5th International Conference on Management of Health and Welfare Units ICOHEMA 2025

Book of Abstracts ISBN: 978-618-5630-25-6

3-5 October 2025

"Reimagining Health and Welfare Management: Inclusivity, Innovation & Impact"

INTERNATIONAL HELLENIC UNIVERSITY

Introduction to the Book of Abstracts of ICOHEMA 2025

"Reimagining Health and Welfare Management: Inclusivity, Innovation & Impact"

In a rapidly evolving global landscape marked by technological breakthroughs, demographic transitions and increasing demands for equity and sustainability, health and welfare systems are facing new and complex challenges. The 5th International Conference on Health Management (ICOHEMA 2025) was held in Thessaloniki from 3 to 5 October 2025, under the title: *"Reimagining Health and Welfare Management: Inclusivity, Innovation & Impact."*

This year's conference was organized and hosted by the International Hellenic University**,** and specifically by the Department of Organisations Management, Marketing and Tourism. The unit responsible for organizing and scientifically coordinating the event was the Postgraduate Programme in Health and Welfare Management Units**,** reflecting its ongoing commitment to fostering critical dialogue and innovation in the fields of health and social care administration.

ICOHEMA 2025 aimed to explore inclusive, innovative and effective approaches to the management of health and welfare services. It brought together an interdisciplinary and international community of academics, researchers, professionals and policy makers, focusing on topics such as:

- Bioethics and AI-driven Digitalization in Health and Welfare Services
- Innovating Patient-Centered Health and Welfare
- Quality Assurance in Health and Welfare Management Services
- Inclusive Workforce Development in Healthcare
- Future Trends in Health and Welfare
- Smart Governance in Public Health and Welfare
- Organizational Resilience and Adaptability in Health
- Sustainability in Health and Welfare Management Services
- Policy and Leadership in Health Systems

The scientific programme encompassed a broad spectrum of presentations and discussions, with four keynote addresses delivered by renowned international experts standing out as key highlights:

- *"Marketing for Public Good: Developing a Purpose-Driven Brand in Ghana to Tackle Malnutrition"*
- *"Who is the Expert in the Room? Trust and Expertise in AI-Assisted Healthcare"*
- *"Enabling Neurodiversity for Global Health and Human Development"*
- *"Unseen but Not Unheard: The Blind Spot of Ableism in Health Communication and the Representation of People with Vision Impairment"*

These talks set the tone for deep and thought-provoking exchanges at the intersections of technology, ethics, inclusivity and public communication in health and welfare.

ISBN: 978-618-5630-25-6

Additionally, a high-level round table discussion entitled: *"Digital Transformation in Healthcare: Innovations, Challenges and Future Perspectives"* brought together experts from academia, policy and the healthcare industry to examine real-world challenges and propose feasible strategies for digital reform.

For three days, ICOHEMA 2025 served as a dynamic milieu for knowledge exchange, research dissemination, and professional collaboration, featuring contributions from both Greek and international participants.

The quality and diversity of the sessions unpacked the importance of fostering dialogue across disciplines to build resilient, equitable and forward-looking health and welfare systems.

On behalf of the Scientific and Organizing Committee, we express our sincere gratitude to all keynote speakers, presenters, round table participants and attendees. Your insights and commitment were essential to the success of this event.

We look forward to welcoming you to the next ICOHEMA as we continue working together toward impactful, inclusive and innovative health and welfare management.

Ourania Gkouna

Co-Chair of the Scientific Committee

Georgia Stavraki

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AI IN HEALTHCARE

INNOVATING FROM WITHIN: COMBATING QUIET QUITTING THROUGH GREEN LEAN SIX SIGMA AND WORKFORCE ENGAGEMENT IN HEALTH MANAGEMENT

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ABSTRACT

In today's evolving healthcare landscape, organizations face intertwined challenges: escalating operational costs, sustainability pressures, and workforce disengagement. A particularly troubling trend is quiet quitting—when employees meet only minimal job requirements while psychologically detaching from their roles (Boy et al., 2023; Kang et al., 2023). This silent withdrawal erodes morale, undermines care quality, and weakens institutional resilience. To counter these pressures, healthcare management must embrace strategies integrating process efficiency, environmental responsibility, and human-centered engagement (Zhu et al., 2018).

One such approach is Green Lean Six Sigma (GLSS), which combines Lean's waste elimination and Six Sigma's precision improvement tools with sustainability goals. When aligned with workforce engagement, GLSS transforms not only operations but also workplace culture, encouraging ownership and shared purpose (Noronha et al., 2023).

Evidence supports this model. Pavão et al. (2018) showed that Lean Six Sigma implementation in a São Paulo hospital reduced financial errors and increased compliance, raising Sigma levels from 3.44 to 5.92 in nine months. Beyond cost savings, staff involved in workflow redesign reported stronger commitment and professional pride. Likewise, Nagadi (2022) highlighted GLSS's potential to cut emissions while enhancing efficiency, proving that ecological and operational goals can progress together.

In the UK's National Health Service, Antony et al. (2023) found that Lean Six Sigma projects improved patient flow and reduced emergency waiting times, improving morale and teamwork. Laureani et al. (2013) and Zhu et al. (2018) observed similar benefits in hospitals across Ireland, Malaysia, and India, where GLSS projects lowered waste and costs. Crucially, success stemmed from staff participation, which fostered inclusion and ownership of sustainability outcomes.

Six Sigma's DMAIC framework (Define, Measure, Analyze, Improve, Control) gives healthcare organizations a structure for addressing inefficiencies and integrating environmental metrics. Sreedharan et al. (2018) found that GLSS enhanced regulatory compliance and service quality. Involving employees in defining and measuring problems improves job satisfaction and reduces quiet quitting (Hoxha et al., 2024; Toska et al., 2025). For example, Laureani and Antony (2023) reported UK cases where nurses co-led Lean Six Sigma projects, reducing medication errors and improving morale.

Integrating GLSS is as much cultural as operational. De Freitas et al. (2017) and McDermott et al. (2022) showed that involving frontline staff in improvement projects boosts morale and innovation. Daultani et al. (2019) documented how Indian hospitals applying GLSS reduced bio-medical waste and improved compliance while increasing staff motivation. Such alignment between sustainability and professional values fosters pride and purpose.

Long-term success requires leadership and learning culture. Mishra (2018) identified leadership support, training, and value alignment as critical to GLSS implementation. Shokri et al. (2020) confirmed that structured education and visible executive commitment are vital for success in UK healthcare. These insights show that change must prioritize people as much as processes.

Innovation often meets institutional resistance, as noted by Haring et al. (2022) and Schweidenback et al. (2024). Yet participatory reform can turn tensions into progress. Van den Heuvel et al. (2006) presented a Dutch hospital case where Lean Six Sigma reduced surgical waiting lists and boosted staff satisfaction, proving that collaboration transforms resistance into engagement.

Additionally, frameworks such as ISO 56002:2019 have been combined with Lean Six Sigma to promote innovation culture (Hidayawanti et al., 2024). When hospitals treat GLSS as a strategic philosophy rooted in sustainability and empowerment, they create resilient systems capable of continuous adaptation.

In conclusion, embedding Green Lean Six Sigma within workforce engagement presents a transformative model for healthcare. It links efficiency and sustainability

with empathy and empowerment, addressing both structural and human challenges. By uniting innovation with inclusive leadership, healthcare systems can move beyond quiet quitting toward cultures of purpose, collaboration, and lasting excellence.

Key Words: Green Lean Six Sigma, Workforce Engagement, Sustainability, Healthcare Innovation, Employee Empowerment, Process Improvement, Organizational Culture

REFERENCES

Antony, J., Lancastle, J., McDermott, O., Bhat, S., Parida, R., &Cudney, E. A. (2023). An evaluation of Lean and Six Sigma methodologies in the national health service. *International Journal of Quality & Reliability Management*, 40(1), 25-52.

Boy, Y., &Sürmeli, M. (2023). Quiet quitting: A significant risk for global healthcare. *Journal of global health*, 13, 03014.

de Freitas, J. G., Costa, H. G., &Ferraz, F. T. (2017). Impacts of Lean Six Sigma over organizational sustainability: *A survey study. Journal of cleaner production*, 156, 262-275.

Haring, M., Freigang, F., Amelung, V., &Gersch, M. (2022). What can healthcare systems learn from looking at tensions in innovation processes? A systematic literature review. BMC Health Services Research, 22(1), 1299.

Hidayawanti, R., Amany, N. A., &Latief, Y. (2024). Integrating ISO 56002: 2019 Organizational Context Evaluation with Lean Six Sigma for Cultivating an Innovation Culture in Precast Concrete Companies in Indonesia. In *E3S Web of Conferences* (Vol. 517, p. 05026). EDP Sciences.

Hoxha, G., Simeli, I., Theocharis, D., Vasileiou, A., &Tsekouropoulos, G. (2024). Sustainable healthcare quality and job satisfaction through organizational culture: Approaches and outcomes. *Sustainability, 16*(9), 3603.

Kang, J., Kim, H., & Cho, O. H. (2023). Quiet quitting among healthcare professionals in hospital environments: a concept analysis and scoping review protocol. *BMJ open*, 13(11), e077811.

Laureani, A., Brady, M., & Antony, J. (2013). Applications of lean six sigma in an Irish hospital. *Leadership in health services*, 26(4), 322-337.

McDermott, O., Antony, J., Bhat, S., Jayaraman, R., Rosa, A., Marolla, G., &Parida, R. (2022). Lean six sigma in healthcare: a systematic literature review on challenges, organisational readiness and critical success factors. *Processes*, 10(10), 1945.

Mishra, M. N. (2022). Identify critical success factors to implement integrated green and Lean Six Sigma. *International Journal of Lean Six Sigma*, 13(4), 765-777.

Nagadi, K. (2022). Implementation of green, lean and six sigma operations for sustainable manufacturing. A Review. *International Journal of Production Management and Engineering,* 10(2), 159-171.

Noronha, A., Bhat, S., Gijo, E. V., Antony, J., Laureani, A., &Laux, C. (2023). Performance and service quality enhancement in a healthcare setting through lean six sigma strategy. *International Journal of Quality & Reliability Management*, 40(2), 365-390.

Pavão, D. N., Buttignol, M., Pereira, A. J., Tanjoni, R., Almeida, E. H. P. D., Leisnock, P., ... & Silva, E. (2018). Efficiency in the operational process:

reduction of incorrect entries and guarantee of compliance in the rendering of accounts. *Einstein* (São Paulo), 16(4), eGS4200.

Schweidenback, J. S., Rangachari, P., D'Amato-Palumbo, S., & Gladstone, J. S. (2024). Integrating the Consolidated Framework for Implementation Research (CFIR) and Tensions into a Novel Conceptual Model for Telehealth Advancement in Healthcare Organizations. *Journal of Healthcare Leadership,* 501-510.

Sreedharan V, R., G, S., &Raju, R. (2018). Development of a Green Lean Six Sigma model for public sectors. *International Journal of Lean Six Sigma*, 9(2), 238-255.

Toska, A., Dimitriadou, I., Togas, C., Nikolopoulou, E., Fradelos, E. C., Papathanasiou, I. V., ... &Saridi, M. (2025). Quiet quitting in the hospital context: investigating conflicts, organizational support, and professional engagement in Greece. *Nursing Reports*, *15*(2), 38

Zhu, Q., Johnson, S., &Sarkis, J. (2018). Lean six sigma and environmental sustainability: a hospital perspective. In Supply Chain Forum: *An International Journal* (Vol. 19, No. 1, pp. 25-41). Taylor & Francis.

INNOVATING HEALTHCARE WITH GLSS: REDEFINING HOSPITAL MANAGEMENT AND ADVANCING WELFARE SOLUTIONS

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ABSTRACT

Healthcare systems worldwide face mounting pressures to deliver quality, efficient, and sustainable care within constrained budgets. These challenges have intensified with Industry 4.0 disruptions, the aftermath of COVID-19, and persistent financial limitations (Haleem et al., 2022; Yaqub et al., 2023; Duek et al., 2020). Established improvement models such as Lean Thinking and Six Sigma have enhanced efficiency, yet their fusion with environmental sustainability—Green Lean Six Sigma (GLSS)—remains underused in healthcare (Kovacevic et al., 2016; Tsekouropoulos et al., 2022; Antony et al., 2019). GLSS integrates Lean's waste reduction, Six Sigma's precision, and green principles of environmental stewardship to create a pathway toward operational and ecological excellence (Kasemsap, 2018; Simeli et al., 2023).

Methodology

The study employed a qualitative design combining semi-structured interviews and literature synthesis to explore how GLSS might evolve theoretically within healthcare. Sixteen Greek healthcare professionals and academics were interviewed

about awareness, perceived benefits, and readiness for GLSS adoption. Thematic analysis identified recurrent patterns, while the literature review situated findings within post-pandemic reforms and digital transformation.

Analysis followed a theory-building logic, moving from descriptive patterns to conceptual explanation—tracing how GLSS can be extended from a technical toolkit to a socio-technical framework linking operational efficiency with inclusivity, ethics, and sustainability.

Findings and Theoretical Development

Respondents expressed cautious optimism. While 74 % recognized Lean's relevance, only 30 % had encountered GLSS, revealing limited awareness of its environmental dimension. Nevertheless, 75 % viewed GLSS positively, citing its potential for social, economic, and ecological improvement.

Three conceptual extensions emerged:

Operational–Environmental Synergy. Participants viewed GLSS as uniting process improvement with ecological accountability. Lean and Six Sigma enhance performance, but their integration with green thinking reframes waste to include environmental waste. This perspective extends GLSS toward a sustainability-driven efficiency theory, positioning hospitals as adaptive learning ecosystems.

Human-Centered Inclusivity. Many linked GLSS to patient-centered care and staff engagement. Streamlined processes free time for relational care, while structured workflows raise morale. This aligns with Kasemsap (2018) and Simeli et al. (2023), suggesting an emerging inclusive operational ethics—where improvement benefits both caregivers and patients.

Adaptive Governance and Ethical Innovation. Respondents associated GLSS's DMAIC (Define–Measure–Analyze–Improve–Control) structure with mechanisms for ethical oversight in digital health and AI use. This insight extends GLSS into a hybrid governance model, integrating efficiency with transparency, data ethics, and sustainability.

Barriers were also evident: 45 % noted constraints such as limited budgets, training costs, and hierarchical resistance. Cultural inertia, especially among senior staff, was a recurring concern. Participants emphasized leadership commitment, education, and systemic alignment as essential for adoption. These findings suggest that change readiness and organizational learning should be embedded within the evolving GLSS framework.

Conclusion

This research advances GLSS from an applied improvement method to a theoretical model of inclusive sustainability in healthcare. By integrating efficiency, quality, and environmental responsibility, GLSS evolves into a value system for responsible innovation. Leadership vision and structured education are vital to institutionalize this approach, while transparent communication can overcome resistance and resource limitations.

Ultimately, GLSS offers more than operational optimization—it provides a governance framework aligning technological innovation with ethical and ecological imperatives. Its application can help healthcare organizations transition toward resilient, adaptive, and environmentally conscious systems that uphold both human well-being and planetary health (Kasemsap, 2018; Simeli et al., 2023).

ISBN: 978-618-5630-25-6

Key Words: Green Lean Six Sigma, Sustainability, Operational Efficiency, Healthcare Transformation, Patient-Centricity, Industry 4.0, Ethical Innovation.

REFERENCES

Antony, J., Sunder M, V., Sreedharan, R., Chakraborty, A., &Gunasekaran, A. (2019). A systematic review of Lean in healthcare: a global prospective. *International Journal of Quality & Reliability Management*, *36*(8), 1370-1391.

Duek, I., &Fliss, D. M. (2020). The COVID-19 pandemic-from great challenge to unique opportunity: Perspective☆. *Annals of Medicine and Surgery*, *59*, 68-71.

Haleem, A., Javaid, M., Singh, R. P., &Suman, R. (2022). Medical 4.0 technologies for healthcare: Features, capabilities, and applications. *Internet of Things and Cyber-Physical Systems*, *2*, 12-30.

Kasemsap, K. (2016). Applying lean production and six sigma in global operations. In *Handbook of research on waste management techniques for sustainability* (pp. 44-74). IGI Global Scientific Publishing.

Kovacevic, M., Jovicic, M., Djapan, M., &Zivanovic-Macuzic, I. (2016). Lean thinking in healthcare: Review of implementation results. *International Journal for Quality Research*, *10*(1), 219.

Simeli, I., Tsekouropoulos, G., Vasileiou, A., &Hoxha, G. (2023). Benefits and challenges of teleworking for a sustainable future: Knowledge gained through experience in the era of COVID-19. *Sustainability*, *15*(15), 11794.

Tsekouropoulos, G., Gkouna, O., Theocharis, D., &Gounas, A. (2022). Innovative sustainable tourism development and entrepreneurship through sports events. *Sustainability*, *14*(8), 4379.

Vasileiou, A., Sfakianaki, E., & Tsekouropoulos, G. (2024). Exploring sustainability and efficiency improvements in healthcare: A qualitative study. *Sustainability*, *16*(19), 8306.

Yaqub, M. Z., &Alsabban, A. (2023). Industry-4.0-enabled digital transformation: Prospects, instruments, challenges, and implications for business strategies. *Sustainability*, *15*(11), 8553.

REIMAGINING INCLUSIVE HEALTHCARE ECOSYSTEMS: INNOVATION STRATEGIES FOR VULNERABLE TRAVELERS

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ABSTRACT

Introduction

Inclusive healthcare for vulnerable travelers -particularly the elderly and people with disabilities- is a global imperative as population demographics shift and the complexity of healthcare needs grows (UN Tourism, n.d.; Portales, 2015). Traditional models of healthcare delivery and medical tourism have been critiqued for being fragmented, exclusionary, and poorly adapted to those with functional or cognitive impairments (Wendel et al., 2024; Lee, 2014). Recent trends in digital innovation and participatory design promise a systemic transformation aimed at equity, personalization, and sustainability in global health and welfare delivery (Bird et al., 2021; Bratić et al., 2025). This essay explores how a systemic approach integrating technology, policy frameworks, and co-design methodologies can reshape global healthcare ecosystems for vulnerable travelers, drawing from recent evidence and expert recommendations (Veras et al., 2025; WHO, 2024).

Method

This analysis synthesizes findings from a structured literature review and a focus group study involving thirty Greek national-level experts across healthcare,

policy, digital innovation, and accessibility domains. The methodological framework included thematic analysis of expert interviews, supported by participatory design literature (Bird et al., 2021) and international policy initiatives on digital health and accessibility (UN Tourism, n.d.; WHO, 2024). Recent scientific references from 2023–2025 complement these findings, particularly in areas such as cross-border data sharing, AI governance, and inclusive technology design (Arefin & Zannat, 2025; Shie et al., 2024).

Results

Systemic Barriers and Opportunities

The research identifies persistent barriers for vulnerable travelers: limited physical and digital accessibility (Lazar et al., 2015), fragmented regulatory frameworks (Weiner et al., 2025), digital illiteracy (Robru et al., 2024), and lack of integrated services. These challenges are particularly acute for elderly individuals and persons with special needs navigating medical tourism and cross-border healthcare (Simeli et al., 2023; Portales, 2015). However, the adoption of universal digital design, Green Lean Six Sigma (GLSS) frameworks, and telemedicine has shown promise in bridging these divides (Grigoriadis et al., 2024; Kaswanet al., 2023), though usability and governance gaps remain (Hasan, et al., 2024; WHO, 2024).

Innovation Strategies:

Digital Platforms

User-centered, accessible platforms that meet international accessibility standards (e.g., support for screen readers, voice commands) are essential for equitable healthcare delivery (Lazar, et al., 2015; Lee, 2014). This approach ensures inclusion for those with sensory or cognitive impairments navigating complex health systems.

Participatory Design

Evidence shows that involving end-users (eg. patients, caregivers, clinicians) in co-design processes leads to more emotionally resonant and usable healthcare technologies (Bird et al., 2021; Shie et al., 2024). Participatory methods also mitigate digital divides, particularly among older adults who face barriers to technology adoption (Lee, 2014; Robru et al., 2024).

Policy Integration

Policy reforms must harmonize cross-border data sharing, health insurance coverage, and care delivery standards (Weiner et al., 2025; Arefin&Zannat, 2025). Integrated insurance models that include coverage for assistive devices and chronic conditions reduce logistical and financial burdens for traveling patients (Squaremouth, 2025).

Ethical AI and Data Governance

Trustworthy healthcare innovation requires robust frameworks for ethical AI use, transparency, and algorithmic bias mitigation (WHO, 2024; Weiner et al., 2025). Unified governance standards and data security measures are especially critical in international contexts (Arefin and Zannat, 2025).

Sustainability and Accountability

Applying GLSS methodologies to healthcare operations increases both efficiency and environmental responsibility (Hossainet al., 2024; Ben-Tovim, 2017; Hasan, et al., 2024). These practices enable destination healthcare systems to strengthen competitiveness while supporting sustainable development goals (Grigoriadis et al., 2024; Bratić et al., 2025).

Conclusions

A systemic approach to inclusive healthcare—rooted in digital innovation, participatory design, and adaptive policy—is both necessary and feasible for supporting vulnerable travelers globally (Bird et al., 2021; UN Tourism, n.d.). Strategic integration ensures that new technologies do not exacerbate existing inequities but act instead as catalysts for resilience, empowerment, and cross-sectoral cooperation (Veras et al., 2025). The future of inclusive healthcare will depend on strong stakeholder collaboration, sustained investment in accessibility, and the mainstreaming of co-design across innovation ecosystems (Wendel et al., 2024; Simeli et al., 2023). Global digital health frameworks and ethical AI practices provide actionable blueprints for a next-generation system that prioritizes dignity, sustainability, and health equity for all (WHO, 2024; Weiner et al., 2025).

Key Words: Inclusivity, Digital Innovation, Participatory Design, Accessibility, Policy Integration, Ethical AI, Sustainability.

REFERENCES

Arefin, S., &Zannat, N. T. (2025). Securing AI in global health research: A framework for cross-border data collaboration. *Clinical Medicine and Health Research Journal*, *5*(02), 1187–1193.

Ben-Tovim, D. I. (2017). *Process redesign for health care using lean thinking: A guide for improving patient flow and the quality and safety of care*. CRC Press.

Bird, M., McGillion, M., Chambers, E. M., Dix, J., Fajardo, C. J., Gilmour, M., et al. (2021). A generative co-design framework for healthcare innovation: Development and application of an end-user engagement framework. *Research Involvement and Engagement*, *7*(1), 12.

Bratić, M., MarićStanković, A., Pavlović, D., Pivac, T., Kovačić, S., Surla, T., et al. (2025). New era of tourism: Innovative transformation through Industry 4.0 and sustainability. *Sustainability*, *17*(9), 3841.

DelliFraine, J. L., Langabeer, J. R., &Nembhard, I. M. (2010). Assessing the evidence of Six Sigma and Lean in the health care industry. *Quality Management in Health Care*, *19*(3), 211–212.

Grigoriadis, T., Vasileiou, A., Tsekouropoulos, G., Sfakianaki, E., &Zagkotsi, S. (2024). Enhancing medical tourism for special needs and elderly patients through digital innovation and Green Lean Six Sigma. In *Digital healthcare: The future is now*.

Hasan, S., Işık, Z., &Demirdöğen, G. (2024). Evaluating the contribution of lean construction to achieving sustainable development goals. *Sustainability*, *16*(8), 3502.

Hossain, A., Khan, M. R., Islam, M. T., & Islam, K. S. (2024). Analyzing the impact of combining lean six sigma methodologies with sustainability goals. *Journal of Science and Engineering Research*, *1*(01), 123-144.

Kaswan, M. S., Rathi, R., Antony, J., Cross, J., Garza-Reyes, J. A., Singh, M., ...& Sony, M. (2023). Integrated Green Lean Six Sigma-Industry 4.0 approach to combat COVID-19: from literature review to framework development. *International Journal of Lean Six Sigma*, 15(1), 50-79.

Lazar, J., Goldstein, D. F., & Taylor, A. (2015). *Ensuring digital accessibility through process and policy*. Morgan Kaufmann.

Lee, C. (2014). *User-centered system design in an aging society: An integrated study on technology adoption* [Dissertation]. Massachusetts Institute of Technology.

Portales, R. C. (2015). Removing "invisible" barriers: Opening paths towards the future of accessible tourism. *Journal of Tourism Futures*, *1*(3), 269–278.

Robru, K., Setthasuravich, P., Pukdeewut, A., &Wetchakama, S. (2024, July). Internet use for health-related purposes among older people in Thailand: An analysis of nationwide cross-sectional data. *Informatics*, *11*(3), 5.

Shie, A. J., Xu, E. M., Ye, Z. Z., Meng, Q. F., & Wu, Y. J. (2024). Sustainable innovative design of elderly-friendly smart medical products: An integrated model. *Sustainability*, *16*(17), 7580.

Simeli, I., Tsekouropoulos, G., Vasileiou, A., & Hoxha, G. (2023). Benefits and challenges of teleworking for a sustainable future: Knowledge gained through experience in the era of COVID-19. *Sustainability*, *15*(15), 11794.

Squaremouth. (2025). *Best travel insurance for pre-existing conditions in 2025* [Internet]. Retrieved July 2, 2025, from https://www.squaremouth.com/resources/best-travel-insurance/pre-existing-condition

UN Tourism. (n.d.). *Accessible Tourism (UNWTO)* [Internet]. Madrid: UN Tourism. Retrieved July 2, 2025, from https://www.unwto.org/accessibility

Veras, M., Pardo, J., Lê, M. L., Jussup, C., Tatmatsu-Rocha, J. C., & Welch, V. (2025). A protocol for AI-powered tools to enhance mobility and function in older adults: An evidence and gap map. *Journal of Personalized Medicine*, *15*(1), 29.

Weiner, E. B., Dankwa-Mullan, I., Nelson, W. A., &Hassanpour, S. (2025). Ethical challenges and evolving strategies in the integration of artificial intelligence into clinical practice. *PLOS Digital Health*, *4*(4), e0000810.

Wendel, C. L., Gray, R. C., Goddard, K., & Hall, J. P. (2024). Navigating new normals: The influence of COVID-19 policies on community access and well-being of people with mobility disabilities in everyday life. *Frontiers in Public Health*, *12*, 1401777.

World Health Organization (WHO). (2024). *Ethics and governance of artificial intelligence for health: Large multi-modal models. WHO guidance*. World Health Organization.

MENTAL HEALTH AND SOCIAL INEQUALITIES: PSYCHOLOGICAL SUPPORT FOR VULNERABLE GROUPS IN PRIMARY HEALTH CARE

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ABSTRACT

This theoretical study examines how social inequalities shape mental health and how Primary Health Care (PHC), as the first point of contact, continuous and person-centered care, can provide equitable psychological support to vulnerable populations. Vulnerability here denotes exposure to structural risks (poverty, chronic illness, forced displacement, marginalization) that elevate the likelihood of mental disorders while simultaneously constraining access to care (Knifton & Inglis, 2020).

Social determinants such as income, education, housing, and discrimination affect both the incidence and course of mental disorders, as well as service uptake and adherence (Murali & Oyebode, 2004; Kirkbride et al., 2024). Refugees, ethnic minorities, and low-income groups often encounter intersecting barriers such as stigma, limited culturally competent services, and institutional mistrust (Mezzina et al., 2022).

Integrating mental health within PHC has emerged as a promising strategy for access, continuity, and coordination. Evidence supports community-based models, stepped care (from screening and psychoeducation to brief psychological therapies), and culturally adapted approaches embedded in multidisciplinary PHC teams (Khanassov et al., 2016; Isaacs & Mitchell, 2024). During the COVID-19 pandemic, PHC played a crucial role in early psychosocial support for socially isolated and high-risk groups, highlighting the value of proximity and continuity (Uphoff et al., 2021).

In PHC, four pathways merit emphasis. First, routine screening with stepped-care for perinatal depression among low-income women. Second, collaborative care for diabetes with depression through shared plans between PHC and mental-health teams. Third, refugee-inclusive services (interpreters, cultural mediation, adapted psychoeducation) alongside social prescribing that links isolated older adults to community resources (Khanassov et al., 2016; Isaacs & Mitchell, 2024). (Khanassov et al., 2016; Isaacs & Mitchell, 2024). These examples illustrate a pragmatic route to equity-oriented delivery.

Despite progress, systemic constraints persist: workforce shortages, unstable funding streams, and fragmented intersectoral coordination impede scale-up and sustainability. Accordingly, policy must pair PHC integration with action on the upstream social determinants that drive exclusion and unequal outcomes (Jeste et al., 2025). This includes investment in community empowerment, anti-stigma initiatives, and participatory service design so that vulnerable groups are involved not only as service users but also as co-designers.

ISBN: 978-618-5630-25-6

In conclusion, bridging mental health and social equity within PHC requires a coherent combination of stepped and collaborative care, cultural adaptation, and trauma-informed principles, embedded in community settings and supported by intersectoral policies that address root social drivers. Future research should evaluate long-term outcomes and cost-effectiveness of integrated PHC models, and develop scalable, context-sensitive implementation strategies for diverse vulnerable populations (Kirkbride et al., 2024; Isaacs & Mitchell, 2024).

Key Words: Mental Health, Social Inequalities, Vulnerable Groups, Primary Health Care, Psychosocial Support, Health Equity.

REFERENCES

Isaacs, A.N., Mitchell, E.K.L. Mental health integrated care models in primary care and factors that contribute to their effective implementation: a scoping review. *Int J Ment Health Syst* **18**, 5 (2024). DOI: https://doi.org/10.1186/s13033-024-00625-x

Jeste, D.V., Smith, J., Lewis-Fernández, R. *et al.* Addressing social determinants of health in individuals with mental disorders in clinical practice: review and recommendations. *Transl Psychiatry* **15**, 120 (2025). DOI: https://doi.org/10.1038/s41398-025-03332-4

Khanassov, V., Pluye, P., Descoteaux, S. *et al.* Organizational interventions improving access to community-based primary health care for vulnerable populations: a scoping review. *Int J Equity Health* **15**, 168 (2016). DOI: https://doi.org/10.1186/s12939-016-0459-9

Kirkbride JB, Anglin DM, Colman I, Dykxhoorn J, Jones PB, Patalay P, Pitman A, Soneson E, Steare T, Wright T, Griffiths SL. The social determinants of mental health and disorder: evidence, prevention and recommendations. World Psychiatry. 2024 Feb;23(1):58-90. DOI: 10.1002/wps.21160. PMID: 38214615; PMCID: PMC10786006.

Knifton, L., & Inglis, G. (2020). Poverty and mental health: policy, practice and research implications. BJPsych Bulletin, 1–4. DOI:10.1192/bjb.2020.78

Mezzina R, Gopikumar V, Jenkins J, Saraceno B and Sashidharan SP (2022) Social Vulnerability and Mental Health Inequalities in the "Syndemic": Call for Action. *Front. Psychiatry* 13:894370. DOI: 10.3389/fpsyt.2022.894370

Murali, V., & Oyebode, F. (2004). Poverty, social inequality and mental health. *Advances in psychiatric treatment*, *10*(3), 216-224. DOI:10.1192/apt.10.3.216

Uphoff EP, Lombardo C, Johnston G, Weeks L, Rodgers M, Dawson S, et al. (2021) Mental health among healthcare workers and other vulnerable groups during the COVID-19 pandemic and other coronavirus outbreaks: A rapid systematic review. PLoS ONE 16(8): e0254821. DOI: https://doi.org/10.1371/journal.pone.0254821

CYBER-BIOETHICS: THE ETHICAL SHIFT IN DIGITAL HEALTH

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ABSTRACT

Introduction: Acknowledging the intense and vital positive as well as negative impacts of digital technologies (such as Artificial Intelligence (AI), big data analytics, computer interfaces, etc.) on societies, environment, healthcare systems, ecosystems and human lives, in part because of the innovative approaches which influence human thinking, interaction and decision-making and affect education, healthcare, human, social and natural sciences, are becoming integrated in Digital Healthcare systems (Panadés & Yuguero, 2025; Schneider et al. 2023; UNESCO, 2022). Against this backdrop, Cyber-bioethics, an emerging ethical discipline that combines bioethics with cybernetics, interprets and evaluates issues such as the privacy of health data, AI bias in healthcare, patient –doctor relationship in digital contexts, in conjunction with the ethical implications of technologies, namely AI powered diagnostics, wearables and robotics (Panadés & Yuguero, 2025; Schneider et al. 2023).

Methodology: The paper draws on existing literature research and applies a systematic document analysis/a systematic review. Electronic databases such as Web of Science (WoS), Scopus, Pub Med and Google Scholar, as well as documents by the European Commission (EC), UNESCO etc. regarding issues, inter alia, of digital health technologies, data and privacy protection and governance, as well as the ethical values to foster ethical digital health, will be extensively searched based on the search strategy pertaining to the purpose of this paper.

Discussion: Cyber-bioethics introduces six fundamental categories involved in digital health: i. the ethics of machine training; ii. the ethics of machine precision; iii. patient – related ethics; iv. doctor – related ethics; v. shared ethics; and vi. the roles of regulators. Accordingly, the key aspects of Cyber-bioethics are twofold encompassing: i. focus on digital health: cyber-bioethics specifically examines the ethical dilemmas raised by digital technologies in healthcare, including smartphone apps, self-tracking devices, and AI-driven systems; ii. addressing new dilemmas: it amplifies conventional bioethical principles to address new challenges like data protection, cybersecurity, the explainability and transparency of AI systems, and ensuring equity in digital health access (Abdullah et al. 2021; Panadés & Yuguero, 2025; Schneider et al. 2023).

Conclusion: The above principles of cyber-bioethics should also be aligned with the following key ethical challenges: i. Values: respect, protection and promotion of human rights and fundamental freedoms and human dignity, environment and ecosystem flourishing, living in peaceful, just and interconnected societies, ensuring diversity and inclusiveness; ii. Ethical issues: data protection and privacy; accountability; transparency and explainability; human oversight; patient – provider relationship (Abdullah et al. 2021; Panadés & Yuguero, 2025; Schneider et al. 2023; UNESCO, 2022). Consequently, this paper argues that the future of digital health depends on an appropriate ethical integration of technologies in healthcare systems. It

is crucial that the principles of cyber-bioethics are adopted and promoted by all stakeholders, from AI developers to healthcare professionals and policy makers, to design, deploy, implement and govern in an ethical, fair, equitable, appropriate and human centered way digital health systems (Panadés & Yuguero, 2025). Establishing these rules and regulatory frameworks is a presupposition for ensuring that digital technologies are aligned with ethical values protecting individuals from potential harms and exploitation.

Key Words: Cyber-bioethics, Digital Health, Digital Technologies, Ethical Shift

REFERENCES

Abdullah Y.I., Schuman J.S., Shabsigh R., Caplan A., Al-Aswad L.A. (2021). Ethics of artificial intelligence in medicine and ophthalmology. *The Asia – Pacific Journal of Ophthalmology*, 10(3): 289–298. doi: 10.1097/APO.0000000000000397 [Accessed the 20th of August 2025, 13:10]

Panadés, R. & Yuguero, O. (2025). Cyber-bioethics: the new ethical discipline for digital health. *Frontiers in Digital Health,* 6: 1-4. doi: 10.3389/fdgth.2024.1523180 [Accessed the 20th of August 2025, 13:00]

Schneider, M., Vayena, E. & Blasimme, A. (2023). Digital bioethics: introducing new methods for the study of bioethical issue. *Journal of Medical Ethics,* 49:783–790. doi:10.1136/medethics-2021-107387 [Accessed the 12th of September 2025, 11:30]

UNESCO, (2022). *Recommendation on the Ethics of Artificial Intelligence.* Paris: United Nations Educational, Scientific and Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000381137 [Accessed the 13th of September 2025, 15:06]

RETHINKING LOCAL WELFARE SERVICES: PARTICIPATORY MAPPING FOR THE DESIGN OF COMMUNITY HEALTH CENTERS USING AI-TOOLS

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ABSTRACT

Contemporary welfare systems are undergoing profound transformations, calling for renewed strategies in the governance, planning, and delivery of health and social services. In Italy, Ministerial Decree 77/2022 has introduced Community Health Centers (CHCs) as central nodes in a restructured territorial healthcare system. CHCs are intended to promote access, integration, and personalization of care, while fostering active community involvement. However, their territorial embeddedness and coordination capacities remain limited, particularly in remote and underserved areas where weak infrastructural connectivity and misaligned service planning often compromise effectiveness (Costa et al., 2022).

This research project responds to these challenges by designing and testing a participatory methodology to support the development of an AI-based decision-support tool. The tool is envisioned to dynamically match the health needs of specific populations with available service offerings, thereby improving planning precision and CHC responsiveness. Anchored in the collaborative governance framework proposed by Ansell and Gash (2008), the project explores how inclusive, multi-actor processes can support adaptive models of CHC development that are territorially sensitive and socially inclusive.

The province of Parma, known for its advanced territorial healthcare infrastructure (Ugolini et al., 2020), is selected as the empirical setting. Three CHCs,

ISBN: 978-618-5630-25-6

located in urban, rural, and mountainous zones, will serve as case studies. These sites allow for the exploration of spatial and organizational variation in access, service delivery, and stakeholder coordination. Participatory mapping processes will engage a range of actors, including health authorities, municipalities, private providers, third-sector organizations, and citizen groups. A mixed-methods strategy will combine qualitative tools (interviews and focus groups) with quantitative analysis of demographic, epidemiological, and administrative datasets. Table 1 better shapes the methodological steps.

Expected outputs include (1) territorial need maps identifying vulnerable population groups and emerging demands, (2) a structured service database, (3) strategic guidelines for CHC planning and governance, and (4) monitoring tools to support performance assessment and replicability. These will converge in the design and training of a machine learning model capable of aligning emerging needs with localized service configurations. Importantly, the AI tool will be developed as a product of stakeholder co-production, positioning it not merely as a technical solution but as an operational expression of collaborative governance (Emerson et al., 2012; Nabatchi & Leighninger, 2015).

This approach aligns with growing literature on the integration of digital tools in territorial welfare and public health planning (Greenhalgh et al., 2017; Ciasullo et al., 2020). By embedding digital innovation within participatory processes, the project advances a model in which CHCs are not fixed infrastructures but dynamic, context-sensitive ecosystems, capable of responding to change, addressing inequities, and fostering accountability across institutional boundaries (Voorberg et al., 2015).

In doing so, this research contributes to the theoretical and applied debate on how AI technologies can be democratically governed, locally rooted, and strategically employed in reshaping welfare institutions from below.

Table 1
Shaping methodological steps

Phase	Objective	Main Tools
1. Context Mapping	Identify existing services and actors in Parma's health ecosystem	Desk research, policy review, literature analysis
2. Case Study Selection	Capture variability across urban, rural, and mountain CHCs	Territorial profiling, stakeholder mapping
3. Participatory Inquiry	Understand local needs and service perceptions	Semi-structured interviews, focus groups
4. Quantitative Analysis	Integrate epidemiological, demographic, and service data	Health records (AUSL), municipal statistics
5. AI Model Design	Create a machine learning framework	Dataset integration, ML algorithms

ISBN: 978-618-5630-25-6

	linking needs and services	
6. Strategic Output	Define planning and monitoring tools for CHCs	Stakeholder validation, synthesis workshops

Key Words: health care management, collaborative governance, machine learning, AI tool, territorial health, community health center

REFERENCES

Ansell, C., & Gash, A. (2008). *Collaborative governance in theory and practice*. Journal of Public Administration Research and Theory, 18(4), 543–571.

Ciasullo, M. V., Cosimato, S., Palumbo, R., & Storlazzi, A. (2020). *Improving value co-creation in smart health ecosystems*. Technological Forecasting and Social Change, 153, 119226.

Costa, G., Pavolini, E., & Guglielmo, M. (2022). *Territorial health policies in Italy: Inequalities, reforms and governance dilemmas*. Sociologia del Lavoro, 164, 105–122.

Emerson, K., Nabatchi, T., & Balogh, S. (2012). *An integrative framework for collaborative governance*. Journal of Public Administration Research and Theory, 22(1), 1–29.

Greenhalgh, T., Wherton, J., Papoutsi, C., et al. (2017). *Beyond adoption: A new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies*. Journal of Medical Internet Research, 19(11), e367.

Nabatchi, T., & Leighninger, M. (2015). *Public participation for 21st century democracy*. Wiley.

Ugolini, C., Leucci, A. C., Nobilio, L., & Bertè, G. (2020). Reorganizing territorial healthcare to avoid inappropriate ED visits: does the spread of Community Health Centres make Walk-in-Clinics redundant?. *BMC Health Services Research*, *20*(1), 807.

Voorberg, W. H., Bekkers, V. J. J. M., & Tummers, L. G. (2015). *A systematic review of co-creation and co-production: Embarking on the social innovation journey*. Public Management Review, 17(9), 1333–1357.

SHAPING NEW COSTING SYSTEMS IN HEALTHCARE: AI-ENHANCED TIME-DRIVEN ACTIVITY-BASED COSTING

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ABSTRACT

Healthcare organizations are increasingly transitioning toward value-based reimbursement models that reward outcomes rather than service volume. Supporting this shift requires granular, patient-level cost data to identify which care activities truly generate value. Traditional cost-accounting systems, aggregating expenses retrospectively across departments, lack the resolution to inform such decisions and often obscure variability in resource use (Kaplan and Porter, 2011).

Time-Driven Activity-Based Costing (TDABC) offers a more precise alternative by assigning costs based on the duration of clinical activities and the per-minute rate of resources (Kaplan and Anderson, 2004). However, TDABC remains constrained by its dependence on manually defined time equations and static process assumptions, which are rarely updated and quickly misaligned with evolving workflows (Kaplan et al., 2014; Haque et al., 2019). As healthcare delivery becomes more dynamic, there is an urgent need for a continuously adaptive, data-driven costing system.

This paper propose an Artificial Intelligence–Enhanced Time-Driven Activity-Based Costing (AI-enhanced TDABC) framework designed to transform TDABC into a responsive and scalable cost-management tool. The model automatically ingests digital timestamps from electronic health records (EHRs), Internet-of-Things (IoT) devices, and scheduling platforms. Machine learning models, such as Random Forests

ISBN: 978-618-5630-25-6

and Long Short-Term Memory (LSTM) networks, are trained nightly to recalibrate time equations based on real-world variation in activity durations and workflow patterns.

The framework consists of four layers. First, a data-ingestion layer consolidates timestamp data from EHRs, IoT sensors, and motion-capture systems. Second, a preprocessing layer segments raw logs into activity sequences and extracts predictors such as patient risk scores, staff profiles, and system congestion flags. Third, a modeling layer applies supervised learning to predict activity durations and understand interdependencies. Finally, a cost-computation layer integrates updated time coefficients with per-minute resource rates, producing real-time, episode-level cost estimates. These feed into dashboards that integrate financial, clinical, and patient-reported outcome metrics.

Real-time costing improves benchmarking and enables value-based management. For example, organizations can compare cost-per-procedure across departments, stratified by provider experience, to identify process inefficiencies. Activity-level insights also enhance Lean initiatives, pinpointing high-cost steps, such as patient transfers or surgical preparation, for targeted interventions (Kaplan and Porter, 2011).

Importantly, this framework supports strategic planning. Cost simulations can guide decisions such as whether to insource or outsource services (e.g., telehealth follow-up or post-acute rehabilitation), enabling finance teams to weigh cost against patient complexity and utilization patterns. Linking cost data with outcome indicators promotes Total Quality Management by identifying improvement efforts with the highest value return.

Operationalizing this framework requires data interoperability, ethical governance of digital tracking, and strong change management. Clinicians must trust AI-generated estimates, supported by transparent model logic and clear visualizations. Continuous model retraining and system upkeep demand dedicated data science and IT infrastructure.

Future work will focus on scaling the framework across multiple care pathways and testing the portability of trained models, laying the groundwork for transfer learning in healthcare costing.

Key Words: Time driven activity based costing, Artificial intelligence, healthcare costing, process mining, value based mining, machine learning

REFERENCES

Ansell, C., & Gash, A. (2008). *Collaborative governance in theory and practice*. Journal of Public Administration Research and Theory, 18(4), 543–571.

Bulman, C., Ferreira, P., & van der Aalst, W. (2024). *Enhancing interventional radiology scheduling with process mining and machine learning*. Health Systems, 13(1), 45–62.

Haque, F., Kaplan, R. S., Chang, H., & Droege, M. (2019). *Time-driven activity-based costing of total hip replacement care: A case study*. Journal of Health Care Finance, 45(3), 1–15.

Kaplan, R. S., & Anderson, S. R. (2004). *Time-driven activity-based costing*. Harvard Business Review, 82(11), 131–138.

Kaplan, R. S., & Porter, M. E. (2011). *How to solve the cost crisis in health care*. Harvard Business Review, 89(9), 46–52.

Kaplan, R. S., Witkowski, M., & Northrup, G. (2014). *Applying TDABC to hospital operations: A laboratory case study*. Journal of Health Care Finance, 40(2), 125–135.

Rojas, E., Munoz-Gama, J., Sepúlveda, M., & Capurro, D. (2016). *Process mining in healthcare: A literature review*. Journal of Biomedical Informatics, 61, 224–236.

van de Griendt, J., Tan, H., & van den Berg, M. (2021). *Predicting operating-room turnover times: A deep learning approach*. Artificial Intelligence in Medicine, 112, 102003.

van der Aalst, W. (2016). *Process mining: Data science in action*. Springer.

Westbrook, J. I., Coiera, E., & Dunsmuir, W. T. (2020). *Predicting nursing task durations using machine learning*. International Journal of Medical Informatics, 145, 104212.

RE-IMAGINING PATIENT-CENTERED CARE: AN AI-POWERED FRAMEWORK FOR PERSONALIZED HEALTH AND WELFARE SERVICES

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ABSTRACT

Health and welfare systems worldwide are experiencing profound transformations, driven by the dual pressures of rising demand, resource limitations, and rapid advances in digital technologies. At the heart of these changes lies the imperative to re-imagine patient-centered care in ways that are inclusive, innovative, and impactful. Reviewing some claims stating that conventional models often fail to capture the diverse realities of patients, particularly those marginalized by socio-economic disparities (Epstein & Street, 2011; Glaser & Saltz, 2017; Jiang et al., 2017).Against this backdrop, artificial intelligence (AI) offers opportunities to build more inclusive, adaptive, and impactful systems.

This paper proposes an AI-powered framework for personalized health and welfare services, designed to integrate technical efficiency with social responsibility (building on sociological insights into healthcare inequalities). The framework leverages machine learning and natural language processing to enable providers to analyze patient data, generate and deliver personalized recommendations, and streamline services/communication across healthcare systems. In doing so, it aims to improve patient health outcomes, strengthen patient satisfaction, and enhance operational efficiency (Epstein & Street, 2011; Glaser & Saltz, 2017; Jiang et al., 2017). Importantly, it also addresses challenges of equity, algorithmic bias and ethical governance, ensuring that technological innovation does not reinforce existing inequalities but instead expands access to care (Reddy et al., 2019; Topol, 2019).

To better shape the discussion, I am asking these three guiding questions:
Q1: How can AI-powered frameworks enhance patient-centred care and improve outcomes?
Q2: What organizational and technological components define an effective AI-powered framework?
Q3: How can AI improve inclusivity, patient satisfaction, and system-level efficiency?

To address these questions, this paper identifies three core components: (1) patient data analysis, where algorithms detect individual health needs; (2) personalized recommendations for patients, caregivers, and providers; and (3) streamlined services through task automation and improved provider-patient communication. By situating AI within broader debates on inclusivity and sustainable health management, this paper contributes to ICHOHEMA 2025´s call to re-imagine health and welfare systems. It offers a roadmap for aligning digital innovation with equitable and patient-centered models of care, advancing both practice and policy.

Key Words: Patient-centered care; Artificial intelligence; Health management; Inclusivity; Digital transformation; Healthcare efficiency

REFERENCES

Epstein, R. M., & Street, R. L. (2011). The values and value of patient-centered care. Annals of Family Medicine, 9(2), 100–103. https://doi.org/10.1370/afm.1239

Glaser, J., & Saltz, J. (2017). Artificial intelligence in healthcare. Journal of Healthcare Management, 62(4), 285–296. https://doi.org/10.1097/JHM-D-17-00067

Jiang, F., Jiang, Y., Zhi, H., Dong, Y., Li, H., Ma, S., Wang, Y., Dong, Q., Shen, H., & Wang, Y. (2017). Artificial intelligence in healthcare: Past, present and future. Stroke and Vascular Neurology, 2(4), 230–243. https://doi.org/10.1136/svn-2017-000101

Reddy, S., Fox, J., & Purohit, M. P. (2019). Artificial intelligence-enabled healthcare delivery. Journal of the Royal Society of Medicine, 112(1), 22–28. https://doi.org/10.1177/0141076818815510

Topol, E. (2019). High-performance medicine: The convergence of human and artificial intelligence. Nature Medicine, 25(1), 44–56. https://doi.org/10.1038/s41591-018-0300-7

DIGITAL TRANSFORMATION IN HEALTHCARE: INNOVATIONS, CHALLENGES AND FUTURE PERSPECTIVES

INTEGRATING AI INTO NURSING PRACTICE: A NEW ERA FOR PREVENTION AND EARLY DIAGNOSIS

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ABSTRACT

Introduction: The integration of Artificial Intelligence (AI) into healthcare represents a paradigm shift, moving from a reactive treatment model to a proactive health management paradigm. This transformation is of particular significance within the field of nursing, a profession central to patient care. AI technologies, encompassing predictive analytics, machine learning, and automated monitoring systems, are increasingly being leveraged to enhance preventive care and early diagnosis. This analysis synthesises findings from a presentation script and supporting documentation to explore the current applications, benefits, and challenges of AI in revolutionising nursing practice, with a specific focus on its role in preemptive intervention.

Objective: The purpose of this submission is to delineate the transformative potential of AI in nursing, specifically for prevention and early diagnosis. The aim is to provide a comprehensive analysis of the potential of AI-driven tools to enhance the nursing role, improve patient outcomes, and transform care delivery models. This exploration is essential for informing nursing professionals, educators, and healthcare policymakers about the practical applications, necessary competencies, and strategic considerations required for the successful and ethical integration of AI into clinical workflows.

Methods: The information for this analysis was gathered through a bibliographic review of recent scientific literature. A comprehensive search of the available literature was conducted, with articles and associated studies retrieved from leading electronic databases, including PubMed, Google Scholar, and Scopus. The search was guided by keywords identified within the source documents, which included: The following subjects will be covered in this study: "Artificial Intelligence in Nursing", "AI-driven predictive models", "early disease detection", "prevention", "nursing role", "sepsis prediction", "FDA-approved AI in oncology", "pandemic response", and "facilitators and barriers to AI adoption".

Results: The research reveals significant advancements in AI applications relevant to nursing. It has been demonstrated that predictive models, including Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs), exhibit a high degree of accuracy (up to 94%) in the early detection and prediction of cancer. Within the domain of infectious disease control, artificial intelligence (AI) plays

a pivotal role in facilitating outbreak forecasting and contact tracing. The utility of AI in triage, telehealth, and resource management was highlighted by the global pandemic of Coronavirus (SARS-CoV-2). The key benefits that have been identified include improved diagnostic accuracy, timely interventions, and reduced human error. Nevertheless, obstacles to adoption remain, encompassing technical infrastructure limitations, ethical concerns regarding data privacy, and a pressing need for specialised nurse training to ensure the competent utilisation of these technologies.

Conclusion: The nurse's role is pivotal in the effective integration of AI into healthcare. In order to avoid being replaced, it is vital that nurses evolve to become data-savvy interpreters, co-creators of technology, and human integrators of AI-driven insights. By leveraging AI for tasks such as risk stratification and early deterioration detection, nurses can transition from a reactive to a proactive model of care, thereby focusing on prevention and early diagnosis. This approach facilitates the delivery of more personalised patient care and serves to reinforce the fundamental nurse-patient relationship. The successful integration of nursing clinical expertise with the analytical capabilities of AI is imperative for the realisation of a healthcare future that is precise, preventative and patient-centred.

REFERENCES

Arora, N., Banerjee, A. K., & Narasu, M. L. (2020). The role of artificial intelligence in tackling COVID-19. *Future Virology, 15*(11), 717–724. https://doi.org/10.2217/fvl-2020-0130

Lange, M., Lowe, A., Kayser, I., & Schaller, A. (2023). *Approaches for the use of Artificial Intelligence in workplace health promotion and prevention: A systematic scoping review*. JMIR Preprints. https://doi.org/10.2196/53506

Luchini, C., Pea, A., & Scarpa, A. (2022). Artificial intelligence in oncology: Current applications and future perspectives. *British Journal of Cancer, 126*(1), 4–9. https://doi.org/10.1038/s41416-021-01633-1

Patel, M., Surti, M., & Adnan, M. (2022). Artificial intelligence (AI) in Monkeypox infection prevention. *Journal of Biomolecular Structure and Dynamics*. https://doi.org/10.1080/07391102.2022.2134214

Ramadan, O. M. E., Alruwaili, M. M., Alruwaili, A. N., Elsehrawy, M. G., & Alanazi, S. (2024). Facilitators and barriers to AI adoption in nursing practice: A qualitative study of registered nurses' perspectives. *BMC Nursing, 23*, 891. https://doi.org/10.1186/s12912-024-02571-y

Ronquillo, C. E., Peltonen, L.-M., Pruinelli, L., Chu, C. H., Bakken, S., Beduschi, A., Cato, K., Hardiker, N., Junger, A., Michalowski, M., Nyrup, R., Rahimi, S., Reed, D. N., Salakoski, T., Salanterä, S., Walton, N., Weber, P., Wiegand, T., & Topaz, M. (2021). Artificial intelligence in nursing: Priorities and opportunities from an international invitational think-tank of the Nursing and Artificial Intelligence Leadership Collaborative. *Journal of Advanced Nursing, 77*(9), 3707–3717. https://doi.org/10.1111/jan.14855

Thakur, G. K., Khan, N., Anush, H., & Thakur, A. (2024). AI-driven predictive models for early disease detection and prevention. In *2024 International Conference on Knowledge Engineering and Communication Systems (ICKECS)* (pp. 1–6). IEEE. https://doi.org/10.1109/ICKECS61492.2024.10616851

Wei, Q., Pan, S., Liu, X., Hong, M., Nong, C., & Zhang, W. (2025). The integration of AI in nursing: Addressing current applications, challenges, and future directions. *Frontiers in Medicine, 12*, 1545420. https://doi.org/10.3389/fmed.2025.1545420

E-HEALTH AND TELEMEDICINE: REMODELING HEALTHCARE SERVICES

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ABSTRACT

The digital transformation of healthcare, driven by demographic pressures and technological advancements, is fundamentally changing how health services are delivered and experienced (Dhingra & Dabas, 2020; Souza-Junior et al., 2016). E-health, which is defined as the use of information and communication technologies (ICT) to support health, forms the broad foundation of this shift. Its applications are diverse and include electronic health records, online consultation platforms, telemonitoring and e-prescriptions (Hollis et al., 2017; Wynn et al., 2020). The primary advantages of this digital shift include increased accessibility to care, particularly for remote or underserved populations, enhanced efficiency for healthcare systems, and greater support for patient self-management (da Fonseca et al., 2021; de Moura Costa et al., 2020).

A critical component of e-health is telemedicine, which specifically refers to the delivery of clinical services at a distance using telecommunications. It has expanded to include specialties such as telecardiology, teledermatology and telesurgery, enabling remote diagnosis, consultation and surgical assistance (Van Houwelingen et al., 2016). The implementation of telemedicine in Greece demonstrates its potential to bridge geographical gaps by connecting remote islands with central specialist care. However, such initiatives also reveal common challenges, including the need for sustainable infrastructure, continuous staff training, and robust data protection frameworks (Sarafis & Bamidis, 2020).

Further refining this digital landscape is Mobile Health (mHealth), which uses smartphones and wearable devices to empower individuals to monitor their health and access information (Malasinghe et al., 2019). Another significant development is telenursing, which applies these principles to nursing practice. Through remote patient monitoring, telephone triage and virtual follow-up care, telenursing has proven effective in improving outcomes for patients with chronic conditions, reducing hospital readmissions and providing support to patients at home (Kamei, 2022; Souza-Junior et al., 2016).

Despite their clear potential, the integration of e-health and telemedicine faces significant barriers. These include interoperability issues between different digital systems, high initial implementation costs, data security and privacy concerns, and legal and regulatory frameworks that often lag behind technological innovation. Furthermore, ensuring that both providers and patients are comfortable with and proficient in using digital tools remains a critical hurdle (da Fonseca et al., 2021; de Moura Costa et al., 2020)

In conclusion, e-health and telemedicine are not just technological additions; they are actively remodeling healthcare to make it more accessible, efficient and patient-centered. The future of this transformation depends on overcoming existing

challenges through strategic investment, standardized protocols and ongoing education, with the ultimate goal of bridging the gap between technological innovation and equitable, widespread clinical application (Wynn et al., 2020).

Key Words: E-Health, Telemedicine, Mobile Health, Telenursing, Digital Transformation

REFERENCES

Da Fonseca, M. H., Kovaleski, F., Picinin, C. T., Pedroso, B., & Rubbo, P. (2021). E-health practices and technologies: a systematic review from 2014 to 2019. Healthcare, 9(9), 1192. https://doi.org/10.3390/healthcare9091192

de Moura Costa, H. J., da Costa, C. A., da Rosa Righi, R., & Antunes, R. S. (2020). Fog computing in health: A systematic literature review. *Health and Technology, 10*(5), 1025–1044. https://doi.org/10.1007/s12553-020-00431-8

Dhingra, D., & Dabas, A. (2020). Global strategy on digital health. *Indian Pediatrics, 57*(4), 356–358.

Gajarawala, S. N., & Pelkowski, J. N. (2021). Telehealth benefits and barriers. *The Journal for Nurse Practitioners, 17*(2), 218–221. https://doi.org/10.1016/j.nurpra.2020.09.013

Hollis, C., Falconer, C. J., Martin, J. L., Whittington, C., Stockton, S., Glazebrook, C., & Davies, E. B. (2017). Annual Research Review: Digital health interventions for children and young people with mental health problems – a systematic and meta-review. *Journal of Child Psychology and Psychiatry, 58*(4), 474–503. https://doi.org/10.1111/jcpp.12663

Kamei, T. (2022). Telenursing and artificial intelligence for oncology nursing. *Asia-Pacific Journal of Oncology Nursing, 9*(12), Article 100134. https://doi.org/10.1016/j.apjon.2022.100134

Malasinghe, L. P., Ramzan, N., & Dahal, K. (2019). Remote patient monitoring: A comprehensive study. *Journal of Ambient Intelligence and Humanized Computing, 10(1),* 57–76. https://doi.org/10.1007/s12652-017-0598-x

Sarafis, P., & Bamidis, P. (2020). Ypiresies Ygeias: Systimata & Politikes [Health Services: Systems & Policies]. Broken Hill Publishers.

Silva, B. M. C., Rodrigues, J. J. P. C., de la Torre-Díez, I., López-Coronado, M., & Saleem, K. (2015). Mobile health: A review of current state in 2015. *Journal of Biomedical Informatics, 56*, 265–272. https://doi.org/10.1016/j.jbi.2015.06.003

Souza-Junior, V. D., Mendes, I. A. C., Mazzo, A., & Godoy, S. (2016). Application of telenursing in nursing practice: an integrative literature review. *Applied Nursing Research, 29*, 254–260. https://doi.org/10.1016/j.apnr.2015.05.005

van Houwelingen, C. T. M., Moerman, A. H., Ettema, R. G. A., Kort, H. S. M., & ten Cate, O. (2016). Competencies required for nursing telehealth activities: A Delphi-study. *Nurse Education Today, 39*, 50–62. https://doi.org/10.1016/j.nedt.2015.12.025

Wynn, R., Gabarron, E., Johnsen, J. A. K., & Traver, V. (2020). Special issue on e-health services. *International Journal of Environmental Research and Public Health, 17*(8), 2885. https://doi.org/10.3390/ijerph17082885

HEALTH PROFESSIONALS' EDUCATION IN THE AGE OF DIGITAL TRANSFORMATION

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ABSTRACT

The digital transformation of healthcare education has accelerated in recent years, reshaping the way health professionals acquire skills and knowledge. Simulation-based training, virtual and augmented reality (VR/AR), serious games, and online platforms are now integral elements of curricula in medicine, nursing, and allied health fields (Cant & Cooper, 2020). The COVID-19 pandemic significantly expedited this shift, driving widespread adoption of remote and digital learning methods (Kiegaldie & Shaw, 2023). While these innovations offer opportunities for more flexible, inclusive, and interactive training, they also introduce challenges related to infrastructure, equity, faculty readiness, and student engagement (Digital Health Education Collaboration, 2019).

The aim of this paper is to explore the impact of digital transformation on health professions education, with a particular focus on nursing, and to identify both the benefits and challenges of integrating digital tools into training.

A literature review was conducted in the databases PubMed and Scopus between 2019 and 2025. The keywords used included "digital health education," "simulation," "nursing education," "virtual reality," and "remote learning." Articles in English were included, focusing on systematic reviews, meta-analyses, and empirical studies that examined technological modalities, student outcomes, and implementation challenges (Al-Ghareeb et al., 2022; Hsieh et al., 2025).

Simulation-based learning has been shown to increase confidence, decision-making, and teamwork in nursing students (Cant & Cooper, 2020; Zulkosky, 2021). VR and AR provide immersive environments that strengthen empathy, communication, and critical thinking, with evidence supporting their effectiveness for high-risk or ethically complex scenarios (Aebersold et al., 2022; Foronda et al., 2023). Remote and blended learning approaches, widely adopted during the pandemic, now form a permanent part of curricula, offering flexibility and accessibility but raising concerns about learner engagement and reduced opportunities for hands-on practice (Peddle et al., 2021). Emerging approaches, such as spaced digital education, improve knowledge retention and confidence, while extended reality (XR) and virtual patients support situational awareness and individualized learning (Spaced Digital Education, 2024; Kononowicz et al., 2020). However, significant barriers remain. These include high costs of VR/AR equipment, unequal access in low-resource contexts, digital fatigue, and gaps in faculty training for integrating new tools (BMC Nursing Editorial Board, 2024). Furthermore, most current evidence demonstrates short-term learning gains, with limited data on long-term skill retention, patient outcomes, and cost-effectiveness (Virtual Simulated Placements, 2025).

Digital transformation offers powerful opportunities for enhancing health professions education, particularly in nursing. Properly implemented, technologies such as simulation, VR/AR, and online platforms can complement traditional clinical

training by improving knowledge, critical thinking, and readiness for real-world practice (Al-Ghareeb et al., 2022). Yet, successful integration depends on equitable access, continuous faculty development, and institutional commitment to infrastructure and support. Future research should address long-term impacts on professional performance and patient care, as well as sustainable models for digital education. When combined with experiential learning, digital tools can prepare future health professionals for more effective, safe, and compassionate care (Hsieh et al., 2025).

Key Words: Digital transformation, Nursing education, Simulation, Virtual reality, Health professions training

REFERENCES

Aebersold, M., et al. (2022). Developing critical thinking using immersive VR. Journal of Nursing Education.

Al-Ghareeb, A., et al. (2022). Simulation and self-confidence among nursing students. Journal of Nursing Education.

BMC Nursing Editorial Board. (2024). Virtual clinical learning outcomes: A systematic review. BMC Nursing.

Cant, R., & Cooper, S. (2020). Simulation-based learning in nursing: A systematic review. Nurse Education Today.

Digital Health Education Collaboration. (2019). Virtual reality for health professions education: Systematic review and meta-analysis. Journal of Medical Internet Research.

Foronda, C. L., et al. (2023). Enhancing clinical judgment through VR simulation. Clinical Simulation in Nursing.

Hsieh, J. Y., et al. (2025). Immersive virtual reality in nursing education: A meta-analysis. Nurse Educator.

Kiegaldie, D., & Shaw, T. (2023). Virtual simulation in remote nursing education. BMC Nursing.

Kononowicz, A. A., et al. (2020). Virtual patient simulations in health professions education: A systematic review and meta-analysis. Medical Teacher.

Peddle, M., et al. (2021). Engagement with e-learning platforms in nursing education. Nurse Education in Practice.

Spaced Digital Education vs. Massed Simulation: Systematic Review and Meta-Analysis. (2024). Journal of Medical Internet Research.

Virtual Simulated Placements in Health Care Education: Scoping Review. (2025). JMIR Medical Education.

Zulkosky, K. (2021). Clinical decision-making through simulation in undergraduate nursing education. Nurse Educator.

ETHICAL AND LEGAL CHALLENGES OF HEALTHCARE DIGITALIZATION

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ABSTRACT

Introduction: Digital healthcare has transformed the way health services are delivered, improving efficiency, accessibility, and quality of care. However, this rapid digital transformation also introduces complex ethical and legal challenges that require careful consideration. Understanding these challenges is crucial for ensuring that innovation in healthcare remains both safe and patient-centered.

Purpose: The aim of this study is to explore the main ethical and legal issues related to healthcare digitalization, focusing on topics such as informed consent, transparency, fairness, data privacy, safety, and liability.

Method: A literature review was conducted using academic sources and legal frameworks, including the General Data Protection Regulation (GDPR) and international studies on artificial intelligence (AI) in healthcare. The analysis focused on identifying recurring ethical dilemmas and legal gaps in the use of digital tools, artificial intelligence systems, and electronic health data.

Results: The findings highlight several major ethical concerns: (1) ensuring informed consent and patient understanding of AI use, (2) maintaining transparency and data safety, (3) avoiding algorithmic bias and discrimination, and (4) protecting patient privacy. From a legal perspective, the most significant challenges include defining responsibility in cases of AI error, safeguarding sensitive data, ensuring cybersecurity, and addressing intellectual property rights in digital innovations. Real-world examples—such as data misuse by digital health apps and algorithmic bias in AI-based decision systems—demonstrate the urgent need for clearer ethical and legal guidelines.

Conclusion: Healthcare digitalization offers tremendous opportunities for improving medical care but also raises new ethical and legal dilemmas. Balancing innovation with responsibility requires continuous interdisciplinary collaboration among healthcare professionals, policymakers, and legal experts. Establishing transparent, equitable, and secure frameworks is essential to ensure that digital health technologies serve both scientific progress and human well-being.

Key Words: Digital health, ethics, law, artificial intelligence, data privacy, healthcare management

REFERENCES

Ronquillo, Y., Meyers, A., & Korvek, S. J. (2017). Digital health.

Schofield, G., Dittborn, M., Selman, L. E., & Huxtable, R. (2021). Defining ethical challenge (s) in healthcare research: a rapid review. BMC Medical Ethics, 22(1), 135.

challenge | Wex | US Law | LII / Legal Information Institute (Retrieved from the web on 01.10.2025)

Legal Challenges - (African American History – 1865 to Present) - Vocab, Definition, Explanations | Fiveable (Retrieved from the the web on 01.10.2025)

Gerke, S., Minssen, T., & Cohen, G. (2020). Ethical and legal challenges of artificial intelligence-driven healthcare. In Artificial intelligence in healthcare (pp. 295-336). Academic Press.

Chikhaoui, E., Alajmi, A., & Larabi-Marie-Sainte, S. (2022). Artificial intelligence applications in healthcare sector: ethical and legal challenges. Emerging Science Journal, 6(4), 717-738.

IBM Watson Reportedly Recommended Cancer Treatments That Were 'Unsafe and Incorrect' (Retrieved from the web on 01.10.2025)

Google, Flo Health to pay $56 million in period-tracking app privacy case | Reuters (Retrieved from the web on 01.10.2025)

Al-Amiery, A. (2025). The ethical implications of emerging artificial intelligence technologies in healthcare. Med Mat, 2(2), 85-100

AI/ FUTURE TRENDS

ECONOMIC COMPETENCE AND DISTRIBUTED LEADERSHIP IN HEALTHCARE: REFRAMING STRATEGIC CAPACITY FOR SUSTAINABLE GOVERNANCE

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ABSTRACT

This theoretical paper examines the strategic role of economic competence as a foundational element of distributed leadership in contemporary healthcare systems facing resource constraints, organizational complexity, and increasing accountability demands. While earlier leadership models emphasized hierarchical authority, emerging scholarship highlights the value of relational, collective, and multi-level practices that distribute decision-making across executives, hybrid professionals, and frontline actors (Fitzgerald et al., 2013; West et al., 2015; Carstensen et al., 2023).

Within this framework, hybrid professionals—such as nurse managers, clinical pharmacists, and allied health leaders—are positioned as key boundary spanners, capable of translating strategic priorities into operational realities while fostering financial stewardship and adaptive team coordination (Günzel-Jensen et al., 2016). Building economic competence—defined as the integration of financial knowledge, analytical skills, and stewardship capacity—enhances leaders' ability to manage budgets, optimize resource allocation, and link cost awareness with organizational resilience (Pakos & Mpogiatzidis, 2025).

The paper contributes a conceptual model in which economic competence and distributed leadership mutually reinforce one another to strengthen strategic capacity and sustainable governance. In particular, we theorize three reinforcing mechanisms: (1) cost-aware sensemaking that aligns clinical, operational, and financial logics across levels of care; (2) shared accountability structures that diffuse fiscal decision-rights while preserving clarity of roles; and (3) capability building that embeds core financial practices—such as variance analysis and activity-based costing—into routine improvement cycles. These mechanisms create feedback loops that enable organizations to balance equity, efficiency, and quality objectives under fiscal pressure.

Implications are twofold. First, leadership development should integrate targeted financial literacy components within interprofessional curricula and continuing education, with attention to translating financial metrics into team-level improvement work (Carstensen et al., 2023). Second, organizational design should enable hybrid professionals to operate as fiscal boundary spanners through supportive data infrastructures, role clarity, and protected time for cross-functional coordination (Günzel-Jensen et al., 2016).

In conclusion, cultivating economic competence within distributed leadership frameworks provides a feasible pathway to adaptive, accountable, and sustainable health system governance. By equipping leaders at multiple levels with shared financial language and tools, health services can better navigate budgetary pressures while sustaining quality and safety outcomes (Pakos & Mpogiatzidis, 2025).

The analysis also delineates boundary conditions—such as regulatory constraints, reimbursement models, and data quality—that can either enable or impede financially informed distributed leadership, clarifying where policy levers may be most effective.

We further differentiate economic competence from generic financial literacy by emphasizing context-specific application in clinical operations, including cost-quality trade-off appraisal and scenario planning for workforce deployment.

Finally, we outline evaluative propositions for future empirical testing to assess how improvements in economic competence translate into measurable governance outcomes (e.g., reduced avoidable variation, improved budget adherence, and sustained care access among vulnerable populations).

Key Words: Economic competence, Distributed leadership, Hybrid professionals, Financial literacy, Financial governance, Sustainable healthcare.

REFERENCES

Carstensen, K., et al. (2023). Distributed leadership in health quality improvement collaboratives (QICs). BMJ Open Quality. https://doi.org/10.1136/bmjoq-2023-002225

Fitzgerald, L., Ferlie, E., McGivern, G., & Buchanan, D. (2013). Distributed leadership patterns and service improvement: Evidence and argument from English healthcare. The Leadership Quarterly, 24(1), 227–239. https://doi.org/10.1016/j.leaqua.2012.10.012

Günzel-Jensen, F., Jain, A. K., & Kjeldsen, A. M. (2016). Distributed leadership in health care: The role of formal leadership styles and organizational efficacy. Leadership, 12(1), 1–24. https://doi.org/10.1177/1742715016646441

Pakos, G., & Mpogiatzidis, P. (2025). Financial literacy among healthcare providers: A systematic review. Journal of Risk and Financial Management, 18(1), 29. https://doi.org/10.3390/jrfm18010029

West, M. A., Armit, K., Loewenthal, L., Eckert, R., West, T., & Lee, A. (2015). Leadership and leadership development in health care: The evidence base. London, UK: Faculty of Medical Leadership and Management; The King's Fund.

ARTIFICIAL INTELLIGENCE IN NURSING: INNOVATION, APPLICATIONS AND CHALLENGES

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ABSTRACT

Artificial intelligence (AI) is broadly defined as the ability of computer systems to simulate cognitive functions traditionally associated with human intelligence, such as learning, reasoning, and decision-making. From its early conceptualization in the 1950s and 1960s, when rule-based systems and symbolic logic were first developed, AI has undergone rapid and profound transformation. The emergence of machine learning and, more recently, deep learning has expanded AI's capacity to process vast amounts of data, detect subtle patterns, and generate accurate predictions at a speed that far surpasses human capability. These advancements have established AI as a transformative force in healthcare, where the ability to make timely, precise, and evidence-based decisions is fundamental to patient safety and quality of care (De Gagne, 2023).

Within the field of nursing, AI is increasingly integrated into everyday practice, offering both clinical and educational applications. Clinical decision support systems aid in the early detection of patient deterioration, facilitating timely interventions and individualized care planning. AI-driven medication management algorithms minimize the risk of dosage errors and adverse drug interactions, significantly enhancing patient safety. Additionally, real-time data analytics platforms, often linked to wearable monitoring devices, enable continuous surveillance of vital signs and early recognition of anomalies. Predictive models further strengthen clinical practice by identifying patients at elevated risk of complications, readmission, or prolonged hospitalization, thereby supporting preventive strategies (Karim et al., 2025).

Beyond direct patient care, AI is also shaping nursing education and professional development. Intelligent tutoring systems, immersive simulations, and adaptive e-learning platforms provide nurses and students with realistic scenarios and immediate feedback, enhancing clinical judgment, decision-making, and responsiveness in complex situations. This not only fosters professional competence but also helps cultivate confidence and adaptability in rapidly changing healthcare environments.

The potential benefits of AI in nursing are considerable. By reducing human error and promoting evidence-based decision-making, AI contributes to improved clinical outcomes, enhanced patient safety, and greater efficiency in care delivery. Importantly, it can also alleviate the administrative and routine workload of nurses, allowing them to dedicate more time to direct patient interaction, communication, and emotional support—elements that remain at the heart of holistic nursing practice. Furthermore, the personalization of care enabled by AI fosters higher patient satisfaction and engagement, strengthening the therapeutic relationship between nurses and those they serve.

Nevertheless, the integration of AI into nursing practice presents significant challenges (Romero et al., 2023). The reliability and representativeness of the data used to train algorithms remain decisive factors for system performance and fairness. Ethical concerns, including the protection of patient privacy, the transparency of algorithmic decision-making, and the mitigation of bias, require continuous scrutiny. Resistance to technological change and lack of trust can also hinder adoption. For this reason, the active involvement of nurses in the design, evaluation, and implementation of AI tools is essential, accompanied by continuous training and education to build digital literacy and confidence in these emerging technologies.

In conclusion, AI is opening new horizons for nursing by introducing innovative solutions that have the potential to transform both clinical practice and professional education. Yet its successful integration depends on careful, ethically grounded, and inclusive implementation strategies. If approached thoughtfully, AI can serve as a powerful complement to nursing practice, enhancing—but never replacing—the irreplaceable human presence, empathy, and critical thinking that define the profession.

Key Words: Artificial intelligence, digital nursing, chatbots, healthcare innovation, medication management.

REFERENCES

De Gagne, J. C. (2023). The State of Artificial Intelligence in Nursing Education: Past, Present, and Future Directions. *International Journal of Environmental Research and Public Health*, 20(6), 4884. https://doi.org/10.3390/ijerph20064884

Karim, M., Das, A., Khalil, M. I., Umme Rabeya Peu, Mondal, B., Alam, M. S., Abu, Parvin, M. R., Alrazeeni, D. M., & Akter, F. (2025). The Role of Artificial Intelligence in Nursing Care: An Umbrella Review. *Nursing Inquiry*, 32(2). https://doi.org/10.1111/nin.70023

Romero, C. B., Opoku, O. A., Syabariyah, S., Astuti, D. A., Asif, I., & Rostinah. (2023). Exploring the Benefits and Challenges of Artificial Intelligence (AI) in Nursing. *Engineering Science Letter*, 2(01), 9–12. https://doi.org/10.56741/esl.v2i01.278

AI-DRIVEN PERSONALIZATION IN IV WELLNESS TOURISM: LINKING INFORMATION SOURCES, DESTINATION IMAGE, AND VISIT INTENTION

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ABSTRACT

Recent advances in artificial intelligence (AI) are also influencing medical and wellness tourism, enabling highly personalized treatment experiences that affect both consumer decision-making and destination competitiveness. This study examines how AI-generated insights support visitors in choosing intravenous (IV) rejuvenation therapies during their vacations, while also investigating the role of information sources, destination image, and visit intention in shaping new marketing strategies.

Data were collected through a structured questionnaire distributed among guests at a luxury hotel. The results show that many participants rely on AI-driven platforms as primary sources of information, usually by sharing recent biochemical results or reporting symptoms in order to receive personalized responses regarding recommended therapies. The insights provided by AI not only guide treatment selection but also strengthen the perception of the destination as innovative, trustworthy, and health-oriented. Other participants reported relying more on prior personal experience or direct physician consultation, highlighting the ongoing importance of traditional information sources and medical guidance. The findings indicate that AI integration enhances the image of the destination, positioning hotels among technologically advanced providers of personalized health and wellness services. Furthermore, the combination of AI-generated information with the reliable knowledge and expertise of health professionals significantly affects intention to visit and revisit. From a marketing perspective, there is a need for new strategies that emphasize personalization, credibility, and innovation within the field of medical and wellness tourism.

ISBN: 978-618-5630-25-6

In addition, the study highlights key concepts associated with the digital transformation of tourism: technology acceptance, trust formation, perceived value, and the co-creation of health-related experiences. The research demonstrates that technology does not replace human knowledge and expertise but rather complements it, creating a hybrid model in which digital personalization is combined with medical supervision. This integration promotes long-term loyalty and strengthens the position of hotels offering such services as preferred destinations.

In conclusion, the study shows that AI can serve both as a medical support tool and as a strategic marketing instrument in health and wellness tourism. Hotels that combine AI-driven personalized service provision with clinical supervision by specialists can not only improve visitor satisfaction but also enhance their competitive position in a global market increasingly shaped by innovation, health and wellness awareness, and personalized services. At the same time, policymakers, healthcare professionals, and tourism management must engage in a dialogue capable of anticipating future challenges, ensuring that the development of health and wellness tourism with the support of AI constitutes a sustainable and promising field.

Key Words: Artificial intelligence, information sources, destination image, intention to visit, wellness tourism, marketing strategies

REFERENCES

Christou, E. (2003). Guest loyalty likelihood in relation to hotels' corporate image and reputation: A study of three countries in Europe. *Journal of Hospitality & Leisure Marketing*, 10(4): 85–107.

Gkintoni, E., Telonis, G., Halkiopoulos, C., & Boutsinas, B. (2025). Next-gen wellness: AI, MBCT, and data-driven marketing transforming health tourism. In V. Katsoni & C. Costa (Eds.), *Innovation and Creativity in Tourism, Business and Social Sciences* (pp. 819–855). Springer.

Jeong, M. & Lambert, C. U. (1999). Adaptation of an information quality framework to measure customers' behavioral intentions to use lodging Web sites. *International Journal of Hospitality Management*, 18(2): 129–146.

Nugroho, I. S., Priyanto, D., & Purnama, Y. (2024). Exploring the role of artificial intelligence (AI) in designing and optimizing personalization strategies to enhance customer experience in the tourism industry. *Technology and Society Perspectives (TACIT)*, 2(3): 292–298. https://doi.org/10.61100/tacit.v2i3.247

Veseli, A., Bajraktari, D., & Bajraktari, A. (2025). Personalizing the travel experience through AI: Exploring the impact of AI-driven technologies on travellers satisfaction in emerging tourism markets. *Crisis Management Days*. https://ojs.vvg.hr/index.php/DKU/article/view/711

Werthner, H. & Klein, S. (1999). *Information Technology and Tourism: A Challenging Relationship*. New York: Springer-Verlag.

LEADERSHIP IN DATA-INFORMED CLINICAL DECISION-MAKING: LEVERAGING DEEP LEARNING AND AI FOR ADMINISTRATIVE ENHANCEMENT IN ONCOLOGY DIAGNOSIS

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ABSTRACT

The aim of this study is to explore a theoretical framework in which the integration of deep learning technologies – specifically Convolutional Neural Networks (CNNs) – supports the administrative side of oncological diagnosis and enhances data-driven clinical decision-making. In recent years, deep learning algorithms have demonstrated remarkable accuracy in tumor detection and classification using medical imaging, often surpassing specialist performance (McKinney et al., 2020). Despite these advances, the real-world adoption of AI in oncology remains limited, and its impact on health outcomes is not yet fully established (Chua et al., 2021). This highlights the need for a holistic approach where leadership and strategic governance play a vital role in embedding AI tools into clinical workflows (Sriharan et al., 2024). Methodologically, the study adopts an interdisciplinary approach combining deep learning technology with healthcare management principles.

A theoretical model is developed for integrating a CNN-based diagnostic support system into the clinical algorithm of an oncology center. The model is evaluated through a hypothetical case study: a large oncology hospital implements an advanced AI system to analyze diagnostic images (e.g., histopathology slides and radiology scans) to support physicians in cancer diagnosis. The scenario illustrates multiple benefits and challenges. On one hand, CNN systems detect suspicious lesions with high sensitivity, contributing to faster and more accurate early-stage diagnosis. This improves clinical performance and enables more personalized treatment through better tumor classification.

Furthermore, administrative burden is reduced by automating certain processes (e.g., standardized reporting), freeing human resources for more complex tasks. On the other hand, AI integration reconfigures workflows and demands change leadership: staff must be adequately trained, and a culture of trust in the new system must be fostered. Leaders are tasked with managing resistance to change, ensuring ethical and legal compliance, and aligning AI use with the organization's strategy (e.g., care quality and efficiency goals). In conclusion, the convergence of advanced deep learning

algorithms with visionary data-driven leadership may transform oncological decision-making. The hypothetical example shows that the strategic application of AI systems can enable timely diagnosis, better patient outcomes, and more efficient resource management in cancer care.

However, to realize these benefits, healthcare organizations must address challenges such as data quality and governance, system interoperability, and the need for regulatory frameworks (Chua et al., 2021). This study contributes to the literature by proposing a framework where competent leadership plays a pivotal role in successfully integrating AI into oncological diagnosis, ultimately enhancing healthcare at a systemic level.

Key Words: Deep Learning, Artificial Intelligence, Oncological Diagnosis, Data-Driven Decision-Making, Health Leadership

REFERENCES

Aftab, M., Mehmood, F., Zhang, C., Nadeem, A., Dong, Z., Jiang, Y., & Liu, K. (2025). AI in oncology: Transforming cancer detection through machine learning and deep learning applications. arXiv preprint arXiv:2501.15489. https://doi.org/10.48550/arXiv.2501.15489

Chua, I. S., Gaziel Yablowitz, M., Korach, Z. T., Kehl, K. L., Levitan, N. A., Arriaga, Y. E., Jackson, G. P., Bates, D. W., & Hassett, M. J. (2021). Artificial intelligence in oncology: Path to implementation. Cancer Medicine, 10(10), 4138–4149. https://doi.org/10.1002/cam4.3935

McKinney, S. M., Sieniek, M., Godbole, V., Godwin, J., Antropova, N., Ashrafian, H., ... & Peng, L. (2020). International evaluation of an AI system for breast cancer screening. Nature, 577(7788), 89–94. https://doi.org/10.1038/s41586-019-1799-6

Sriharan, A., Sekercioglu, N., Mitchell, C., Senkaiahliyan, S., Hertelendy, A., Porter, T., & Banaszak-Holl, J. (2024). Leadership for AI transformation in health care organization: Scoping review. Journal of Medical Internet Research, 26, e54556.

BIOETHICAL DILEMMAS IN ARTIFICIAL INTELLIGENCE APPLICATIONS IN THE FIELD OF HEALTH

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ABSTRACT

Introduction:

Artificial Intelligence (AI) is increasingly being applied in the field of healthcare, offering innovative possibilities in diagnosis, therapeutic management, and patient care. However, its rapid integration into healthcare systems raises significant bioethical dilemmas related to bias, algorithmic opacity, and data security, with potentially serious implications for patient privacy. In this context, the establishment of strict ethical guidelines and the assurance of high standards of data protection in AI-based medical systems are deemed essential (Corfmat et al., 2025; Jobin et al., 2019).

Aim:

To highlight the key bioethical issues arising from the use of AI in healthcare and to examine the need for the development of guidelines and regulatory frameworks.

Methodology:

A scoping review of 18 reviewed articles published between 2019 and 2025 was conducted, drawing from databases such as PubMed, Google Scholar, Scopus, and SpringerLink. Thematic analysis was applied to identify recurring ethical concerns and proposed mitigation strategies.

Results:

Several critical issues emerge from the use of AI in healthcare. This has been extensively documented in recent scoping reviews, highlighting the ethical and legal tensions that arise as AI systems become embedded in clinical practice. Particular emphasis is placed on the protection and security of personal data, as well as the risk of breaches of patient privacy (Corfmat et al., 2025; Ratti et al., 2025, Viberg et.al., 2022; Gooman, 2020).

Additional challenges include the opacity of algorithmic processes (Pinto-Bustamante et al., 2023; Karimian et al., 2022; Guan, 2019), ethical dilemmas in life-and-death decisions without human oversight and the attribution of responsibility in cases of potential medical errors resulting from AI use (Elendu et al., 2023; Ekmekci & Arda, 2020). Furthermore, inequities in access to innovative technologies are identified, along with the risk of diminishing the human dimension in patient care and the potential

widening of social and geographical disparities in access to advanced medical (Skorburg et al., 2024; Mascarenhas et al., 2023; Goirand et al., 2021; WHO, 2019).

Despite these concerns, multiple studies underscore the transformative potential of AI when implemented with ethical safeguards and inclusive design principles. At the same time, significant benefits are recognized, such as increased diagnostic accuracy, optimized allocation of healthcare resources, improved patient management and personalized treatment approaches enabled by big data analysis applications (Li et al., 2024; Elias et al., 2023; Prakash et al. 2022).

Conclusions:

Artificial Intelligence in medicine stands at a critical crossroads that requires careful consideration and a balanced evaluation of both benefits and risks. This technological progress has the potential to revolutionize healthcare, but only if all stakeholders—from patients to regulatory authorities—are aware of and willing to address its ethical, legal, and social implications. Decisions regarding the further development of AI technologies in healthcare must be grounded in the principles of justice, transparency, and accountability, ensuring that healthcare remains safe, fair, and accessible to all (Corfmat et.al., 2025; Ratti et.al., 2025; Nunes et.al., 2022; Goodman, 2020; WHO, 2019).

Key Words: Bioethics, Artificial Intelligence, Healthcare, Opacity, Privacy

REFERENCES

Corfmat, M., Martineau, J. T., & Régis, C. (2025). High-reward, high-risk technologies? An ethical and legal account of AI development in healthcare. *BMC Medical Ethics, 26*(4). https://doi.org/10.1186/s12910-024-01158-1

Ekmekci, P. E., & Arda, B. (2020). *Artificial intelligence and bioethics*. Springer Nature. https://doi.org/10.1007/978-3-030-52448-7

Elendu, C., Amaechi, D. C., Elendu, T. C., Jingwa, K. A., Okoye, O. K., John Okah, M., Ladele, J. A., Farah, A. H., & Alimi, H. A. (2023). Ethical implications of AI and robotics in healthcare: A review. *Medicine (Baltimore), 102*(50), e36671. https://doi.org/10.1097/MD.0000000000036671

Elias, M. A., Faversani, L. A., Moreira, J. A. V., Masiero, A. V., & Cunha, N. V. D. (2023). Artificial intelligence in health and bioethical implications: A systematic review. *Revista Bioética, 31*, e3542PT. https://doi.org/10.1590/1983-803420233542PT

Goirand, M., Austin, E., & Clay-Williams, R. (2021). Implementing ethics in healthcare AI-based applications: A scoping review. *Science and Engineering Ethics, 27*(5), 61. https://doi.org/10.1007/s11948-021-00336-3

Goodman, K. W. (2020). Ethics in health informatics. *Yearbook of Medical Informatics, 29*(1), 26–31. https://doi.org/10.1055/s-0040-1701966

Guan, J. (2019). Artificial intelligence in healthcare and medicine: Promises, ethical challenges and governance. *Chinese Medical Sciences Journal, 34*(2), 76–83. https://doi.org/10.24920/003611

Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence, 1*(9), 389–399. https://doi.org/10.1038/s42256-019-0088-2

Karimian, G., Petelos, E., & Evers, S. M. (2022). The ethical issues of the application of artificial intelligence in healthcare: A systematic scoping review. *AI and Ethics, 2*(4), 539–551. https://doi.org/10.1007/s43681-021-00131-7

Li, Y. H., Li, Y. L., Wei, M. Y., & Li, G. Y. (2024). Innovation and challenges of artificial intelligence technology in personalized healthcare. *Scientific Reports, 14*(1), 18994. https://doi.org/10.1038/s41598-024-70073-7

Mascarenhas, M., Afonso, J., Ribeiro, T., Andrade, P., Cardoso, H., & Macedo, G. (2023). The promise of artificial intelligence in digestive healthcare and the bioethics challenges it presents. *Medicina (Kaunas), 59*(4), 790. https://doi.org/10.3390/medicina59040790

Nunes, H. D. C., Guimarães, R. M. C., & Dadalto, L. (2022). Bioethical challenges related to the use of artificial intelligence in hospitals. *Revista Bioética, 30*, 82–93. https://doi.org/10.1590/1983-803420243727EN

Pinto-Bustamante, B. J., Riaño-Moreno, J. C., Clavijo-Montoya, H. A., Cárdenas-Galindo, M. A., & Campos-Figueredo, W. D. (2023). Bioethics and artificial intelligence: Between deliberation on values and rational choice theory. *Frontiers in Robotics and AI, 10*, 1140901. https://doi.org/10.3389/frobt.2023.1140901

Prakash, S., Balaji, J. N., Joshi, A., & Surapaneni, K. M. (2022). Ethical conundrums in the application of artificial intelligence (AI) in healthcare—a scoping review of reviews. *Journal of Personalized Medicine, 12*(11), 1914. https://doi.org/10.3390/jpm12111914

Ratti, E., Morrison, M., & Jakab, I. (2025). Ethical and social considerations of applying artificial intelligence in healthcare—a two-pronged scoping review. *BMC Medical Ethics, 26*, 68. https://doi.org/10.1186/s12910-025-01198-1

Skorburg, J. A., O'Doherty, K., & Friesen, P. (2024). Persons or data points? Ethics, artificial intelligence, and the participatory turn in mental health research. *American Psychologist, 79*(1), 137–149. https://doi.org/10.1037/amp0001168

Viberg Johansson, J., Bentzen, H. B., & Mascalzoni, D. (2022). What ethical approaches are used by scientists when sharing health data? An interview study. *BMC Medical Ethics, 23*, 41. https://doi.org/10.1186/s12910-022-00779-8

World Health Organization. (2019). *WHO guideline: Recommendations on digital interventions for health system strengthening*. World Health Organization. https://apps.who.int/iris/handle/10665/311941

AI SERVING HEALTH: A CASE STUDY OF HEALTHAI SOLUTIONS

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ABSTRACT

The development of technology and artificial intelligence (AI) has brought about significant changes in many areas of daily life, including health. In today's reality, consumers are increasingly looking for personalized solutions that will help them improve their personal well-being and health. In this context, HealthAISolutions was developed as a newly established health technology company with the main goal of providing innovative artificial intelligence solutions to support personal health.

HealthAISolutions focuses on developing digital assistants that use AI technology to provide customized advice and support on nutrition, exercise, sleep and general well-being. The company's main services include the digital assistant HealthAIBuddy, which offers personalized health advice, and the mobile application HealthAICoach, which provides interactive educational programs and guidance from professionals.

This paper examines the business proposal of the start-up HealthAI Solutions, which operates in the rapidly growing digital health sector and specializes in the development of digital wellness assistants with artificial intelligence. Through the preparation of a full business plan and the conduct of a quantitative survey, with the participation of 91 people, the attitudes, intentions and needs of consumers towards the use and acceptance of health applications that incorporate AI were investigated.

The paper includes an analysis of the business environment, marketing, product development and networking strategies, as well as financial planning. The results of the survey revealed a high degree of acceptance of the digital assistant HealthAI Buddy, a strong intention to use and a positive attitude towards the use of artificial intelligence to provide personalized health advice. At the same time, concerns about the security of personal data were recorded, as well as preferences regarding functions, subscription costs and product features.

The study concludes with specific strategic proposals for the company's market entry and growth, as well as directions for future research activity. Through the combined use of findings and a business approach, the work contributes to the

understanding of purchasing behavior in digital health services and to the enhancement of innovation in the sector.

Key Words: AI services, Health, Market Analysis, Business Plan

REFERENCES

Blank, S. & Eckhardt, J. T. (2024). The lean startup as an actionable theory of entrepreneurship. *Journal of Management*, 50(8), 3012-3034.

Blease, C., Kaptchuk, T. J., Bernstein, M. H., Mandl, K. D., Halamka, J. D., & DesRoches, C. M. (2019). Artificial intelligence and the future of primary care: exploratory qualitative study of UK general practitioners' views. *Journal of medical Internet research*, 21(3), e12802.

Bygrave, W. D. & Zacharakis, A. (2015). *The portable MBA in entrepreneurship*. New York: John Wiley & Sons.

Cialdini, R.B. (2007). *Influence: The Psychology of Persuasion*. New York: Collins Business.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.

Dees, J. G. (1998). The meaning of social entrepreneurship. *Duke Innovation & Entrepreneurship*.

Kvedar, J., Coye, M. J. & Everett, W. (2014). Connected health: a review of technologies and strategies to improve patient care with telemedicine and telehealth. *Health affairs*, 33(2), 194-199.

Novatchkov, H.& Baca, A. (2012). Artificial intelligence in sports on the example of weight training. *J. Sports Sci. Med.*, 12, 27–37.

Osterwalder, A.& Pigneur, Y. (2010). *Business model generation: a handbook for visionaries, game changers, and challengers*. New York: John Wiley & Sons.

Ozaslan, B., Patek, S.D.& Breton, M.D. (2020). Impact of Daily Physical Activity as Measured by Commonly Available Wearables on Mealtime Glucose Control in Type 1 Diabetes. *Diabetes Technol. Ther.*, 22, 742–748.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of management review*, 25(1), 217-226.

AI/ FUTURE TRENDS

DIGITAL HEALTH SERVICES DURING CRISES: ANALYZING PERSPECTIVES OF HEALTH SERVICE PROVIDERS AND USERS

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ABSTRACT

Healthcare delivery has undergone remarkable transformation, especially in the face of global crises that have demanded innovative solutions for patient care and service accessibility. The COVID-19 pandemic serves as a key example, demonstrating how such challenges can accelerate the adoption of digital healthcare solutions.

This research aimed to examine the perspectives of both healthcare providers and users regarding digital healthcare services in times of crisis.

This research was designed as a prospective descriptive correlational study incorporating cross-sectional comparisons. The sample included healthcare professionals (n=290) and community members (n=263). The requisite sample size was determined through a preliminary power analysis set at a significance level of α=0.05. Relevant data, including variables such as gender, age, educational attainment, employment status, and overall work experience, were systematically recorded using a designated Data Recording Sheet. To explore the perspectives of both health service providers and users regarding digital health services amidst crises, a specialized questionnaire titled "Investigation of the Views of Health Service Providers and Users"

was developed specifically for this study. This instrument, standardized in the Greek language, comprises three distinct sections: (a) demographic information of all participants, (b) attitudes and perceptions of healthcare professionals concerning digital health services during crisis situations, and (c) items targeting the general population to evaluate digital literacy, health literacy, and digital health literacy. The data will be subjected to statistical analysis using SPSS version 25.0, maintaining a predetermined significance level of $\alpha=0.05$.

The study comprised 208 male and 345 female participants, with 37.8% of the total demographic falling within the 46-55 age range. Among health professionals, 26.4% rated digital health applications as useful, whereas 50% emphasized the importance of incorporating these tools during the pandemic. In terms of completing medical forms, 37.26% of citizens possessed substantial knowledge in comparison to 41.71% of health workers, a difference deemed statistically significant ($p<0.001$).

Technology has become a vital asset in the health sector, playing a crucial role in tackling challenges like pandemics, natural disasters, and humanitarian crises. The findings of this study highlight not only the necessity of strengthening digital literacy among both providers and users, but also the importance of integrating digital health services as a permanent component of crisis management strategies. These implications underline how digital solutions can enhance resilience, ensure continuity of care, and support more equitable access to healthcare during future emergencies.

Key Words: digital health, health system, crisis management

REFERENCES

Pop, Ș. (2017) 'Prevention and Crisis Management', International Conference Knowledge-Based Organization, 23(1), pp. 246–250. doi:10.1515/kbo-2017-0039.

World Health Organization (2022) Global report on assistive technology. Available at: https://www.who.int/publications/i/item/9789240049451
(Accessed: 24 September 2025).

Zeng, K., Bernardo, S.N. and Havins, W.E. (2020) 'The use of digital tools to mitigate the COVID-19 pandemic: Comparative retrospective study of six countries', JMIR Public Health and Surveillance, 6(4), p. e24598. doi:10.2196/24598.

Pfitzer, E., Bitomsky, L., Nißen, M., Kausch, C. and Kowatsch, T. (2024) 'Success factors of growth-stage digital health companies: Systematic literature review', Journal of Medical Internet Research, 26. Available at: https://api.semanticscholar.org/CorpusID:273722194
(Accessed: 24 September 2025).

Elkhodr, M., et al. (2021) 'Technology, privacy, and user opinions of COVID-19 mobile apps for contact tracing: Systematic search and content analysis', Journal of Medical Internet Research, 23(2), p. e23467. doi:10.2196/23467.

RETHINKING LEADERSHIP IN PRIMARY HEALTHCARE AND SOCIAL WELFARE: TOWARDS INCLUSIVE AND TRANSFORMATIONAL GOVERNANCE IN THE DIGITAL ERA

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ABSTRACT

This study explores the role of transformational, inclusive, and distributed leadership in the digital transformation of Primary Health Care (PHC) and social welfare systems. Technologies such as telemedicine, electronic health records, and artificial intelligence can improve access and efficiency but may also widen inequalities without inclusive governance strategies (Greenhalgh et al., 2021). Leadership is therefore critical to aligning innovation with equity and resilience in integrated care.

Transformational leadership drives innovation and adaptability in times of change (West et al., 2020), while inclusive leadership fosters psychological safety and interdisciplinary collaboration (Nembhard & Edmondson, 2006; Shore et al., 2018). Distributed leadership supports local autonomy and shared responsibility across PHC–welfare networks, but requires coordination to ensure accountability and continuity (Bolden, 2011).

Digital transformation governance faces key policy challenges: persistent digital divides between urban and rural or socio-economic groups, resistance to change, limited digital literacy among professionals, fragmented systems, and concerns over ethics, privacy, and algorithmic bias (Xie et al., 2024; Tilahun et al., 2025). Addressing these demands policies that go beyond technical adoption to create environments for equitable innovation.

Practical implications include targeted investment in infrastructure for underserved areas, programs to build digital leadership skills, and participatory approaches embedding citizen and patient voices in service design (Laukka et al., 2022; Lemak et al., 2024). National strategies should adopt cross-sectoral, inclusive frameworks, ensure interoperability between health and welfare systems, and safeguard trust through robust governance of data and ethics (WHO, 2023). Monitoring equity outcomes is essential to evaluate whether digital innovations reduce or exacerbate disparities.

ISBN: 978-618-5630-25-6

In conclusion, PHC and welfare leadership must evolve to be inclusive, adaptive, and impact-oriented. By combining transformational vision, inclusive practices, and distributed coordination, leaders can direct digital transformation towards socially just and sustainable outcomes. Further research should examine how leadership models influence equity and effectiveness in digitally enabled integrated care.

Key Words: Primary Health Care, Social Welfare, Leadership, Digital Transformation, Inclusion, Governance

REFERENCES

Bolden, R. (2011). Distributed leadership in organizations: A review of theory and research. International Journal of Management Reviews, 13(3), 251–269. https://doi.org/10.1111/j.1468-2370.2011.00306.x

Greenhalgh, T., Wherton, J., Papoutsi, C., Lynch, J., & Hughes, G. (2021). Beyond adoption: A new framework for theorizing and evaluating challenges to the scale-up and sustainability of health technologies. Journal of Medical Internet Research, 23(11), e30472. https://doi.org/10.2196/30472

Laukka, E., Pölkki, T., & Kanste, O. (2022). Leadership in the context of digital health services: A concept analysis. Journal of Nursing Management, 30(8), 3274–3287. https://doi.org/10.1111/jonm.13758

Lemak, C. H., Pena, D., Jones, D. A., Kim, D. H., & Guptill, J. (2024). Leadership to accelerate healthcare's digital transformation: Evidence from 33 health systems. Journal of Healthcare Management, 69(4), 267–279. https://doi.org/10.1097/JHM-D-23-00123

Nembhard, I. M., & Edmondson, A. C. (2006). Making it safe: The effects of leader inclusiveness on psychological safety and improvement efforts in health care teams. Journal of Organizational Behavior, 27(7), 941–966. https://doi.org/10.1002/job.413

Shore, L. M., Cleveland, J. N., & Sanchez, D. (2018). Inclusive workplaces: A review and model. Human Resource Management Review, 28(2), 176–189. https://doi.org/10.1016/j.hrmr.2017.07.003

Tilahun, B., Tariku, A., Abebe, B., & Kan, L. (2025). Centering equity in the digital transformation of primary health care (Issue 21). Johns Hopkins Center for Global Digital Health Innovation.

West, M. A., Eckert, R., Collins, B., & Chowla, R. (2020). Caring to change: How compassionate leadership can stimulate innovation in health care. The King's Fund. https://www.kingsfund.org.uk/publications/caring-change

World Health Organization. (2023). Leadership and governance for health equity in the digital age. WHO Regional Office for Europe.

Xie, Y., Fadahunsi, K., Kelleher, C., Tarn, D. M., Grace, A., & O'Donoghue, J. (2024). Towards an inclusive digital health ecosystem. Bulletin of the World Health Organization, 103(2), 170–173. https://doi.org/10.2471/BLT.22.289123

EVALUATING THE IMPLEMENTATION OF DRGs AND THE ROLE OF INTERNAL CONTROLS IN ENSURING TRANSPARENCY AND RESOURCE OPTIMIZATION IN THE GREEK HEALTH SYSTEM

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ABSTRACT

Diagnosis-Related Groups (DRGs) represent a central mechanism for hospital reimbursement, promoting cost containment, standardization, and benchmarking. Introduced into the Greek health system during fiscal reforms of the early 2010s, DRGs were intended to improve transparency and accountability. Yet, their implementation has faced significant barriers, including inconsistent coding practices, a shortage of certified coders, and weak integration with hospital information systems, limiting their effectiveness.

This paper evaluates DRG implementation in Greek hospitals and investigates how robust internal controls can enhance governance and ensure efficient resource use. The study adopts a conceptual methodology, based on a structured review of international and national literature, policy documents, and reports from regulatory bodies. The analysis is guided by agency and stewardship theories, which provide a framework to examine how oversight mechanisms reduce information asymmetry between providers and payers and strengthen,accountability.

Findings highlight systemic vulnerabilities such as upcoding, misclassification, and under-documentation, all of which distort cost data and undermine trust in DRG-based financing. To address these weaknesses, the study proposes a three-tier internal control framework: preventive measures (standardized coding protocols, certified training, ethical guidelines), detective measures (routine audits, analytics platforms for

anomaly detection), and corrective measures (post-audit feedback, reclassification, sanctions).

Practical implications are emphasized. At the hospital level, managers should institutionalize internal audit units, invest in continuous training for coders, and adopt business intelligence tools for real-time monitoring. At the governance level, policy makers should establish a national certification program for medical coders, mandate external audits of DRG claims, and empower central authorities to enforce compliance.Collectively, these interventions can minimize opportunistic behaviors, enhance coding accuracy, and promote equitable allocation of resources.

In conclusion, integrating DRGs with a robust internal control framework offers a strategic path toward transparency, accountability, and efficiency in the Greek health sector. By aligning financial incentives with clinical realities and embedding modern digital and audit tools, the DRG-based financing model can evolve into a sustainable framework that balances cost containment with improved quality of care.

Key Words: DRGs, Internal Audit, Health Governance, Cost Control, Coding Errors, Greek Health System.

REFERENCES

Abernethy, M. A. and Stoelwinder, J. U. (1995). *The role of professional control in the management of complex organizations.* Accounting, Organizations and Society, 20(1) (pp. 1–17).

Audit Scotland (2020). *NHS in Scotland 2020*. Edinburgh: Audit Scotland.

Busse, R., Geissler, A., Quentin, W. and Wiley, M. (2011). *Diagnosis-Related Groups in Europe: Moving towards transparency, efficiency and quality in hospitals.* Copenhagen: WHO Regional Office for Europe.

COSO (Committee of Sponsoring Organizations) (2017). *Enterprise Risk Management – Integrating with Strategy and Performance.* Durham: AICPA.

Deloitte (2021). *Health Audit Analytics: Using Data to Transform Performance.* London: Deloitte Insights.

Emanuel, E. J., Gudbranson, E. and Malani, A. (2020). *Transforming accountability: A concept for health care governance.* Health Affairs, 39(10) (pp. 1742–1749).

European Commission (2023). *eHealth Interoperability and Governance in Europe.* Brussels: Publications Office of the EU.

Geissler, A., Scheller-Kreinsen, D. and Busse, R. (2011). *DRG-based hospital payment systems in Europe.* Health Policy, 101(2) (pp. 103–109).

Hellenic DRG Institute (2019). *Annual Report on DRG Implementation in Greek Hospitals.* Athens: KE.TE.K.NY.

HIMSS (Healthcare Information and Management Systems Society) (2020). *Unlocking the Value of Health IT for Better Outcomes.* Chicago: HIMSS.

Hood, C. (2010). *Accountability and transparency: Siamese twins, matching parts, awkward couple?* West European Politics, 33(5) (pp. 989–1009).

Jacobs, R., Smith, P. C. and Street, A. (2006). *Measuring Efficiency in Health Care: Analytic Techniques and Health Policy.* Cambridge: Cambridge University Press.

KPMG (2019). *Audit and Assurance in Healthcare: Emerging Practices and Challenges*. London: KPMG Global Health. National Transparency Authoruity.

OECD (2019). *Health at a Glance: Europe 2019 – State of Health in the EU Cycle*. Paris: OECD Publishing.

OECD (2021). *Improving Value in Health Systems*. Paris: OECD Health Policy Studies.

Bank of Greece (2020). *Annual Report on the Greek Economy 2019*. Athens: BoG.

WHO (World Health Organization) (2022). *Strategic Purchasing for Universal Health Coverage: Key Policy Issues and Questions.* Geneva: WHO.

OCCUPATIONAL STRESS AND BURNOUT IN HEALTHCARE SERVICES: DETERMINANTS, IMPACTS AND ORGANISATIONAL RESPONSES

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ABSTRACT

Occupational stress and professional burnout are pressing challenges in healthcare services, with significant implications for employee wellbeing, organisational efficiency, and the quality of patient care (Goncalveset al., 2019; Girma et al., 2021). The demanding nature of healthcare work, characterised by high workloads, emotional intensity, and limited resources, often creates conditions that elevate stress and increase vulnerability to burnout (Mengist et al., 2021; Hoxha et al., 2024). These phenomena are not only detrimental to staff resilience but also threaten the safety, sustainability, and effectiveness of health service delivery (Sriharan et al., 2021).

The present study aimed to investigate the factors contributing to occupational stress and burnout among employees in healthcare services and to explore their interrelationships. A quantitative research design was employed, using a structured 37-item questionnaire administered to a sample of 62 healthcare workers. The instrument examined demographic characteristics, psychological job demands, working conditions, and key dimensions of burnout, including emotional exhaustion, depersonalisation, and

reduced personal accomplishment. Data analysis was conducted with SPSS, employing descriptive statistics and Pearson correlation tests to identify patterns and associations.

The findings revealed that high psychological demands, such as excessive workload, the need for continuous concentration, and limited autonomy in decision-making, were positively and significantly correlated with emotional exhaustion and reduced energy levels ($r = .661$, $p < .001$; $r = .488$, $p < .001$). Employees who perceived their workload as overwhelming were also more likely to report symptoms of fatigue and emotional strain. Moreover, demographic differences emerged: younger and female employees reported higher stress and burnout levels, while greater work experience correlated with lower psychological strain, suggesting a protective effect of professional maturity.These results highlight the urgent need for targeted organisational interventions in healthcare settings. Strengthening psychological support systems, enhancing working conditions, and implementing mechanisms for recognition and reward are critical measures for reducing stress and preventing burnout. Equally important is the development of leadership practices that are participatory and supportive, enabling healthcare staff to feel valued and engaged.

Addressing occupational stress and burnout in healthcare services is not only vital for safeguarding the mental health and wellbeing of employees but also for ensuring the resilience and quality of patient care. By investing in preventive and supportive strategies, healthcare organisations can reduce turnover, improve job satisfaction, and reinforce the sustainability of health systems

Key Words: Occupational stress, Professional burnout, Healthcare services, Employee wellbeing, Patient care.

REFERENCES

Girma, B., Nigussie, J., Molla, A., &Mareg, M. (2021). Occupational stress and associated factors among health care professionals in Ethiopia: a systematic review and meta-analysis. *BMC Public Health*, *21*(1), 539.

Goncalves, A., Fontes, L., Simaes, C., & Gomes, A. R. (2019). Stress and burnout in health professionals. In *Occupational and environmental safety and health* (pp. 563-571). Cham: Springer International Publishing.

Hoxha, G., Simeli, I., Theocharis, D., Vasileiou, A., & Tsekouropoulos, G. (2024). Sustainable healthcare quality and job satisfaction through organizational culture: Approaches and outcomes. *Sustainability*, *16*(9), 3603.

Mengist, B., Amha, H., Ayenew, T., Gedfew, M., Akalu, T. Y., Assemie, M. A., ... & Desta, M. (2021). Occupational stress and burnout among health Care Workers in Ethiopia: a systematic review and Meta-analysis. *Archives of rehabilitation research and clinical translation*, *3*(2), 100125.

Sriharan, A., Ratnapalan, S., Tricco, A. C., &Lupea, D. (2021). Women in healthcare experiencing occupational stress and burnout during COVID-19: a rapid review. *BMJ open*, *11*(4), e048861.

ADDRESSING KNOWLEDGE GAPS REGARDING MENTAL HEALTH DISORDERS: UNIVERSITY STUDENTS' PERCEPTIONS

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ABSTRACT

The stigma against mental illness is an ongoing problem both in the mental health sector and in society at large. Social stereotypes, prejudices, and discrimination against individuals with mental disorders create inequalities both in healthcare systems by affecting the quality of care, and in all domains of their socialization, such as family, peer networks, educational environment, and workplace (Torales et. al. 2023; Østerud, 2023). It is well-known that the two-way relationship of interdependence and interaction between the individual and society, which provides the former with emotional adequacy and good mental health, can been disrupted. Universities, as the highest educational institutions, play a vital role in preparing students to become citizens of society by shaping their perceptions and attitudes toward social issues. Studies show the effectiveness of anti-stigma interventions, both in health science students and students from other schools, that can promote awareness and eliminate the stigma surrounding mental health (Wong et. al. 2024; Kirschner et al. 2020). It is evident that anti-stigma educational programs in higher education can ensure innovation in the field of Health and Welfare (Thornicroft et al. 2016).

The aim of this paper is to examine university student's knowledge regarding the stigma of mental illness and to explore how education can positively influence people's perceptions in mental health issues. For the purposes of this study, three focus groups were conducted from May 2025 to June 2025 in three cities where departments of the University of Thessaly are located. More specifically, the participants were 21

students from undergraduate programs of the School of Health Sciences, School of Humanities and Social Sciences, School of Engineering, School of Agriculture, School of Economics and Business Administration, and School of Science. The research was conducted in full compliance with the ethical principles of social research, ensuring that the privacy rights of participants would be respected, there would be no physical or psychological harm and there would be no misleading regarding the purposes and methods. Before the research was conducted, participants received a signed consent form that included: the purpose, procedure, the expected benefits, the potential risks of the research, and the right to withdraw from it at any stage. Each focus group session was recorded and then transcribed.

The data collected were analyzed using the method of content analysis (Polit and Beck, 2021). Specifically, the student's knowledge gaps were examined according to their level of knowledge and understanding of the term's *mental health*, *mental illness*, *mental disorder* and *mental health stigma*. In addition, their perceptions of whether the mental disorders are curable or not curable were assessed. The analysis revealed lack of knowledge, and students were requested to indicate whether they would participate in an educational program regarding the stigma of mental illness and to indicate the topics that interested them.

In conclusion, there is a willingness within the academic community, both among students of health sciences and students at other schools, to participate in educational interventions aimed at enhancing knowledge and improving attitudes towards mental illness by reducing stigma. Policy implications include developing community-oriented mental health curricula at the institutional level, targeted awareness and educational programs at the national level, and reducing the stigma of mental illness at the societal level.

Key Words: Stigma, mental illness, mental health, welfare, students, knowledge

REFERENCES

Kirschner, B., Goetzl, M. & Curtin, L. (2022). Mental health stigma among college students: Test of an interactive online intervention. Journal of American College Health, 70(6): 1831-1838.

Østerud, K. L. (2023). Mental illness stigma and employer evaluation in hiring: Stereotypes, discrimination and the role of experience. Sociology of Health & Illness, 45(1): 90-108.

Polit, D. F. & Beck, C. T. (2021). Nursing research: generating and assessing evidence for nursing practice. Eleventh edition. Chapter 24: Data Collection in Qualitative Research. Wolters Kluwer.

Thornicroft, G., Mehta, N., Clement, S., Evans-Lacko, S., Doherty, M., Rose, D., Koschorke, M., Shidhaye, R., O'Reilly, C. & Henderson, C. (2016). Evidence for effective interventions to reduce mental-health-related stigma and discrimination. Lancet, 387(10023): 1123-1132.

Torales, J., Aveiro-Róbalo, T. R., Ríos-González, C., Barrios, I., Almirón-Santacruz, J., González-Urbieta, I., Caycho-Rodríguez, T., Castaldelli-Maia, J. M. & Ventriglio, A. (2023). Discrimination, stigma and mental health: what's next? International Review of Psychiatry, 35(3-4): 242-250.

Wong, J. C. M., Chua, J. Y. X., Chan, P. Y. & Shorey, S. (2024). Effectiveness of educational interventions in reducing the stigma of healthcare professionals

and healthcare students towards mental illness: A systematic review and meta-analysis. Journal of Advanced Nursing, 80(10): 4074-4088.

EXPLORING THE IMPACT OF RELIGIOSITY AND SPIRITUALITY ON THE HEALTH OF THE ELDERLY.

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ABSTRACT

The study of spirituality and religiosity in the care of elderly individuals around the world—particularly those with chronic illnesses, disabilities, functional limitations, or those at the end of life—is gaining increasing attention in the literature. The terms religiosity and spirituality are closely intertwined and often used interchangeably to describe people's religious and spiritual needs. This occurs because the two concepts are inextricably linked, making their distinction challenging. The term aging is often used to describe the biological changes that occur in an individual until death. Despite the chronic diseases that accompany aging, elderly individuals can maintain a good level of physical and mental health, remaining capable of performing basic self-care activities and sustaining their social lives.

Our purpose is to describe the concepts of spirituality and religiosity and to explore their impact on the health of elderly individuals. Therefore, a review of the scientific literature was undertaken using electronic databases Medline (PubMed) and Scopus over the past 20 years.

A statistical correlation has been found between religiosity, spirituality, and health in studies concerning cardiovascular diseases common among elderly individuals, including blood pressure, cholesterol, myocardial infarction, and stroke. Benefits of religiosity and spirituality have been observed both before and after cardiac events. Positive effects have also been noted regarding disability and functional limitations, kidney function, liver cirrhosis, pulmonary emphysema, chronic pain,

cancer, and self-rated overall health. Additionally, religiosity has been shown to reduce both the need for hospitalization and the length of hospital stays. There is also strong evidence of a connection between religiosity and mental health.

Many studies have demonstrated that spirituality and religiosity are factors that influence quality of life, well-being, the quality of care, and the satisfaction of elderly patients, who should always be treated as holistic biopsychosocial beings. There is a need for a unified and nuanced approach to understanding how religiosity and spirituality affect health and longevity in the context of global aging.

Key Words: Spirituality, Religiosity, Well-being, Elderly, Health, Aging.

REFERENCES

Balboni TA, VanderWeele TJ, Doan-Soares SD, Long KND, Ferrell BR, Fitchett G, Koenig HG, Bain PA, Puchalski C, Steinhauser KE, Sulmasy DP, & Koh HK (2022). Spirituality in serious illness and health. JAMA, 328(2):184–197

Carlos A Reyes-Ortiz , Claudia Payan , Geraldine Altamar , Fernando Gomez , Harold G Koenig. (2019). Religiosity and self-rated health among older adults in Colombia. Colomb Med, 50(2):67-76.

Ginting, H, Näring, G.W.B., Kwakkenbos, L., Becker E.S. (2015). Spirituality and negative emotions in individuals with coronary heart disease. Journal of Cardiovascular Nursing, 30(6): 537-545

Hayward RD, Owen AD, Koenig HG, Steffens DC, Payne ME. (2012). Religion and the presence and severity of depression in older adults. Am J Geriatr Psychiatry, 20(2):188–192.

Katherine Carroll Britt , Jill Hamilton (2023). How Can We Support Religious and Spiritual Practices of Older Adults With Mild Cognitive Impairment and Dementia? J Gerontol Nurs. , 49(4):3-6

Kraal AZ, Sharifian N, Zaheed AB, Sol K, Zahodne LB. (2019). Dimensions of religious involvement represent positive pathways in cognitive aging. Res. Aging, 41(9):868–890

Luana Araujo Dos Reis , Tania Maria de Oliva Menezes. (2017). Religiosity and spirituality as resilience strategies among long-living older adults in their daily lives. Rev Bras Enferm., 70(4):761-766

N. Krause, D.R. Hayward. Religious involvement, practical wisdom, and self-rated health. (2014). Journal of Aging and Health, 26(3):540-558

Shilpa Aggarwal, Judith Wright , Amy Morgan , George Patton , Nicola Reavley . (2023). Religiosity and spirituality in the prevention and management of depression and anxiety in young people: a systematic review and meta-analysis. BMC Psychiatry, 23(1):729-731

T Muhammad. (2022) The role of religiosity and religious participation in the relationship between depressive symptoms and cognitive impairment among older Indian adults. Sci Rep.12(1):119-125.

WORK MOTIVATIONS, WORK COMMITMENT AND EMOTIONAL EXHAUSTMENT IN THE HEALTH SECTOR: RESEARCH IN NURSING STAFF IN GREECE

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ABSTRACT

This study examined the relationship between work motivation, organizational commitment and emotional exhaustion in the health sector, with a particular focus on medical and nursing staff in public health services in Northern Greece (Health Regions 3 and 4 – YPE), but also data from all health regions of the country. The study was based on both an extensive bibliographic analysis and primary quantitative research to record how these three variables interact, as well as being influenced by demographic factors (Βιθυνός κ.α., 2016) (Σαρμανιώτης, 2021).

According to the international literature, work motivation can be divided into intrinsic and extrinsic. Intrinsic motivation is related to personal satisfaction and a sense of purpose, while extrinsic motivation is related to reward and development opportunities (Kanfer κ.α., 2017) (Acquah κ.α., 2021) (Niati κ.α., 2021). Organizational commitment, as described in the model of Meyer and Allen (1984), includes three types: affective, continuum and normative (Chelliah κ.α., 2015) (Badrianto & Permatasari, 2022) (Nurlina κ.α., 2023). Emotional exhaustion, a key component of burnout syndrome, refers to emotional and physical exhaustion resulting from professional hours (Maslach & Leiter, 2016) (McFarland & Hlubocky, 2021).

The primary research was conducted with the convenience sampling method, using a structured questionnaire distributed to doctors, nurses and nursing assistants. The sample covered both Northern Greece and other regions of Greece. Data analysis included descriptive statistics, normality and correlation tests (Pearson/Spearman) and analysis of differences between groups based on demographic characteristics. The results showed a statistically significant positive correlation only between work motivation and organizational commitment, both at national and geographical levels (northern Greece and other regions of Greece), confirming the trend described in previous studies. Emotional exhaustion, a key component of burnout syndrome, refers to the emotional and physical exhaustion resulting from time-consuming professional stress (Fantahun et al., 2023) (Da Conceição, 2023) (Nurlina et al., 2023).

However, no statistically significant correlation was found between motivation and emotional exhaustion or between commitment and burnout, which differs from the findings of some international studies (Wullur & Werang, 2020) (McFarland & Hlubocky, 2021). The analysis of demographic factors revealed that variables such as

age, gender, length of service and marital status affect individual variables (motivation, commitment or burnout), but not all of them simultaneously. For example, older age and longer length of service were associated with greater organizational commitment, while the presence of children was associated with differences in motivation levels (Fantahun κ.α., 2023) (Maisi et al., 2023). The findings of the study highlight the importance of work motivation as a strategic management tool in the health sector. Strengthening both intrinsic and extrinsic motivation can increase organizational commitment, improving the overall effectiveness and quality of healthcare delivery (Parker, 2014) (Badrianto & Permatasari, 2022)

Although reducing emotional exhaustion does not appear to be directly related to motivation or commitment in this sample, the literature suggests that these factors can have a preventive effect in different organizational or cultural settings (Maslach & Leiter, 2016) (McFarland & Hlubocky, 2021). This study contributes to the significant Greek literature, which remains limited in this area, and provides practical guidance for administrators and managers in public health units. These include implementing policies that enhance staff recognition, investing in ongoing training, and developing leadership practices that encourage active participation and collaboration (Vithinos et al., 2016) (Maisi et al., 2023).

Key Words: Work motivation, Organizational commitment, Emotional exhaustion, Public health units, Human resources

REFERENCES

Βιθυνός, Γ., κ.α. (2016). Διοίκηση Ανθρώπινου Δυναμικού. Αθήνα: Εκδόσεις Σταμούλη.

Chelliah, S., Sundarapandiyan, N., & Vinoth, B. (2015). A research on employees' organisational commitment in organisations: A case of SMEs in Malaysia. International Journal of Managerial

Studies and Research, 3(7), 10–18. Fantahun, A., et al. (2023). Organizational commitment and associated factors among health professionals. BMC Health Services Research, 23, 456.

Kanfer, R., Frese, M., & Johnson, R. E. (2017). Motivation related to work: A century of progress. Journal of Applied Psychology, 102(3), 338–355.

Maslach, C., & Leiter, M. P. (2016). Burnout: A multidimensional perspective. Psychology Press.

Parker, S. K. (2014). Beyond motivation: Job and work design for development, health, ambidexterity, and more. Annual Review of Psychology, 65, 661–691.

Acquah, A., Nsiah, T. K., Antie, E. N. A., & Otoo, B. (2021). Literature review on theories of motivation. EPRA International Journal of Economic and Business Review, 9(5), 25-29. Https://doi.org/10.36713/epra6848

Badrianto, Y., & Permatasari, D. (2022). The influence of organizational culture, work competence and work motivation on organizational commitment. Journal of Economics and Business Letters, 2(2), 25-29. Https://doi.org/10.55942/jebl.v2i2.157

Da Conceição, M. R. (2023). Impact of Compensation and Work Motivation on Organizational Commitment. Journal of Digitainability, Realism & Mastery (DREAM), 2(12), 249-265. Https://doi.org/10.56982/dream.v2i12.178

Fantahun, B., Dellie, E., Worku, N., & Debie, A. (2023). Organizational commitment and associated factors among health professionals working in public hospitals

of southwestern Oromia, Ethiopia. BMC Health Services Research, 23(1), 180.

McFarland, D. C., & Hlubocky, F. (2021). Therapeutic strategies to tackle burnout and emotional exhaustion in frontline medical staff: narrative review. Psychology research and behavior management, 1429-1436.

Niati, D. R., Siregar, Z. M. E., & Prayoga, Y. (2021). The effect of training on work performance and career development: the role of motivation as intervening variable. Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences, 4(2), 2385-2393. Https://doi.org/10.33258/birci.v4i2.1940

Nurlina, N., Widayatsih, T., & Lestari, N. D. (2023). The effect of job satisfaction and motivation on the organizational commitment. JMKSP (Jurnal Manajemen, Kepemimpinan, Dan Supervisi Pendidikan), 8(1), 26-39. Https://doi.org/10.31851/jmksp.v8i1.10029

Wullur, M. M., & Werang, B. R. (2020). Emotional Exhaustion and Organizational Commitment: Primary School Teachers' Perspective. International Journal of Evaluation and Research in Education, 9(4), 912-919. Https://doi.org/10.11591/ijere.v9i4.20727

Μαΐση, Ε., Βλασιάδης, Κ., Ζυγά, Σ., Αργυριάδης, Α., & Πατελάρου, Α. (2023). Η παρακίνηση προσωπικού ως απόρροια της αποτελεσματικής ηγεσίας στο ιατρονοσηλευτικό προσωπικό μονάδων υγείας. Archives of Hellenic Medicine/Arheia Ellenikes Iatrikes, 40(4).

Σαρμανιώτης ,Χ.(2021).Στρατηγικό μάνατζμεντ. Θεσσαλονίκη: Ζυγός

MINDFULNESS AND CHARACTER STRENGTHS PRACTICES FOR CHILDREN: UPGRADING HEALTH AND SOCIAL CARE SERVICES

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ABSTRACT

With high rates of mental health concerns among children especially during mental health crises, effective positive psychology interventions could protect and promote their mental health and greatly improve student well-being (Tamiolaki et al., 2024). Mindfulness practice and character strengths have been defined determined as being two separate positive psychology interventions (Niemiec et al., 2012). However, to date, few studies have investigated the effects of combining these practices for enhancing wellbeing (Ivtzan et al., 2016; Pang, & Ruch, 2019). The present study aimed to promote wellbeing through an intervention of eight sessions of 45 min each with mindfulness and character strengths practices.

A total of 395 Greek participants of both genders aged between 8 and 10 years (3rd- and 4th-grade students in primary school) living in Heraklion, Crete, took part in this study. There were 209 participants in the intervention group and 186 in the control group. Participants' applicability of character strengths use, mindfulness, and well-being were assessed before, immediately after the intervention, and one month after the intervention. The participants in the intervention group received the programme of interest, whereas the participants in the control group received no intervention. The post-intervention results showed that the participants in the intervention group experienced an improvement in well-being, mindfulness, and strengths use, compared to the participants in the control group. Furthermore, these positive changes were sustained at follow-up.

The findings of this study highlight that mindfulness-based strength practices can enhance children's wellbeing. Mindfulness and character strengths seem to be key factors in helping children view challenges as opportunities for growth and as steps toward becoming more empowered versions of themselves. Mindfulness and character strengths interventions are promising, as such practices can empower healthcare professionals to improve the effectiveness of health and social care services. Healthcare professionals could implement mindfulness and character strengths programmes within school settings and through e-learning courses and websites. In addition, mindfulness and character strengths training programs, seminars, and workshops offered to

healthcare professionals, parents, and teachers may create a synergistic impact in supporting children's mental health.

Key Words: Mindfulness, character strengths, wellbeing and children.

REFERENCES

Ivtzan, I., Niemiec, R. M., & Briscoe, C. (2016). A study investigating the effects of Mindfulness-Based Strengths Practice (MBSP) on wellbeing. *International Journal of Wellbeing, 6*(2), 1–13. https://doi.org/10.5502/ijw.v6i2.557

Niemiec, R. M., Rashid, T., & Spinella, M. (2012). Strong Mindfulness: Integrating Mindfulness and Character Strengths. *Journal of Mental Health Counseling, 34*(3), 240–253. https://doi.org/10.17744/mehc.34.3.34p6328x2v204v21

Pang, D., & Ruch, W. (2019). The Mutual Support Model of Mindfulness and Character Strengths. *Mindfulness, 10*(8), 1545–1559. https://doi.org/10.1007/s12671-019-01103-z

Tamiolaki, A., Kalaitzaki, A., Papadakaki, M., & Kourkoutas, E. (2024). The Silver Lining of Posttraumatic Growth around the Dark Side of the COVID-19 Pandemic: A School-Based Intervention with Mindfulness and Character Strengths Practices among Children. *Healthcare, 12*(2), 283. https://doi.org/10.3390/healthcare12020283

DIGITAL TRANSFORMATION AND SERVICES MANAGEMENT IN THE PHARMACEUTICAL SECTOR: EMPLOYEE ADOPTION, QUALITY ASSURANCE, AND FUTURE TRENDS

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ABSTRACT

This study investigates the role of digital transformation in the pharmaceutical sector, emphasizing the importance of **services management** in facilitating both technological innovation and organizational change. The pharmaceutical industry, as part of the wider health and welfare ecosystem, is undergoing rapid transformation through the integration of Artificial Intelligence (AI), the Internet of Things (IoT), big data analytics, and digital marketing strategies. These developments are reshaping the way pharmaceutical services are designed, delivered, and managed, with significant implications for patient care, organizational efficiency, and workforce adaptability.

The paper examines digital transformation not only as a technological process but also as a human-centered challenge. Successful adoption of innovative technologies depends largely on the readiness, skills, and perceptions of employees working in pharmaceutical services. In this context, services management plays a pivotal role, as it provides the structural and strategic framework for aligning technological integration with employee engagement and organizational objectives. By focusing on both the technical and social dimensions of digital transformation, the study contributes to a more holistic understanding of innovation in health and welfare management services.

In the theoretical section, the research reviews key concepts related to digitalization in healthcare and pharmaceuticals. It explores the potential benefits of AI-driven systems, such as improved drug development, personalized treatment, predictive analytics, and efficient supply chain management, while also acknowledging the challenges of cost, interoperability, and ethical concerns. Furthermore, the study examines the **Technology Acceptance Model (TAM)** as a framework for understanding employee attitudes toward digital transformation. Central variables such as perceived usefulness, perceived ease of use, and self-efficacy are analyzed as key determinants of technology adoption. These factors are critical in shaping the extent to which pharmaceutical services management can successfully embed digital solutions into everyday operations.

The empirical part of the research employs a quantitative methodology, using a structured questionnaire distributed to employees in the pharmaceutical sector in Greece. Data analysis was conducted with PSPP, employing descriptive statistics, reliability testing, and linear regression analysis. The findings indicate that perceived usefulness and perceived ease of use significantly and positively influence employees' intention to adopt digital technologies.

The discussion highlights the implications of these findings for quality assurance, workforce inclusion, and organizational resilience. Digital transformation, when effectively managed, strengthens quality assurance in pharmaceutical services by enabling more reliable processes, transparent data management, and patient-centered innovations. At the same time, services management must ensure that employees are equipped with the skills, training, and confidence necessary to engage with new technologies. This dual focus on innovation and inclusivity supports both organizational adaptability and the sustainability of digital initiatives.

The practical implications emphasize the need to invest in digital skills training, adopt user-friendly technologies, and communicate the benefits of digital transformation clearly. Strong managerial support and active employee involvement are also vital to ensure successful and sustainable implementation.

In conclusion, the study argues that digital transformation in the pharmaceutical sector represents a comprehensive organizational shift rather than a purely technical upgrade. Effective **services management** is essential in bridging the gap between technological potential and human readiness. By integrating workforce perspectives with strategic digital initiatives, pharmaceutical organizations can not only enhance quality and efficiency but also build resilient systems capable of adapting to **future trends in health and welfare**. This aligns closely with the conference themes of **AI-driven Digitalization in Health and Welfare Services, Quality Assurance in Health and Welfare Management Services,** and **Organizational Resilience and Adaptability in Health.**

Key Words: Digital Transformation, Services Management, Pharmaceutical Sector, Employee Adoption, Quality Assurance**.**

REFERENCES

Kant, S., Deepika, & Roy, S. (2025). Artificial intelligence in drug discovery and development: transforming challenges into opportunities. Discover Pharmaceutical Sciences.

Mastrantonas, A., Kokkas, P., Chatzopoulos, A., Papoutsidakis, M., Stergiou, C., Vairis, A., & Kanetaki, Z. (2024). Identifying the effects of Industry 4.0 in the pharmaceutical sector: achieving the sustainable development goals. Discover Sustainability.

Ocana, A., Pandiella, A., Privat, C., Bravo, I., Luengo-Oroz, M., Amir, E., & Gyorffy, B. (2025). Integrating artificial intelligence in drug discovery and early drug development: a transformative approach. Biomarker Research.

Propes, C., Locke, T., & Hendricks-Sturrup, R. (2025). Landscape of informed consent practices and challenges in point-of-care clinical trials. Learning Health Systems.

THE "PREDICTIVE ACCURACY" OF RESILIENCE TO THE PROCESS OF DEALING WITH THE EMERGING ISSUES IN A PERIOD OF CRISIS IN THE PRIVATE HEALTHCARE SECTOR. A CASE STUDY

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ABSTRACT

The literature offers a wide variety of definitions and perceptions of the concept of resilience depending on the scientific field that researches it and the various issues that define it, as appropriate, in each research approach. This is exactly what happens in the scientific field of healthcare. Depending on the approach of each research effort and based on the reference point of the research, completely different perceptions and definitions of resilience are formed. Resilience is used either in the context of individual or group investigation, or in the field of systemic or organizational research of healthcare units (Ward, & Webster, 2025). Finally, resilience is the pillar of research, in recent decades, on safety in healthcare units.

In the field of research on the development of patient health safety, resilience has been studied as a dimension that emerges through individual concepts and elements of healthcare reality. For example, in a study at the beginning of the 21st century (Carthey, et al., 2001), it was argued that safety is supported by the resilience of the health system, which in turn is shaped through three main cultural indicators, commitment, capacity and cognizance (the three c). The commitment indicator has two components: motivation and resources. The motivation component moves between two poles, whether the healthcare organization is a model for good safety practices or is content to simply stay one step ahead of regulatory sanctions. The resource component, in addition to the financial dimension, also includes the people who are responsible for managing the risks faced by the healthcare organization. The capacity indicator is the product of various elements, including the methods used to identify the risks and critical

situations that the healthcare organization will potentially face. Finally, the cognizance indicator refers to the way in which the organization understands the inherent risks and shapes the sense making processes of its daily work. The researcher concludes by presenting twenty dimensions (work behaviors) that form the Checklist for the Assessment of Institutional Resilience (CAIR).

The research in this study will be based mainly on two theoretical models for examining resilience during the COVID-19 pandemic in private Greek healthcare. The first stems from organizational mindfulness (Weick, & Sutcliffe, 2001) which is formed by five dimensions, one of which is Commitment to Resilience. This dimension includes the development of systems that can adapt to emerging crises, the creation of plans and procedures, the training of staff for the management of emergencies and the development of the necessary rapid recovery capabilities. The second theoretical model understands resilience as the ability of a healthcare organization to learn to successfully deal with unforeseen crises that occur at an unexpected time (Wildavsky, 1988). Within this position (model), the dimension of learning that emerges through the ways of dealing with risks that appear in times of crisis activates the resilience of the organization.

The present research is based on the idea that an organization, in order to face a crisis, must be "resiliently prepared" (Weick, & Sutcliffe, 2001) and at the same time, because it is appropriately prepared, it is ready to learn during the evolution of the crisis and that this learning upgrades the resilience of the organization (Wildavsky, 1988).

It follows that the research will apply the deductive methodology (Brown, 2008, Miles, et al. 2014), to investigate whether this dual theoretical framework is verified when dealing with the COVID-19 pandemic by private healthcare organizations. This is a case study (Merriam, 2009) with interviews with the managers (owners) of three private organizations. The data analysis will be based on the analysis of the theoretical propositions (Yin, 2018).

REFERENCES

Brown, L. (2008). A review of the literature on case study research. Canadian Journal for New Scholars in Education, 1(1), 1-13.

Carthey, J., de Leval, M R., & Reason, J.T. (2001). Institutional resilience in healthcare systems. Quality in Health Care, Vol. 10, pp. 29–32.

Merriam, S.B. (2009). Qualitative research: A guide to design and implementation (2nd ed.) San Francisco, CA: Jossey-Bass.

Miles, M.B.; Huberman, A.M., & Saldana, J. (2014). Qualitative data analysis: A methods sourcebook, Thousand Oaks, CA: Sage.

Ward, E.J.; Webster, C.S. (2025). The Conceptualization of Health Care Resilience: A Scoping Review. *Journal of Patient Safety.* 21(6):e100-e109, September.

Weick, K. E., & Sutcliffe, K. M. (2001). Managing the unexpected: Assuring high performance in an age of complexity.. University of Michigan Press.

Wildavsky, A. (1988). Searching for Safety. Transaction Publishers, New Brunswick (U.S.A.), London (U.K.)

Yin, R. K. (2018). Case study research: Design and methods (6th ed.). Thousand Oaks, CA: Sage

INNOVATION AND CARE: CONTEMPORARY NURSING FROM A SCIENTIFIC PERSPECTIVE

CONCERNS ABOUT RADIATION AMONG WOMEN WITH BREAST CANCER

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ABSTRACT

Background: Radiotherapy is a central treatment for breast cancer, improving local control and survival (Allen, Her, & Jaffray, 2017). Yet, many women face concerns about radiation that go beyond physical effects, including uncertainty about treatment outcomes, fear of side effects, and psychological distress (Zheng, Wan, Zhu, & Xiang, 2022). Misconceptions such as fear of becoming radioactive or sustaining internal harm intensify anxiety (Shaverdian et al., 2018). These concerns may reduce adherence and quality of life (Arikan, Ozturk, Yerli, & Aksu, 2023). This study assessed women's concerns using three validated instruments: the M.D. Anderson Symptom Inventory (MDASI), the Information Styles Questionnaire (ISQ), and the Profile of Mood States – Short Form (POMS-SF).

Methods: A longitudinal cohort study was conducted between October 2022 and May 2023 in two radiotherapy departments in Thessaloniki, Greece. A total of 216 women with breast cancer were enrolled. Participants were divided into a control group (n = 98), receiving standard care, and an intervention group (n = 118), which additionally received a structured informational brochure. Concerns were assessed at baseline (first five sessions) and at treatment completion. The MDASI was used to evaluate concerns about symptoms and functional interference (Mystakidou et al., 2004). The ISQ assessed information needs, focusing on disease, treatment, and psychological concerns (Cassileth, Zupkis, Sutton-Smith, & March, 1980; Alamanou, Balokas, Fotos, Patiraki, & Brokalaki, 2016). Emotional concerns were measured with the POMS-SF, which evaluates mood states such as tension, depression, anger, fatigue, confusion, and vigor (McNair, Lorr, & Droppelman, 1971; Roussi & Vassilaki, 2001).

Results: At baseline, participants in both groups reported high levels of concern. Using the MDASI, women described fatigue, pain, sleep problems, and appetite loss that interfered with daily activities. By treatment completion, the intervention group showed significantly greater reductions in symptom distress compared to controls (p

ISBN: 978-618-5630-25-6

< .0005), underscoring the benefit of tailored information (Mystakidou et al., 2004).The ISQ highlighted strong informational concerns regarding disease progression and treatment side effects. While both groups showed reduced needs over time, only the intervention group reported a statistically significant decline in disease- and treatment-related informational needs ($p = .001$). Psychological informational needs remained stable ($p = .336$), confirming that education alone cannot fully resolve deeper emotional anxieties (Cassileth et al., 1980; Alamanou et al., 2016).The POMS-SF revealed elevated tension, depression, fatigue, and confusion, and low vigor at baseline. By the end of radiotherapy, the intervention group demonstrated significant improvements in all negative mood states (tension: $p < .0005$; depression: $p < .0005$; anger: $p < .0005$; fatigue: $p < .0005$; confusion: $p < .0005$) and a notable increase in vigor ($p < .0005$). These results indicate that addressing information gaps indirectly reduces psychological distress and enhances resilience (Roussi & Vassilaki, 2001).

Conclusion: Concerns about radiation among women with breast cancer are multidimensional, spanning symptoms, informational needs, and emotional well-being. The combined use of MDASI, ISQ, and POMS-SF demonstrated the depth of these concerns. Structured informational brochures effectively reduced symptom distress, disease- and treatment-related concerns, and negative mood states, while psychological informational needs persisted. This suggests that written educational interventions are valuable but insufficient on their own. Comprehensive strategies integrating education, counseling, and supportive care are essential to address persistent concerns and enhance patient-centered radiotherapy.

Key Words: breast cancer, radiotherapy, concerns, MDASI, ISQ, POMS-SF

REFERENCES

Alamanou, G. D., Balokas, A. S., Fotos, V. N., Patiraki, E., & Brokalaki, H. (2016). Information needs of cancer patients: Validation of the Greek Cassileth's Information Styles Questionnaire. *European Journal of Oncology Nursing,* 20, 49–57.

Allen, C., Her, S., & Jaffray, D. A. (2017). Radiotherapy for cancer: Present and future. *Advanced Drug Delivery Reviews, 109,* 1–2.

Arikan, F., Ozturk, N., Yerli, N., & Aksu, M. G. (2023). The effect of radiotherapy-related anxiety and depression on quality of life in cancer patients. *Celal Bayar University Journal of Science, 10,* 104–111.

Cassileth, B. R., Zupkis, R. V., Sutton-Smith, K., & March, V. (1980). Information and participation preferences among cancer patients. *Annals of Internal Medicine,* 92(6), 832–836.

McNair, D., Lorr, M., & Droppelman, L. (1971). *Profile of Mood States manual*. San Diego, CA: Educational and Industrial Testing Service.

Mystakidou, K., Cleeland, C., Tsilika, E., et al. (2004). Greek M.D. Anderson Symptom Inventory: Validation and utility in cancer patients. *Oncology,* 67(3), 203–210.

Roussi, P., & Vassilaki, E. (2001). The applicability of the multiaxial model of coping to a Greek population. *Anxiety, Stress & Coping,* 14(2), 125–247.

Shaverdian, N., Wang, X., Hegde, J. V., Aledia, C., Weidhaas, J. B., Steinberg, M. L., & McCloskey, S. A. (2018). The patient's perspective on breast radiotherapy: Initial fears and expectations versus reality. *Cancer, 124*(8), 1673–1681.

Zheng, M., Wan, H., Zhu, Y., & Xiang, L. (2022). The correlation between radiotherapy and patients' fear of cancer recurrence: A systematic review and meta-analysis. *Journal of Hospice & Palliative Nursing,* 24(3), 186–198.

AGEISM IN NURSING: EVIDENCE-BASED INTERVENTIONS FOR EQUITABLE CARE

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ABSTRACT

Ageism, including stereotypes, prejudice and discrimination on grounds of age, remains a pervasive barrier to equitable care for older people in care services and in wider health systems. Despite recognition of the negative impact on patient outcomes, ageist attitudes and behaviors persist among nurses, trainees and healthcare professionals, requiring targeted interventions to promote age-inclusive practices.

The purpose of this narrative literature review is to synthesize high quality evidence on the prevalence, determinants and impact of ageism in nursing and to critically evaluate evidence-based interventions promoting equal and personalized care for older people.

A comprehensive literature review was carried out, pulling peer reviewed studies published in English from the years 2015-25 in electronic databases such as PubMed, CINAHL and Scopus. The search terms included: ageism, nursing, intervention, equitable care, gerontological education, and continuous learning. Studies included evaluated intervention strategies targeting ageism among nurses or nursing students and reported outcomes related to attitudes, knowledge and behavior towards older people. Data have been extracted and synthesized thematically.

The review identified several causes of ageism in the nursing profession, including a lack of exposure to geriatric education, a lack of clinical contact with elderly people and the prevalence of social stereotypes. There is clear evidence of bias in favor of multidisciplinary interventions that incorporate gerontological curricula, peer-reviewed clinical experience and structured reflection rather than traditional didactic approaches. For example, research shows that courses integrating life-course concepts and structured intergenerational contacts significantly reduce ageist attitudes among trainees in the nursing profession and reinforce the need for evidence-based reforms. Experient learning strategies such as age-simulation kits and virtual or artificial intelligence scenarios enhance empathy and insight, particularly when combined with debriefing. Organizational and process-based approaches, including acceptance and engagement interventions and age-inclusive workplace policies, have been effective in reducing both overt and implicit ageist prejudices.

The findings highlight the superiority of layered, experiential and reflective interventions over single-track training approaches to reduce ageism in the nursing

profession. However, the variability of methodology, limited longitudinal data and variable measures of outcome limit generalizability. There is a clear need for standardized, long-term studies that assess both the attitudinal and patient-centered outcomes of behavior. The introduction of evidence-based and scalable interventions into education curricula and workplace policies is essential to promote equal care for older people and to tackle labor and social ageism.

Key Words: ageism, nursing, equitable care, intervention, gerontological education, continuous learning

REFERENCES

Chasteen, A., Horhota, J., & Crumley-Branyon, E. (2020). Ageism. In T. D. Nelson (Ed.), Ageism: Stereotyping and prejudice against older persons (pp. 95–123). MIT Press.

Dahlke, S., & Hunter, K. F. (2022). Harnessing nursing to diminish ageism. International journal of older people nursing, 17(2), e12417. https://doi.org/10.1111/opn.12417

Chen, C., Shannon, K., Napier, S., Neville, S., & Montayre, J. (2024). Ageism directed at older nurses in their workplace: A systematic review. Journal of clinical nursing, 33(7), 2388–2411. https://doi.org/10.1111/jocn.17088

Doan, Therese & Brennan, Sumiyo & Kulik, Carole. (2023). Geriatric nursing education: The impact of the life review assignment. Teaching and Learning in Nursing. 18. 10.1016/j.teln.2023.04.012.

Gallo, V. (2019). Ageism in nursing education: A review of the literature. Teaching and Learning in Nursing, 14(3), 208–210. https://doi.org/10.1016/j.teln.2019.04.004

Smith, J., & Lee, T. (2024). Ageism and nursing students: A systematic review. Nurse Education Today, 123, 105733. https://doi.org/10.1016/j.nedt.2023.105733

Stehle, G. (2023). A review of ageism in the literature. Journal of Gerontological Nursing, 49(6), 13–21. https://doi.org/10.3928/00989134-20230511-03

Thornton, M., Burns, K., & Street, L. (2021). Intergenerational learning: An opportunity to transform nursing students' perspectives of older adults. Innovation in Aging, 5(Supplement_1), 325. https://doi.org/10.1093/geroni/igab046.1264A

MEDITERRANEAN DIET ADHERENCE AMONG NURSES IN ROTATING SHIFT WORK

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ABSTRACT

The Mediterranean diet is internationally recognized as one of the healthiest dietary patterns, associated with reduced risk of chronic diseases, improved metabolic health, and enhanced quality of life. Nevertheless, nurses working rotating shifts face particular challenges in maintaining healthy dietary habits due to irregular working hours, night shifts, and increased physical and mental demands. The aim of this study was to investigate adherence to the Mediterranean diet among nurses employed in rotating shifts and to examine associations with demographic and occupational characteristics.

A cross-sectional study was conducted with 100 nurses from hospitals in Northern Greece. Data were collected using the validated MedDietScore questionnaire, which evaluates the frequency of consumption of 11 food groups and provides a total score ranging from 0 to 55, with higher scores indicating greater adherence. Demographic and occupational data included gender, age, educational level, and years of professional experience. Statistical analyses included descriptive statistics, chi-square tests, independent-samples t-tests, one-way ANOVA, and Spearman's correlation.

The mean MedDietScore was 25.94 (SD = 4.58), reflecting moderate adherence. Categorization revealed that 27% of participants had low adherence (≤24), 71% moderate adherence (25–34), and only 2% high adherence (≥35). No significant differences were observed between males and females ($p = 0.124$) or between age groups ($p = 0.176$). However, a statistically significant positive correlation was found between years of professional experience and MedDietScore ($rho = 0.248$, $p = 0.013$), suggesting a tendency for more experienced nurses to demonstrate higher adherence to the Mediterranean dietary pattern.

Table 1
Adherence to the Mediterranean Diet among Nurses (N = 100)

Category	Frequency	%
Low	27	27%
Moderate	71	71%
High	2	2%

These findings indicate that most nurses working rotating shifts exhibit only moderate adherence to the Mediterranean diet, while high adherence was rarely achieved. The results highlight the need for targeted workplace interventions, including nutrition education programs and improved access to healthy food options during night shifts, to promote adherence to healthy dietary patterns and safeguard the health of shift-working nurses.

Key Words: Mediterranean diet, adherence, nurses, rotating shifts, nutrition.

REFERENCES

Anastasiou, C. A., Yannakoulia, M., Kosmidis, M. H., Dardiotis, E., Hadjigeorgiou, G. M., Sakka, P., Arampatzi, X., Bougea, A., Labropoulos, I., & Scarmeas, N. (2017). Mediterranean diet and cognitive health: Initial results from the Hellenic Longitudinal Investigation of Ageing and Diet. *PloS one*, *12*(8), e0182048. https://doi.org/10.1371/journal.pone.0182048

Estruch, R., Ros, E., Salas-Salvadó, J., Covas, M. I., Corella, D., Arós, F., Gómez-Gracia, E., Ruiz-Gutiérrez, V., Fiol, M., Lapetra, J., Lamuela-Raventos, R. M., Serra-Majem, L., Pintó, X., Basora, J., Muñoz, M. A., Sorlí, J. V., Martínez, J. A., Fitó, M., Gea, A., Hernán, M. A., … PREDIMED Study Investigators (2018). Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts. *The New England journal of medicine*, *378*(25), e34. https://doi.org/10.1056/NEJMoa1800389

Leyva-Vela, B., Reche-García, C., Hernández-Morante, J. J., Martínez-Olcina, M., Miralles-Amorós, L., & Martínez-Rodríguez, A. (2021). Mediterranean Diet Adherence and Eating Disorders in Spanish Nurses with Shift Patterns: A Cross-Sectional Study. *Medicina (Kaunas, Lithuania)*, *57*(6), 576. https://doi.org/10.3390/medicina57060576

Souza, R. V., Sarmento, R. A., de Almeida, J. C., & Canuto, R. (2019). The effect of shift work on eating habits: a systematic review. *Scandinavian journal of work, environment & health*, *45*(1), 7–21. https://doi.org/10.5271/sjweh.3759

BRINGING THE GAP BETWEEN THEORY AND CLINICAL PRACTICE.

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ABSTRACT

Introduction: Despite substantial scientific progress, a persistent gap remains between theoretical research and clinical practice in healthcare, particularly in nursing. This discrepancy undermines evidence-based decision-making, slows the adoption of effective interventions, and contributes to inconsistent patient outcomes. The challenge lies not only in generating robust evidence but also in ensuring its timely integration into daily clinical practice. Implementation science and knowledge translation frameworks have emerged as essential tools to address this divide, yet barriers persist at individual, organizational, and systemic levels.

Purpose: This abstract aims to examine contemporary strategies for bridging the theory–practice gap in nursing and clinical healthcare settings. Specifically, it seeks to evaluate implementation and knowledge translation approaches reported in the last decade, highlight barriers and facilitators influencing the adoption of evidence-based nursing practices, and identify mechanisms that support sustainable integration of theoretical knowledge into routine patient care.

Method: A bibliographic review was carried out in the electronic database Google Scholar, Scopus and Pubmed between 2015 and 2025. Data extraction focused on reported implementation outcomes—such as adoption, fidelity, and sustainability—and on strategies designed to enhance knowledge translation.

Results: The reviewed literature converges on several key findings. Implementation science frameworks and knowledge translation models provide systematic approaches for identifying contextual barriers and tailoring strategies, leading to higher adoption rates among healthcare professionals, particularly nurses. Multi-component interventions—combining stakeholder engagement, co-design, targeted training, audit and feedback, and local champions—are consistently more effective than single strategies in promoting fidelity and penetration. Educational approaches such as clinical simulation and communities of practice enhance the transfer of theoretical knowledge into applied clinical skills. Organizational enablers, including leadership commitment, protected time for implementation, and robust data systems, have a significant impact on sustainability. Expanding the definition of evidence to

include practice-based knowledge promotes mutual learning and facilitates the pragmatic adaptation of interventions in clinical settings.

Conclusion: Bridging the theory–practice gap in healthcare, and specifically nursing, requires multi-faceted, context-sensitive approaches grounded in implementation science and co-designed with end users. Successful translation depends on capacity building, measurement of implementation outcomes, and organizational commitment to sustain change. Educational strategies such as clinical simulation and communities of practice enhance skill transfer, while policy-level levers, including protected implementation time and robust data systems, accelerate adoption. Iterative, theory-informed approaches are essential for achieving lasting impact in clinical nursing practice.

Key Words: theory–practice gap, nursing, implementation science, clinical simulation, implementation outcomes

REFERENCES

Daneshfar, M., & Moonaghi, H. K. (2025). The impact of clinical simulation on bridging the theory–practice gap in nursing education: A systematic review. BMC Medical Education.

Chisholm, A., et al. (2024). Advancing evidence-based practice through the Knowledge Translation Challenge. Nurses' important roles in research, implementation science and practice change. Journal of Advanced Nursing.

Ugwu, S. N., et al. (2023). Causes and effects of theory-practice gap during clinical practice: the lived experiences of baccalaureate nursing students. International Journal of Qualitative Studies on Health and Well-being.

Fontaine, G., et al. (2024). Effects of implementation strategies on nursing practice and patient outcomes: A comprehensive systematic review and meta-analysis. Implementation Science.

Brown, J. E., et al. (2019). Graduate nurses' perception of the effect of simulation on reducing the theory-practice gap. SAGE Open Nursing.

WORKFORCE & FUTURE TRENDS

SOCIOECONOMIC STATUS AND PARENTAL EDUCATION AS DETERMINANTS OF CHILDHOOD DENTAL CARIES IN KOSOVO

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ABSTRACT

Oral health is a critical aspect of general health and quality of life, influencing not only physical function such as chewing and speaking but also psychological and social well-being. Poor oral health, particularly the presence of dental caries, is one of the most common chronic conditions affecting children and adolescents worldwide. Dental caries can lead to pain, difficulty eating, sleep disturbances, and poor academic performance. As a preventable disease, it is strongly influenced by behavioral, environmental, and socioeconomic factors.

Globally, numerous studies have demonstrated that dental caries prevalence is significantly associated with socioeconomic indicators—most notably, parental education and household income. According to the American Center for Disease Control (CDC), the main oral health disparities in children between 2 to 19 years old are untreated cavities and it is related to family income. (CDC, 2019) Various research studies showed that children who come from lower household income are more likely to experience higher rates of untreated dental caries. A study conducted in Brazil showed that children coming from families with low- income had more dental pain problems coming from untreated cavities than those with higher income families (Peres et al., 2010; Kumar et al., 2016)

Educational level of parents, especially mothers, was a significant factor associated with caries prevalence in various studies of urban and rural children, highlighting the role of health literacy and parental involvement in preventive care. In Japan, higher levels of parental education, in particular maternal education, may be associated with reduced risk of dental caries in preschool children. (Tanaka et al., 2013). In Kosovo mothers displayed an insufficient knowledge regarding dental visits for their child, assisting their children in tooth brushing process and their feeding habits. (Begzati et al., 2014)

This study aims to determine the DMFT Index in children and adolescents aged 12-15 years old and to investigate the prevalence of dental caries among these

demographic group in both urban and rural regions of Kosovo and to explore how these patterns relate to the educational level of their parents and household income, among other contributing factors to dental caries prevalence.

Kosovo, a developing country with unique socio-economic challenges, lacks comprehensive national data on children's oral health. By comparing findings from Kosovo with those from international studies, this research not only seeks to understand the local burden of dental caries but also to identify whether global patterns hold true in the Kosovar context. The results are expected to provide valuable insights into the social determinants of oral health among children in Kosovo, highlighting vulnerable populations and guiding the development of targeted oral health education and prevention programs. Ultimately, this research aims to support policymakers and public health authorities in designing effective, equity-focused oral health strategies aligned with international best practices.

Key Words: oral health, dental caries, socioeconomic status, health management

REFERENCES

Begzati, A.,Bytyci, A., Meqa, K., Latifi-Xhemajli, B., & Berisha, M. (2014). Mothers' behaviours and knowledge related to caries experience of their children.*Oral Health Prev Dent, 12 (2), 133-140*. https://doi.org/10.3290/j.ohpd.a31667https://doi.org/10.1186/1472-6831-10-20

CDC. (2019). *Oral Health Surveillance Report: Trends in Dental Caries and Sealants, Tooth Retention, and Edentulism,*https://doi.org/10.1186/1472-6831-10-20United States, 1999–2004 to 2011–2016.

Kumar, S., Tadakamadla, J., Kroon, J., & Johnson, N. W. (2016). Impact of parent-related factors on dental caries in the permanent dentition of 6–12-year-old children: a systematic review. *Journal of dentistry, 46*, 1-11

Peres, M. A., Peres, K. G., Frias, A. C., & Antunes, J. L. F. (2010). Contextual and individual assessment of dental pain period prevalence in adolescents: a multilevel approach. *BMC Oral Health, 10*, 20-20. https://doi.org/10.1186/1472-6831-10-20

Tanaka, K., Miyake, Y., Sasaki, S., & Hirota, Y. (2013, Summer*).* Socioeconomic status and risk of dental caries in Japanese preschool children: the Osaka Maternal and child health study. *J Public Health Dent, 73*(3), 217-223. https://doi.org/10.1111/jphd.12016

REIMAGINING TELEHEALTH IN PRIMARY CARE: INSIGHTS FROM DOCTORS AND PATIENTS IN MALTA'S CENTRALISED SYSTEM

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ABSTRACT

As health systems increasingly adopt digital solutions, understanding how such technologies are experienced by users becomes essential for delivering inclusive and effective care. This study explores the usability, effectiveness, and future acceptability of telephone-based telemedicine within Malta's primary health care setting—a small island nation with a centralised service model. A mixed-methods, cross-sectional design was employed, using the validated Telehealth Usability Questionnaire (TUQ) alongside open-ended responses to gather insights from both doctors and patients.

The findings reveal a contrast between the two user groups: patients reported higher satisfaction levels and a greater willingness to reuse telemedicine services compared to doctors. Notably, while age did not significantly impact satisfaction, older patients were less likely to express intent to reuse telehealth in the future. Among doctors, satisfaction correlated most strongly with ease of use, perceived usefulness, and communication quality. However, several challenges were identified, including concerns over limited diagnostic accuracy, medico-legal accountability, and the impersonal nature of voice-only consultations.

Thematic analysis of qualitative feedback highlighted the need for improved guidance, legal clarity, and dedicated training for clinicians. While patients valued the accessibility and time-saving benefits of remote care, they also acknowledged that certain clinical situations necessitated in-person consultations. Both groups recognised that video consultations could address some of the limitations of telephone-based systems.

Practical implications extend beyond Malta. The country's centralised and hybrid care model demonstrates that a small health system can achieve consistent telemedicine experiences across diverse populations. Lessons include the importance of embedding legal frameworks early, integrating structured training programmes for professionals, and promoting video-enabled services to enhance communication and diagnostic accuracy. These findings may guide other nations with similar resource-constrained or centralised systems in strengthening equity and sustainability in telehealth implementation.

Key Words: Telemedicine, Primary Care, Malta, Usability, Patient Satisfaction, Digital Health

ENHANCING EMPLOYEE SATISFACTION IN HEALTHCARE AND HOSPITALITY: THE ROLE OF ADVANCED TECHNOLOGIES AND MAINTENANCE LEADERSHIP

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ABSTRACT

In the demanding and rapidly evolving domains of healthcare and hospitality, effective maintenance management is pivotal for ensuring operational reliability, staff performance, and user satisfaction. While healthcare organizations face persistent challenges such as outdated infrastructure, delayed maintenance, and limited staff training, hospitality businesses often excel through preventive cultures, structured systems, and innovative digital solutions. This study investigates how maintenance practices influence employee satisfaction and performance in Greek health units and explores cross-sectoral insights from hospitality organizations to propose more resilient and inclusive models of welfare management.

The research addresses an important gap in the literature by explicitly linking facility maintenance to staff well-being, job satisfaction, and organizational outcomes. Its primary aim is to evaluate the impact of maintenance management on the work environment and human resource (HR) performance. Secondary aims include assessing the contribution of emerging digital tools, such as Computerized Maintenance Management Systems (CMMS), Artificial Intelligence (AI), Internet of Things (IoT), and Blockchain, analyzing the role of leadership in shaping effective maintenance practices and identifying the conditions under which lessons from hospitality can be transferred to healthcare settings.

A mixed-method design was adopted. Quantitative data were collected through a cross-sectional survey of 102 healthcare professionals from public and private health units across Greece. The survey covered demographics, working environment, maintenance practices, stress factors, and technological readiness. Statistical analysis was performed using SPSS, including ANOVA tests to detect significant relationships. To enrich the findings, qualitative data were derived from three case studies of Greek hospitality businesses, a hotel chain, a city hotel, and a boutique smart property, chosen for their diverse operational models and leadership approaches.

Findings confirm that maintenance management strongly affects environmental conditions, job satisfaction, and stress reduction. In healthcare units, respondents reported moderate satisfaction with basic aspects such as lighting and ventilation but highlighted persistent problems including noise, poor air quality, and risks from

outdated equipment. Nearly half experienced workplace obstacles and delays in problem resolution, with technological failures emerging as major stressors. Leadership responsiveness and communication were found to be decisive: fewer than half of maintenance checks were regularly scheduled, and many participants expressed partial confidence in management's ability to prioritize safety. At the same time, respondents showed strong interest in training seminars and a willingness to embrace advanced technologies, though digital readiness was uneven.

Hospitality case studies provide comparative insights, demonstrating that preventive maintenance strategies, structured monitoring systems, and smart digital solutions improve efficiency and staff morale. Under specific regulatory and resource conditions, these practices are transferable to healthcare, offering pathways for reducing stress, improving satisfaction, and enhancing service quality. Notably, hospitality leadership styles emphasized proactive communication and inclusivity, reinforcing trust and shared responsibility, elements that can significantly strengthen healthcare maintenance cultures.

The study contributes both theoretical and practical value. It advances understanding of how strategic maintenance management fosters HR capacity-building and organizational resilience, highlighting the complementarities between digital innovation and leadership inclusivity. Practically, it offers tailored recommendations:
For healthcare personnel: actively report issues, engage in training, promote safety practices, and collaborate with management.
For administrators: invest in infrastructure modernization, adopt CMMS, AI, IoT, and Blockchain tools, strengthen leadership accountability, and foster cross-departmental communication.
For policy makers and academics: support cross-sectoral learning between healthcare and hospitality, expand comparative research across countries, and examine the long-term impacts of digital maintenance systems.

Limitations must be acknowledged. The healthcare sample is limited to Greece, and the case studies focus on three hospitality contexts, which may restrict generalizability. Furthermore, qualitative evidence in healthcare remains underdeveloped, and practical challenges of digital tool adoption, such as cost, staff training requirements, system compatibility, and organizational resistance, require deeper exploration. Future research should extend to cross-country and longitudinal studies to capture evolving impacts of maintenance strategies and technological integration.

In conclusion, the study demonstrates that effective maintenance management, supported by advanced technologies and inclusive leadership, can significantly enhance staff satisfaction and performance while reducing workplace stress. By leveraging innovative digital tools and adapting cross-sectoral best practices, healthcare and hospitality organizations can reimagine maintenance not merely as a technical function but as a strategic driver of inclusivity, innovation, and impact. Such rethinking fosters safer, more sustainable, and resilient environments for both employees and service users.

Key Words: Maintenance Leadership, Employee Satisfaction, Healthcare and Hospitality, Advanced Technologies, Innovation, Organizational Resilience.

REFERENCES

AlBattat, A.R., Som, A.P.M., & Helalat, A.S., (2013). Overcoming staff turnover in the hospitality industry using Mobley's model. *International Journal of Learning and Development, 3*(6), pp. 1–15. http://dx.doi.org/10.5296/ijld.v3i6.4844

American Hospital Association. (2022). *Certified healthcare facility manager handbook.* American Hospital Association Certification Center. https://www.aha.org/system/files/media/file/2019/05/AHA_CC-CHFM-Handbook.pdf

Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. (2000). *Manufacturing Advantage: Why High-Performance Work Systems Pay Off*. Ithaca, NY: ILR Press.

Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management, 17*(1), 99-120. https://doi.org/10.1177/014920639101700108.

Becerik-Gerber, B., Jazizadeh, F., Li, N., & Calis, G. (2011). Application areas and data requirements for BIM-enabled facilities management. *Journal of Construction Engineering and Management, 138*(3), pp. 431–442. https://doi.org/10.1061/(ASCE)CO.1943-7862.0000433.

Boppana, V. R. (2023). Data Analytics for Predictive Maintenance in Healthcare Equipment. *International Journal of Business & Management Science*, 9(2). SSRN. http://dx.doi.org/10.2139/ssrn.5005057

Borman, W. C., & Motowidlo, S. J. (1997). Task performance and contextual performance: The meaning for personnel selection research. *Human Performance, 10*(2), pp. 99–109. https://doi.org/10.1207/s15327043hup1002_3.

Buhalis, D., & Leung, R. (2018). Smart hospitality – Interconnectivity and interoperability towards an ecosystem. *International Journal of Hospitality Management, 71*, 41–50. https://doi.org/10.1016/j.ijhm.2017.11.011.

Buljac-Samardzic, M., Doekhie, K. D., & van Wijngaarden, J. D. H. (2020). Interventions to improve team effectiveness within health care: A systematic review of the past decade. *Human Resources for Health, 18*, p. 2. https://doi.org/10.1186/s12960-019-0411-3.

Cotts, D. G., Roper, K. O., & Payant, R. P. (2009). *The facility management handbook*. AMACOM. New York, NY.

Cozzio, C., Santos Arteaga, F. J., & Maurer, O. (2025). Artificial intelligence adoption in hospitality: Challenges and opportunities across hierarchical levels. *Tourism Review*. https://doi.org/10.1108/TR-10-2024-0913

Dhillon, B. S. (2002). *Engineering maintenance: A modern approach*. CRC Press. Boca Raton.

Duigou, A. (2023). AI-driven predictive maintenance in industrial and healthcare settings: A review. *Journal of Maintenance Engineering*, *12*(3), 45–62.

Euromonitor International. (2023). *Smart hospitality: Global trends and opportunities*. London: Euromonitor.

Fahimnia, B., Sarkis, J., & Davarzani, H. (2015). Green supply chain management: A review and bibliometric analysis. *International Journal of Production Economics*, *162*, 101-114. https://doi.org/10.1016/j.ijpe.2015.01.003.

Fatima, T., Malik, S.A., & Shabbir, A. (2018). Hospital healthcare service quality, patient satisfaction and loyalty: An investigation in context of private

healthcare systems. *International Journal of Quality & Reliability Management, 35*(6): 1195–1214. https://doi.org/10.1108/IJQRM-02-2017-0031.

Ghanem, M. S. (2021). Total Productivity Maintenance (TPM): A hospitality industry's new maintenance approach. *Journal of Association of Arab Universities for Tourism and Hospitality, 20*(1), 236–264. https://doi.org/10.21608/JAAUTH.2021.64149.1140.

Ghazi, K. M. (2016). Hotel maintenance management practices. *Journal of Hotel & Business Management, 5*(1), Article 136. https://doi.org/10.4172/2169-0286.1000136.

Grecotel Hotels & Resorts. (2024). *About us*. https://www.grecotel.com

Griffin, M. A., Neal, A., & Parker, S. K. (2017). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal, 50*(2), pp. 327–347. https://doi.org/10.5465/amj.2007.24634438.

Guleria, S., Guptill, J., Kumar, I., et al. (2024). Artificial intelligence integration in healthcare: perspectives and trends in a survey of U.S. health system leaders. *BMC Digital Health*, *2*, 80. https://doi.org/10.1186/s44247-024-00135-3.

Hellenic Chamber of Hotels. (2023). *Annual report on Greek hospitality industry*. Athens: HCH.

Hellenic Vibes. (2024). *Smart boutique hotel Athens*. https://www.hellenicvibes.gr

Hollis, B., & Verma, R. (2015). The intersection of hospitality and healthcare: Exploring common areas of service quality, human resources, and marketing. *Cornell Hospitality Roundtable Proceedings, 4*(2), 6–15.

HyScaler. (2025). *Blockchain for facility management: Ensuring data integrity and collaboration.* Industry Report, HyScaler Technologies.

Innovent.io. (2023). *IoT solutions for predictive maintenance in smart facilities* (Innovent White Paper Series). Innovent.io.

Jones, P., Hillier, D., & Comfort, D. (2017). The Sustainable Development Goals and the Tourism and Hospitality Industry. *Athens Journal of Tourism*, 4(1), 7–18. DOI: 10.30958/ajt.4.1.1

Jones, P., & Comfort, D. (2019). Sustainable Development Goals and the World's Leading Hotel Groups. *Athens Journal of Tourism*, *6*(1), 1–14. DOI: 10.30958/ajt.6-1-1

Kapiki, S., & Pappa, A. (2025). Enhancing Healthcare Efficiency: Leveraging Advanced Maintenance Management for Optimal Staff Performance. *Journal of Health Organization and Management*, DOI: 10.1108/JHOM-03-2025-0134.

Kapiki, S. (2021). Smart City and IoT Technologies Enabling Smart Tourism: the Case of Greece (pp. 80- 112). In A. Brovko, O. Dolinina (Eds.) *Higher Education in Smart City Technologies: European, Kazakh, Mongolian, Russian Universities Approach*, ISBN: 978-5-00140-890-1

Kaplan, R. S., & Porter, M. E. (2011). How to solve the cost crisis in health care. *Harvard Business Review, 89*(9), pp. 46–52.

Krijgsheld, M., Tummers, L. G., & Scheepers, F. E. (2022). Job performance in healthcare: a systematic review. *BMC Health Services Research, 22*(1), Article 149. https://doi.org/10.1186/s12913-021-07357-5.

Kyriakarakos, G. & Dounis, A. (2020). Intelligent Management of Distributed Energy Resources for Increased Resilience and Environmental Sustainability of Hospitals. *Sustainability*, *12*(18): 1-4.

Lateef, O. (2009). Building maintenance management in Malaysia. *Journal of Building Appraisal, 4*, 207–214. https://doi.org/10.1057/jba.2008.27

Laturkar, A., & Khaiyum, S. (2023). Blockchain for healthcare: improving interoperability, data integrity, and patient privacy. *International Journal of Engineering Research & Technology, 11*(6). https://doi.org/10.17577/NCRTCA-PID-014

Letsios, A., Polyzos, N., Poulopoulos, Ch., & Skamnakis, Ch. (2022). Hospital managers' participation in operational planning: insights from a recent study in the Greek National Health System. *Hippokratia, 26*(3), pp. 91-97.

Longart, P. (2020). Understanding hotel maintenance management. *Journal of Quality Assurance in Hospitality & Tourism, 21*(3), 267–296. https://doi.org/10.1080/1528008X.2019.1658148

Marriott International. (2022, 2023). *ESG and sustainability highlights*. https://www.marriott.com/sustainability

Melville N., Kraemer K., & Gurbaxani V. (2004). Information Technology and Organizational Performance: An Integrative Model of IT Business Value. *MIS Quarterly, 28*(2): 283-322.

Mitropoulos, P., Mitropoulos, I., & Sissouras, A. (2013). Managing for efficiency in health care: the case of Greek public hospitals. *The European Journal of Health Economics, 14*, pp. 929-938. https://doi.org/10.1007/s10198-012-0437-0

Mobley, R. K. (2002). *An introduction to predictive maintenance*. Elsevier Science. Woburn, Massachusetts, USA.

Pomaranik, W., & Kludacz-Alessandri, M. (2024). Talent management practices and other factors affecting employee performance in the public healthcare sector in Poland: An empirical study using structural equation modelling. *BMC Health Services Research, 24*, 1667. https://doi.org/10.1186/s12913-024-12169-4

Sebastian, R. (2011). Changing roles of the clients, architects and contractors through BIM. *Engineering, Construction and Architectural Management, 18*(2), pp. 176–187. https://doi.org/10.1108/09699981111111148

Shamayleh, A., Awad, M., & Farhat, J. (2020). IoT Based Predictive Maintenance Management of Medical Equipment. *Journal of Medical Systems*, *44*(72). https://doi.org/10.1007/s10916-020-1534-8

Shohet, I. M., & Lavy, S. (2004). Healthcare facilities management: State-of-the-art review. *Facilities, 22*(7-8): 210–220. https://doi.org/10.1108/02632770410547570

Sigala, M. (2018). New technologies in tourism: From multi-disciplinary to anti-disciplinary advances and trajectories. *Tourism Management Perspectives*, *25*, 151–155. https://doi.org/10.1016/j.tmp.2017.12.003

Trist, E. L., & Bamforth, K. W. (1951). Some social and psychological consequences of the longwall method of coal-getting: an examination of the psychological situation and defences of a work group in relation to the social structure and technological content of the work system. *Human Relations, 4*(1), 3–38. https://doi.org/10.1177/001872675100400101

Tsang, A. H. C. (1995). Condition-based maintenance: tools and decision making. *Journal of Quality in Maintenance Engineering, 1*(3): 3–17. https://doi.org/10.1108/13552519510096350

URAHL. (2025). *The crucial role of IoT maintenance systems in the hospitality industry*. Industry Report. https://urahl.com/the-crucial-role-of-iot-maintenance-systems-in-the-hospitality-industry/

Weick, K. E., & Sutcliffe, K. M. (2007). *Managing the unexpected: Resilient performance in the age of uncertainty* (2nd ed.). Jossey-Bass. San Francisco, CA.

Were, S. O., & Maranga, V. N. (2022). Hotel facilities' management practices and employee performance in Kenya. *Research in Hospitality Management, 12*(2), 125–131. https://doi.org/10.1080/22243534.2022.2133069

Wireman, T. (2005). *Total productive maintenance*. Industrial Press. New York, NY.

Wong, J. K. W., Li, H., & Wang, S.W. (2005). Intelligent building research: a review. *Automation in Construction, 14*(1), 143–159. https://doi.org/10.1016/j.autcon.2004.06.001

ARTIFICIAL INTELLIGENCE IN HEALTHCARE: IMPLICATIONS FOR PERFORMANCE INCENTIVES, JOB SATISFACTION AND PROFESSIONAL BURNOUT- OPPORTUNITIES AND CHALLENGES

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ABSTRACT

Introduction: Artificial intelligence (AI) is increasingly adopted in healthcare, showing potential to reduce professional burnout, enhance job satisfaction, and strengthen performance incentives among healthcare professionals (Albrecht et al. 2025; Huo et al. 2025; Karaferis et al. 2025). By supporting clinical tasks and providing real-time information, AI can contribute to a more manageable and engaging work environment (Al Fouri et al. 2024; Misurac et al. 2025). At the same time, its integration presents challenges related to cognitive load, ethical concerns, and the need for adequate training and organizational support (Mache et al. 2025; Ongun et al. 2025). Understanding both benefits and risks is essential for successful and sustainable implementation in healthcare settings.

ISBN: 978-618-5630-25-6

Purpose: Exploration of the impact of AI on healthcare professionals' performance incentives, job satisfaction, and professional burnout.

Method: A literature review of relevant articles published in English and Greek between 2020-2025 was conducted. Sources were identified using the databases PubMed, Scopus, and Science-Direct, focusing on research articles examining the impact of AI on performance incentives, job satisfaction, and burnout in healthcare sector. A total of 1,927 articles were initially identified. After removing duplicates and screening titles and abstracts for relevance, 78 articles were assessed for full-text eligibility. Editorials, commentaries, and non-relevant publications were excluded. Following full-text review and applying inclusion criteria (peer-reviewed research articles in English or Greek), 22 studies were finally included.

Results: Studies show that AI can significantly reduce professional burnout in healthcare settings when applied appropriately and with adequate training. By lowering psychological strain and preventing task overload, AI systems help decrease stress levels among healthcare professionals. Clinical decision support systems, for example, enable evidence-based decisions to be made more efficiently, while automated chatbots take over administrative procedures and AI-driven scheduling applications streamline daily responsibilities (Albrecht et al. 2025; Cho et al. 2024; Huo et al. 2025; Meduri et al. 2024). At the same time, the customization of AI tools enhances job satisfaction by releasing professionals from repetitive duties, allowing them to dedicate more time to meaningful clinical interactions, and by creating opportunities for continuous skill development. For instance, automated imaging analysis reduces the need for repetitive manual assessments, giving clinicians more opportunities to engage directly with patients and focus on complex clinical cases (Al Fouri et al. 2024; Huo et al. 2025; Jasri et al. 2022; Karaferis et al. 2025; Unlu Bidik and Turan, 2025). Moreover, AI promotes performance incentives by strengthening professional autonomy, supporting efficient performance, and encouraging skill advancement. Personalized AI-driven alerts and reminders allow healthcare professionals to focus on patient care, while real-time analytics reinforce confidence in clinical decisions and improve overall performance outcomes. These functions taken together contribute to a stronger sense of purpose and fulfillment among healthcare professionals (Al Fouri et al. 2024; Huo et al. 2025; Karaferis et al. 2025; Tursunbayeva and Renkema, 2023). Despite its potential benefits, AI integration in healthcare presents several challenges. High cognitive demands, complex interfaces, and frequent notifications can contribute to stress and techno-stress among professionals (Mache et al. 2025). Ethical concerns, including accountability for AI-driven decisions, patient data privacy, and algorithmic bias, raise important professional and legal questions (Ongun et al. 2025; Prasad and Bhanusree, 2024). Additionally, rapid technological changes and inadequate training often hinder effective adoption and create resistance among staff, highlighting the complexities involved in AI implementation (Meduri et al. 2024).

Conclusion: AI can substantially support healthcare professionals by improving job satisfaction, enhancing performance incentives, and alleviating symptoms of burnout. Nevertheless, these benefits depend on the quality of implementation. A successful integration requires policies and organizational strategies that ensure adequate training, user support, and responsible application of AI systems. Therefore, AI implementation in healthcare requires a balanced approach that maximizes its potential advantages while minimizing risks for professionals' well-being. Future research should focus on developing user-friendly AI systems, providing continuous

training for healthcare professionals, and evaluating the long-term psychological and organizational effects of AI integration.

Key Words: Artificial Intelligence, Performance Incentives, Job Satisfaction, Professional Burnout, Healthcare Professionals

REFERENCES

Al Fouri, A., Siam, A., Yacoub, H., & Sakher, S. (2024). The impact of artificial intelligence applications on enhancing professional empowerment from the perspective of medical sector workers. *Journal of Law and Sustainable Development*, 12(3): e3445. https://doi.org/10.55908/sdgs.v12i3.3445

Albrecht, M., Shanks, D., Shah, T., Hudson, T., Thompson, J., Filardi, T., Wright, K., Ator, G. A., & Smith, T. R. (2025). Enhancing clinical documentation with ambient artificial intelligence: a quality improvement survey assessing clinician perspectives on work burden, burnout, and job satisfaction. *JAMIA open,* 8(1): ooaf013. https://doi.org/10.1093/jamiaopen/ooaf013

Cho, A., Cha, C., & Baek, G. (2024). Development of an Artificial Intelligence-Based Tailored Mobile Intervention for Nurse Burnout: Single-Arm Trial. *Journal of medical Internet research*, 26: e54029. https://doi.org/10.2196/54029

Huo, W., Li, Q., Liang, B., Wang, Y., & Li, X. (2025). When Healthcare Professionals Use AI: Exploring Work Well-Being Through Psychological Needs Satisfaction and Job Complexity. *Behavioral sciences (Basel, Switzerland)*, 15(1): 88. https://doi.org/10.3390/bs15010088

Jasri, A., Aljasmi, S., & Aburayya, A. (2022). Employing PLS-SEM analysis to examine the mediation role of artificial intelligence in physician experience: An empirical study of the effect of the medical smartwatch on physician satisfaction. *South Eastern European Journal of Public Health*, *Special Issue*, 5: 407. https://doi.org/10.70135/seejph.vi.407

Karaferis, D., Balaska, D., & Pollalis, Y. (2025). Digitalization and Artificial Intelligence as Motivators for Healthcare Professionals. *Japan Journal of Research*, 6(3): 1-9. https://doi.org/10.33425/2690-8077.1170

Mache, S., Bernburg, M., Würtenberger, A., & Groneberg, D. A. (2025). Artificial Intelligence in Primary Care: Support or Additional Burden on Physicians' Healthcare Work?—A Qualitative Study. *Clinics and Practice*, 15(8): 138. https://doi.org/10.3390/clinpract15080138

Meduri, K., Nadella, G. S., Gonaygunta, H., Kumar, D., Addula, S. R., Satish, S., & Rehman, S. U. (2024). Human-centered AI for personalized workload management: A multimodal approach to preventing employee burnout. *Journal of Infrastructure, Policy and Development*, 8(9): 6918. https://doi.org/10.24294/jipd.v8i9.6918

Misurac, J., Knake, L. A., & Blum, J. M. (2025). The Effect of Ambient Artificial Intelligence Notes on Provider Burnout. *Applied clinical informatics*, 16(2): 252–258. https://doi.org/10.1055/a-2461-4576

Ongun, P., Sahin Koze, B., & Altinbas, Y. (2025). Artificial Intelligence Anxiety and Patient Safety Attitudes Among Operating Room Professionals: A Descriptive Cross-Sectional Study. *Healthcare*, 13(16): 2021. https://doi.org/10.3390/healthcare13162021

Prasad, P. R., & Bhanusree, P. S. (2024). A Study on the Impact of Artificial Intelligence on Employee Mental Health in the Healthcare Sector. *Journal of*

Civil and Environmental Engineering, 12(10): 229-238. https://www.researchgate.net/publication/385232777_A_Study_on_the_Impact_of_Artificial_Intelligence_on_Employee_Mental_Health_in_the_Healthcare_Sector [Accessed the 4th of September 2025, 16:55]

Tursunbayeva, A., & Renkema, M. (2023). Artificial intelligence in health-care: implications for the job design of healthcare professionals. *Asia Pacific Journal of Human Resources*, 61(4): 845-887. https://doi.org/10.1111/1744-7941.12325

Unlu Bidik, N., & Turan, Z. (2025). Examining the relationship between midwives' attitudes toward artificial intelligence use and their job satisfaction. *BMC nursing*, 24(1): 771. https://doi.org/10.1186/s12912-025-03346-9

THE PSYCHOLOGICAL CHARACTERISTICS OF THE WORK ENVIRONMENT IN THE ERA OF ARTIFICIAL INTELLIGENCE. CHALLENGES AND OPPORTUNITIES

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ABSTRACT

Introduction: Psychosocial factors at work refer to the ways in which work is organized, the social relationships that frame it, and the demands placed on employees. They include dimensions such as work pace and intensity, job autonomy, clearly defined roles, social support, perceived fairness, and professional identity. These factors are central to the well-being and performance of healthcare professionals, as inadequate management has been strongly linked to psychosocial risks such as stress, dissatisfaction, and burnout (Vázquez González et al., 2024; WHO, 2024)

Artificial intelligence (AI) is reshaping healthcare by altering workflows, roles, and autonomy through tools such as decision support, digital scribes, and predictive analytics, making it a double-edged phenomenon that creates both challenges and opportunities for professionals (Sarraf & Ghasempour, 2025; OECD, 2024).

Health systems face demographic, chronic disease, and workforce pressures, and while AI may improve efficiency (Arvai et al., 2025), it also brings risks like technostress and anxiety but offers opportunities for skills, balance, and support (Issa et al., 2024; Kenku & Uzoigwe, 2024; Chatzea et al., 2024; Huo et al., 2025).

Purpose: This study aims to explore the psychosocial effects of AI on healthcare professionals, with emphasis on the challenges and benefits that emerge.

Methodology: A literature review was conducted of studies published in the past ten years, sourced from the PubMed and Google Scholar electronic databases. The

review utilized the following English keywords: "*Artificial Intelligence", "Artificial Intelligence AND psychosocial factors", "Artificial Intelligence AND technostress, "Artificial Intelligence AND anxiety", "Artificial Intelligence AND healthcare workforce", "Artificial Intelligence AND well-being"*. A total of 11 articles were included in this review.

Results: The literature review identifies significant challenges**.** New forms of technostress, such as overload, complexity, insecurity, uncertainty, and invasion of privacy, lead to mental strain and work-related stress (Issa et al., 2024). A particular form is "AI anxiety," expressed as fear that technology may reduce the value of human work or limit employment opportunities, especially among workers with lower psychological resilience (Kenku & Uzoigwe, 2024). Research with healthcare professionals also shows concerns about loss of skills and professional identity, which can affect meaning and job satisfaction (Arvai et al., 2025). In addition, monitoring work through digital systems limits autonomy and increases feelings of unfairness (Vázquez González et al., 2024). Electronic patient records can also raise the risk of burnout when they involve excessive data entry and mental load (Sarraf & Ghasempour, 2025). At the same time, AI brings clear **benefits.** The use of digital recording assistants reduces the time spent on bureaucratic tasks, improving work–life balance and helping prevent burnout (Sarraf & Ghasempour, 2025). The integration of gamification, virtual reality (VR) and serious games into nursing education strengthens confidence and competence, contributing to mental well-being and job satisfaction (Chatzea et al., 2024). According to the theory of basic psychological needs (autonomy, competence, relatedness), AI can enhance well-being when designed to support these needs (Huo et al., 2025). Furthermore, it can free up time from administrative duties and redirect it to patient care and communication (Dailah et al., 2024).

Conclusions: in healthcare, AI is not only a technological solution; it is transforming the way work is experienced. On the one hand, it creates **challenges** such as stress, loss of control, deskilling, and burnout risk. On the other, it offers **benefits** by reducing bureaucracy, enhancing skills, and allowing more time for care. As emphasized by the **WHO (2024)** and the **OECD (2024),** the balance between challenges and benefits will depend on whether AI is designed in a human-centered way, with transparency and active involvement of healthcare professionals. In this way, AI can shift from being a source of stress to a driver of well-being and creativity. Achieving this balance requires guidelines to address technostress, training and reskilling, and embedding AI into occupational health and safety frameworks (Arvai et al., 2025; Vázquez González et al., 2024; Sarraf & Ghasempour, 2025). Further research should prioritize **longitudinal studies**, **cross-country comparisons**, and testing **interventions**such as gamification, VR, and serious games to strengthen resilience and well-being (Chatzea et al., 2024; Huo et al., 2025).

Key Words: Artificial Intelligence; Psychosocial factors; Healthcare workforce; Technostress; AI anxiety; Well-being

REFERENCES

Arvai, K., Varga, O. and Zrubka, Z. (2025). Perceptions of healthcare professionals on the use of artificial intelligence: A systematic review of reviews. *JMIR*, 27(1): e66986. https://doi.org/10.2196/66986

Chatzea, V.E., Papageorgiou, E.I. and Karageorgos, A. (2024). Digital tools for nursing education: A review of serious games, VR, and gamification

approaches. *Information*, 15(410): 1–20. https://doi.org/10.3390/information15040410

Dailah, H.G., et al. (2024). Artificial intelligence in nursing: Applications, benefits, and challenges. *Healthcare*, 12(2555): 1–11. https://doi.org/10.3390/healthcare12202555

Huo, L., Xu, S. and Li, J. (2025). Artificial intelligence and healthcare workers' well-being: The role of basic psychological needs. *Behavioral Sciences*, 15(88): 1–13. https://doi.org/10.3390/bs15010088

Issa, Y., Nguyen, A. and Brough, P. (2024). Technostress in the era of artificial intelligence: A conceptual extension. *Technological Forecasting and Social Change*, 198: 1070. https://doi.org/10.1016/j.techfore.2024.1070

Kenku, A.A. and Uzoigwe, T.L. (2024). Determinants of artificial intelligence anxiety: Impact of psychological and organisational characteristics. *African Journal for the Psychological Study of Social Issues*, 27(1): 46–52.

Kim, B.J. and Lee, J. (2024). The mental health implications of artificial intelligence adoption: The crucial role of self-efficacy. *Humanities and Social Sciences Communications*, 11(1561): 1–13. https://doi.org/10.1057/s41599-024-04018-w

Sarraf, B. and Ghasempour, A. (2025). Impact of artificial intelligence on electronic health record-related burnouts among healthcare professionals: Systematic review. *Frontiers in Public Health*, 13: 1628831. https://doi.org/10.3389/fpubh.2025.1628831

Vázquez González, I.G., et al. (2024). Digitalisation and workers wellbeing: The impact of digital technologies on work-related psychosocial risks. Luxembourg: Publications Office of the European Union (JRC & EU-OSHA). https://www.econstor.eu/bitstream/10419/311088/1/1909887366.pdf

World Health Organization (WHO). (2024). *Ethics and governance of artificial intelligence for health: Guidance on large multi-modal models.* Geneva: WHO. https://iris.who.int/bitstream/handle/10665/375579/9789240084759-eng.pdf

Organisation for Economic Co-operation and Development (OECD). (2024). *Artificial intelligence and the health workforce: Perspectives from medical associations on AI in health.* OECD Publishing, Paris. https://www.oecd.org/content/dam/oecd/en/publications/reports/2024/11/artificial-intelligence-and-the-health-workforce_c8e4433d/9a31d8af-en.pdf

THE INFLUENCE OF ORGANIZATIONAL READINESS ON KNOWLEDGE TRANSLATION AND IMPLEMENTATION OF INNOVATION IN A SOCIAL HOSPITAL: A CASE STUDY

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ABSTRACT

Healthcare institutions face daily challenges that require professionals to adapt their clinical practice to the best available scientific evidence (Teixeira et al., 2022). This need to bridge the gap between professional practice and scientific evidence becomes even more relevant when considering the growing commitment of healthcareprofessionals to align their interventions with the most recent scientific advancements (Silva, 2019). This entails converting scientific evidence into effective clinical interventions and their integration into daily clinical practice (Andrade & Pereira, 2020), ultimately enhancing health outcomes and benefits for the patients receiving these services(Graham et al., 2006; Pereira, 2016). The ability of a healthcare organization to effectively and efficiently translate and implement knowledge into practice depends on an internal assessment of its readiness for knowledge translation.
Organisational readiness is understood as an organizational climate shaped by the commitment of members to engage in change initiatives and their collective confidence in achieving the intended outcomes of implementation (Weiner, 2009). As for Knowledge Translation, it may be represented as the bridging element between research

findings and their practical implementation (Graham et al., 2006) , which faces diverse barriers, such as fragmented organizational structures, limited leadership presence, insufficient resources, and variability in professionals' motivation. Additionally, without a well-established level of readiness, even the most robust evidence or carefully structured KT strategies may fail to generate change, or produce the "decoupling phenomena" which implies a discrepancy between theoretical strategic decisions and their practical implementation (Gabutti et al., 2023; Mascia et al., 2014).

In this context, and for organizations to ensure the effectiveness of change initiatives, it is crucial to conduct an assessment that determines their organizational readiness for knowledge translation.. The lack of awareness or failure to monitor this metric hinders institutions from identifying and understanding the multiple dimensions that may influence the successful implementation of new practices

Therefore, perceptions from nurses at a PSSI Hospital were gathered using a pilot European Portuguese version of the Organizational Readiness for Knowledge Translation (OR4KT) instrument, to assess the organization's readiness to translate knowledge and _implement change. A quantitative, descriptive-exploratory, and cross-sectional design was employed, combining descriptive and inferential analyses to identify facilitating and hindering factors of the Organizational Culture dimensions.

The results, normalized to a score of 62,72, on a 0 to 100 scale, indicate moderate readiness, slightly below the optimal cut-off of 64,48 proposed by (Grandes et al., 2017). Dimension scores revealed the institution;s strengths in dimensions such as organizational climate for change (69,44) and organizational Support (68,55), but also exposed the need to improve Motivation (62,11) and Change Content (33,13).

Additionally, a new variable was computed, and "Professional Recognition" emerged as a determinant regarding Organizational Readiness, with professionals who, despite possessing the formal education and required certification, had not been integrated into the institution as Specialists nor compensated in accordance with their advanced qualifications, reporting statistically different perceptions across multiple dimensions of the Organizational Culture.

The study's results align with other research on the subject and provide the organization with a Roadmap to improve its quality of care.

Contrasting with previous applications of the OR4KT, this study not only applies a pilot version of the instrument within a new national context but also stands among the first efforts to examine organizational readiness for knowledge translation in a Portuguese third-sector healthcare institution. Academically, this research provides a pivotal contribution to the ongoing validation of the OR4KT instrument within the Portuguese context, strengthening the multicentric study, currently under development, which aims to adapt and validate the questionnaire for the Portuguese healthcare settings.

Lastly, this research has also concluded that professional recognition of nurses is a significant institutional determinant, directly influencing organizational readiness for knowledge translation.

Key Words: Evidence-based practice; knowledge management; knowledge translation; organizational readiness for change; organizational readiness for knowledge translation

REFERENCES

Andrade, K. R. C., & Pereira, M. G. (2020). Knowledge translation in the reality of Brazilian public health. *Revista de Saúde Pública*, *54*, 72. https://doi.org/10.11606/s1518-8787.2020054002073

Gabutti, I., Colizzi, C., & Sanna, T. (2023). Assessing Organizational Readiness to Change through a Framework Applied to Hospitals. *Public Organization Review*, *23*(1), 1–22. https://doi.org/10.1007/s11115-022-00628-7

Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: Time for a map? *Journal of Continuing Education in the Health Professions*, *26*(1), 13. https://doi.org/10.1002/chp.47

Grandes, G., Bully, P., Martinez, C., & Gagnon, M.-P. (2017). Validity and reliability of the Spanish version of the Organizational Readiness for Knowledge Translation (OR4KT) questionnaire. *Implementation Science*, *12*(1), 128. https://doi.org/10.1186/s13012-017-0664-y

Mascia, D., Morandi, F., & Cicchetti, A. (2014). *Looking good or doing better? Patterns of decoupling in the implementation of clinical directorates*. https://doi.org/10.1097/HMR.0b013e318286095c

Pereira, R. P. G. (2016). *Enfermagem baseada na evidência: Atitudes, barreiras e práticas*. https://repositorio-aberto.up.pt/handle/10216/84324

Silva, V. M. D. (2019). I Consenso SOBEP de aspiração de crianças com tubo endotraqueal: A busca pela aproximação da ciência e da prática. *Revista da Sociedade Brasileira de Enfermeiros Pediatras*, *18*(2), 60–61. https://doi.org/10.31508/1676-3793201800009

Teixeira, L. O., Pinto, C. B., Carvalho, A. L., Teixeira, A. I. C., & Augusto, M. C. B. (2022). *Supervisão no indicador de prática clínica: A prática baseada na evidência no contexto do paciente cirúrgico | RevSALUS - Revista Científica Internacional da Rede Académica das Ciências da Saúde da Lusofonia*. https://revsalus.com/index.php/RevSALUS/article/view/49

Weiner, B. J. (2009). A theory of organizational readiness for change. *Implementation Science*, *4*(1), 67. https://doi.org/10.1186/1748-5908-4-67

EDUCATIONAL TOURISM DESTINATION AND HEALTH SERVICES MANAGEMENT: PERCEIVED TRAVEL RISKS AND POLICY IMPLICATIONS

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ABSTRACT

Educational tourism combines travel and educational experience (Genis, 2007). The characteristics of educational tourism, which is a kind of thematic tourism,are that its main objective is academic or learning along with travel planning in line with institutional requirements and student stay, which requires the use of tourist services like hosting, food and leisure (Franco, Sánchez, & López, 2022).Travel and tourism are the world's largest service industries on which many countries rely as a source of revenue, employment, private sector growth and investment (Gee & Fayos-solá, 1997; Boniface, Cooper, & Cooper, 2016). In the educational tourism sector, which is one of the service industries, various kinds of motivations have been recognised due to extensive research on tourist motivations, which enable potential educational tourists to choose the desirable tourism destination for them (Thomas & Wee, 2022).

Lifelong learning refers to the continuous pursuit of knowledge and skills that goes beyond formal education and it is required for individuals in order to remain competitive and adaptable in the workforce (Alheit, 2018). In order to prepare students for lifelong learning in an effective way, teachers themselves must have a strong

foundation of lifelong learning skills and competencies. That is the purpose of teacher training programmes, such as Erasmus+, as they give teachers the opportunities to develop these skills and competencies and enhance their teaching practices (Kilag et al., 2023).

Risk perception can be defined as the subjective evaluation of the risk of a threatening situation based on its characteristics and rigorousness (Sjöberg, Moen, & Rundmo, 2004; Moreira, 2008). Perceived travel risk can lead to a lessening in travel demand in cases of terrorism (Wilks & Moore, 2003), diseases (Pine & McKercher, 2004; Leggat et al., 2010; Yanni, Marano, & Han, 2010), natural disasters (Park & Reisinger, 2010) and very importantinternational events (Schroeder et al., 2013). It is more likely for tourists to avoid destinations with an increased safety risk like terrorist attacks, natural disasters or a pandemic outbreak (Pizam & Fleischer, 2002; Rittichainuwat & Chakraborty, 2009).

The present research investigates the role that push-pull motives and Herzberg's motivation theory play in the intention to travel for educational tourism purposes in a certain travel destination and how perceived travel risk in a health crisis situation drives or hinders Primary Education teachers from three urban prefectures of Greece, those of Imathia, Larissa and Pieria, to participate in European Educational Programmes.

The findings of the study reveal that the Primary Education teachers from the aforementioned prefectures represent the main dimensions of perceived travel risk that motivates them to choose a travel destination for their continuing professional development within the frame of educational tourism.

The present research could serve as a policy tool for the European administrative and health care service providers in order to better promote the participation of teachers in European Educational Programmes and develop health services packages for travellers by assisting them to choose educational tourism destinations even though there would be some kind of health crisis situation.

Key Words:health and tourism, services management, health services, educational tourism, tourism destination,

REFERENCES

Alheit, P. (2018). Biographical learning–within the lifelong learning discourse. In *Contemporary theories of learning* (pp. 153-165). Routledge.

Boniface, B., Cooper, R. & Cooper, C. (2016). *Worldwide Destinations: The Geography of Travel and Tourism* (7th ed.). London: Routledge.

Franco, N. T., Sánchez, J. E. O., & López, E. R. A. (2022). Educational tourism: A theoretical review of the phenomenon. *Journal of Administrative Science*, *4*(7), 26-31. doi: 10.29057/jas.v4i7.8926

Gee, E.Y., & Fayos-solá, C.E. (1997). *International Tourism: A Global Perspective* (1st ed.). Madrid: UNWTO.

Genís, M. (2007). Lenguas y turismo a vista de pájaro. In *II Congreso Virtual sobre enseñanza de E/LE*.

Kilag, O. K. T., Malbas, M. H., Miñoza, J. R., Ledesma, M. M. R., Vestal, A. B. E., & Sasan, J. M. V. (2023). Education programs in developing lifelong learning competence. *European Journal of Higher Education and Academic Advancement Volume*, *1*(2).

Leggat, P. A., Brown, L. H., Aitken, P., & Speare, R. (2010). Level of concern and precaution taking among Australians regarding travel during pandemic

(H1N1) 2009: Results from the 2009 Queensland social survey. *Journal of Travel Medicine, 17*(5), 291–295. doi: 10.1111/j.1708-8305.2010.00445.x

Moreira, P. (2008). Stealth risks and catastrophic risks: On risk perception and crisis recovery strategies. *Journal of Travel & Tourism Marketing, 23*(2–4), 15–27. doi: 10.1300/J073v23n02_02

Park, K., & Reisinger, Y. (2010). Differences in the perceived influence of natural disasters and travel risk on international travel. *Tourism Geographies, 12*(1), 1–24. doi: 10.1080/14616680903493621

Pine, R., & McKercher, B. (2004). The impact of SARS on Hong Kong's tourism industry. *International Journal of Contemporary Hospitality Management, 16*(2), 139–143. doi: 10.1108/09596110410520034

Pizam, A., & Fleischer, A. (2002). Severity versus frequency of acts of terrorism: Which has a larger impact on tourism demand? *Journal of Travel Research, 40*(3), 337–339. doi: 10.1177/0047287502040003011

Rittichainuwat, B. N., & Chakraborty, G. (2009). Perceived travel risks regarding terrorism and disease: The case of Thailand. *Tourism Management, 30*(3), 410–418. doi: 10.1016/j.tourman.2008.08.001

Schroeder, A., Pennington-Gray, L., Kaplanidou, K., & Zhan, F. (2013). Destination risk perceptions among U.S. Residents for London as the host city of the 2012 Summer Olympic Games. *Tourism Management, 38*, 107–119. doi: 10.1016/j.tourman.2013.03.001

Sjöberg, L., Moen, B. E., & Rundmo, T. (2004). Explaining risk perception. *An evaluation of the psychometric paradigm in risk perception research*, *10*(2), 665-612.

Thomas, A., & Wee, H. (2022). Educational tourist motivations, destination image, and destination selection behavior in an extended SOR model: A preliminary analysis. *International Journal of Academic Research in Business and Social Sciences*, *12*(10), 2198-2210. doi:10.6007/IJARBSS/v12-i10/14849

Wilks, J., & Moore, S. (2003). *Tourism risk management for the Asia Pacific region: An authoritative guide for managing crises and disasters*. APEC International Centre for Sustainable Tourism (AICST).

Yanni, E. A., Marano, N., & Han, P. (2010). Knowledge, attitudes, and practices of US travelers to Asia regarding seasonal influenza and H5N1 avian influenza prevention measures. *Journal of Travel Medicine, 17*(6), 374–381. doi: 10.1111/j.1708-8305.2010.00458.x

DIGITAL HEALTH AND REMOTE PATIENT MONITORING IN GREECE: CURRENT LANDSCAPE AND FUTURE PERSPECTIVES

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ABSTRACT

Introduction: The COVID-19 pandemic acted as a catalyst for the adoption of digital health modalities such as telemedicine, remote patient monitoring (RPM), and telenursing. These services were essential for ensuring continuity of care, reducing infection risks, and relieving pressure on healthcare systems worldwide. In Greece, where rural and island populations experience restricted access to in-person healthcare resources, digital health technologies offer opportunities to overcome geographical barriers and reduce inequities in healthcare. However, while international literature confirms the benefits of RPM and telecare, Greek evidence remains limited and fragmented. The aim of this review is to synthesise evidence from both international and Greece-specific studies on digital health, RPM, and telecare, highlighting outcomes, professional competencies, and future directions.

Methods: A literature review was conducted for studies published between 2015 and 2025 using PubMed, Scopus, and Google Scholar. Search terms included digital health, telemedicine, remote patient monitoring, telenursing, and Greece. Eligible studies included systematic reviews, clinical trials, and observational studies, alongside national pilot programs. Literature on health professionals' competencies and readiness to deliver digital health services was also included.

Results: International studies indicate that RPM contributes to improved patient–provider communication, preventive care, and chronic disease management (heart failure, COPD, and diabetes), while also reducing avoidable hospital admissions. Telenursing interventions strengthen patient self-management, adherence, and continuity of follow-up, especially in patients with complex healthcare needs.
In Greece, several pilot initiatives demonstrate feasibility and positive outcomes. The SI4CARE pilot (2021–2023) in Aegean Islands provided 119 telemedicine

consultations, reporting approximately 95% satisfaction among patients, caregivers, and providers. Economic evaluations on Patmos and Leros islands demonstrated avoidance of 6–16 aeromedical transports per year, resulting in positive net present value, internal rates of return >20%, and pay-back periods of <3 years. Moreover, the Greek National Telemedicine Network (EDIT) connects island health centres with regional hospitals, enabling specialist consultation and increasingly supporting home monitoring services.

Professional readiness has emerged as pivotal. Papathanasiou and Fradelos et al. (2024) identified eight critical domains for telecare delivery—ranging from technological literacy to ethics and evidence-based practice—highlighting the need for structured training. Karvouniari et al. (2024) validated the Digital Competence Indicators tool in a sample of 494 Greek health professionals, demonstrating high internal consistency (Cronbach's $\alpha = 0.826$) and confirming a five-domain structure of digital skills. Scalability requires investment in digital infrastructure, reimbursement frameworks to sustain telehealth services, and integration of telecare competencies in national medical and nursing curricula. Systematic assessment of digital readiness and certification of competencies are essential to ensure quality and safety. Coordinated national policies can accelerate the transition from fragmented pilots to sustainable healthcare system integration.

Conclusion: Digital health and RPM represent transformative opportunities for Greece's healthcare system, especially in geographically isolated regions. While feasibility has been confirmed, large-scale adoption demands both strategic policy action and practical implementation frameworks. Embedding telecare skills in curricula, ensuring equitable reimbursement models, and expanding chronic care RPM programs are urgent next steps. With coherent policy support, Greece can leverage digital health not only to reduce inequalities but also to strengthen preventive medicine and deliver sustainable, high-quality care nationwide.

Key Words: digital health, telecare, remote patient monitoring

REFERENCES

Angelopoulou, E., Kontaxopoulou, D., Fragkiadaki, S., & colleagues. (2024). Perceptions of telemedicine in the Aegean Islands, Greece: Two-year experience. *Geriatrics (Basel), 9*(1), 3. https://doi.org/10.3390/geriatrics9010003

Ariyanto, H., & colleagues. (2024). Effectiveness of telenursing in improving quality of life among patients with heart failure: A systematic review. *International Journal of Nursing Studies, 148,* 104649. https://doi.org/10.1016/j.ijnurstu.2023.104649

Karvouniari, A., Karabetsos, D., Kleisiaris, C. F., & colleagues. (2024). Translation and validation of Digital Competence Indicators in Greek for health professionals: A cross-sectional study. *Healthcare (Basel), 12*(14), 1370. https://doi.org/10.3390/healthcare12141370

Kefala, A. M., & colleagues. (2024). Working as a healthcare professional in island primary care: Motivations and barriers. *International Journal of Environmental Research and Public Health, 21*(4), 973. https://doi.org/10.3390/ijerph21040973

Papathanasiou, I. V., Fradelos, E. C., Barisone, M., & colleagues. (2023). Competencies and skills needed in the management of chronic patients' needs

through telecare. *Polski Merkuriusz Lekarski, 54,* 116–121. https://doi.org/10.36740/merkur202304116

OPERATIONAL AND COMMUNICATIONAL CRISIS MANAGEMENT IN HEALTH CRISES: LESSONS LEARNED BY COVID-19

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ABSTRACT

Health crises involve invisible, unpredictable, and uncontrollable risks to global society (Pan & Meng, 2016). Especially, COVID-19 pandemic crisis has changed the way heath crises are being perceived. It has been clear that pandemics are a special case of crisis, which presents increased demand for specific services, such as special hospital care, transport of the sick, and burial of the dead (Reissman, et al, 2006).

In particular, during a pandemic, due to limited response time, the dynamics of infection conditions, and intense public pressure, health authorities need to understand and assess the nature and type of pandemic correctly while simultaneously seeking an appropriate response (Lai, 2012). Epidemics require special treatment and care in the context of crisis management similar to the management of natural disasters such as earthquakes and hurricanes (Reissman, et al., 2006).

The management of the pandemic has shown important gaps in public communication of the managerial process. The pandemic represented a profound challenge for the field of health crisis management. It exerted pressure not only on healthcare systems but also on communication strategies, as the magnitude of the crisis compelled political leadership to persuade the public to comply with unprecedented measures.

At the same time, the articulation of these measures, combined with the limited scientific knowledge regarding the transmission pathways and the severity of the virus, often resulted in contradictory guidance on which measures should be implemented. A critical difficulty lay in the inability of decision-makers to translate public health recommendations into operational crisis management strategies (Aspriadis, 2021).

Nevertheless, the challenges encountered, along with the knowledge gained throughout the pandemic, provide significant insights and tools that can contribute to more immediate, coordinated, and effective responses in future health crises, whether of smaller or comparable scale.

This study explores how crisis management strategies can be effectively employed for the benefit of society in the context of health emergencies. Of particular importance is the capacity to convert scientific recommendations into actionable crisis management measures, thereby preventing contradictory messages and inconsistencies in policy implementation.

The research examines the case of COVID-19 in Greece, during the two major waves (March and November 2020) and is grounded in the theoretical frameworks of crisis management theory as well as the World Health Organization's models of pandemic prevention and management. Particular emphasis is placed on communication management, which constitutes a vital component of the overall process. The methodology of the research is based on qualitative content analysis

(Krippendorff, 2004; Brancati, 2018; Gillham, 2000) in the official crisis management protocols for non-pharmaceutical measures (NPIs) of pandemic management that were followed, as communicated to the public during that time. The findings add to the growing literature on effective crisis response strategies for COVID-19 pandemic management and to the crisis communication literature.

Key Words: Pandemic Management, Crisis Management, Crisis Communication, COVID-19, Health Management.

REFERENCES

Aspriadis, N. (2021). Managing COVID-19 pandemic crisis: the case of Greece. *Journal of International Crisis and Risk Communication Research*, *4*(2), 387-412.

Brancati, D. (2018). *Social scientific research*. London: SAGE Publications Ltd

Gillham, B. (2000). *Case Study Analysis*. Continuum. London & New York: Continuum.

Krippendorf K. (2004). *Conflict Analysis: An Introduction to its Methodology*. Sage Publications.

Lai, A. Y. (2012). Organizational collaborative capacity in fighting pandemic crises: A literature review from the public management perspective. *Asia-Pacific Journal of Public Health*, *24*(1), 7–20.

Pan, P. L., & Meng, J. (2016). Media Frames across Stages of Health Crisis: A Crisis Management Approach to News Coverage of Flu Pandemic. *Journal of Contingencies and Crisis Management*, *24*(2), 95–106.

Reissman, D. B., Watson, P. J., Klomp, R. W., Tanielian, T. L., & Prior, S. D. (2006). Pandemic Influenza Preparedness: Adaptive Responses to an Evolving Challenge. *Journal*

WORKFORCE & FUTURE TRENDS

LEADERSHIP AND INTERNAL QUALITY AS DETERMINANTS OF JOB SATISFACTION: A CONCEPTUAL AND EMPIRICAL APPROACH IN THE HEALTHCARE SECTOR.

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ABSTRACT

The redefinition of healthcare management increasingly aims at integrating human-centered leadership models with quality assurance structures that empower human resources and upgrade the services provided (Brach et al., 2012; Sfantou et al., 2017). Within this framework, the present study focuses on the interconnection of three critical variables: leadership, internal quality, and job satisfaction, by proposing a conceptual and empirically supported model that highlights their dynamics within healthcare services.

The research is grounded in theoretical approaches to transformational, participative, and authentic leadership (Avolio & Bass, 2004; Wong & Laschinger, 2013; Northouse, 2021), which emphasize inspiration, collaboration, and the ethical dimension of leadership. Simultaneously, the concept of internal quality, as introduced by Donabedian (1988), is analyzed through the employees' perspective, linking it to support, guidance, processes, and organizational cohesion (Poksinska et al., 2013; Øvretveit, 2005). Internal quality functions as a mediating mechanism in the relationship between leadership and professional well-being (Goetz et al., 2015; Laschinger et al., 2009).

The empirical part of the study is based on a cross-sectional survey using a structured questionnaire distributed to healthcare professionals working in public hospitals and primary healthcare centers in Greece. Participation was voluntary and anonymous, enabling the collection of perceptions and attitudes at a given point in time. The research tool was structured in four sections: (a) demographic and professional characteristics, (b) the Multifactor Leadership Questionnaire, (c) the SERVQUAL scale (Parasuraman et al., 1988) for internal quality, and (d) the Job Satisfaction Survey. Responses were recorded on Likert-type scales, allowing for quantification and statistical analysis of perceptions.

ISBN: 978-618-5630-25-6

Leadership is among the most important factors influencing employee satisfaction and commitment. Bass's (1985) theory of transformational leadership demonstrated that practices which inspire vision and provide support enhance job satisfaction and organizational effectiveness (Bass & Avolio, 1994). In healthcare, such leadership behaviors are associated with staff empowerment and reduced occupational stress (Boamah et al., 2018).

Quality of care, measured through the perceptions of both staff and patients, is a cornerstone of organizational performance. The SERVQUAL instrument, with its five dimensions (reliability, responsiveness, assurance, empathy, tangibles), has been proven effective in capturing quality (Parasuraman et al., 1988). In Greece, its application in both primary and secondary healthcare highlights the strong relationship between internal quality and staff satisfaction (Papanikolaou & Zygiaris, 2012; Goula et al., 2021).

Recent studies indicate that internal quality acts as a mediator between leadership and job satisfaction: leadership practices that strengthen communication and processes result in more positive quality perceptions and increased satisfaction (Boamah et al., 2018; Ystaas, 2023). Furthermore, leaders with emotional intelligence and guidance skills enhance employees' sense of meaning and safety (Goleman, 2001; Cummings et al., 2018).

Job satisfaction, as a complex psychosocial phenomenon, is associated with the intention to remain in the profession, the quality of care, and organizational resilience (Schaufeli & Bakker, 2004; West & Dawson, 2012; Maslach & Leiter, 2016). This study therefore contributes at multiple levels: (a) to the theoretical understanding of the leadership–quality–satisfaction nexus through a systemic framework (Senge, 2006; Mintzberg, 1993), (b) to health policy by highlighting the need for leadership models that cultivate cultures of quality and professional empowerment (WHO, 2020; Ham, 2014), and (c) to the broader dialogue on shifting from external audits toward cultural transformation in healthcare governance (Berwick, 1989; Mannion & Davies, 2018).

In conclusion, the study shows that value-driven and visionary leadership, when combined with strong internal quality structures, can enhance job satisfaction, increase organizational effectiveness, and promote citizens' trust in the healthcare system.

Key Words: Leadership in Healthcare . Internal Quality , Job Satisfaction , Health Policy Organizational Development, Service Quality

REFERENCES

Avolio, B. J., & Bass, B. M. (2004). *Multifactor leadership questionnaire (TM)*. Mind Garden, Inc.

Bass, B. M. (1985). *Leadership and performance beyond expectations*. Free Press.

Bass, B. M., & Avolio, B. J. (1994). *Improving organizational effectiveness through transformational leadership*. Sage Publications.

Berwick, D. M. (1989). Continuous improvement as an ideal in health care. *New England Journal of Medicine*, 320(1), 53–56.

Boamah, S. A., Spence Laschinger, H. K., Wong, C., & Clarke, S. (2018). Effect of transformational leadership on job satisfaction and patient safety outcomes. *Nursing Outlook*, 66(2), 180–189.

Brach, C., Lenfestey, N., Roussel, A., Amoozegar, J., & Sorensen, A. (2012). Will it work here? A decisionmaker's guide to adopting innovations. Washington,

DC: Agency for Healthcare Research and Quality, US Department of Health and Human Services.

Cummings, G. G., Tate, K., Lee, S., Wong, C. A., & Paananen, T. (2018). Leadership styles and outcome patterns for the nursing workforce and work environment: A systematic review. *International Journal of Nursing Studies*, 85, 19–60.

Donabedian, A. (1988). The quality of care: How can it be assessed? *JAMA*, 260(12), 1743–1748.

Goleman, D. (2001). *Emotional intelligence: Perspectives on a theory of performance*. In C. Cherniss & D. Goleman (Eds.), *The emotionally intelligent workplace* (pp. 27–44). Jossey-Bass.

Goetz, K., Campbell, S. M., Broge, B., Brodowski, M., & Szecsenyi, J. (2015). The impact of intrinsic and extrinsic factors on the job satisfaction of primary care physicians in Germany. *Health Policy*, 119(3), 376–382.

Goula, A., Stamouli, M., Alexopoulou, E., & Lemonidou, C. (2021). Measuring health service quality in Greece: Patients' and health professionals' perceptions. *International Journal of Health Planning and Management*, 36(3), 808–822.

Ham, C. (2014). *Reforming the NHS from within: Beyond hierarchy, inspection and markets*. The King's Fund.

Laschinger, H. K. S., Wong, C. A., & Grau, A. L. (2009). Authentic leadership, empowerment and burnout: A comparison in new graduate and experienced nurses. *Journal of Nursing Management*, 17(8), 1001–1011.

Mannion, R., & Davies, H. (2018). Understanding organisational culture for healthcare quality improvement. *BMJ*, 363, k4907.

Maslach, C., & Leiter, M. P. (2016). *Burnout*. In G. Fink (Ed.), *Stress: Concepts, cognition, emotion, and behavior* (pp. 351–357). Academic Press.

Mintzberg, H. (1993). *Structure in fives: Designing effective organizations*. Prentice Hall.

Northouse, P. G. (2021). *Leadership: Theory and practice* (9th ed.). Sage Publications.

Øvretveit, J. (2005). The quality journeys of six organisations in the USA and Europe. *International Journal for Quality in Health Care*, 17(6), 479–486.

Papanikolaou, V., & Zygiaris, S. (2012). Service quality perceptions in primary health care centres in Greece. *Health Expectations*, 17(2), 197–207.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12–40.

Poksinska, B., Swartling, D., & Drotz, E. (2013). The daily work of Lean leaders–lessons from manufacturing and healthcare. *Total Quality Management & Business Excellence*, 24(7–8), 886–898.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25(3), 293–315.

Senge, P. M. (2006). *The fifth discipline: The art and practice of the learning organization*. Broadway Business.

Sfantou, D. F., Laliotis, A., Patelarou, A. E., Sifaki-Pistolla, D., Matalliotakis, M., & Patelarou, E. (2017). Importance of leadership style towards quality of care measures in healthcare settings: A systematic review. *Healthcare*, 5(4), 73.

West, M., & Dawson, J. (2012). *Employee engagement and NHS performance*. King's Fund.

WHO. (2020). *Strengthening leadership and management in health systems*. World Health Organization.

Wong, C. A., & Laschinger, H. K. (2013). Authentic leadership, performance, and job satisfaction: The mediating role of empowerment. *Journal of Advanced Nursing*, 69(4), 947–959.

Ystaas, M. (2023). Leadership and quality in healthcare: A review of mediating mechanisms. *Journal of Health Organization and Management*, 37(2), 212–229.

EMPLOYEE SATISFACTION, ORGANISATIONAL CULTURE AND STRESS MANAGEMENT: INTERACTIONS AND IMPLICATIONS IN HEALTHCARE SERVICES

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ABSTRACT

Employee satisfaction, organisational culture, and stress management are interdependent factors that play a central role in shaping organisational effectiveness, particularly in healthcare environments where high demands and complex working conditions prevail (Hoxha et al., 2024). The healthcare workforce, especially in emergency pre-hospital services, operates in contexts of continuous pressure, irregular schedules, and unpredictable situations that generate both physical and psychological strain (Mansor& Tayib, 2010; Kim& Jung, 2022). Understanding how satisfaction, culture, and stress management interact is therefore essential not only for employee wellbeing but also for the quality and resilience of healthcare organisations (Singh& Singh, 2009; Rafi'i, Hanif& Bin Daud, 2025).The present study investigates these relationships in a public emergency pre-hospital care organisation.

A quantitative research design was employed, based on structured questionnaires completed by 210 employees. The analysis included descriptive statistics, correlation coefficients, mean comparisons, and reliability testing.

Results revealed that employees reporting higher job satisfaction also demonstrated significantly more positive perceptions of organisational culture, particularly regarding leadership support, teamwork, and transparent communication ($r = .62$, $p < .001$). Conversely, stress indicators were found to be negatively associated with satisfaction ($r = –.48$, $p < .001$), confirming that unmanaged stress undermines both individual wellbeing and the cohesiveness of organisational culture. Further analysis showed that access to stress management resources, such as psychological support and adequate staffing, was linked to significantly higher satisfaction levels.

Employees who reported receiving such support achieved higher mean satisfaction scores ($M = 4.12$, $SD = 0.67$) than those without these resources ($M = 3.45$, $SD = 0.74$; $t(208) = 4.89$, $p < .001$). The reliability of all measurement constructs was high, with Cronbach's Alpha coefficients exceeding .85, ensuring consistency and validity of the findings.These results underscore that employee satisfaction is not an isolated construct but one deeply embedded in organisational culture and stress management practices. A supportive organisational culture, characterised by open communication, participatory decision-making, and effective leadership, fosters satisfaction and mitigates the impact of occupational stress. At the same time, the absence of systematic mechanisms to manage stress reduces job satisfaction, weakens organisational cohesion, and ultimately compromises service quality.

The study concludes that healthcare organisations, especially those in high-pressure environments such as emergency pre-hospital services, must adopt integrated policies that address these factors simultaneously. Enhancing working conditions, embedding stress management initiatives, and cultivating a supportive and participatory culture can significantly improve both employee experience and the delivery of high-quality healthcare services. These findings provide actionable insights for managers and policymakers seeking to strengthen workforce resilience and organisational effectiveness in the healthcare sector.

Key Words: Employee satisfaction, Organisational culture, Stress management, Healthcare workforce.

REFERENCES

Hoxha, G., Simeli, I., Theocharis, D., Vasileiou, A., & Tsekouropoulos, G. (2024). Sustainable healthcare quality and job satisfaction through organizational culture: Approaches and outcomes. *Sustainability*, *16*(9), 3603.

Kim, J., & Jung, H. S. (2022). The effect of employee competency and organizational culture on employees' perceived stress for better workplace. *International journal of environmental research and public health*, *19*(8), 4428.

Mansor, M., & Tayib, D. (2010). An empirical examination of organisational culture, job stress and job satisfaction within the indirect tax administration in Malaysia. *International Journal of Business and Social Science*, *1*(1).

Rafi'i, M. R., Hanif, S. A. M., & Bin Daud, F. (2025). Exploring the link between healthcare organizational culture and provider work satisfaction: a systematic review. *BMC health services research*, *25*(1), 904.

Singh, A. P., & Singh, S. (2009). Effects of stress and work culture on job satisfaction. *ICFAI Journal of Organizational Behavior*, *8*(2), 52-62.

ANALYZING THE IMPACT OF OCCUPATIONAL BURNOUT ON THE PERSONAL AND PROFESSIONAL DEVELOPMENT OF NURSING PROFESSIONALS IN THE CONTEXT OF NURSING CARE QUALITY

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ABSTRACT

Introduction: The provision of high-quality and safe healthcare is a fundamental priority for all health systems (Brabcova et al., 2023). Safety and quality are essential guiding principles and are directly influenced by the work environment of nursing staff (Brešan et al., 2021).

Aim: of this systematic review is to investigate the impact of occupational burnout on the personal and professional lives of nursing staff in relation to the quality of nursing care delivered.

Methods: A literature review was conducted of studies published in the past ten years, sourced from the PubMed electronic database. The review utilized the following English keywords: "Occupational Burnout," "Burnout AND Personal Life," "Burnout AND Professional Life," "Burnout AND Nursing Staff," "Quality of Nursing Life," and "Burnout AND Nursing Care Provided." A total of 11 articles were included in this review.

Results: The primary findings identified as key factors contributing to reduced efficiency and lower quality of healthcare services delivered by nurses are the absence of motivation for work, dissatisfaction with monthly wages, exhausting rotating

schedules, and the persistent struggle to maintain a healthy balance between family and professional life. Specifically, nursing entails shift work, and most professionals adhere to rotating schedules, resulting in altered perceptions of both organizational and occupational issues (Gómez-García et al., 2016). Nursing shifts are physically demanding, with most of the time spent standing and experiencing inadequate rest (Skela-Savič et al., 2020). Additionally, nurses are frequently assigned tasks beyond the scope of nursing care (Kang et al., 2014). Nursing staff are expected to perform demanding tasks that frequently necessitate prompt and accurate decision-making. Adverse patient events are more prevalent when the patient-to-nurse ratio and overall workload are elevated. The combination of rest deprivation, stress, and fatigue can result in errors that may negatively impact patients' clinical outcomes (Betsiou et al., 2022). The exhaustion they experience surpasses daily demands and significantly impacts their mental health. This, in turn, leads to reduced quality of care and compromised patient safety (Cheng et al., 2020). Additionally, nurses frequently encounter anxiety, depression, burnout syndrome, and post-traumatic stress disorder. Resilience has been identified as one of the most critical factors for successful adaptation within the challenging nursing work environment (Mealer et al., 2016). Adequate staffing levels, higher education, and a positive work environment are factors that enhance patient safety (Kirwan et al., 2013). Support from hospital management promotes psychological well-being and, consequently, job satisfaction (Pahlevan et al., 2018). Proper organizational structures play a decisive role in nursing staff's job satisfaction, retention, provision of high-quality services, and ultimately in patient outcomes. Ensuring adequate staffing and fair scheduling is crucial to improving the quality and safety of care, as well as reducing unnecessary patient delays in hospitals (Cho et al., 2016).

Conclusion: The persistent demands of nursing practice and the unwavering effort necessary in daily routines frequently lead professionals to a psychological stalemate, hindering their ability to deliver the level of nursing care they possess and restricting their capacity to engage in personal pursuits beyond the hospital environment.

Key Words: Occupational Burnout, Quality of Nursing Life, Burnout AND Nursing Care Provided.

REFERENCES

Betsiou, S. & Pitsiou, G. & Panagiotidou, E. & Sarridou, D. & Kioumis, I. & Boutou, AK. (2022).Nursing errors in intensive care unit and their association with burnout, anxiety, insomnia and working environment: a cross-sectional study. Hippokratia, 26 (3): 110-117.

Brabcova, I. & Hajduchova, H. & Tothova, V. & Chloubova, I. & Cervený, M. & Prokesova, R. Malý, J. & Vlcek, J. & Dosedel, M. & Mala–Ladova, K. & Tesar, O. & O'Hara, S. (2023). Reasons for medication administration errors, barriers to reporting them and the number of reported medication administration errors from the perspective of nurses: A cross-sectional survey. Nurse Education in Practice, 70, 103642.

Brešan, M. & Erčulj, V. & Lajovic, J. & Ravljen, M. & Sermeus, W. & Grosek, S. (2021). The relationship between the nurses' work environment and the quality and safe nursing care: Slovenian study using the RN4CAST questionnaire. PLoS One, 16(12).

Cheng, H. & Yang, H. & Ding, Y. & Binquan, W. (2020). Nurses' mental health and patient safety: An extension of the Job Demands-Resources model. J Nurs Manag, 28(3):653-663.

Cho, E. & Lee, NJ. & Kim, EY. & Kim, S. & Lee, K. & Park, KO. & Sung, YH. (2016). Nurse staffing level and overtime associated with patient safety, quality of care, and care left undone in hospitals: A cross-sectional study. Int J Nurs Stud, 60:263-71.

Gómez-García, T. & Ruzafa-Martínez, M. & Fuentelsaz-Gallego, C. & Madrid, JA. & Rol, MA. & Martínez-Madrid, MJ. & Moreno-Casbas, T. (2016). Nurses' sleep quality, work environment and quality of care in the Spanish National Health System: observational study among different shifts. BMJ Open, 5;6(8).

Kang, J-H. & Kim, C-W. & Lee, S-Y. (2016). Nurse-Perceived Patient Adverse Events depend on Nursing Workload. Osong Public Health Res Perspect, 7(1): 56-62.

Kirwan, M. & Matthews, A. & Scott, AP. (2013). The impact of the work environment of nurses on patient safety outcomes: a multi-level modelling approach. Int J Nurs Stud, 50(2):253-63.

Mealer, M. & Conrad, D. & Evans, J. & Jooste, K. & Solyntjes, J. & Rothbaum, B. & Moss, M. (2014). Feasibility and acceptability of a resilience training program for Intensive Care Unit nurse. American Journal of Critical Care, 23 (6): 97-105.

Pahlevan Sharif, S. & Sadat Ahadzadeh, A. & Sharif Nia, H. (2018). Mediating role of psychological well-being in the relationship between organizational support and nurses' outcomes: A cross-sectional study. J Adv Nurs, 74(4):887-899.

Skela-Savič, B. & Dobnik, M. & Kalender-Smajlović, S. (2020). Nurses' work characteristics and self- assessment of the work environment-Explorative cross-sectional study. J Nurs Manag, 28(4):860-871.

TRANSLATING LIFESTYLE INTERVENTION TO PRACTICE IN PATIENTS WITH TYPE 2 DIABETES REGISTERED IN THE COMMUNITY

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ABSTRACT

Introduction: Type 2 Diabetes Mellitus (T2DM) is a serious and growing problem in Greece (Makrilakis et al 2021). Previous studies have found that persons with T2DM often lacked knowledge about their condition and reported poor self-care skills (Lee E-H. et al 2016). This would mean a high likelihood of diabetes complications leading to a reduction in quality of life, disability, or even death (Lim RBT et al 2015).

Objective: The object of this study is to evaluate the effectiveness of motivational intervention of patients with T2DM aged 18 years and older who were visiting Primary Care Units. The Effects targeting diabetes mellitus at community and primary healthcare level. The efficacy of a lifestyle intervention program can be readily translated into clinical practice for patients with type 2 Diabetes Mellitus.

Research design and methods: This study was a randomized clinical trial, pretest–posttest balanced experimental design to assess the effects of the motivational interviewing intervention. The study consisted of a 3-month randomized controlled trial of 82 health plan members with T2DM registered in the community. Participants were randomized in the middle to lifestyle case management or usual care. Case management entailed group education, support, and referral by health care providers. The intervention group received training on prevention behaviors (nutritional functions and physical activity) in 4 sessions. The data were studied at baseline, immediately after the intervention and after a period of 3 months from the start of the intervention. The primary outcome was change and competence of the Stages of Exercise Behavior

(Greek version of a five-item Exercise Self-Efficacy Scale), and impact on their quality of their life (DQOL Brief Clinical Inventory – Greek Version). Outcomes were difference between groups for change in health-related quality of life and change of physical activity. The two-sided statistical significance level was set at 0.05. Data analysis was performed with IBM SPSS 28.0 (Statistical Package for Social Sciences).

Results: The motivational interview did improve participants significantly in exercise behavior and quality of life among diabetes people with appropriate baseline value (respectively) compared to the control group at 3 months follow-up. Case management resulted in improved health-related quality of life ($P < 0.01$) compared with usual care. In all quality-of-life domains, the case management group improved compared with usual care ($P < 0.001$).

Conclusions: The lifestyle case management may improve diverse health indicators among patients with T2DM (Carpenter R et al 2018). Motivational interviewing has been used to successfully bring about change in people with a strategy to assess readiness to change in patients who need to manage and addictive behaviors (Davis J, et al 2022). Nevertheless, further rigorous community-based interventions should be conducted to examinate the effectiveness into clinical practice for patients with T2DM.

Key Words: community, diabetes mellitus, group education program, intervention.

REFERENCES

Makrilakis K, Kalpourtzi N, Ioannidis I, Iraklianou S, Raptis A, Sotiropoulos A, Gavana M, Vantarakis A, Kantzanou M, Hadjichristodoulou C, Chlouverakis G, Trypsianis G, Voulgari PV, Alamanos Y, Touloumi G, Liatis S (2021). EMENO Study Group. Prevalence of diabetes and pre-diabetes in Greece. Results of the First National Survey of Morbidity and Risk Factors (EMENO) study. Diabetes Res Clin Pract, 172:108646.

Lee E-H, Lee YW, Moon SH (2016). A structural equation model linking health literacy to self-efficacy, self-care activities, and health-related quality of life in patients with type 2 diabetes. Asian Nurs Res, 10(1):82-87.

Lim RBT, Chen C, Naidoo N, Gay G, Tang WE, Seah D, Chen R, Tan NC, Lee J, Tai ES, Chia KS, Lim WY (2015). Anthropometrics indices of obesity, and all-cause and cardiovascular disease-related mortality, in an Asian cohort with type 2 diabetes mellitus. Diabetes Metab, 41(4):291-300.

Carpenter R, DiChiacchio T, Barker K (2018). Interventions for self-management of type 2 diabetes: An integrative review. Int J Nurs Sci, 14;6(1):70-91.

Davis J, Fischl AH, Beck J, Browning L, Carter A, Condon JE, Dennison M, Francis T, Hughes PJ, Jaime S, Lau KHK, McArthur T, McAvoy K, Magee M, Newby O, Ponder SW, Quraishi U, Rawlings K, Socke J, Stancil M, Uelmen S, Villalobos S. 2022 National Standards for Diabetes Self-Management Education and Support. Sci Diabetes Self Manag Care. 2022 Feb;48(1):44-59. doi: 10.1177/26350106211072203. Epub 2022 Jan 20. PMID: 35049403.

SUSTAINABLE HUMAN RESOURCES MANAGEMENT: MANIFESTATIONS AND IMPLICATIONS FOR HEALTHCARE MANAGEMENT

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ABSTRACT

Sustainability plays a key role in various disciplines including business and healthcare management (Cosenz et al., 2024; Hoxha et al., 2024). Sustainability is defined as meeting "the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Thus, the concept of sustainability contains longevity (i.e., envisioning future generations) and retains core principles or purposes (i.e., meeting needs for survival and development, Bateh et al., 2013). In the business world, although sustainability is a fluid concept (e.g., sustainability and Corporate Social Responsibility concepts) its role in achieving corporate objectives, by balancing economic goals with environmental protection and social responsibility thus, ensuring long-term prosperity of all stakeholders (Elkington, 1997), is stressed.

In this study, we focus on exploring the role of sustainability in Human Resources Management (HRM). We choose this field since HRM acts as a key organizational function that embeds social, environmental, and ethical values into workforce practices, thereby enhancing employee well-being, engagement, and long-term organizational resilience. Such values are important for understanding how sustainability embedded in HRM practices contributes to addressing societal challenges, advancing equity and inclusivity, and fostering long-term resilience both within an organization and society. In this light, existing research in this field has largely emphasized macro-level outcomes, such as strategy and organizational performance (Janssens and Steyaert, 2009), while overlooking employees' lived experiences within organizations adopting sustainable HRM practices (Beijer et al., 2021).

To this end, we aim to reveal such lived experiences. By so doing, we address research calls for empirical, practice-oriented studies focusing on well-being, engagement, and everyday workplace realities within the field of sustainable HRM practices (Aust et al., 2020). Our study is guided by two research questions, namely 1) how is sustainability reflected on the everyday work experiences of employees?, and 2) how do sustainability-oriented HRM practices impact employees' engagement at work? We employed a qualitative study using 17 semi-structured interviews and collecting visual data (i.e., photo voice) from our participants.

Our evidence reveals 1) that employees distinct sustainable HRM practices in material and sentimental, and 2) unpacks the role of such practices in employee engagement and performance. By *material* practices participants are referring to the significance of promotional activities adopted by the organisations, the attention given to the meaning of well-being, the introduction of hybrid and remote working practices, practices relating to gender equality, the freedom of communication that they encounter with their supervisors, the power of feedback and the workshops that aim to empower new and existing soft skills. In addition, there was reference to *sentimental* practices, namely the organisational culture, the transparency and ethics that is running through a business. Such a distinction is important since it highlights how organizations can understand and integrate these values to achieve successful employee engagement. Next, all these practices contribute to reduce work stress and burnout, increase motivation and well-being, innovation, efficiency and adaptability to changes which also act as key elements for achieving employee engagement and satisfaction.

This evidence underscores key implications for healthcare management, including the importance of both material and intangible/sentimental sustainability practices, organizational culture, and sustainability as lived experience. Given the stress, staff shortages, and burnout within healthcare contexts, sustainable HRM practices can enhance engagement, resilience, and improve care quality. Existing studies are limited, often overlooking healthcare-specific contexts, psychological factors, and their connection to patient outcomes, emphasizing the need for more holistic as well as long-term approaches (Atalla et al., 2025). Such research is also needed to generate evidence that in turn can lead to public policy implications; our evidence and suggested practical implications in the healthcare context denote well-being and workforce planning initiatives. Thus, further research can focus on these topics (i.e., sustainable HR practices in the healthcare context and emerging initiatives) and generate meaningful public policy implications.

REFERENCES

Atalla, A. D. G., El-Ashry, A. M. and Khattab, S. M. K. (2025). Fostering eco-friendly excellence: exploring the relationship between green human resource practices and organizational environmental performance as perceived by nurses: a cross-sectional study. *BMC Nursing*, 24(1), https://doi.org/10.1186/s12912-025-03097-7.

Aust, I., Matthews, B. and Muller-Camen, M. (2020). Common Good HRM: A paradigm shift in Sustainable HRM? *Human Resource Management Review*, 30(3): 1-11.

Bateh, J., Heaton, C., Arbogast, G. W. and Broadbent, A. (2013). Defining sustainability in the business setting. *American Journal of Business Education*, 6(3): 397-400.

Beijer, S., Peccei, R., Van Veldhoven, M. and Paauwe, J. (2021). The turn to employees in the measurement of human resource practices: A critical review and proposed way forward. *Human resource management journal*, 31(1): 1-17.

Cosenz F., Noto G., Cavadi G., Bivona E. and Scirè G. (2024). Pursuing sustainable performance in healthcare organizations: a sustainable business model perspective. *Journal of Health Organization and Management,* 38(5): 741-759.

Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone.

Hoxha G., Simeli I., Theocharis D., Vasileiou A. and Tsekouropoulos G. (2024). Sustainable Healthcare Quality and Job Satisfaction through Organizational Culture: Approaches and Outcomes. *Sustainability,* 16(9): 3603.

Janssens, M. and Steyaert, C. (2009). HRM and performance: A plea for reflexivity in HRM studies. *Journal of Management Studies*, 46(1): 143-155.

WCED (1987). *Report of the World Commission on Environment and Development: Our Common Future Transmitted to the General Assembly as an Annex to document A/42/427 – Development and International Co-operation: Environment*. https://www.un-documents.net/wced-ocf.htm.

INVESTIGATION OF THE OCCURRENCE OF RADIOTHERAPY-RELATED FEAR IN WOMEN WITH BREAST CANCER

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ABSTRACT

Objective: Radiotherapy is a central component of breast cancer treatment, improving local control and survival (Allen et al., 2017). Despite its efficacy, many women experience fear concerning treatment effectiveness, side effects, disruption of daily life, and psychological and social consequences (Shaverdian et al., 2018; Arikan et al., 2023). Misconceptions about radiation and uncertainty about outcomes often intensify these fears, sometimes surpassing fear of the disease itself (Rayne et al., 2016). Evidence from Greece is limited, highlighting the need for systematic evaluation and targeted interventions (Ouzouni et al., 2024).

Methods: A prospective cohort study was conducted between October 2022 and May 2023 in two radiotherapy departments in Thessaloniki, Greece. A total of 216 women with histologically confirmed breast cancer participated. They were allocated to a control group (n = 98), which received standard care, and an intervention group (n = 118), which also received a structured informational brochure. Fear was measured at baseline (within the first five sessions) and after radiotherapy completion using the validated Greek version of the Questionnaire for Assessing Fear of Radiotherapy in Oncology Patients (QAFRT; Živković Radojević et al., 2017; Ouzouni et al., 2024). The tool evaluates four domains: treatment effectiveness, illness during therapy, daily life impact, and side effects.

Results: Both groups reported high baseline fear, consistent with international evidence that radiotherapy is often perceived as threatening (Shaverdian et al., 2018; Murchison et al., 2020). The intervention group showed significant reductions in overall fear scores across all QAFRT domains compared to controls ($p < .0005$). Improvements included decreased fears about treatment outcomes, illness during therapy, daily disruption, and side effects. The control group showed only marginal reductions. Findings suggest that structured, patient-focused information can dispel misconceptions, reduce anticipatory fear, and support psychological adjustment (Halkett et al., 2010).

ISBN: 978-618-5630-25-6

Conclusion: Fear related to radiotherapy is a common and multidimensional issue for women with breast cancer, potentially affecting treatment adherence and overall well-being. Structured educational interventions significantly reduced fear across all domains, supporting the integration of tools like the QAFRT into clinical practice. Tailored educational and supportive strategies may enhance resilience, improve compliance, and optimize patient experiences (Lewis et al., 2014). Further research should examine long-term outcomes and multimodal psycho-educational programs.

Implications: For patients, regular fear assessment and targeted education can lower fear, strengthen resilience, and improve adherence. For healthcare professionals, the study emphasizes the use of fear assessment tools and structured communication to address misconceptions and emotional concerns. For the health system, embedding psycho-educational interventions into radiotherapy care may increase treatment completion, reduce psychological morbidity, and improve quality of services. These results support patient-centered oncology care models where psychological support is a vital element of cancer management.

Key Words: radiotherapy-related fear, breast cancer, psychological distress, QAFRT, educational intervention

REFERENCES:

Allen, C., Her, S., & Jaffray, D. A. (2017). Radiotherapy for cancer: Present and future. *Advanced Drug Delivery Reviews, 109,* 1–2.

Arikan, F., Ozturk, N., Yerli, N., & Aksu, M. G. (2023). The effect of radiotherapy-related anxiety and depression on quality of life in cancer patients. *Celal Bayar University Journal of Science, 10,* 104–111.

Halkett, G. K., Kristjanson, L. J., Lobb, E., O'Driscoll, C., Taylor, M., & Spry, N. (2010). Meeting breast cancer patients' information needs during radiotherapy: What can we do to improve the information and support that is currently provided? *European Journal of Cancer Care, 19*(4), 538–547.

Lewis, F., Merckaert, I., Lienard, A., Libert, Y., & Razavi, D. (2014). Anxiety and its time courses during radiotherapy for non-metastatic breast cancer: A longitudinal study. *Radiotherapy and Oncology, 111*(2), 276–280.

Murchison, S., Soo, J., Kassam, A., Ingledew, P. A., & Hamilton, S. (2020). Breast cancer patients' perceptions of adjuvant radiotherapy: An assessment of pre-treatment knowledge and informational needs. *Journal of Cancer Education, 35*(4), 661–668.

Ouzouni, A., Plataniotis, G. A., Capizzello, A., Gkantaifi, A., Tsaloglidou, A., Owens, D. A., & Lavdaniti, M. (2024). Translation and validation of the Greek version of the Questionnaire for Assessing Fear of Radiotherapy in Oncology Patients. *Cureus, 16*(2), e62801.

Rayne, S., Schnippel, K., Firnhaber, C., Wright, K., Kruger, D., & Benn, C. A. (2016). Fear of treatments surpasses demographic and socioeconomic factors in affecting patients with breast cancer in urban South Africa. *Journal of Global Oncology, 3*(2), 125–134.

Shaverdian, N., Wang, X., Hegde, J. V., Aledia, C., Weidhaas, J. B., Steinberg, M. L., & McCloskey, S. A. (2018). The patient's perspective on breast radiotherapy: Initial fears and expectations versus reality. *Cancer, 124*(8), 1673–1681.

Živković Radojević, M., Folić, M., & Jankovic, S. (2017). A questionnaire for assessing fear of radiotherapy in oncology patients. *Serbian Journal of Experimental and Clinical Research, 19*(1), 1–7.

A COMPARATIVE ANALYSIS OF THE EFFICACY OF PROBLEM-BASED LEARNING (PBL) AND TRADITIONAL EDUCATION IN UNDERGRADUATE MENTAL HEALTH NURSES

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ABSTRACT

Background: Problem-Based Learning (PBL) is recognized as a major innovation in health sciences education. Unlike traditional lecture-based methods, which largely promote the passive acquisition of knowledge, PBL actively engages students in the learning process through the analysis of real-life problems. This learner-centered approach not only strengthens theoretical understanding but also fosters practical skills, problem-solving abilities, teamwork, and critical thinking. By collaboratively addressing complex case scenarios, students are encouraged to assume responsibility for their learning, identify knowledge gaps, and apply evidence-based reasoning to reach meaningful conclusions. Over the past decades, PBL has been widely adopted in medical and nursing education worldwide and is considered a valuable bridge between theory and clinical practice.

ISBN: 978-618-5630-25-6

Aim: This study aimed to examine the impact of PBL on the development of caring behaviors among undergraduate nursing students. Caring behaviors are a fundamental component of professional nursing practice, encompassing empathy, communication skills, technical competence, and the ability to deliver holistic, patient-centered care. Understanding how PBL facilitates the cultivation of these behaviors contributes to the ongoing discourse on effective teaching strategies in nursing education.

Methods: A quasi-experimental design with pre- and post-test measures was employed, involving both an intervention and a control group. The study was conducted at the Department of Nursing, University of Thessaly, within the clinical course Psychiatry – Mental Health Nursing. The sample comprised 134 third-year undergraduate nursing students. Sixty-seven students formed the intervention group and were exposed to PBL, while the remaining 67 students in the control group received traditional instruction. Data were collected using structured questionnaires. In addition to demographic data, the instruments included the Caring Behaviors Inventory (CBI-24), translated and culturally adapted into Greek by Eurydiki Papastavrou. The tool assesses caring behaviors across four domains: professional knowledge and skill, respect, reassurance, and emotional support

Results: The control group consisted of 60 female students (89.5%), while the intervention group included 55 females (82.1%). The majority of participants in both groups were unmarried (91.0% in the control group; 92.5% in the intervention group). Sixty-two students in each group were enrolled in the sixth semester of the four-year program. The mean age was 22.7 ± 4.7 years in the control group and 22.9 ± 5.4 years in the intervention group. Post-intervention analysis indicated improvements in CBI-24 scores across all subscales for both groups. However, the intervention group consistently achieved higher mean scores, with the most pronounced difference observed in the domain of professional knowledge and skills ($p = 0.027$). These findings suggest that exposure to PBL exerted a stronger positive influence on the development of caring behaviors compared to traditional teaching.

Discussion: This study underscores the role of PBL in enhancing caring behaviors among nursing students. While traditional teaching methods remain valuable for establishing foundational knowledge, they may not provide the experiential depth and reflective opportunities afforded by PBL. By embedding learning within authentic clinical problems, PBL appears to promote deeper engagement, more comprehensive understanding, and stronger professional competencies. Nevertheless, several limitations must be acknowledged. The one-week clinical placement may have restricted the consolidation of caring behaviors. Furthermore, the limited theoretical background on caring provided to students, along with the relatively small and single-site sample, may affect the generalizability of the findings. Future research should explore the long-term effects of PBL, its impact on actual clinical performance, and its potential contribution to patient satisfaction and outcomes.

Conclusion: PBL emerges as a valuable and effective pedagogical approach in nursing education. It enhances not only theoretical knowledge and technical skills but also caring behaviors, which are critical for delivering high-quality, patient-centered care—a central objective of national and international healthcare quality strategies. The promotion of caring behaviors through PBL may strengthen nurses' professional identity, improve patient outcomes, and increase job satisfaction. For these reasons, PBL should be considered a robust alternative to traditional lecture-based teaching and

more extensively integrated into nursing curricula, thereby better preparing graduates to meet the demands of contemporary healthcare.

Key Words: Problem-Based Learning; Caring Behaviors; Nursing Students; Nursing

REFERENCES

Dolmans, D. H., De Grave, W., Wolfhagen, I. H., & Van der Vleuten, C. P. (2005). Problem-based learning: Future challenges for educational practice and research. Medical Education, 39(7), 732–741.

Gwee, M. C. (2009). Problem-based learning: A strategic learning system design for the education of healthcare professionals in the 21st century. Kaohsiung Journal of Medical Sciences, 25(5), 231–239.

Inocian, E. P., Hill, M. B., Felicilda-Reynaldo, R. F. D., Kelly, S. H., Paragas, E. D., & Turk, M. T. (2022). Factors in the clinical learning environment that influence caring behaviors of undergraduate nursing students: An integrative review. Nurse education in practice, 63, 103391.

Jamshidi, H., Hemmati Maslakpak, M., & Parizad, N. (2021). Does problem-based learning education improve knowledge, attitude, and perception toward patient safety among nursing students? A randomized controlled trial. BMC Nursing, 20(1), 70.

Mårtensson, S., Knutsson, S., Hodges, E. A., Sherwood, G., Broström, A., & Björk, M. (2024). Development of caring behaviour in undergraduate nursing students participating in a caring behaviour course. Scandinavian journal of caring sciences, 38(1), 47–56.

Papastavrou, E., Efstathiou, G., & Charalambous, A. (2011). Nurses' and patients' perceptions of caring behaviours: Quantitative systematic review of comparative studies. Journal of Advanced Nursing, 67(6), 1191–1205.

Papastavrou, E., Karlou, C., Tsangari, H., Efstathiou, G., Sousa, V. D., Merkouris, A., & Patiraki, E. (2011). Cross-cultural validation and psychometric properties of the Greek version of the Caring Behaviors Inventory: A methodological study. Journal of Evaluation in Clinical Practice, 17(3), 435–443.

Rodrigues, P. S., Marin, M. J. S., Souza, A. P., Vernasque, J. R. D. S., Grandin, G. M., Almeida, K. R. V., &

Oliveira, C. S. R. (2024). Students' and graduates' perceptions on problem-based learning in nursing undergraduate education. Ciência & Saúde Coletiva, 29(8), e06042024.

SERVICES MANAGEMENT: INNOVATING PATIENT-CENTERED HEALTH AND WELFARE – RETHINKING PARENTAL SATISFACTION IN PAEDIATRIC PHARMACEUTICAL CARE - THE IMPACT OF INCOME AND AGE

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ABSTRACT

The present study investigates parental satisfaction with pharmaceutical services in paediatric hospitals, with a particular focus on the influence of socio-demographic factors such as household income and parental age. Parental satisfaction is a critical indicator of healthcare quality, as it reflects both the perceived effectiveness of service delivery and the capacity of hospital pharmacies to respond to the individualized needs of families with young patients. While previous research has emphasized structural elements such as accessibility, clarity of instructions, and professional competence of pharmacists, this study examines how variations in parents' income levels and age groups shape their expectations, perceptions, and overall experiences.

A quantitative survey design was adopted, using a modified version of the Pharmacy Services Patient Satisfaction Questionnaire (PSPSQ 2.0). The instrument was carefully translated and culturally adapted for the Greek context, followed by a pilot test to ensure validity and reliability. The questionnaire measured parental perceptions across multiple dimensions using a five-point Likert scale from "strongly disagree" to "strongly agree." Statistical analyses included descriptive statistics, correlation tests, and multivariate regression to explore associations between demographic factors and satisfaction outcomes. This methodological approach allowed the study to isolate the effects of income and age while controlling for other variables, thereby providing a nuanced understanding of demographic influences on satisfaction.

ISBN: 978-618-5630-25-6

The results show that parental income has a notable impact on the evaluation of hospital pharmacy services. Families with higher income levels expressed greater dissatisfaction with waiting times and the physical organization of pharmacy spaces, highlighting higher expectations of efficiency and comfort. In contrast, parents from lower-income households tended to focus on the availability of medication and the clarity of verbal instructions provided by pharmacists, often valuing interpersonal communication over infrastructural aspects. This divergence suggests that socio-economic status directly shapes priorities and satisfaction drivers, underscoring the need for tailored service approaches that respond to heterogeneous expectations.

Parental age also emerged as a significant factor. Younger parents, particularly those under 35 years old, expressed greater reliance on digital communication tools and exhibited higher sensitivity to delays or lack of technological infrastructure, such as electronic appointment systems or online prescription tracking. Older parents, especially those above 45 years, placed more emphasis on the pharmacist's professionalism, verbal guidance, and trustworthiness, often perceiving personal interaction as more critical than technological convenience. These generational differences highlight the dual challenge hospital pharmacies face: maintaining strong interpersonal relationships while progressively integrating digital innovations that meet the expectations of younger cohorts.

The discussion situates these findings within the broader framework of health and welfare services management. It argues that effective services management in pediatric hospital pharmacies must integrate demographic considerations into strategic planning. Tailored communication strategies, patient flow optimization, and infrastructural improvements aligned with diverse parental profiles can strengthen satisfaction, improve medication adherence, and build trust in healthcare institutions. Practically, this requires adopting differentiated service models: investing in user-friendly digital platforms to support younger parents while simultaneously reinforcing personalized counseling and interpersonal trust-building for older caregivers.

In conclusion, income and age are key determinants of parental satisfaction with pharmaceutical services in pediatric hospitals. Recognizing these socio-demographic dimensions enables healthcare systems to design services management strategies that are more inclusive, equitable, and patient-centered. By addressing both clinical and social factors, pediatric hospital pharmacies can enhance service quality, promote health equity, and support stronger family engagement in pediatric care. This work aligns closely with the conference themes of Quality Assurance in Health and Welfare Management Services, Innovating Patient-Centered Health and Welfare, and Policy and Leadership in Health Systems, offering insights into how demographic-sensitive management approaches can drive equity and improve healthcare outcomes.

Key Words: parental satisfaction; paediatric pharmacy; digital health; patient-centered care, services management

REFERENCES

Hassali MA, Saleem F, Verma AK, Choy WY, Nouri AI, Asmani MFM. (2018). Translation and Validation of Patient Satisfaction with Pharmacist Services Questionnaire (PSPSQ 2.0). *J Young Pharm*., *10*(4):427-32. DOI:10.5530/jyp.2018.10.94

Karakolias, S., Georgi, C., & Georgis, V. (2024). Patient Satisfaction With Public Pharmacy Services: Structural and Policy Implications From Greece. *Cureus*, *16*(4), e58654. https://doi.org/10.7759/cureus.58654

Lake, E. T., Smith, J. G., Staiger, D. O., Schoenauer, K. M., & Rogowski, J. A. (2020). Measuring Parent Satisfaction With Care in Neonatal Intensive Care Units: The EMPATHIC-NICU-USA Questionnaire. *Frontiers in pediatrics*, *8*, 541573. https://doi.org/10.3389/fped.2020.541573

Molla, M., Sisay, W., Andargie, Y., Kefale, B., & Singh, P. (2022). Patients' satisfaction with outpatient pharmacy services and associated factors in Debre Tabor comprehensive specialized hospital, Northwest Ethiopia: A cross-sectional study. *PloS one*, *17*(1), e0262300. https://doi.org/10.1371/journal.pone.0262300

Mukattash, T. L., Jarab, A. S., Gharaibeh, W. H., Abu-Farha, R. K., Nusair, M. B., & Daghash, R. (2020). Pharmaceutical care in children, an exploratory study of parental experiences in Jordan. *International journal of clinical pharmacy*, *42*(4), 1145–1152. https://doi.org/10.1007/s11096-020-01095-0

Sakharkar, P., Bounthavong, M., Hirsch, J. D., Morello, C. M., Chen, T. C., & Law, A. V. (2015). Development and validation of PSPSQ 2.0 measuring patient satisfaction with pharmacist services. *Research in social & administrative pharmacy: RSAP*, *11*(4), 487–498. https://doi.org/10.1016/j.sapharm.2014.10.006.

POSTTRAUMATIC GROWTH AMONG CHILDREN AND ADOLESCENTS: A SYSTEMATIC REVIEW

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ABSTRACT

During public health crises, safeguarding mental health is essential not only to protect well-being but also to foster post-traumatic growth (PTG). PTG is a term that describes the positive psychological changes that individuals can experience as a result of struggling with highly challenging life circumstances (Bhushan et al., 2022; Tedeschi & Calhoun, 2004; Ulset & von Soest, 2022; Zhou et al., 2021). This presentation is a systematic literature review that aims to provide PTG prevalence rates and potential influencing factors among children and adolescents in the context of public health crises such as the COVID-19 pandemic. Recommendations will also be presented on how social workers and other healthcare professionals can foster PTG in times of uncertainty.

A systematic literature search identified twenty-one relevant studies conducted across eleven countries during the COVID-19 pandemic. To identify published articles on PTG in children and adolescents, we searched Scopus, PubMed, Google Scholar, and PsycINFO from February 2000 to February 2025. Findings indicate heterogeneous PTG prevalence, ranging from low to moderate/high levels. Several facilitating factors emerged, including sociodemographic variables such as age and gender, individual factors such as personal traits and coping strategies, relational factors such as social support, and psychological factors such as wellbeing and satisfaction with life.

The identified factors provide a valuable framework for health and social care professionals, educators, and policymakers to design targeted interventions aimed at fostering well-being and PTG in children and adolescents during public health crises. By translating these findings into practical strategies, stakeholders can support young populations to not only cope with adversity but also to experience meaningful personal development, ultimately promoting flourishing (Tamiolaki et al., 2024). Future research should, also, use longitudinal methodologies to explore how PTG unfolds across developmental stages, thus identifying key factors that influence PTG over time.

Key Words: Posttraumatic growth, mental health, protective factors.

REFERENCES

Bhushan, B., Basu, S., & Ganai, U. J. (2022). Post-traumatic Stress and Growth Among the Children and Adolescents in the Aftermath of COVID-19. *Frontiers in Psychology, 12*. https://doi.org/10.3389/fpsyg.2021.791263

Tamiolaki, A., Kalaitzaki, A., Papadakaki, M., & Kourkoutas, E. (2024). The Silver Lining of Posttraumatic Growth around the Dark Side of the COVID-19 Pandemic: A School-Based Intervention with Mindfulness and Character Strengths Practices among Children. *Healthcare, 12*(2), 283. https://doi.org/10.3390/healthcare12020283

Tedeschi, R. G., & Calhoun, L. G. (2004). Target Article: "Posttraumatic Growth: Conceptual Foundations and Empirical Evidence". *Psychological Inquiry, 15*(1), 1–18. https://doi.org/10.1207/s15327965pli1501_01

Ulset, V. S., & von Soest, T. (2022). Posttraumatic growth during the COVID-19 lockdown: A large-scale population-based study among Norwegian adolescents. *Journal of Traumatic Stress, 35*(3), 941–954. Portico. https://doi.org/10.1002/jts.22801

Zhou, J., Wang, Y., Bu, T., Zhang, S., Chu, H., Li, J., He, J., Zhang, Y., Liu, X., Qiao, Z., Yang, X., & Yang, Y. (2021). Psychological Impact of COVID-19 Epidemic on Adolescents: A Large Sample Study in China. *Frontiers in Psychiatry, 12*. https://doi.org/10.3389/fpsyt.2021.769697

THE IMPORTANCE OF HEALTH TECHNOLOGY ASSESSMENT IN THE MANAGEMENT OF HEALTH UNITS.

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ABSTRACT

Health Technology Assessment (HTA) stands as a pivotal process within hospital administration, playing a vital role in decision-making regarding the acquisition and implementation of new medical technologies. It encompasses a systematic evaluation of the efficacy, safety, cost-effectiveness, and broader implications of introducing new health technologies into clinical practice. As hospitals continuously strive to enhance patient care and optimize resource utilization, HTA serves as a compass, guiding administrators through complex choices.

The objective of our research was to analyze the HTA as a process and its effect on the administration of a health system, at all levels of administration. The progress of the implementation for the new European HTA regulation, especially in Greece, was studied. In addition, the expected contribution of artificial intelligence and digital health in general, to the assessments and decision-making that an administration is asked to make, is also examined.

The methodology chosen is the systematic literature review using PRISMA, through an extensive search of papers and articles that focus on the search for conclusions regarding the rapid development of HTA and digital health. We searched in PubMed, Google Scholar and Kalippos databases. A total of 1.048 references were screened. We analyzed 145 references at the final stage.

Primary data collection validated that within hospital administration, HTA acts as a core for informed decision-making. It aids in assessing the potential impact of adopting new technologies, considering factors like clinical benefits, patient outcomes, financial implications, and ethical considerations. By analyzing these facets, administrators can determine whether a new technology aligns with the hospital's objectives and budgetary constraints. HTA also fosters evidence-based medicine by scrutinizing the scientific evidence supporting the efficacy and safety of technologies. This process involves rigorous assessments, often involving multidisciplinary teams or committees comprising clinicians, economists, ethicists, and other experts. Their collaboration ensures a comprehensive evaluation that goes beyond clinical effectiveness to encompass the broader societal impact and ethical implications of technology adoption.Moreover, HTA assists hospital administrators in establishing

ISBN: 978-618-5630-25-6

priorities for resource allocation. It aids in identifying technologies that offer the most value in terms of improved patient outcomes relative to their costs. This helps hospitals optimize their budgets by investing in innovations that provide the greatest benefits for patients while managing expenses effectively. The implementation of the European HTA regulation will be vital for all European member states. The regulation will be fully active after 2030. There is not yet enough data to statistically analyze the impact of health technology assessment on health systems. It is a given that in the coming years this very analysis will become a research field with multiple subjects, especially after 2030.

Although all the study shows that HTA is at a starting point and in evolving stage in Greece, it is a dynamic and transformative process with a need of real-world data (RWD). All data lead to the conclusion that real world clinical data will become the fuel that will accelerate the use and importance of HTA in administrative decision making. We are definitely at the dawn of a new era in the healthcare field. The rise of Artificial intelligence, of digital health and big data analysis will open pathways to new approaches in health services and processes.

Ultimately, HTA is already serving as a cornerstone in hospital administration, enabling informed decision-making that influences patient care, operational efficiency, and financial sustainability. By conducting thorough assessments of health technologies, health systems can navigate the dynamic landscape of medical advancements while ensuring that the technologies integrated into their practices are aligned with the institution's values, goals, and capacity to deliver high-quality care.

REFERENCES

Al-Jaroodi, J., Mohamed, N., & Abukhousa, E. (2020). Health 4.0: On the Way to Realizing the Healthcare of the Future. IEEE Access, 8, 211189–211210.

Angelis, A., Lange, A., & Kanavos, P. (2018). Using health technology assessment to assess the value of new medicines: results of a systematic review and expert consultation across eight European countries. European Journal of Health Economics, 19(1), 123–152.

Angelis, A., Tordrup, D., & Kanavos, P. (2017). Is the Funding of Public National Health Systems Sustainable over the Long Term? Evidence from Eight OECD Countries. Global Policy, 8, 7–22.

Daubner-Bendes, R., Kovács, S., Niewada, M., Huic, M., Drummond, M., Ciani, O., Blankart, C. R., Mandrik, O., Torbica, A., Yfantopoulos, J., Petrova, G., Holownia-Voloskova, M., Taylor, R. S., Al, M., Piniazhko, O., Lorenzovici, L., Tarricone, R., Zemplényi, A., & Kaló, Z. (2021). Quo Vadis HTA for Medical Devices in Central and Eastern Europe? Recommendations to Address Methodological Challenges. Frontiers in Public Health, 8.

Dayer, V. W., Drummond, M. F., Dabbous, O., Toumi, M., Neumann, P., Tunis, S., Teich, N., Saleh, S., Persson, U., von der Schulenburg, J. M. G., Malone, D. C., Salimullah, T., & Sullivan, S. D. (2024). Real-world evidence for coverage determination of treatments for rare diseases. Orphanet Journal of Rare Diseases, 19(1).

Di Bello, V., Tonti, G., Barletta, G., Di Salvo, G., Mancino, M., La Carrubba, S., Canterin, F. A., Carerj, S., & La Canna, G. (2012b). Introduction to Health Technology Assessment. In Journal of Cardiovascular Echography (Vol. 22, Issue 3, pp. 99–106). Medknow Publications.

Drummond, M., Tarricone, R., & Torbica, A. (2022). European union regulation of health technology assessment: what is required for it to succeed? In European Journal of Health Economics (Vol. 23, Issue 6, pp. 913–915). Springer Science and Business Media Deutschland GmbH.

Erdös, J., Ettinger, S., Mayer-Ferbas, J., de Villiers, C., & Wild, C. (2019). European Collaboration in Health Technology Assessment (HTA): goals, methods and outcomes with specific focus on medical devices. Wiener MedizinischeWochenschrift, 169(11–12), 284–292.

Fontrier, A. M., Visintin, E., & Kanavos, P. (2022). Similarities and Differences in Health Technology Assessment Systems and Implications for Coverage Decisions: Evidence from 32 Countries. In PharmacoEconomics - Open (Vol. 6, Issue 3, pp. 315–328). Adis.

Giuliani, G., Chassagnol, F., Traub, D., Gyldmark, M., Hebborn, A., Ducournau, P., & Ruof, J. (2018b). Leveraging EUnetHTA's conceptual framework to compare HTA decision drivers in France, Italy, and Germany from a manufacturer's point of view. Health Economics Review, 8(1).

Gozzo, L., Paterson, K., Wong, O., Megerlin, F., Geldmacher, J., Popoli, P., Jommi, C., Fricke, F.-U., De Solà-Morales, O., Kamae, I., Rasi, G., & Drago, F. (2022). Towards a European harmonization of health technology assessment recommendations executive paper of European regulatory conference focused on the EU commission proposal to harmonize HTA. Frontiers in Drug Safety and Regulation, 2.

Haverinen, J., Keränen, N., Falkenbach, P., Maijala, A., Kolehmainen, T., & Reponen, J. (2019). Digi-HTA: Health technology assessment framework for digital healthcare services. Finnish Journal of EHealth and EWelfare, 11(4).

Julian, E., Pavlovic, M., Sola-Morales, O., Gianfrate, F., Toumi, M., Bucher, H. C., Dierks, C., Greiner, W., Mol, P., Bergmann, J. F., Salmonson, T., Hebborn, A., Grande, M., Cardone, A., & Ruof, J. (2022). Shaping a research agenda to ensure a successful European health technology assessment: insights generated during the inaugural convention of the European access academy. Health Economics Review, 12(1).

Kanavos, P., Angelis, A., & Drummond, M. (2019). An EU-wide approach to HTA: An irrelevant development or an opportunity not to be missed? In European Journal of Health Economics (Vol. 20, Issue 3, pp. 329–332). Springer Verlag.

Kristensen, F. B., Husereau, D., Huić, M., Drummond, M., Berger, M. L., Bond, K., Augustovski, F., Booth, A., Bridges, J. F. P., Grimshaw, J., IJzerman, M. J., Jonsson, E., Ollendorf, D. A., Rüther, A., Siebert, U., Sharma, J., &Wailoo, A. (2019). Identifying the Need for Good Practices in Health Technology Assessment: Summary of the ISPOR HTA Council Working Group Report on Good Practices in HTA. Value in Health, 22(1), 13–20.

Mentis, I. (2021). The introduction of Health Technology Assessment (HTA) in Greece and comparison with the European experience. In Review ΑΝΑΣΚΟΠΗΣΗ ARCHIVES OF HELLENIC MEDICINE (Vol. 2022, Issue 3).

O'Rourke, B., Oortwijn, W., & Schuller, T. (2020). The new definition of health technology assessment: A milestone in international collaboration. In International Journal of Technology Assessment in Health Care (Vol. 36, Issue 3, pp. 187–190). Cambridge University Press.

Schünemann, H. J., Reinap, M., Piggott, T., Laidmäe, E., Köhler, K., Põld, M., Ens, B., Irs, A., Akl, E. A., Cuello, C. A., Falavigna, M., Gibbens, M., Neamtiu, L., Parmelli, E., Jameleddine, M., Pyke, L., Verstijnen, I., Alonso-Coello, P., Tugwell, P., … Moja, L. (2022). The ecosystem of health decision making: from fragmentation to synergy. In Health Policy.

Thokala, P., & Duenas, A. (2012). Multiple criteria decision analysis for health technology assessment. Value in Health, 15(8), 1172–1181.

Vis, C., Bührmann, L., Riper, H., & Ossebaard, H. C. (2020). Health technology assessment frameworks for eHealth: A systematic review. In International Journal of Technology Assessment in Health Care (Vol. 36, Issue 3, pp. 204–216). Cambridge University Press.

ARTISTIC EVENTS, SAFETY AND QUALITY AS DRIVERS OF LOCAL TOURISM DEVELOPMENT

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ABSTRACT

Artistic events are one of the most dynamic mechanisms for promoting culture and strengthening local identity. Whether they are music, theatre, dance festivals or multi-themed cultural events, these events attract visitors, generate economic activity and contribute to the promotion of the destination. However, in the modern environment of tourism development, their success and sustainability do not depend only on the artistic programme but also by the ability of the organisers to ensure safety conditions and implement quality assurance procedures (Jia, 2025).

The concept of health and safety in artistic events is linked to the safety of spectators, artists and staff. It includes considerations such as infrastructure suitability, risk management procedures, health coverage, and emergency preparedness. Particularly at mass attendance events, having clear safety protocols in place fosters visitor confidence and contributes to the destination's image as trustworthy and welcoming (Dadwal, 2020) (Hutton et al., 2025).

At the same time, quality assurance systems act as a framework for evaluating and improving the services provided. From the quality of artistic productions to the hosting experience, service and accompanying activities, quality assurance offers guarantees for the value of the visitor experience. The adoption of international standards (π.χ. ISO), the systematic collection of feedback and the continuous improvement of services make events more competitive and attractive to international audiences (Jia, 2025).

ISBN: 978-618-5630-25-6

The interconnection of the above factors with local tourism development is immediate. Artistic events that meet high standards of safety and quality have a higher probability of gaining a stable audience, attracting visitors from different geographical areas and enhancing the hospitality economy (accommodation, catering, transport). At the same time, they create employment opportunities, support small local businesses and strengthen the international image of the destination (Li, Choe, Kang, & Lee, 2025) (Metaxas et al., 2022).

Additionally, investing in health, safety, and quality assurance creates long-term benefits for local communities. Improvements in infrastructure, know-how and organization remain after the end of the events, offering a legacy for future events. At the same time, strengthening the trust of visitors and residents cultivates a positive attitude towards tourism, promoting more sustainable development models (Song, 2024) (Janes, 2025).

Overall, the integration of safety and quality assurance practices is not a secondary issue of technical compliance but a strategic factor that determines the success of artistic events. The visitor's experience, the protection of health and the assurance of high-quality standards compose a network of values that contributes to the strengthening of cultural tourism and sustainable local tourism development. The further study and systematic application of these practices in the Greek reality can enhance the competitiveness of festivals and highlight the country as a model in the organization of cultural events with international resonance (Dadwal, 2020) (Jia, 2025) (Li, Choe, Kang, & Lee, 2025).

Key Words: artistic events, health, safety, quality assurance, local tourism development.

REFERENCES

Dadwal, D. (2020). Management of health and safety risks at large events: Process, procedures and factors.

Hutton, A., et al. (2025). Exploring safety at mass gathering events through the lens of event managers, police and medical personnel.

Janes, J. (2025). Welfare first: transforming harm reduction at UK festivals.

Jia, H. (2025). Verification of the Impact of Sports Event Service Quality on Visitor Satisfaction and Revisit Intention. Behavioral Sciences, 15(8), 1019.

Li, B., Choe, Y., Kang, S., & Lee, J. (2025). *Sustainable Event Tourism: Risk Perception and Preventive Measures in On-Site Attendance*. *Sustainability*, 17, 3455.

Metaxas, T., et al. (2022). Measuring the impact of Greece as a safe branding tourist destination: Evidence from Spain and Greece. Sustainability.

Song, E., (2024). National pride and safety awareness at large events.

DIGITAL HEALTH: FROM THE ELECTRONIC HEALTH RECORD TO INTELLIGENT MATERIAL MANAGEMENT

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ABSTRACT

Introduction: Healthcare systems are experiencing a profound digital transformation, driven by the imperative to enhance quality of care while ensuring the efficient allocation of resources (Krotkiewicz et al., 2025; Abernethy et al., 2022; Mathews et al., 2019; Evans, 2016). The Electronic Health Record (EHR) and integrated Enterprise Resource Planning (ERP) platforms represent fundamental components of this transition, enabling interoperability, transparency, and operational efficiency (Barbieri et al., 2023; Wu & Trigo, 2021; Wager et al., 2021). Papageorgiou Hospital in Greece serves a benchmark of innovation, adopting advanced digital solutions for the management of both clinical information and healthcare materials (Avinash & Joseph, 2024; Beaulieu & Bentahar, 2021).

Objective:The implementation of EHR systems, when integrated with ERP platforms, enables secure access to clinical data and automates the billing of surgical materials, thereby enhancing care delivery and administrative transparency (Alzu'bi et al., 2021; Clermont, 2023; Hendrickson et al., 2019). Recent studies confirm that such integration optimizes inventory control and streamlines hospital workflows (Barbieri et al., 2023; Wu & Trigo, 2021; Ye et al., 2022). This study focuses on the case of Papageorgiou Hospital, which has been implementing the EHR system since 2001. The hospital initiated the pilot phase of electronic billing and e-management of surgical materials in 2008, followed by full-scale deployment in 2012. This long-term digital adoption provides a valuable framework for assessing the practical impact of integrated health information systems on both clinical and administrative performance.

Methodology: A scoping review of 15 reviewed articles published between 2016 and 2025 was conducted using databases such as PubMed, Google Scholar, Scopus, and SpringerLink. Thematic analysis was applied to identify recurring patterns in digital health adoption, focusing on EHR interoperability, supply chain digitization and billing accuracy. In addition to the literature review, the study incorporates a real-world case analysis based on the long-standing digital infrastructure of Papageorgiou Hospital. This institutional experience serves as a practical validation of the findings.

Results:The interoperability of the EHR provides healthcare professionals with secure and immediate access to essential medical data, thereby expediting and supporting evidence-based clinical decision-making (Alzu'bi et al., 2021; Clermont, 2023). The integration of ERP with the health record and surgical workflows enables automated material billing, minimizes errors, enhances supply chain resilience, optimizes inventory control, and streamlines invoicing processes with insurance providers (Barbieri et al., 2023; Ye et al., 2022; Mathews & Makary, 2020). Administrative procedures are consequently delivered with greater transparency and accuracy, while bureaucratic delays are significantly reduced (Wu & Trigo, 2021; Beaulieu & Bentahar, 2021).

Conclusions: The experience of Papageorgiou Hospital illustrates the tangible added value generated by the integration of EHR and ERP systems, both in patient-centered care and in resource management (Barbieri et al., 2023; Wu & Trigo, 2021). It represents a best-practice model of digital health adoption, providing a roadmap for the wider implementation of innovative and efficient solutions across hospitals and healthcare systems (Abernethy et al., 2022; Becker's Hospital Review, 2024; HSE, 2024)

Key Words: Digital Health, Electronic Health Record (EHR), Electronic Billing, Material Management

REFERENCES

Abernethy, A., Adams, L., Barrett, M., Bechtel, C., Brennan, P., Butte, A., ... & Valdes, K. (2022). The promise of digital health: Then, now, and the future. *NAM Perspectives*, 2022, 10–31478. https://doi.org/10.31478/202206e

Alzu'bi, A. A., Watzlaf, V. J. M., & Sheridan, P. (2021). Electronic health record (EHR) abstraction. *Perspectives in Health Information Management*, *18*(Spring), 1g. https://pubmed.ncbi.nlm.nih.gov/34035788

Avinash, B., & Joseph, G. (2024). Reimagining healthcare supply chains: A systematic review on digital transformation with specific focus on efficiency, transparency and responsiveness. *Journal of Health Organization and Management*, *38*(8), 1255–1279. https://doi.org/10.1108/JHOM-03-2024-0076

Barbieri, C., Neri, L., Stuard, S., Mari, F., & Martín-Guerrero, J. D. (2023). From electronic health records to clinical management systems: How the digital transformation can support healthcare services. *Clinical Kidney Journal*, *16*(11), 1878–1884. https://doi.org/10.1093/ckj/sfad168

Beaulieu, M., & Bentahar, O. (2021). Digitalization of the healthcare supply chain: A roadmap to generate benefits and effectively support healthcare delivery. *Technological Forecasting and Social Change*, *167*, 120717. https://doi.org/10.1016/j.techfore.2021.120717

Clermont, G. (2023). The learning electronic health record. *Critical Care Clinics*, *39*(4), 689–700. https://doi.org/10.1016/j.ccc.2023.03.004

Evans, R. S. (2016). Electronic health records: Then, now, and in the future. *Yearbook of Medical Informatics*, *25*(S01), S48–S61. https://doi.org/10.15265/IYS-2016-s006

Furstenau, L. B., Zani, C., Terra, S. X., Sott, M. K., Choo, K. K. R., & Saurin, T. A. (2022). Resilience capabilities of healthcare supply chain and supportive digital technologies. *Technology in Society*, *71*, 102095. https://doi.org/10.1016/j.techsoc.2022.102095

Hendrickson, M. A., Melton, G. B., & Pitt, M. B. (2019). The review of systems, the electronic health record, and billing. *JAMA*, *322*(2), 115–116. https://doi.org/10.1001/jama.2019.5667

Krotkiewicz, M., Szynkaruk, A., & Stachyra, A. (2025). Digital transformation in healthcare management: From artificial intelligence to blockchain. *Wiadomości Lekarskie*, *78*(3), 578–583. https://doi.org/10.36740/WLek/202445

Mathews, S. C., & Makary, M. A. (2020). Billing quality is medical quality. *JAMA*, *323*(5), 409–410. https://doi.org/10.1001/jama.2019.19648

Mathews, S. C., McShea, M. J., Hanley, C. L., Ravitz, A., Labrique, A. B., & Cohen, A. B. (2019). Digital health: A path to validation. *NPJ Digital Medicine*, *2*(1), 38. https://doi.org/10.1038/s41746-019-0111-3

Wager, K. A., Lee, F. W., & Glaser, J. P. (2021). *Health care information systems: A practical approach for health care management*. John Wiley & Sons.

Wu, Z., & Trigo, V. (2021). Impact of information system integration on the healthcare management and medical services. *International Journal of Healthcare Management*, *14*(4), 1348–1356. https://doi.org/10.1080/20479700.2020.1760015

Ye, F., Liu, K., Li, L., Lai, K. H., Zhan, Y., & Kumar, A. (2022). Digital supply chain management in the COVID-19 crisis: An asset orchestration perspective. *International Journal of Production Economics*, *245*, 108396. https://doi.org/10.1016/j.ijpe.2021.108396