IOCH 2026 Conference

The 1st International Online Conference on Healthcare

25–26 March 2026 | Online

Program and Abstract Book

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The 1st International Online Conference on Healthcare

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Welcome from the Chair

Dear Colleagues,

We are excited to announce **the 1st International Online Conference on Healthcare - The Future of Healthcare: Innovations and Trends (IOCH 2026),** which will be held virtually from 25 to 26 March **2026**.

This conference will showcase the latest research and advancements in healthcare, focusing on areas such as digital health, patient-centered care, connected care, clinical data management, artificial intelligence (AI), and other healthcare innovations. We aim to explore the current landscape, address existing challenges and opportunities, and discuss future directions that will shape the evolution of healthcare delivery and systems.

We warmly invite all healthcare researchers, professionals, and innovators to participate and share their expertise in the following thematic areas and related topics:

S1. Digital Health Adoption and Innovation—A Vision for the Future of Healthcare

S2. Patient-Centered Care—Optimizing Care Pathways through Engagement and Outcome Measurement

S3. Connected Care—Leveraging Technology to Build an Integrated Care Ecosystem

S4. Clinical Data Management—Balancing Transparency with Innovation for Enhanced Care Quality

S5. Generative AI in Clinical Practice—Evidence-Based Evaluation of Diagnostic and Therapeutic Applications.

The conference committee will review the submitted abstracts. All accepted abstracts will be available online in Open Access format on Sciforum.net during and after the conference. Following the conference, selected contributions will be invited for submission to the *Healthcare* journal (ISSN 2227-9032, Impact Factor: 2.7), with a **20% discount** on the publication fee.

We look forward to your participation in this inspiring event.

Prof. Dr. Lorraine S. Evangelista
Conference Chair
Sue & Bill Gross School of Nursing,
University of California Irvine,
California, USA

Healthcare (ISSN 2227-9032) is an international, peer-reviewed, open access journal (free for readers) that publishes original theoretical and empirical research on all aspects of medicine and healthcare. The journal publishes Original Research Articles, Reviews, Case Reports, Technical Notes, Short Communications, etc. The journal covers all aspects of healthcare service, with an emphasis on healthcare management, health informatics, and health policy. *Healthcare* also publishes basic research relevant to clinical practice and patient care, encompassing prevention, diagnosis, treatment, and rehabilitation. Basic research studies of interest include those using (i) real-world clinical data or settings, (ii) measured patient, population, or health system outcomes, (iii) healthcare implementation insights, and/or (iv) health policy relevance. The audience of *Healthcare* includes all types of caregivers and healthcare professionals, such as nurses and physicians, as well as patients.

We encourage researchers to publish their experimental and theoretical results in as much detail as possible. For theoretical papers, full details of proofs must be provided so that the results can be checked; for experimental papers, full experimental details must be provided so that the results can be reproduced. Additionally, electronic files or software containing the full details of the calculations, experimental procedures, and other relevant information can be deposited along with the publication as “Supplementary Material”.

Journal webpage: https://www.mdpi.com/journal/healthcare

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Keynote Speakers

Prof. Dr. Hua Xu

Robert T. McCluskey Professor and Vice Chair for Research and Development, Department of Biomedical Informatics and Data Science Associate Dean for Biomedical Informatics, Yale School of Medicine, Yale University, New Haven, USA

Prof. Dr. Yun-Chul Hong

Department of Preventive Medicine, Seoul National University, Seoul, Republic of Korea Korea Academy of Preventive Medicine, Seoul, Republic of Korea

Prof. Dr. Frances Mair

School of Health & Wellbeing, College of Medical, Veterinary and Life Sciences, University of Glasgow, Glasgow, United Kingdom

Invited Speakers

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University of Genoa, Genoa, Italy

Dr. Umair Majid

Institute of Health Policy, Management, and Evaluation, University of Toronto, Ontario ON M5S 1A1, Canada

Dr. Priscila Marconcin

Piaget Research Center for Ecological Human Development, Instituto Piaget, Lisboa, Portugal

Prof. Dr. Rui Zhang

University of Minnesota, Minneapolis–Saint Paul, USA

Dr. Yannik Terhorst

Ludwig Maximilian University of Munich, Munich, Germany

Prof. Dr. Juliette Hussey

School of Medicine, Trinity College Dublin, The University of Dublin, Dublin, Ireland

Program at a Glance

	Day 1 (25 March 2026)	Day 2 (26 March 2026)
Morning [CET]	**S4.** Clinical Data Management—Balancing Transparency with Innovation for Enhanced Care Quality **S3.** Connected Care—Leveraging Technology to Build an Integrated Care Ecosystem	**S2.** Patient-Centered Care—Optimizing Care Pathways through Engagement and Outcome Measurement
Afternoon [CET]	**S5.** Generative AI in Clinical Practice—Evidence-Based Evaluation of Diagnostic and Therapeutic Applications	**S1.** Digital Health Adoption and Innovation—A Vision for the Future of Healthcare

IOCH 2026 Full Program

DAY 1—Morning Program
25 March 2026 (Wednesday)

Time: 9:00 (CET, Basel) | 4:00 (EDT, New York) | 16:00 (CST Asia, Beijing)

Session 4. Clinical Data Management—Balancing Transparency with Innovation for Enhanced Care Quality

CET (Central European Time)	Speaker	Title
9:00–9:05	**Prof. Dr. Rüdiger Pryss** Session Chair	Welcome from the Session Chair
9:05–9:25	**Dr. Yannik Terhorst** Invited Speaker	Mobile sensing and sensor data for health care, and LLM agents for assessment
9:25–9:40	**Justin Kahen** Selected Speaker	Federated Learning in Healthcare: A Systematic Review of Transparency, Privacy, and Clinical Utility
9:40–9:55	**Jiahui Nian** Selected Speaker	Managing Online Breastfeeding Consultations Using LDA and BERTopic: A Topic Modeling Approach
9:55–10:10	**Manya Mehra** Selected Speaker	Implementing a Privacy-Preserving Learning System for Paediatric Asthma Management
10:10–10:25	**Mia Yates** Selected Speaker	Missed Doses and Patterns of Refusal: Utilization of a Digital Dashboard to Address Patient Safety
10:25–10:40	**Flash Poster Presentation** (5 mins per person)	**Foteini Pavlidou** Emergency Department Presentations Due to Psychoactive Substances: A Retrospective Analysis **Ângelo Miguel Cardoso Jesus** Safety Profile and Adverse Drug Reactions of Radium-223 in the EudraVigilance Database: A Retrospective Descriptive Analysis **Brian Mansoury** Real-Time Language Equity in Digital Health Platforms: A Systematic Review of Multilingual Clinical Interfaces and Their Impact on Outcomes for Patients With Limited English Proficiency

Session 3. Connected Care—Leveraging Technology to Build an Integrated Care Ecosystem

CEST Time	Speaker	Title
10:50–10:55	**Prof. Stefano Omboni** Session Chair	Welcome from the Session Chair
10:55–11:15	**Prof. Dr. Juliette Hussey** Invited Speaker	Virtual delivery of a multidisciplinary rehabilitation programme
11:15–11:30	**Amogh Durgam** Selected Speaker	Video Laryngeal Mask Airways for Airway Management: A Scoping Review
11:30–11:45	**Dilyara Nihatova Yakabova** Selected Speaker	Associations Between Early Screen Exposure and Neurocognitive Outcomes in Children Aged 2–5 Years: A Systematic Review
11:45–12:00	**Kimberly Harry** Selected Speaker	Integrating Machine Learning into Care Coordination Pathways: A Framework for Long-Term Care Facilities

DAY 1—Afternoon Program
25 March 2026 (Wednesday)

Time: 14:00 (CEST, Basel) | 9:00 (EDT, New York) | 21:00 (CST Asia, Beijing)

Session 5. Generative AI in Clinical Practice—Evidence-Based Evaluation of Diagnostic and Therapeutic Applications

CET (Central European Time)	Speaker	Title
14:00–14:05	**Prof. Ping Yu** Session Chair	Welcome from the Session Chair
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14:35–14:55	**Prof. Dr. Rui Zhang** Invited Speaker	Generative AI for Differential Diagnosis and Treatment Recommendation

14:55–15:10	**Reena Ughreja** Selected Speaker	From Accuracy to Equity: Addressing Hallucination Risks and Bias in AI-Driven Clinical Decision Support Systems
15:10–15:25	**Oussama El Othmani** Selected Speaker	Deep Learning and Multimodal Approaches for Automated Pain Intensity Estimation in Infants: An Evidence-Based Clinical Evaluation
15:25–15:40	**Srividya Narayanan** Selected Speaker	From Risk to Ready: A Five-Step Roadmap for Regulatory-Ready AI in Clinical Care
15:40–15:55	**UMER KHALIFA SALEEMRAJA** Selected Speaker	Optimizing Clinical Trial Screening with LLMs: A New Era in Healthcare Technology
15:55–16:15	Flash Poster Presentation (5 mins per person)	**Sameer Mustafa Sheikh** Generative Artificial Intelligence in Clinical Neurosciences: An Evidence-Based Appraisal of Diagnostic Precision and Therapeutic Decision-Making **Inesa Stonkutė** Artificial Intelligence for Maxillary Sinus Pathology Detection on Cone–Beam CT: A Systematic Review of Expert-Consensus Studies **Joshua Khorsandi** Safety, Bias, and Hallucination Mitigation in Clinical Applications of Generative Artificial Intelligence: A Systematic Review of Current Evidence **Ghazenfer Mansoor** Evaluating Generative AI in Clinical Workflows: A Practical Framework for Safe and Effective Deployment

DAY 2—Morning Program
26 March 2026 (Thursday)

Time: 9:00 (CET, Basel) | 4:00 (EDT, New York) | 16:00 (CST Asia, Beijing)

Session 2. Patient-Centered Care—Optimizing Care Pathways through Engagement and Outcome Measurement

CET (Central European Time)	Speaker	Title
9:00–9:05	**Prof. Dr. Andre Van Zundert** Session Chair	Welcome from the Session Chair
9:05–9:25	**Dr. Umair Majid** Invited Speaker	Grabbing the Future of Patient-Centred Care as It Emerges: People-Centred Systems as the Next Chapter
9:25–9:45	**Dr. Priscila Marconcin** Invited Speaker	Empowering Older Adults in the Self-Management of Chronic Conditions: A Patient-Centered Care Approach
9:45–10:00	**Shikha Gandhi** Selected Speaker	Integrating Patient-Reported Outcomes and Digital Co-Design to Optimize Dermatologic Care Pathways: Patient-Centered Approaches
10:00–10:15	**Ricardo Madeira** Selected Speaker	Videoconference-Delivered Physical Exercise Compared with Face-to-Face Programs for Institutionalized Older Adults: A 6-Week Quasi-Experimental Study
10:15–10:30	**Alice Yip** Selected Speaker	Reclaiming self and family: A phenomenological exploration of the unmet needs and lived experiences of breast cancer survivors in Hong Kong
10:30–10:45	**Eka Mishbahatul M Has** Selected Speaker	Feeding the Future: Household Food Security and Infant Feeding Practices among Stunted Children in Urban Indonesia
10:45–11:00	**Sameer Mustafa Sheikh** Selected Speaker	Bridging the Gap Between Data and Compassion: A Neurocentric Approach to Patient-Centered Care through Engagement and Outcome-Driven Pathways
11:00–11:15	**JAVEDH SHAREEF** Selected Speaker	Prescribing Practices, Polypharmacy, and Drug Interaction Risks in Anticoagulant Therapy: Insights from a Secondary Care Hospital
11:15–11:30	**Handan aydın kahraman** Selected Speaker	Clinical Assessment of Medical Device–Related Pressure Injury Risk: Profiling Risk Levels in Patients Using Medical Devices

11:30–11:50	Flash Poster Presentation (5 mins per person)	**DIMITRIOS MIMARAKIS** Euthanasia as a pathway for patients: Healthcare professional characteristics that may impact their attitudes toward euthanasia in Greece **Paula Latorre** The Impact of Affective Symptoms on Subjective Memory Complaints: Implications for Patient-Centered Cognitive Assessment and Gender-Sensitive Care **Alejandra Chulián** How is purpose in life experienced when the road ahead is shorter than the road behind? **Mohammad T Alashqar** Clinical Impact of Digital Health Education for Patients with Heart Failure: A Systematic Review and Meta-Analysis

DAY 2—Afternoon Program
26 March 2026 (Thursday)

Time: 14:00 (CET, Basel) | 9:00 (EDT, New York) | 21:00 (CST Asia, Beijing)

Session 1. Digital Health Adoption and Innovation—A Vision for the Future of Healthcare

CET (Central European Time)	Speaker	Title
14:00–14:05	**Dr. James C. L. Chow** **Dr. Simona Tecco** Session Chair	Welcome from the Session Chairs
14:05–14:35	**Prof. Dr. Yun-Chul Hong** Keynote Speaker	AI and Next Frontier in Primary Healthcare
14:35–14:50	**Laney Hyland** Selected Speaker	Beyond innovation: How frontline clinical innovators shape digital care
14:50–15:05	**Kushi Sharma** Selected Speaker	Comparative Evaluation of mHealth Awareness, Usage Patterns, and Preventive Behaviours Among Dental, Nursing, and Engineering Undergraduates in Himachal Pradesh
15:05–15:20	**atta Ur Rehman** Selected Speaker	Assessment of Effect of Mobile-Linked Health Intervention on Health literacy of Pregnant Women in Cholistan Desert, Punjab, Pakistan
15:20–15:50	**Prof. Dr. Frances Mair** Keynote Speaker	Digital Health Implementation Challenges and Opportunities
15:50–16:05	**Olatunde Aremu** Selected Speaker	Impact of smartphone ownership on improved access to digital menstrual health information and accurate fertility cycle tracking among Liberian women: Evidence from 2020 Demographic and Health Survey
16:05–16:20	**Styliani Gerakari** Selected Speaker	Predicting medical crises in Public Health with AI
16:20–16:35	**Karim Keshavjee** Selected Speaker	Evaluating the Scalability of SNOMED CT for Jurisdictional Level Semantic Interoperability
16:35–16:55	Flash Poster Presentation (5 mins per person)	**TUN WEI HUANG** Opportunities and Challenges in Integrating Smart Healthcare into Taiwan's Long-Term Care System: A Physicians' Perspective **Minnah Hafeez** Awareness and Health Outcomes Related to Ergonomic Practices Amid Digital Transformation: A Survey of Remote Workers in Islamabad, Pakistan **Antonio David Martin-Barrado** Digital Engagement and Positive Youth Development: A Systematic Review **Cherisse L Seaton** Digital Literacy Training Supports For Older Adults With Cardiovascular Disease Using Health Technologies
16:55–17:00	Prof. Dr. Lorraine S. Evangelista Event Chair	Closing remarks from the Event Chair

Session 1. Digital Health Adoption and Innovation—A Vision for the Future of Healthcare

sciforum-160537: A Voice-Enabled Clinical Assistant for Bedside Assessment

Vedansh Mehra

[1] Department of Medicine, Dr. V.M. Government Medical College, Solapur, 413003, India

Introduction: The importance of bedside assessment in clinical decision making cannot be ignored, but the volume of documentation and information that is unnoticed and sporadic may slow down timely interventions. Digital tools which are voice-enabled provide hands-free support and enable the real-time capture of data, which may increase efficiency and accuracy. This paper will consider the practicality and effectiveness of a voice-based clinical assistant system to aid bedside evaluation in general medicine wards.

Methods: The pilot study was performed in two general medicine units over the period of eight weeks. The clinicians were provided with a tablet-based voice-activated assistant to record vital signs, capture clinical impressions, access patient history, and add reminders to routine rounds. The electronic health record (EHR) was connected to the system via safe APIs. The outcomes that were measured were documentation time, completeness of assessment records, user satisfaction, and occurrence of omission of clinical tasks. There was a pre-implementation and post-implementation comparison.

Results: The voice-enabled assistant led to a 32-percent decrease in documentation time and a 28-percent rise in the completeness of the bedside assessment notes. As a result of improved workflow and reduced cognitive load, clinicians rated usability scores highly, with the mean being 4.4/5. The rate of task omission, especially follow-up vital checks and drug reminders, reduced by 21 percent. There were no data-security breaches or system-related clinical errors.

Conclusions: The voice-based clinical assistant greatly simplified the bedside operations, increased the quality of documentation, and augmented compliance with normal clinical duties. These observations indicate that voice-based applications are able to reinforce real-time clinical assistance and add to safer and more efficient inpatient care. Greater multicentre analysis should be encouraged to determine scalability and long-term effects.

sciforum-160082: Beyond innovation: How frontline clinical innovators shape digital care

Threase Kessie[1], Linda Ryan[1], Michelle Howard[2], Laney Hyland Reilly[2], Jared Gormly[2]

[1] Department of Design Innovation, Maynooth University, Maynooth, Co Kildare, W23 F2H6, Ireland
[2] HSE Spark Innovation Programme, Sancton Wood Building, Heuston South Quarter, Saint John's Road West, Dublin 8, D08 TPX9, Ireland

Introduction:

Real-world optimisation of patient care using digital care depends on more than deploying technology. It requires understanding the contextual, relational, and practical challenges faced by frontline clinicians implementing these tools. As frontline clinicians directly witness patient needs and digital mismatches, their insights reveal why certain digital interventions fail to translate into meaningful improvements. This presentation shows how frontline clinicial innovators navigate the challenges of integrating digital tools into the provision of healthcare.

Methods:

The analysis is based on six qualitative case studies of frontline clinical innovators who led the implementation of digital interventions in clinical contexts. These frontline clinical innovators included an occupational therapist, a midwife, a speech and language therapist, two primary care managers, and a consultant neurologist. The digital tools were deployed in maternity care, primary care, neurology, occupational therapy, speech and language therapy, and community services. All data were collected post-implementation, following each innovator's engagement and funding through the HSE Spark innovation programme. An inductive cross-case thematic analysis has been used to identify common themes across case studies.

Results:

Across the case studies , four shared themes emerged: frontline innovators identified needs through direct experience of service gaps; implementation exposed substantial organisational and technological barriers, particularly around governance, procurement, and IT; all digital tools required ongoing adaptation to align with patient needs and clinical workflows; and digital projects demanded significant relational and coordination work beyond clinicians' usual roles. These themes illustrate why initial enthusiasm often declined as the practical realities of implementation became clear.

Conclusions:

Digital innovation is critical to the optimisation of healthcare. Therefore, understanding barriers and what needs to be changed to enable innovation in this space is critical. While based on six in-depth cases and therefore limited in breadth, our study on frontline clinicians offers essential insights into barriers to effective, equitable digital health adoption.

sciforum-159896: Comparative Evaluation of mHealth Awareness, Usage Patterns, and Preventive Behaviours Among Dental, Nursing, and Engineering Undergraduates in Himachal Pradesh

Kushi Sharma

[1] Department of Public Health Dentistry, Himachal Dental College, Sundernagar, Atal Medical Research University, Sundernagar, 175002, India

Background

Mobile health applications are significantly shaping preventive healthcare behaviours among young adults, yet empirical evidence from the Himalayan region remains scarce. Understanding students' mHealth knowledge, usage patterns, and influence on preventive behaviours is essential for improving digital health adoption.

Aim

The aim of this study was to assess and compare mHealth-related knowledge, usage patterns, categories of apps used, and preventive health attitudes and behaviours among dental, nursing, and engineering undergraduate students in Himachal Pradesh.

Materials and Methods

A comparative cross-sectional study was conducted among 665 students: dental (n = 220), nursing (n = 215), and engineering (n = 230). A validated 22-item questionnaire (Content Validity Index = 0.89; Cronbach's alpha = 0.84) assessed mHealth knowledge, attitudes, types of applications used, and preventive health behaviours, including physical activity, diet, sleep hygiene, stress management, and routine monitoring. Barriers to mHealth adoption were also documented. Chi-square tests were used for categorical variables and one-way ANOVA for preventive behaviour scores.

Results

Overall mHealth knowledge was 78.3 %. Dental students showed significantly higher knowledge (86.4 %) than nursing (79.1 %) and engineering students (70.9 percent) ($\chi^2 = 18.42$; p 0.001). Regular mHealth usage (≥3 times per week) was most common among dental students (52.7 percent), followed by nursing (41.8 %) and engineering students (29.6 %) ($\chi^2 = 27.15$; p 0.001). Preventive behaviour scores differed significantly ($F(2,662) = 32.9$; p 0.001): dental students scored highest (31.4 ± 5.2), followed by nursing (28.7 ± 4.9) and engineering students (26.1 ± 5.4). Frequent mHealth users demonstrated stronger preventive engagement. Key barriers included limited awareness (38.2 %), privacy concerns (28.4 %), and inconsistent internet access (22.5 %).

Conclusion

Dental students exhibited superior mHealth knowledge, higher usage frequency, and stronger preventive behaviours. Strengthening digital health literacy among non-health disciplines may enhance mHealth adoption and support improved preventive health practices across student communities.

sciforum-160683: Identification of the Most Effective Machine Learning and Closed-Loop Control Strategies for Deep Brain Stimulation Optimization in Functional Neurosurgery: A Systematic Comparative Review (2020–2025).

Pooja K

[1] Department of Dentistry, Sri Ramakrishna Dental College and Hospital, Coimbatore, Tamil Nadu - 641044, India

Introduction:
Deep Brain Stimulation (DBS) is a major breakthrough at the intersection of medicine and technology and has revolutionised the treatment of severe neurological, psychiatric, and movement disorders. It has significantly evolved through the years, yet the conventional open-loop paradigms remain constrained by inconsistent symptom control and the inefficient use of energy. The paradigm shift comes from switching to adaptive closed-loop DBS enabled by artificial intelligence and machine learning capable of adjustable real-time stimulation based on neural and behavioural biomarkers. This systematic comparative review evaluates ML-based closed-loop DBS systems across disorders such as Parkinson's disease, chronic pain, dystonia, essential tremor, epilepsy, and psychiatric conditions.

Methods:
Thirty studies were analysed based on five key parameters: clinical indication and DBS target, biomarker modality, ML approach, clinical outcomes, and energy efficiency. The strategies include static optimisation (pre-surgical planning) and dynamic optimisation (real-time adjustment) to identify the most effective computational approaches used in functional neurosurgery.

Results:
Closed-loop strategies ranged from threshold-based adaptive control to reinforcement learning, CNN classifiers, and MPC. Static optimisation demonstrated statistically superior performance over programming, including improved target coverage, reduced electric field leakage, an increased therapeutic window, and reduced programming time. For dynamic optimisation, outcomes depend on biomarker fidelity, particularly local field potential beta oscillations (13–30 Hz). For multi-parameter optimisation tasks, reinforcement learning (RL) offered an effective model-free approach, autonomously learning stimulation policies and improving focality. Model Predictive Control (MPC) achieved more than 20 percentage reduction in tracking error and provided superior real-time regulation.

Conclusion:
Across studies, adaptive DBS improved symptom control. Stimulation time and energy consumption were reduced by up to 50 per cent. Reinforcement learning and MPC showed promise in epilepsy, while amplitude-adaptive cortical control was effective in ET. Network-guided targeting and sleep-state adaptation expanded potential beyond PD. Overall, AI-driven closed-loop DBS enhances precision, clinical efficacy, and energy efficiency.

sciforum-160262: The Effect of Digital Cognitive Behavioral Therapy on Ruminative Thinking in Young Adults with Depression: A Randomized Controlled Trial

yawei chang

[1] china medical university

Introduction: The prevalence of depression among young adults continues to rise, with its core pathological mechanism—ruminative thinking (the persistent immersion in negative thoughts)—significantly affecting prognosis. While digital cognitive behavioral therapy (dCBT) represents a highly accessible intervention, its specific efficacy in targeting ruminative thinking in young depressed patients requires further empirical validation.

Methods: A two-arm, randomized controlled trial was conducted. Participants included 128 young patients (aged 16-25) meeting the DSM-5 diagnostic criteria for depression, recruited through hospital platforms and online channels. They were randomly assigned to either a dCBT intervention group (n=64) or a waitlist control group (n=64). The intervention group received 8 weeks of app-based, guided dCBT, which included psychoeducation, cognitive restructuring, behavioral activation, and mindfulness training. The control group received no intervention during the 8-week period. Assessments were conducted at baseline and post-intervention (week 8) using the Ruminative Response Scale (RRS) and the Patient Health Questionnaire-9 (PHQ-9) to evaluate levels of ruminative thinking and depressive symptoms, respectively. Repeated-measures ANOVA was used to compare between-group differences, and the PROCESS macro was employed for mediation effect analysis.

Results: Post-intervention, the dCBT group demonstrated significantly lower RRS scores (28.5 ± 5.2 vs. 45.8 ± 6.1; $F(1, 125) = 105.3$, p 0.001) and PHQ-9 scores (7.1 ± 3.5 vs. 15.3 ± 4.0; $F(1, 125) = 98.7$, p 0.001) than the waitlist control group, with effect sizes of $\eta^2 = 0.36$ and $\eta^2 = 0.35$, respectively. Mediation analysis further indicated that the reduction in ruminative thinking played a significant partial mediating role in the alleviation of depressive symptoms through dCBT (indirect effect = -2.1, 95% CI: [-3.5, -0.9]).

Conclusion: This study demonstrates that dCBT effectively alleviates both ruminative thinking and depressive symptoms in young adults with depression, and that reduction in rumination serves as an important mechanism of symptom improvement. These findings provide robust evidence supporting dCBT as an accessible intervention targeting the core pathological mechanism of youth depression.

sciforum-162995: Assessment of Effect of Mobile-Linked Health Intervention on Health literacy of Pregnant Women in Cholistan Desert, Punjab, Pakistan

Usman Cheema, atta Ur Rehman

[1] Department of Public Health, Institute of Health & Management Sciences affiliated with SZABMU, Islamabad 46300, Pakistan

Background

Maternal health during pregnancy is critical for favorable maternal and neonatal outcomes. However, women living in remote and resource-limited regions face persistent barriers in accessing timely health information and care. In the Cholistan Desert of Punjab, Pakistan, geographic isolation, limited health infrastructure, low literacy levels, and deeply rooted cultural practices contribute to poor maternal nutrition and a high prevalence of anemia. Mobile health (mHealth) interventions offer a promising approach to address these gaps by enabling low-cost, direct communication with pregnant women.

Methods

This randomized controlled trial assessed the impact of a real-world WhatsApp-based mHealth intervention on maternal health literacy, nutritional status, dietary behaviors, and predictors of anemia among 384 pregnant women recruited from three public-sector health facilities in the Bahawalpur, Bahawalnagar, and Rahim Yar Khan districts. WhatsApp was selected due to its widespread use, familiarity, and minimal technical requirements in low-resource settings. Participants were randomly assigned to an intervention group receiving structured, interactive maternal health support via WhatsApp or a control group receiving routine antenatal care. Data were collected using structured questionnaires adapted from validated tools and standard nutritional assessments. Questionnaires were administered physically in the health care facility in the control group and in the intervention group before and after intervention.

Results

Women in the intervention group demonstrated significant improvements in nutrition-related knowledge, maternal health awareness, dietary practices, and key anemia-related indicators compared with the control group. Positive changes were also observed in selected mental and social well-being indicators. Implementation challenges included limited digital literacy, intermittent mobile connectivity, skepticism toward technology-based health advice, and continued reliance on traditional practices, which affected engagement among some participants.

Conclusion

This study provides evidence that a WhatsApp-based, real-world mHealth intervention can improve maternal health literacy, nutritional behaviors, and anemia-related outcomes in marginalized desert communities. Using familiar platforms enhances feasibility, acceptability, and program scalability.

sciforum-158901: Automatic Identification of First-Degree Atrioventricular Blocks

Manuel Sandoval Martínez, Claudia Morales Barrón, Luz Elba Castillo Izquierdo, Ramón Izquierdo Córdova

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A Python program was developed for the automated analysis of digitized electrocardiograms (ECGs) with the objective of classifying heart rate, determining the electrical axis, and identifying first-degree atrioventricular block (1AVB) by automatically measuring time intervals and wave amplitudes, thus emulating cardiological diagnostic criteria. The algorithm was evaluated using a sample of 85 ECG recordings sourced from *A large scale 12-lead electrocardiogram database for arrhythmia study published on Physionet* (115 ECG), all known to exhibit 1AVB. The tool demonstrated an **effectiveness of 97%** in 1AVB detection, identifying 83 cases. Additionally, the program was able to produce the following measurements of ECGs: Electrical Axis, classifiying them as 48 Normal, 35 Left Axis Deviation, and 2 Right Axis Deviation, and Heart Rate, detecting 40 Bradycardias (38 Mild, 1 Moderate, 1 Severe), 15 Tachycardias, and 28 Normal Rates.

The preliminary risk analysis obtained with the measurements provided by the tool yielded 15 high-risk cases and 70 low-risk cases, with diagnostic implications for conditions such as ventricular hypertrophy or advanced cardiac conduction system disease. The processing time for the whole sample was an average of 163 seconds using a standard computer, resulting in an analysis time per ECG of less than 2 seconds. The computational results showed full concordance with the clinical diagnosis provided by cardiologists from the Desiderio Rosado Carbajal Hospital. The high accuracy, efficient processing time, and concordance with expert diagnosis confirm the potential of this computational program as a reliable and rapid support tool in the field of cardiology, facilitating the screening and preliminary diagnosis of significant ECG abnormalities.

sciforum-159500: Awareness and Health Outcomes Related to Ergonomic Practices Amid Digital Transformation: A Survey of Remote Workers in Islamabad, Pakistan

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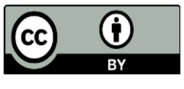
Introduction:
The rapid digital transformation accelerated by the COVID-19 pandemic has significantly altered global work dynamics, with work-from-home (WFH) becoming increasingly prevalent. This study aimed to assess the understanding and implementation of ergonomic principles among remote employees in Islamabad and to evaluate how WFH practices affect their physical and mental well-being.

Methodology:
A cross-sectional online survey was conducted among remote workers in Islamabad (N = 34). Participants were recruited through nonprobability snowball sampling. A structured, content-validated questionnaire covering demographics, ergonomic awareness, workstation practices, and health symptoms was distributed via social media platforms and professional networks. Descriptive statistics, including frequencies and percentages, were analyzed using SPSS version 18. Fisher's exact test was applied to examine associations between workstation deficiencies and reported symptoms.

Results:
Most participants (82.4%) were female, and 58.8% were aged 20–25 years. The findings revealed substantial ergonomic shortcomings: 58% used non-ergonomic chairs, 44% worked on non-ergonomic tables, and 62% placed their screens below eye level. Only 32% participants took regular hourly breaks, indicating limited adoption of basic ergonomic practices. These setups contributed to notable health issues: 61% experienced constant neck pain, 56% reported lower back pain, and 47% had shoulder discomfort. Additionally, 68% reported eye strain, whereas more than half experienced fatigue and stress. Fisher's exact test showed no statistically significant association between symptoms and desktop level (p = 0.34), keyboard position (p = 1.1), chair type (p = 0.310), or desk type (p = 0.366).

Conclusion:
Despite growing awareness of the challenges of remote work, ergonomic practices among Islamabad's remote workforce remain limited. The high burden of discomfort underscores the need for affordable workstation improvements. Future studies with larger samples and longitudinal or interventional designs are recommended to clarify causal relationships between workstation design and health outcomes.



sciforum-162085: Digital Engagement and Positive Youth Development: A Systematic Review.

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Introduction: Extensive research has addressed the adverse effects of excessive Internet use on mental well-being. However, there is a critical need to understand these digital behaviors through the lens of Positive Youth Development (PYD), a model centered on cultivating strengths rather than merely preventing risks. This study aims to examine the influence of PYD assets on digital behaviors and identify critical research gaps regarding emerging technologies.

Method: A systematic search was performed following PRISMA guidelines across the Web of Science, Scopus, and PubMed databases (inception to December 2024). Keywords included Internet, social media, artificial intelligence, adolescent, child, student, Positive Youth Development, PYD, and Developmental Assets.

Results: The analysis included 17 eligible studies (13 longitudinal, 4 cross-sectional) published from 2012 to 2024, assessed using the Joanna Briggs Institute checklist, comprising 37,015 adolescents (aged 10–19). Geographically, samples were predominantly Asian (n = 15), with only two studies from Europe. Notably, 13 studies identified PYD as a protective factor against Internet addiction and gaming disorders. However, specific dimensions showed nuanced effects: the Connection dimension was associated with reduced sexting, whereas high Competence and Confidence levels correlated with increased pornography consumption in specific contexts. Additionally, family support and emotional self-regulation emerged as crucial moderators. Finally, no studies addressed artificial intelligence (AI) interactions.

Discussion: As one of the first systematic reviews on this topic, this study suggests that PYD offers effective tools to promote responsible technology use. Nevertheless, the reliance on predominantly Chinese samples necessitates cross-cultural validation. Furthermore, the lack of research linking PYD to AI interactions highlights a new frontier for investigation. These insights provide a foundation for designing more inclusive interventions to foster digital skills among youth in the digital age.

sciforum-160609: Digital Health Adoption and Innovation: Psychological Benefits and Risks in the Future of Healthcare

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Digital health innovations are revolutionizing today's healthcare models, unveiling unique prospects for boosting accessibility, personalized approaches, and seamless care. With technological innovations like telemedicine, health monitoring apps, remote tracking, and AI-assisted tools steadily integrating into healthcare, recognizing their psychological effects on both patients and healthcare professionals is becoming increasingly vital.

This study employed a systematic scoping review to examine the psychological effects of technology use in healthcare following the accelerated digital adoption observed after the COVID-19 pandemic. A systematic literature search identified approximately 500 publications, of which 50 studies published after 2020 up to mid-2024 were included after excluding COVID-19-specific research, in order to avoid confounding effects. Findings from the included studies were synthesized to develop an analytical framework for understanding the psychological effects of technology use in both the delivery and receipt of healthcare services.

On a positive note, digital health has the potential to augment users' perception of agency, foster self-efficacy in the management of chronic illnesses, alleviate anxiety associated with travel or prolonged waiting periods, and reinforce feelings of security through persistent support. Numerous individuals also report heightened motivation, enhanced engagement in therapeutic processes, and alleviation from geographic or social constraints.

Conversely, the digital transformation engenders several noteworthy psychological risks. A subset of users experiences anxiety when engaging with unfamiliar technologies or depending on automated systems, while apprehensions regarding data security and incessant monitoring may evoke feelings of vulnerability. The diminishment of in-person interactions may erode emotional bonds and trust between patients and clinicians, thereby exacerbating feelings of uncertainty or frustration. Moreover, individuals possessing limited digital competencies may encounter exclusion, resulting in diminished self-confidence and increased stress levels.

Comprehending both the advantages and challenges associated with digital health is paramount for the development of human-centered systems that safeguard psychological well-being and facilitate equitable healthcare innovation.

sciforum-156198: Digital Health Strategies for Florida's Emerging Chronic Disease Burden

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Background: Digital health technologies have the potential to reduce the burden of chronic diseases by improving prevention, early detection, and continuous management. This study projects county-level demand from 2025 to 2040 for cardiovascular disease (CVD) and chronic obstructive pulmonary disease (COPD) among older adults in Florida and considers how digital health can alleviate the chronic disease burden in high-risk counties.

Methods: County-level hospitalization data from the Florida Agency for Health Care Administration (2000–2024) were analyzed using the Holt–Winters exponential smoothing method to forecast CVD and COPD prevalence. Forecasts were integrated with Health Professional Shortage Area (HPSA) and Social Vulnerability Index (SVI) data.

Results: The statewide trends suggest a general increase in CVD by 8.13% and a decline in COPD by 13.47%, but a closer examination at the county level reveals a more uneven distribution, with twenty-one counties projected to experience an increase in both diseases. The projected burden is greatest in counties with higher social vulnerability, limited provider availability, and higher proportions of racial/ethnic minorities. The Internet of Things (IoT) can enhance prevention and long-term management through remote monitoring, activity tracking, and behavior-based feedback systems.

Conclusion: Strategic planning and targeted investments are essential to address regional disparities and meet future healthcare demands. Forecasting models informed by digital health innovation have the potential to improve chronic disease management and expand equitable healthcare access. Counties with high SVI and HPSA scores should prioritize digital health interventions, including telehealth, mobile health units, teleradiology, wearable monitoring, and e-pharmacy services, to improve access and continuity of care. IoT implementation must include community-based training to improve digital literacy, ensure cultural competence, and address infrastructure barriers such as connectivity and affordability. Building a digitally enabled, data-informed public health system will be critical in ensuring equitable, proactive, and sustainable chronic disease prevention across Florida's aging population.

sciforum-160455: Digital Literacy Training Supports For Older Adults With Cardiovascular Disease Using Health Technologies

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Introduction:

Digital technologies present new possibilities for the self-management of cardiovascular disease (CVD). Yet little is known about digital literacy training (DLT) needs among older adults to support their successful uptake of technology. We aimed to synthesize evidence about the impacts of training on health technology use among older adults with CVD and to explore their learning experiences.

Methods:

A systematic review was conducted according to PRISMA guidelines and supplemented by focus group input from older adults with CVD. Multiple databases were searched for articles reporting DLT with adults age 60+ years with CVD published between inception and March 31, 2025. Focus group responses to the question “What have been your experiences learning how to use digital technologies?” were analyzed and triangulated with review findings.

Results:

The review included 56 studies with DLT as part of digital health interventions and 32 patients with CVD (mean age = 73 years) participated in focus groups. The majority of studies reported positive technology-related outcomes (e.g., technology confidence, acceptance, and eHealth literacy), although study designs did not allow for the determination of the role of DLT separate from the overall intervention. Two studies were exceptions, demonstrating positive impacts of training on technology- and health-related outcomes. In ten studies, DLT was evaluated, and patient feedback largely affirmed that training was needed. Analyses across studies found differing DLT characteristics (e.g., print materials, ad hoc support) unrelated to technology uptake. Focus group patients showed variable training needs, with 18 (56%) “high technology” and 13 (41%) “low technology” users. Participants' technology training experiences ranged from extensive and lifelong technology engagement to hesitant engagement, suggesting greater training support needs.

Conclusions:

Together, these findings highlight the role of DLT in encouraging older adults with CVD to use health technologies and suggests the importance of understanding support needs.

sciforum-160151: Enhancing Early Autism Screening with Behavioural Data and Machine Learning Algorithms

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Background: Autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by impairments in communication, social interaction, and behaviour. Early diagnosis is critical, as timely intervention can significantly improve developmental outcomes. Conventional diagnostic procedures are time-intensive and require specialist expertise, creating a need for scalable, data-driven tools that support early screening in both clinical and non-clinical settings. **Objective:** This study aims to develop a robust, machine learning-based system capable of accurately predicting ASD risk in children using behavioural, demographic, and clinical indicators. The goal is to provide an accessible tool that helps families and clinicians identify and plan interventions early. **Methods:** We collected an open-source ASD screening dataset from Kaggle, which contains behavioural indicators, demographic information, and relevant clinical attributes. Multiple machine learning classifiers were trained and evaluated on this dataset to determine the most effective model for early ASD prediction. Standard evaluation metrics were used to compare overall performance. **Results:** Random Forest achieved the strongest predictive performance among all evaluated models, demonstrating superior accuracy and screening reliability compared to the other classifiers. These results highlight the potential of machine learning approaches for efficient early ASD risk detection. **Conclusion:** The Random Forest-based ASD prediction model demonstrates strong potential as a dependable early screening tool, offering high predictive accuracy and consistent performance across key evaluation metrics. This data-driven methodology can assist clinicians and caregivers in identifying at-risk children sooner, enabling prompt assessment and enhancing the likelihood of early therapeutic intervention.

sciforum-159076: Evaluating the Scalability of SNOMED CT for Jurisdictional Level Semantic Interoperability

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Introduction: SNOMED CT is a comprehensive clinical terminology with significant potential to improve care, yet implementation at the jurisdictional scale remains uneven. Research question: "What are the root causes of poor uptake, and what practical steps will change the trajectory?

Methods: Hands-on engagement with pan-Canadian EMR data (1.2 million de-identified patient records), Snap2SNOMED-assisted mapping and curation, and a targeted review of peer-reviewed and gray literature. We analyzed findings using a people, process, technology, and economics lens.

Results: Five structural limitations appear to impede jurisdiction-wide adoption: (1) workflow misalignment that puts coding work on clinicians during time-pressed encounters, (2) insufficient localization, including Canadian synonyms, bilingual content, and curated value sets, frustrating for clinicians (3) inadequate error surfacing for developers, including weak exposure of inactivation reasons, historical associations, and version changes through developer-facing services, which allows errors and divergence to go undetected, (4) a maturity model that ignores complexity in early stages, accumulating technical debt, and (5) lack of structural incentives that align costs with benefits for vendors and clinics.

Discussion: Although the Canadian context makes these barriers concrete, similar issues appear internationally. We propose four system-level actions that aim to reduce costs for vendors and increase value for clinicians: (1) a centralized, authoritative terminology service hosted by a trusted national actor to lower vendor costs, enable synonym localization, and enforce history rules, (2) workflow-embedded standardization that moves coding effort into background services, (3) monetary and non-monetary incentives and innovation challenges that garner publicity for vendors to stimulate adoption and 4) a simple capability framework to replace the staged maturity, prioritizing debt-cutting basics first. Together, these measures offer a practical path to make SNOMED CT usable, consistent, cost-effective, and sustainable at scale.

sciforum-158774: Exploring Human–AI interaction in Primary Healthcare: A Qualitative study

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Background: Artificial intelligence is rapidly reshaping the healthcare sector. Technological advancements are accelerating, and healthcare professionals often appear unprepared to seize the opportunities and, even more so, address the challenges. In some countries, where the applications of AI in primary health care range from limited to non-existent, it is of particular importance to consider the readiness for AI integration, with a view to properly preparing healthcare professionals.

Aim: This study explores the perceptions of healthcare professionals in Greek Primary Healthcare regarding the future use of AI, focusing on expected benefits, potential risks, ethical concerns, and their readiness for human-AI-assisted care.

Methods: A qualitative design was implemented through two focus groups with a total of 18 Primary Healthcare professionals: 3 physicians, 8 nurses, 1 midwife, 3 health visitors, and 3 administrative staff from a Health Center and a local PHC unit (TOMY). The data were collected using a semi-structured guide and thematically analyzed using the framework of Braun and Clarke (2006).

Results: Participants identified potential benefits in supporting decision-making through the management and organization of patient data, as well as time savings that could be leveraged in providing personalized care. However, they raised serious concerns about data confidentiality, accountability, professional deskilling, and the possible loss of human control. Training and rigorous oversight of systems emerged as key enablers for preparedness and trust.

Conclusion: Exploring healthcare professionals' perceptions of human–AI interaction before implementation provides meaningful insights for planning, training, and ethical policymaking. Building digital and ethical readiness today will determine how responsibly AI shapes the future of Primary Healthcare.

sciforum-156527: Healthcare Professionals' Intentions to Adopt Holoportation Technology

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Background:
Holography offers a cutting-edge method for three-dimensional interaction between healthcare providers and patients. While its use in education and care delivery is growing, provider acceptance remains uncertain. This study investigates healthcare professionals' intention to adopt holohealth technologies using the Unified Theory of Acceptance and Use of Technology (UTAUT)

Methods:
A cross-sectional survey was conducted following a presentation on Holoportation/Hologram tools at a healthcare providers' conference. Participants completed a Qualtrics survey, and data were analyzed using SmartPLS 4 with partial least squares–structural equation modeling (PLS-SEM). The analysis assessed the measurement reliability and tested relationships within the structural model.

Results:
Results reveal that perceived ease of use (PEOU) is a key determinant of adoption, significantly predicting behavioral intention to use (BIU) (β = 0.414; p 0.05) and perceived usefulness (PU) (β = 0.241; p 0.05). This confirms that an intuitive, user-friendly design enhances both perceived utility and adoption likelihood. PU also significantly influences BIU (β = 0.243; p 0.05), underscoring that professionals adopt holohealth when it improves efficiency or outcomes. Trialability has a positive effect on PU (β = 0.306; p 0.05), indicating that hands-on exposure enhances perceived value. Social influence further drives adoption (β = 0.333; p 0.05), reflecting the role of peer and organizational endorsement. Conversely, technology anxiety hinders adoption by reducing both PEOU (β = -0.644; p 0.05) and PU (β = -0.472; p 0.05). The structural model (R^2 = 0.718 for BIU) explains over 70% of the variance in adoption.

Conclusion:
This study provides empirical support for a comprehensive model of holohealth adoption. Key factors such as intuitive design, perceived benefits, peer support, and hands-on experience promote adoption, while anxiety about technology presents a barrier. These insights can guide implementation strategies that foster confidence and usability among healthcare professionals.

sciforum-163144: Healthcare Regulatory Compliance: A Generative AI Framework for Identifying and Mitigating Risks

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Introduction:
As healthcare organizations increasingly rely on AI systems for clinical decision support, ensuring regulatory compliance has become a critical challenge. We propose an AI-powered compliance framework that supports data-driven regulatory risk assessment in healthcare AI workflows. By combining information retrieval, generative reasoning, and interactive visualization, the framework enables early identification of potential compliance risks directly from dataset characteristics and intended clinical use.
Methods:
The framework was evaluated using a scenario-based, data-driven test design based on a hospital readmission prediction dataset comprising ten years of longitudinal patient records with clinical measures, which was used with an AI-based readmission prediction model. Regulatory risk inference was derived directly from dataset characteristics and the intended use of the AI model. The evaluation followed four steps: (i) automated dataset characterization to identify sensitive health attributes, quasi-identifiers, temporal scope, and variables relevant to readmission prediction; (ii) GDPR-orientated risk inference by mapping data properties to requirements related to anonymization, data minimization, and data retention; (iii) classification of the intended use case as a high-risk AI system under the EU AI Act, with inference of obligations for training data governance and documentation; and (iv) dataset and model level screening for potential bias and representativeness issues across demographic and clinical subgroups.
Results:
Using the hospital readmission dataset, the framework identified elevated re-identification and retention risks under GDPR linked to longitudinal data. Variables with limited relevance to readmission prediction were highlighted as potential data minimization concerns. The system classified the use case as a high-risk AI system under the EU AI Act and detected subgroup imbalances indicative of potential regulatory and ethical risks. A review by data governance experts confirmed the relevance of the generated findings.
Conclusions:
The proposed framework supports early-stage regulatory risk assessment for healthcare AI systems, promoting compliance-by-design and trustworthy AI development.

sciforum-160688: Impact of smartphone ownership on improved access to digital menstrual health information and accurate fertility cycle tracking among Liberian women: Evidence from 2020 Demographic and Health Survey

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Background: The availability and accessibility of mobile and digital health resources have continued to have far-reaching, positive effects on people's health and health outcomes globally. The adoption of digital (mHealth) tools for disseminating health information and managing health care delivery has garnered greater attention in population health in recent years. Evidence has shown that mobile phones are a helpful tool for accessing and delivering targeted health information and interventions, which has been well documented in several countries. However, less is known about the use of such devices and other digital health resources to enhance reproductive health knowledge, including understanding of the fertility cycle, among Liberian women. **Methods**: A multilevel regression analysis was applied to data from 8,065 women aged 15-49 who participated in the Liberian Demographic and Health Survey conducted between 2019 and 2020 across the whole country. **Results:** The findings show that use of a mobile phone for searching targeted reproductive health messages (OR =2.56; 95% CI: 1.98 to 3.20), having secondary and higher education (OR =1.87; 95% CI: 1.74 to 2.24), and daily use of the internet on a smart phone (OR =1.62; 95% CI: 1.58 to 2.12) were all associated with exposure to and improved knowledge of menstrual cycle patterns. Additionally, results show that individuals from more affluent households are more likely (OR = 2.16; 95% CI: 2.86-3.42) to own a smartphone and use it to track their menstrual cycle and access general reproductive health messages. **Conclusion:** Ownership of mobile phones, use of smart/mobile phones for accessing health information and targeted reproductive health messages, and various characteristics of women are associated with improved knowledge of menstrual cycle length and patterns and how best to track it. The government should make efforts to ensure that innovative health messages, such as the mobile obstetric emergency system (MORES), available via WhatsApp, are scaled across all health domains using digital tools.

sciforum-150769: Opportunities and Challenges in Integrating Smart Healthcare into Taiwan's Long-Term Care System: A Physicians' Perspective

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Background: The rapidly aging population in Taiwan has sharply increased the demand for long-term care. Physicians must coordinate chronic disease management (e.g., blood glucose control for diabetes, long-term monitoring for hypertension and heart failure, inhalation therapy and exacerbation prevention for chronic obstructive pulmonary disease), preventive services, and palliative support across hospitals, communities, and home settings. Smart healthcare technologies—including telemedicine, continuous monitoring, and generative artificial intelligence—offer new possibilities for strengthening the long-term care system.

Objectives:

This study examines how physicians can drive adoption of smart healthcare in Taiwan, highlighting clinical governance, patient-centered outcomes, and data-driven decision-making.

Methods:

We employed a mixed descriptive and case-based approach using a home-based care network in Changhua as the pilot site. Physicians, nurses, and care coordinators identified frail older adults with multimorbidity and enrolled them in a six-month smart healthcare program. Interventions included scheduled teleconsultations, remote physiological monitoring through wearable IoT devices, and AI-based algorithms predicting risks of frailty progression and medication nonadherence. Implementation was documented through field observations, semi-structured physician interviews, and electronic health record audits to capture care continuity, medication reconciliation accuracy, and adverse event detection. Quantitative indicators—such as avoidable hospitalization rates, emergency visits, and time spent on medication reviews—were compared with pre-intervention baselines, while qualitative feedback elucidated facilitators and barriers.

Results:

Smart healthcare interventions improved continuity of care and enabled early detection of adverse events, reducing avoidable hospitalizations by about 15% in pilot sites. Physicians reported higher efficiency in medication reconciliation and shared decision-making but noted barriers, including data interoperability gaps, privacy and cybersecurity concerns, limited reimbursement, and variable digital literacy among older adults and caregivers.

Conclusions:

Physician leadership is essential to align emerging technologies with patient values and long-term care goals. Strategies include establishing interoperable data standards, advocating reimbursement reform, and embedding AI-driven risk assessment into routine geriatric care to achieve long-term care for Taiwan's aging population.

sciforum-133683: PathoCast: An Explainable AI Framework for Predicting Daily Dengue Risk in Low-Resource Urban Settings

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Introduction:
Dengue poses a recurring public health challenge in urban centers in low- and middle-income countries, where limited surveillance capacity delays outbreak detection and response. Early-warning tools are especially needed in regions like Lahore, Pakistan, where rapid transmission and climate variability make reactive strategies insufficient. This study introduces PathoCast, an explainable artificial intelligence framework designed to classify daily dengue risk using multimodal environmental, epidemiological, and behavioral indicators.

Methods:
A daily dataset for the year 2022 was constructed using dengue case counts, meteorological variables, and Google Trends search behavior. Temporal and environmental predictors were derived through feature engineering, and synthetic geographic identifiers were added to enable spatial visualization. An XGBoost classifier served as the primary model, supported by an interpretability layer based on grouped SHAP (SHapley Additive exPlanations) values to quantify the contribution of predictor categories.

Results:
Grouped SHAP analysis demonstrated that temporal transmission indicators exerted the strongest influence on risk classification (mean |SHAP| = 0.13), followed by environmental variability features (mean |SHAP| = 0.07). Behavioral trend proxies contributed modestly (mean |SHAP| = 0.04) but provided complementary signal value. Rainfall-related indicators showed minimal short-term predictive effects. Spatial heatmaps generated from synthetic district coordinates revealed distinct clusters of elevated predicted risk, illustrating how the system could guide targeted vector control once linked to real administrative boundaries.

Conclusions:
This study on PathoCast demonstrates the feasibility of an interpretable, low-cost AI framework capable of supporting localized dengue early-warning efforts in resource-constrained settings. Future work will include multi-season model validation, the integration of real-time meteorological and behavioral data APIs, and the development of a mobile interface for community health workers.

sciforum-160410: Predicting medical crises in Public Health with AI

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Artificial intelligence (AI) is increasingly being applied to public health via early warning systems (EWSs) designed to predict medical crises, particularly infectious disease outbreaks or any disaster using real-time data. A recent systematic review found that AI-based EWSs effectively integrate multiple data streams—such as epidemiological surveillance, climate, web-based sources, wastewater, social media, sensor networks, mobile apps, and electronic health records—to detect outbreak signals earlier than conventional surveillance. Machine learning (ML), deep learning (DL), natural language processing (NLP) techniques, and predictive analytics are most commonly used, enabling models to parse both structured and unstructured data. For example, recent work on influenza forecasting employed a probabilistic deep-learning model (Dense ResNet) trained on surveillance data to provide continuous risk estimates several days in advance, outperforming binary-threshold systems. AI-driven systems do not supplant traditional surveillance; rather, they augment it by enabling earlier signal detection, which can trigger investigations, diagnostics, and public health interventions. However, substantial challenges remain: data quality, variability in data granularity, biases in input data, and integration into public health workflows. The use of AI in public health raises questions about privacy, consent, and accountability. The legal and ethical framework must evolve along with technology. Ethical dilemmas including privacy, equity, and the risk of false alarms including cyber security issues when analyzing sensitive personal data must be ensured.

The challenge is not only to collect data but to interconnect and analyze them accurately. Their value multiplies when institutions, research centers, and public health services collaborate, forming a vibrant information ecosystem. The challenge is quality, security, and collaboration of sources. Overall, peer-reviewed evidence suggests that AI-enhanced EWSs hold strong promise for transforming public health crisis prediction. Realizing this potential demands rigorous validation, transparent model design, and close collaboration between data scientists and public health professionals.

sciforum-157252: Psychological Stress Mediates the Relationship Between Personality Characteristics and Eye-Blink Rate

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Introduction:
This study examined how personality traits influence physiological markers of stress, focusing on the mediating role of perceived psychological stress in the link between personality and spontaneous eye-blinking behavior. Drawing on the Big Five framework, we explored how neuroticism and conscientiousness—traits that are closely tied to stress reactivity—relate to perceived stress and blink rate. Spontaneous blink rate (SBR), a dopaminergic and attentional marker, was used as a noninvasive physiological indicator of stress-related arousal.

Methods:
Eighty-six adults (74 females; *M* = 21.9 ± 2.5 years, range = 18–31) silently read a standardized Hebrew text while their blinks were recorded via webcam using custom Python-based software. Personality (BFI-2) and perceived stress (PSS-14) were assessed online approximately five months later to minimize reactivity. Correlational and path analyses tested direct and indirect associations between personality, perceived stress, and blink rate.

Results:
Neuroticism was positively related to perceived stress (β = 0.35; *p* .001), which predicted a higher blink rate (β = 0.38; *p* .001), supporting the mediation hypothesis. When modeled together, neuroticism showed a negative direct effect on blink rate (β = –0.30; *p* .005), revealing a suppression effect. Conscientiousness indirectly predicted a lower blink rate through reduced stress (β = –0.26, *p* .05; stress → blink rate, β = 0.29, *p* .01). The model explained 12% of the variance in stress and 15% of the variance in blink rate.

Conclusions:
Perceived stress mediates the relationship between personality and blink dynamics, revealing dual pathways: neuroticism increases blinking via stress but directly reduces it through attentional mechanisms. Blink rate thus emerges as a sensitive psychophysiological marker linking personality and stress, with implications for noninvasive stress monitoring and personalized assessment in clinical and occupational contexts.

sciforum-147164: Toward a Unified Understanding of Digital Professionalism in Nursing Students: A Concept Analysis

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Introduction
The growing use of social media has blurred the line between personal expression and professional responsibility, making it harder for nursing students to navigate appropriate professional conduct online. As future healthcare providers, their ability to uphold professional standards in online environments is critical in maintaining patient trust, ensuring safe communication, and supporting the integrity of nursing practice. Despite its significance, there is a need to operationalize digital professionalism in nursing research.
Methods
Walker and Avant's (2019) eight-step method was used to operationalize digital professionalism among nursing students. A literature search was conducted using four databases: CINAHL, Scopus, PubMed, and ProQuest Dissertations & Theses Global. After applying inclusion and exclusion criteria, 18 articles were selected for in-depth analysis.
Results
Digital professionalism in nursing students can be operationally defined as the consistent demonstration of professional behaviours, values, and competencies on digital platforms. Five defining attributes emerged from the analysis: (1) safeguarding privacy and confidentiality, (2) establishing clear boundaries between personal and professional identities, (3) being accountable for online actions, (4) engaging in civil and respectful digital discourse, and (5) complying with relevant professional regulatory standards and institutional policies.
Conclusion
This operational definition provides a foundation for a unified understanding of digital professionalism among students, educators, and institutions. Future research should prioritize the development of a standardized measurement tool to assess digital professionalism in nursing students, thereby strengthening its operational clarity. Additionally, exploration of the concept across diverse cultural contexts is warranted to highlight both universal and context-specific attributes.

Session 2. Patient-Centered Care—Optimizing Care Pathways through Engagement and Outcome Measurement

sciforum-162364: Empowering Healing Beyond the Clinic: Student Perspectives on Social Prescribing—A Cross-Sectional Study Among Undergraduate Health-Science students

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Background: Social prescribing is an emerging, person-centered healthcare model in which individuals are connected to non-medical, community-based services to improve physical, mental, and social well-being. By addressing social determinants of health, it complements conventional clinical care and supports holistic patient management.

Aim: To assess the knowledge, attitudes, and perceived applicability of social prescribing among undergraduate health-science students, and to evaluate predictors of readiness to adopt this approach in future practice.

Materials and Method: A descriptive cross-sectional study was conducted among 419 undergraduate students from medical, dental, and allied health professions. A pre-validated 29-item self-administered questionnaire was distributed electronically. Descriptive statistics, chi-square tests, and binary logistic regression were used to examine associations between knowledge, attitudes, and readiness to adopt social prescribing.

Results: Of the 419 participants, 61.3% demonstrated adequate knowledge of social prescribing. Students with prior exposure to community-based health programs were 2.14 times more likely to have good knowledge (OR = 2.14, 95% CI: 1.45–3.15, p 0.001). A favorable attitude was observed in 78.5% of respondents, and those with adequate knowledge had 3.28 times higher odds of positive attitudes (OR = 3.28, 95% CI: 2.21–4.87, p 0.001). Only 39.6% reported confidence in explaining social prescribing to patients; receiving curricular exposure increased confidence (OR = 1.87, 95% CI: 1.21–2.89, p = 0.004). Overall readiness to adopt social prescribing in future practice was 68.4%, significantly associated with favorable attitudes (OR = 2.93, 95% CI: 1.98–4.34, p 0.001). Dental students showed higher recognition of its relevance to lifestyle-related conditions compared to other streams (p = 0.03).

Conclusion: Undergraduate students exhibited positive attitudes toward social prescribing but limited formal exposure and confidence. Integrating structured social prescribing modules into undergraduate curricula could strengthen future professionals' capacity to address social determinants and deliver comprehensive, patient-centered care.

sciforum-160514: Integrating Digital Health Diaries to Help Improve Patient-Centered Care in Children with Chronic Illnesses: A Pilot Study of Engagement and Outcome monitoring.

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Introduction: Paediatric patient-centered care is centered on collaboration, shared decision-making, and individualized care. The utilization of care pathways for children with chronic illnesses is rarely consistent, which impacts their adherence and outcomes. This paper reviews the subject of digital health diaries as a means of improving engagement and maximising outcome monitoring.

Methods: Ten participants were selected from a three-month perspective pilot study with fifty children aged between 6 and 16 years who had chronic disease conditions with either asthma, type 1 diabetes, or juvenile idiopathic arthritis. The interactive digital diary was a secure and interactive journal where participants and caregivers recorded symptoms, medication compliance, and lifestyle issues. The healthcare teams would consider the entries on a weekly basis and offer customized feedback. Measures of engagement like frequency of entry and caregiver involvement and clinical outcomes like disease activity scores, hospitalisation, and adherence were followed.

Results: The engagement through the diary was high, with 84% of the respondents recording data at least five days per week. An increase in the involvement of caregivers was associated with increased adherence. An initial review of the data displayed a decrease in the number of unplanned hospitalisations and a higher disease activity score of active diary users. Families indicated an improvement in their satisfaction with communication of care and were more engaged in treatment decision-making.

Conclusions: Digital health diaries are a viable solution in facilitating patient-centered care in paediatrics. They promote communication, provide useful outcome data, and improve communication between children, their caregivers, and medical staff. Further studies should be performed on a larger scale in order to verify long-term benefits and scalability.

sciforum-142036: Simulation-Based Evaluation of Radiotherapy Scheduling Strategies Using Linear Optimization and Patient Archetypes

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Public radiotherapy systems in resource-limited and lower–middle-income countries face critical challenges in efficiently scheduling treatments while ensuring equitable access. These systems often operate with limited technological infrastructure and a small number of treatment machines, leading to capacity saturation and long waiting times. This study focuses on a public oncology center under severe resource constraints, using real-world data to design and evaluate improved scheduling strategies. We present a hybrid decision-support framework that integrates patient segmentation, discrete-event simulation (DES), and online optimization to support treatment planning. Patients are grouped into archetypes based on treatment duration using Jenks Natural Breaks, with model selection guided by the Akaike Information Criterion. These archetypes are used to generate synthetic demand within a DES environment, which enables patient-level tracking to monitor treatment trajectories and identify delays in individual cases. A linear online optimization model assigns each patient to a LINAC and dynamically determines the treatment start date, taking into account indivisible sessions, machine capacity per day, and administrative constraints. The objective function minimizes start time and includes a secondary term to promote balanced use of available resources. The framework allows for comparative analysis of scheduling strategies: the optimized policy is benchmarked against a heuristic baseline that assigns patients to the earliest available slot. Simulation results show improvements in system performance, including more balanced capacity utilization, fewer periods of high saturation, and reductions in patient balking. The proposed framework is flexible, data-driven, and transferable to other healthcare systems with structural limitations, offering valuable support for operational decision-making in radiotherapy services.

sciforum-158549: Validity and Reliability of The HandCube: A Novel Multi-Camera Computer Vision System for Automated, Objective Assessment of Finger Kinematics in Rehabilitation

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Quantitative assessment of hand and finger kinematics is essential for diagnosis, treatment planning, and monitoring rehabilitation outcomes but conventional tools, including manual goniometry and observational scales, are labour-intensive, examiner-dependent, and limited in their ability to capture complex, dynamic three-dimensional (3D) motion of individual digits. There is therefore a clear need for an objective, affordable, and easy-to-use system capable of providing detailed, repeatable 3D kinematic data during functional hand movements.

The HandCube is a markerless system using a four-webcam multi-view setup to reconstruct a 3D hand. During evaluation, a patient is required to perform different gestures within the cube (eg. hand open, fist, oppositions and pinches). Based on computer vision and a machine learning algorithm, prominent joint landmarks in 3D space are automatically output as a kinematic report and aninterdigital web space range.

To verify the system's reliability, a calibrated robotic hand (OHand, OYMotion) was used in this study to perform the series of hand motions, and the actual angles of joints (measured by goniometer) were matched and compared to angles provided by the HandCube system. The HandCube recorded each gesture five times while the robotic hand was rotated 360 degrees to simulate different orientations. The system demonstrated strong agreement with researchers using a goniometer. The mean absolute error for joint angles was 9.6°, which is less than 10°. The system also provides 0.951 in average Intraclass Correlation Coefficient (ICC) among all movable finger joints of the robotic hand, which showed excellent test–retest reliability across repeated measurements.

The HandCube represents a significant advancement in rehabilitative assessment technology addressing the limitations of subjective manual methods. This innovation has the potential to standardize hand assessment, enable manageable progress tracking, and support data-driven clinical decision-making.

sciforum-160255: Closing the Outcome Gap: A Patient-Engagement Ecosystem for Smarter Clinical Pathway Design

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Persistent gaps in clinical outcomes often arise from fragmented communication, limited patient participation, and care pathways that fail to adapt to individual needs. This study introduces an innovative Patient-Engagement Ecosystem, a multidimensional framework designed to transform traditional pathways into responsive, data-driven, and patient-aligned care processes. The ecosystem leverages structured engagement strategies, digital interaction tools, and real-time outcome monitoring to continuously refine clinical decision-making.

The model was implemented across multidisciplinary clinics serving diverse patient populations. Core components included: (1) Engagement Enablement, driven by personalized counselling, shared decision-making aids, and proactive digital touchpoints; (2) Outcome Intelligence, integrating patient-reported outcomes and experiences (PROMs and PREMs) into routine workflow; and (3) Adaptive Pathway Engineering, where aggregated engagement–outcome data informed dynamic pathway redesign through weekly multidisciplinary reviews.

Results demonstrated compelling improvements across domains central to patient-centered care. Engagement activation improved by 34%, treatment adherence increased by 21%, and pathway deviation rates decreased by 18%. Importantly, early detection of emerging outcome disparities enabled rapid, targeted interventions, reducing avoidable complications in high-risk subgroups. Qualitative feedback indicated heightened patient empowerment, improved trust, and a clearer understanding of treatment expectations, whereas clinicians reported more efficient coordination and greater decision confidence.

This study presents a novel, scalable ecosystem that positions patient engagement as a foundational driver of care quality. By embedding patient voices, preferences, and outcomes at every step of pathway design, healthcare systems can close persistent outcome gaps and deliver care that is not only efficient but truly person-centered. The findings highlight a transformative model with the potential to redefine modern clinical pathway optimisation at scale.

sciforum-160422: A comprehensive framework for quality and patient safety in the field of a Greek Emergency Department

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The emergency department (ED) is a high-risk environment for errors, and errors are inevitable for individuals working in such a complex and high-pressure environment. There are many interrelated factors that can lead to patient harm, and usually more than one factor is involved in each individual patient safety incident.

Through extensive research, both human and systemic factors have been identified as critical to patient safety. Understanding human factors helps to mitigate risks. Meanwhile, the environmental factor focuses on creating a workplace designed for the best possible outcomes for patients. Research conducted worldwide has shown that the main problems were the lack of guidelines and protocols, non-compliance with them, non-systematic recording and evaluation of errors, poor communication, ambiguity, confusion, and, of course, the need to rush due to the excessive number of patients. However, every weak point is actually an opportunity for intervention and improvement.

Within the framework of a just culture, a system is developed where there is open reporting but also appropriate accountability for each individual's actions. Developing and maintaining a culture of safety is a commitment to minimizing adverse events during high-risk tasks that could cause harm. Applying all the recommendations of researchers and institutional actors, we developed our framework. Through the systematic recording and monitoring of the data required in standardized forms, it became possible to directly evaluate the results of clearly defined procedures. This capability led to the continuous adjustment and redesign of procedures, with the constant criterion being the more effective operation of the ED and the higher quality of the health services provided.

sciforum-163276: Adaptive Personalization in Digital Therapeutics: A Systematic Review of Real-Time Patient-Centered Tailoring Mechanisms and Their Clinical Outcomes

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Introduction: Digital therapeutics (DTxs) are increasingly used to support chronic disease management, behavioral health, and rehabilitation. While many platforms claim to deliver “personalized” care, the underlying adaptive mechanisms—how interventions change in real time in response to patient behavior, symptoms, adherence, or physiologic signals—remain poorly defined and inconsistently evaluated. This systematic review examines real-time personalization strategies in DTxs and assesses their impact on patient-centered outcomes, engagement, and clinical effectiveness.

Methods: We searched PubMed, Embase, PsycINFO, and IEEE Xplore for studies published from January 2015 to November 2025. Eligible studies evaluated DTx platforms incorporating adaptive tailoring mechanisms such as dynamic feedback loops, sensor-driven adjustments, reinforcement learning algorithms, rule-based personalization, or real-time symptom monitoring. Two independent reviewers screened articles, extracted data, and assessed methodological quality using PRISMA guidelines. Personalization mechanisms were categorized into algorithmic, behavioral, and physiological tailoring modalities.

Results: Out of 303 potential studies, 19 articles met the inclusion criteria. Adaptive personalization significantly improved patient engagement across chronic disease management, mental health, and physical rehabilitation domains. Algorithmic personalization (e.g., reinforcement-learning recommendations, automated therapy dose adjustments) produced the largest gains in adherence and symptom control, while physiological tailoring using wearables improved real-time detection of deterioration. However, transparency regarding how personalization decisions were made was limited in most studies. Few interventions incorporated patient preferences or shared decision-making into their adaptive logic, and only 37% provided auditability or explainability features.

Conclusions: Personalization is often cited as a core strength of digital therapeutics, yet current implementations vary widely and are insufficiently transparent. Evidence suggests that real-time adaptive tailoring enhances engagement and clinical outcomes, but patient-centered co-design, explainability, and standardized reporting of personalization mechanisms are urgently needed for safe, equitable, and trustworthy DTx deployment.

sciforum-162514: Age-Related Differences and the Effects of Sensorimotor Training on Postural Control in Older Adults

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Introduction: Postural control deteriorates progressively with age as sensory, motor, and cognitive subsystems become less efficient, contributing to instability and increased fall risk. Understanding how balance performance evolves across later adulthood and how targeted interventions may counteract these changes is essential for optimizing preventive strategies. Sensorimotor training has emerged as a promising approach to enhance stability by stimulating multisensory integration and adaptive postural responses. This study investigated age-related differences in postural control among adults aged 55–80 years and evaluated the effects of a six-month sensorimotor training program on linear and nonlinear balance parameters.

Methods: Eighty-six community-dwelling older adults were randomly allocated to a Control Group (CG, n = 43; 73.50 ± 6.08 years) or an Exercise Group (EG, n = 43; 72.40 ± 7.03 years). The EG completed a twice-weekly, six-month sensorimotor training program centred on six circuits of progressively challenging exercises, each comprising eight adaptable tasks targeting sensory reweighting, coordination, and postural responsiveness. Balance assessments were performed with eyes open and eyes closed, using variability measures and linear and nonlinear parameters, including acceleration metrics, entropy indices, and Lyapunov Exponents, to analyze postural behavior.

Results: Participants in the EG demonstrated significant improvements in postural control across sensory conditions. Decreases in sample entropy and approximate entropy indicated greater regularity and improved organisation of sway patterns. Significant reductions in the Lyapunov Exponent suggested enhanced dynamic stability, while lower acceleration values reflected reduced instability. Conversely, the CG exhibited tendencies toward increased sway variability and loss of control over time.

Conclusions: The six-month sensorimotor intervention effectively supported balance maintenance by improving sway regularity, stability, and adaptability, mitigating age-related declines observed in non-exercising peers. These findings reinforce the relevance of sensorimotor training as a preventive and clinically meaningful strategy to promote safer, more stable movement in older adults.

sciforum-163065: Age-Related Trends in Caries Experience Among Preschool Children in Shenzhen, China: A Cross-Sectional Study

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Introduction:

Early childhood caries remains a major public health concern in rapidly urbanizing regions of China, yet age-specific patterns of disease accumulation in preschoolers are not well described. This study aimed to characterize age-related trends in dental caries experience among 3- to 5-year-old children in Shenzhen.

Methods:

A cross-sectional survey was conducted in 2024 using a multistage random sampling method to recruit preschool children from 27 kindergartens in Shenzhen. Two calibrated examiners performed oral examinations in the kindergartens using disposable dental mirrors with LED illumination and ball-ended Community Periodontal Index probes. Dental caries experience was recorded using the decayed, missing, and filled teeth (dmft) index, following World Health Organization recommendations.

Results:

Out of the 4,015 invited children, 3,534 (1,886 boys, 53%) completed the survey (response rate: 88%). The prevalence of caries experience was 31% at age 3, 49% at age 4, and 58% at age 5, indicating that an additional 27% of children developed caries experience over the two-year age span. Mean dmft scores (± SD) were 1.2 ± 2.5 for 3-year-olds, 2.2 ± 3.2 for 4-year-olds, and 2.8 ± 3.5 for 5-year-olds, corresponding to a cumulative increase of 1.6 affected teeth per child. Upper central incisors were the most frequently affected teeth (23%) at age 3 and remained the most susceptible across all ages, while caries in lower molars increased from 7% at age 3 to 24% at age 5.

Conclusions:

Dental caries prevalence and severity among preschool children in Shenzhen increase markedly with age. These findings highlight the urgent need for targeted preventive strategies focusing on high-risk teeth, particularly the upper central incisors and lower molars, to curb the growing burden of early childhood caries in this population.

sciforum-159953: Airway Complications in Morbidly Obese Patients Undergoing General Anaesthesia: a Systematic Review

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Introduction

The worldwide prevalence of morbid obesity (BMI ≥40 kg/m²) is rising rapidly.[1] While airway complications in obese patients (BMI ≥30 kg/m²) undergoing general anesthesia are well-documented, evidence specifically focusing on morbidly obese patients remains limited.[2] This systematic review aims to identify airway complications in morbidly obese compared to non-morbidly obese patients undergoing general anesthesia.

Methods

Following the PRISMA 2020 guidelines, five databases were reviewed (PubMed, Embase, Scopus, Web of Science, and Cochrane Library) for studies published from January 2015 to February 2025. The inclusion criteria were as follows: patients ≥18 years with BMI ≥40 kg/m² undergoing general anaesthesia compared to non-morbidly obese patients. Cohort studies, RCTs, case–control studies, and large case series were included. The extracted data was not suitable for meta-analysis due to the heterogeneous nature of the research. Thus, a SWiM approach was undertaken using Stive synthesis and vote counting for direction of effect.

Results

Out of the 2,062 studies screened, 19 publications met the inclusion criteria. Perioperative desaturation was most frequently reported (nine studies), with seven studies showing significant associations (incidence 2.2-35%). Difficult intubation (seven studies) and difficult mask ventilation (five studies) showed inconsistent associations. Airway device failure, reduced apnea time (halved in morbidly obese patients), and increased hospital/ICU length of stay demonstrated positive associations.

Discussion

Perioperative desaturation was consistently associated with morbid obesity. The inconsistent links with difficult intubation or ventilation likely stem from varied outcome definitions and the multifactorial nature of airway difficulty. Future research with standardized outcome measures is needed for this growing patient population.

References

World Obesity Federation. Prevalence of Obesity [Internet]. [cited 2025 Feb 23]. Available from: https://www.worldobesity.org/about/about-obesity/prevalence-of-obesity

Seyni-Boureima R, Zhang Z, Antoine MMLK, Antoine-Frank CD. A review on the anesthetic management of obese patients undergoing surgery. BMC Anesthesiol. 2022 Apr 5;22(1):98.

sciforum-163026: ANALYSIS OF MEDICAL PERSONNEL IN THE PRIMARY HEALTH CARE SERVICE IN PUBLIC AND PRIVATE HEALTH SECTORS

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Today, in Kazakhstan, one of the health care sectors in which the problem of personnel needs is felt is the outpatient polyclinic sector, which is the first in providing medical care to the population. It is in this health sector that queues take place, placing a heavy burden on doctors and leading to outflow of personnel to the private sector. Thus, during the 2018-2022 period, there has been an annual increase in the number of doctors in primary health care service in both the public and private sectors. However, the increase in the number of doctors in the private sector is higher than in the public sector. The number of private doctors increased by 11.0 percent, and the number of public doctors increased by 5.0 percent. The analysis of staff positions in outpatient clinics in the public sector showed a wave-like dynamics for the 2018-2022 period. This circumstance is due to the growth of the population, which is connected to the growing need for medical personnel in Kazakhstan every year, and the COVID-19 pandemic, which significantly affected primary health care service doctors. The need for doctors in the *public sector* in 2018 was met by 96.2%, and in 2022, it was 92%, having decreased by 4 points. According to the results of statistical data, there is a distinct shortage of medical personnel in Kazakhstan. The main reason is the insufficient financing of the industry, as well as the outflow of doctors from public health institutions to other, higher-paying sectors of the economy. In general, as of 2022, the staff was understaffed by 8%. This means that the number of positions actually occupied does not correspond to the volume of services that the state planned to provide.

sciforum-163267: Assessing Patient-Centered Engagement: Provider–Patient Interaction (PPI), Trust, and Cultural Sensitivity Scales

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Introduction:
Patient-centered care relies on effective provider–patient engagement, including high-quality interaction, trust, and culturally sensitive communication. Reliable measurement tools in these domains are essential for understanding how providers approach social needs such as social isolation (SI). This study examines the reliability and item performance of three brief engagement-focused scales—Provider–Patient Interaction (PPI), Trust in Patients, and Cultural Sensitivity (CS)—and explores their associations with providers' communication and comfort with SI screening.

Methods:
Healthcare providers who care for older adults (n = 59) completed the PPI (16 items), Trust (6 items), and CS (5 items) scales, along with measures of communication about SI and comfort with SI screening. Analyses included internal consistency reliability, descriptive item statistics, and corrected item–total correlations. Preliminary construct validity was explored through correlations between each scale and conceptually related indicators (communication about SI and comfort screening SI).

Results:
All three scales demonstrated strong internal consistency: PPI α = .987, Trust α = .906, and CS α = .832. PPI items showed high means (4.31–4.59) and strong item–total correlations (.781–.936). Trust items had moderate means (2.92–3.59) with acceptable item–total correlations (.596–.814). CS scores were high (3.95–4.56) with adequate item performance (.408–.834). Preliminary validity testing indicated that PPI correlated strongly with CS (r = .858, p .001) and moderately with SI screening comfort (r = .391, p = .007). Communication about SI also correlated with screening comfort (r = .314, p = .026). Trust was not significantly associated with comfort.

Conclusions:
The PPI, Trust, and CS scales demonstrated strong reliability and promising preliminary construct validity among healthcare providers. These brief, practical measures can support the assessment of key engagement domains and inform strategies to optimize patient-centered care pathways, including social isolation screening.

sciforum-160201: Barriers and facilitators in counselling in community pharmacy perceived by older patients: a focus group study

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Background: The ageing of the world population is simultaneously a great triumph and a great challenge. It is essential to adjust health care systems to older populations, and community pharmacies are no exception. **Objective:** The goal was to identify barriers and facilitators, perceived by older patients, that may influence counselling in community pharmacy and, consequently, therapeutical adherence. **Methods:** A qualitative study was performed. Six focus groups were conducted, with 51 participants. The target population was people of 65 years or older who were autonomous and frequently went to community pharmacies. The sessions occurred in the place where older adults had gymnastic classes, to avoid mobility constraints. The audio was recorded, the interviews were transcribed ad verbatim, and the data were managed using NVivo (version 15). **Results:** Four main themes emerged: barriers centered around older adults, centered around physical space, centered around pharmacy professionals, and centered around society. Nine categories emerged from the data analysis. Also, several facilitators were identified, which were organized according to the same themes. There were also nine categories identified. **Conclusions:** Public authorities should define strategies to prevent physical and social barriers and thus promote age-friendly environments. Rather than simply identifying or detecting problems, it is essential to focus on how they can be mitigated. In this study, it was possible to relate some facilitators to the identified barriers. The findings showed the urgent need to involve community pharmacies in age-friendly initiatives, to ensure safer environments for older adults, who are among the most frequent users of community pharmacies.

sciforum-163241: Beyond Barriers: Access to Mental Health Services for Cultural Minorities

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Equity in access to mental health services remains a global challenge, particularly acute for cultural and ethnic minorities. This systematic review explores the complex dynamics influencing access to and utilization of psychological support services by these groups, highlighting how such access is a key indicator of social integration and inclusivity in national healthcare systems.

Our analysis reveals a significant gap between the theoretical availability of services and their actual accessibility. Multiple barriers emerge, extending beyond the mere presence of facilities, involving cultural, linguistic, and structural aspects of the healthcare system. These barriers include differences in mental health perception, cultural stigma, language difficulties, lack of awareness about available services, and misunderstandings between patients and healthcare providers.

By identifying two main obstacles, the linguistic/cultural barrier and the structural/organizational one, this study highlights how ethnic minorities and migrants face unique and more intense challenges compared to the general population when seeking help for mental health issues. These challenges can lead to delayed diagnoses, inadequate treatments, and inferior health outcomes.

The implications of this research are relevant for policymakers, healthcare professionals, and researchers, offering insights to develop targeted strategies to reduce disparities in access and improve the quality of care provided to culturally diverse communities. We propose a multidisciplinary approach that includes cultural training for healthcare workers, interpreting services, community awareness campaigns, and more inclusive health policies.

sciforum-155384: Bridging the Gap Between Data and Compassion: A Neurocentric Approach to Patient-Centered Care through Engagement and Outcome-Driven Pathways

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The evolving landscape of brain and neurological sciences demands an integrative approach that prioritizes patients' perspectives within clinical decision-making. Traditional models of care often rely predominantly on clinician-defined outcomes, with limited incorporation of the patient's lived experience. This study introduces a neurocentric, patient-informed framework that integrates digital health tools with outcome measurement systems to enhance responsiveness and personalization in neurological and neuropsychiatric care.

A mixed-methods evaluation was conducted involving 126 patients diagnosed with chronic neurological conditions (stroke, Parkinson's disease, and mild cognitive impairment). Participants interacted with a digital platform combining self-reporting modules, wearable sensor data, and validated outcome measures, including patient-reported outcome measures (PROMs) and patient-reported experience measures (PREMs). Care teams accessed real-time analytics on symptom variations, treatment adherence, and well-being, supporting data-informed adjustments to individualized care plans.

Results demonstrated that systematic collection and analysis of patient-reported data were associated with a 34% improvement in care compliance, a 21% reduction in hospitalizations, and a 42% increase in reported satisfaction. Qualitative findings highlighted improved communication and mutual understanding between patients and clinicians, reinforcing the emotional dimension of therapeutic interaction. Statistical modeling confirmed a strong correlation ($r = 0.81$, p 0.01) between patient-reported engagement levels and favorable clinical outcomes.

This work underscores that integrating PROMs, PREMs, and digital monitoring can enhance patient-informed care and adaptive decision-making in neurological practice. While not constituting a full patient–clinician partnership, this approach strengthens recognition of the patient's experiential knowledge and sets the stage for future co-constructed care models that promote autonomy and empowerment in neurological health management.

sciforum-145735: Can Mindfulness ameliorate Nurse–Patient Relations among Italian Oncology Nurses?

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Background: Ensuring care for patients represents the first duty of nurses. Facing patients' requirements is important to nursing care to objectively assess whether nursing interventions supply high-quality care and answer to the greatest demands of specialized care nursing. At the same time, mindfulness meditation has been reported to improve psychological well-being, also among nurses. The aim of this study was to assess associations between nurse–patient relations and mindfulness among oncology nurses who are constantly stressed in their work environments.

Methods: An on-line nationwide survey was disseminated among Italian oncology nurses. The "Caring Nurse-Patient Interactions Scale" (CNPI) and the Five Facet Mindfulness Questionnaire (FFMQ) were proposed. The CNPI investigated a further four subdimensions, specifically clinical, relational, humanistic and comforting care. The FFMQ was also administered to assess five factors of mindfulness: "Observing", "Describing", "Acting with Awareness", "Non-Judging of inner experience", and "Non-Reactivity to inner experience".

Results: Both significant positive and negative correlations were found between the following:

Clinical dimension and observing (r=0.114; p=0.047), describing (r=0.154; p=0.007), acting (r=0.178, p=0.002), and non-reactivity (p=-0.140; p=0.014).

Relational dimension and observing (r=0.182; p=0.001), describing (r=0.349; p0.001), acting (r=0.279, p0.001), and non-reactivity (p=-0.204; p0.001).

Humanistic dimension and observing (r=0.161; p=0.005), describing (r=0.215; p0.001), acting (r=0.174, p=0.002), and non-reactivity (p=-0.175; p=0.002).

No significant associations were found between the nurse–patient relation dimension and non-judging aspects or between the comforting dimension and the subdimensions of mindfulness.

Conclusion: Mindfulness can effectively promote caring nurse–patient relations in oncology nurses in all the investigated subdimensions.

sciforum-160349: Characteristics of Social Relationships in Premenopausal Breast Cancer Patients Receiving Ovarian Function Suppression: A Latent Class Analysis

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Introduction: Ovarian function suppression (OFS) is currently recommended by international authoritative guidelines as the preferred first-line endocrine therapy for premenopausal women diagnosed with hormone receptor-positive early-stage breast cancer. However, research indicates a substantial psychological burden: studies show that over 70% of patients undergoing OFS experience moderate to severe depression, which can significantly exacerbate problems related to social relationships and overall quality of life. The urrent literature concerning OFS patients is notably lacking in exploratory research focused on their psychosocial characteristics. This study aims to identify and investigate the characteristics of different social support sensitivity groups among OFS patients.

Methods: This investigation utilized a descriptive cross-sectional design. The study was conducted in Shanghai, China, spanning from October 2023 to July 2024. A total of 1,283 breast cancer patients undergoing OFS were recruited through convenience sampling. Data pertaining to the patients' social relationships were systematically collected via comprehensive, self-reported questionnaires. The final analysis included 1,134 patient records.

Results: Applying latent variable analysis to the dataset of 1,134 patients successfully identified four distinct categories of social relationship profiles among OFS patients. These categories demonstrated significantly different levels of sensitivity to social support. Further analysis of the influencing factors revealed several key variables impacting the social relationships of OFS patients, including age, marital status, monthly income, and the level of economic burden. These factors were found to be statistically significant determinants of social relationship quality.

Conclusion: The findings of this study successfully identified several patient subgroups with varying social support sensitivities. This identification provides crucial, data-driven insights that offer potential clinical application value for developing personalized, targeted interventions aimed at optimizing social support strategies for patients undergoing ovarian function suppression.

sciforum-160668: Clinical Assessment of Medical Device–Related Pressure Injury Risk: Profiling Risk Levels in Patients Using Medical Devices

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Aim: The aim of this study was to evaluate the risk of pressure injury development among patients exposed to medical devices and to examine the clinical outcomes obtained using the Medical Device-Related Pressure Injury Risk Assessment Scale. The scale provides a structured approach for the early identification of pressure injuries associated with medical device application.

Methods: This descriptive and analytical study was conducted with 132 patients receiving medical device applications in a tertiary training and research hospital. Data were collected using a Personal Information Form and the Medical Device-Related Pressure Injury Risk Assessment Scale. Total scores range from 8 to 27, representing high-risk (8–12), moderate-risk (13–20), and low-risk (21–27) categories. Statistical analyses conducted in SPSS 26.0 included descriptive statistics, independent and paired t-tests, ANOVA, correlation, and regression analyses. Normality was assessed using Skewness–Kurtosis values, and Wilcoxon and Dunnett's C tests were applied when parametric assumptions were not met. Statistical significance was set at p0.05.

Results: Among patients who developed a medical device-related pressure injury, 54.6% were admitted to intensive care units. Overall, 35.8% of participants were classified as high-risk, 40.0% as moderate-risk, and 24.2% as low-risk. Device contact duration, device-related skin pressure, and anatomical application site significantly affected risk scores (p0.01). Additionally, the patient's general clinical condition was identified as a strong determinant of risk level.

Conclusion: The findings demonstrate that risk levels are greatly influenced by patient-related factors and device-specific characteristics. The scale proved effective in guiding early detection, systematic monitoring, and preventive nursing interventions. This study highlights the importance of integrating structured MDRPI risk assessment into routine clinical practice to enhance patient safety and improve care outcomes.

sciforum-159435: Clinical Impact of Digital Health Education for Patients with Heart Failure: A Systematic Review and Meta-Analysis

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Background: Heart failure (HF) is a major global health issue, with high morbidity, death, and frequent hospital readmissions. Digital health education may improve clinical outcomes in HF, but the variability observed across studies has not yet been assessed through a systematic review and meta-analysis in this population.

Objective: To examine the impact of digital health education interventions on all-cause mortality, hospital readmissions, and health-related quality of life (HRQoL) in adults with HF.

Methods: A systematic review and meta-analysis were conducted in accordance with the PRISMA 2020 standards. Randomized controlled trials (RCTs) published between January 2015 and June 2025 were identified using PubMed and manual searches. Studies of adults with HF who had received digital health education via mobile apps, web-based platforms, tele-education, or digital therapies were eligible for inclusion. Primary outcomes included all-cause mortality, hospital readmission, and HRQoL. Risk ratios (RRs) and mean differences (MDs) were aggregated using fixed-effects or random-effects models, depending on the presence of heterogeneity.

Results: Twenty-six RCTs involving diverse international cohorts were included. Digital health education interventions significantly reduced all-cause mortality (RR = 0.80; 95% CI: 0.66–0.97; p = 0.02). Hospital readmission risk was also lower in the intervention groups (RR = 0.88; 95% CI: 0.79–0.99; p = 0.03) than in the standard of care (SoC) group. HRQoL showed modest improvements overall (MD = 4.11; 95% CI: 0.98–7.25; p = 0.01), particularly reflected in improved Minnesota Living with Heart Failure Questionnaire scores and self-care behavior domains. Heterogeneity was moderate for mortality and high for HRQoL outcomes.

Conclusions: Digital health education interventions offer clinically significant benefits for patients with HF, reducing hospital readmissions and mortality while improving selected HRQoL metrics. These findings support the integration of digital education into multidisciplinary HF care. Future studies should focus on standardizing intervention components, assessing long-term viability, and evaluating cost-effectiveness.

sciforum-163277: Co-Designed Digital Health Interventions for Underserved Populations: A Systematic Review of Adoption, Engagement, and Clinical Outcomes

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Introduction: Digital health tools are frequently promoted as solutions to healthcare inequities, yet underserved populations often experience lower adoption, poorer engagement, and limited benefit. Co-design and participatory approaches—where patients, communities, and clinicians actively shape digital health solutions—may improve relevance and impact but have not been systematically evaluated. This systematic review examines how co-designed digital health interventions for underserved populations influence technology adoption, patient engagement, and clinical outcomes.

Methods: We systematically searched PubMed, Embase, CINAHL, PsycINFO, and IEEE Xplore for studies published between January 2010 and November 2025. Eligible studies (1) involved digital health interventions (e.g., telehealth, mobile apps, patient portals, remote monitoring); (2) explicitly targeted underserved populations (e.g., racial/ethnic minorities, rural, low-income, limited English proficiency); and (3) used co-design, participatory design, or community-based approaches in development. Two reviewers independently screened studies, extracted data, and assessed quality following PRISMA guidelines. Outcomes included measures of adoption, engagement, satisfaction, and clinical or behavioral outcomes.

Results: Of 863 records, 23 studies met the inclusion criteria. Co-designed interventions most frequently targeted chronic disease management, mental health, and maternal–child health. Studies reporting detailed co-design processes (e.g., iterative prototyping, community advisory boards, bilingual interfaces, culturally grounded content) demonstrated higher adoption and sustained engagement compared with top–down implementations in similar populations. Several interventions showed clinically meaningful improvements in glycemic control, depressive symptoms, medication adherence, and appointment attendance. However, the reporting of design methods and equity-related outcomes was highly variable, and few studies evaluated scalability or long-term sustainability.

Conclusions: Co-designed digital health interventions show promise for improving adoption, engagement, and selected clinical outcomes among underserved populations. Standardized reporting of co-design processes, explicit equity metrics, and rigorous evaluation of long-term implementation are needed to guide future digital health innovation that is genuinely patient-centered and inclusive.

sciforum-152828: Community Engagement and Caries Prevention in Rural Populations: Lessons Learned from Integrating Oral Health into Public Health in District Mandi, Himachal Pradesh, India

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Background
Dental caries is highly prevalent in rural Himachal Pradesh, where seasonal isolation and low oral health literacy limit preventive care. Outreach initiatives may improve engagement and support integration of oral health into public health systems.

Objectives: To assess community engagement in rural caries prevention and identify lessons for integration into public health pathways.

Materials and Methods: A cross-sectional study was conducted in 2023 (baseline) and 2024 (follow-up) in rural villages and schools in the Mandi district. Baseline activities included oral health education, fluoride toothpaste distribution, caries screening ("D/d" component of DMFT/deft index), recording of oral hygiene practices, and urgent care referrals. Follow-up reassessed caries status and oral hygiene practices. Data were collected through clinical exams, questionnaires, focus groups, and interviews. Analyses included chi-square tests, paired t-tests, descriptive statistics, and logistic regression ($p \leq 0.05$).

Results: Of 3,041 participants (year 2023), engagement was highest among school-aged children (79.3%) and lowest among adults >65 years (10.1%). Follow-up retention in 2024 was 68% (n = 2,068). Twice-daily brushing rose from 39% to 81.5% (p 0.001), fluoridated toothpaste use from 65% to 86.7% (p 0.001), and mean decayed teeth in children decreased from 3.2 ± 1.4 to 2.7 ± 1.2 (p = 0.01). Children (6–12 years) were more likely to adopt twice-daily brushing than adults >65 (OR = 4.2; 95% CI: 3.3–5.3). Female adherence was slightly higher than male adherence (OR = 1.3; 95% CI: 1.1–1.5). School participation strongly predicted sustained engagement (OR = 3.7; 95% CI: 2.9–4.7).

Conclusion: Outreach programs significantly improve oral hygiene behaviors in rural populations. School-based involvement, culturally sensitive strategies, and alignment with public health systems enhance sustainability and provide a replicable model for reducing rural-urban disparities in oral health.

sciforum-162979: Comparative Analysis of Postoperative Pain in Single-visit vs. Multiple-visit Non-surgical Root Canal Treatment: A Clinical Data Case Study from Kolhapur City.

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The optimal number of appointments for non-surgical Root Canal Treatment (RCT) remains a central clinical debate, driven by the desire to balance procedural efficiency with patient comfort and long-term success. This prospective, comparative clinical study addresses the critical scarcity of region-specific evidence by providing the first rigorous analysis of short-term postoperative pain in single-visit (S-RCT) versus multiple-visit (M-RCT) protocols among the Kolhapur city patient population. Novelty is achieved through the application of advanced Bayesian inferential statistics, which offers a robust, probability-based conclusion regarding the certainty of treatment effect, surpassing the limitations of traditional frequentist *p*-value interpretations. The methodology involved a standardized approach: N=100 patients (50 S-RCT, 50 M-RCT) presenting with non-complicated pulpal pathology were recruited. Both groups underwent standardized biomechanical preparation; the M-RCT group received a calcium hydroxide intracanal dressing between appointments. The primary outcome—postoperative pain intensity—was measured using a 10-point Visual Analogue Scale (VAS) at baseline and at 6, 12, 24, and 48 hours post-treatment. The results were compelling: while conventional frequentist analysis indicated no statistically significant difference in mean VAS scores between the groups at any measured time point (e.g., *p*-value at 24 hours = 0.187), the Bayesian Hierarchical Modeling provided a high degree of certainty. The analysis estimated the posterior mean difference in VAS score (S-RCT minus M-RCT) at 24 hours to be -0.45 (95% credible interval: -1.20 to 0.30). Crucially, the probability of a single-visit RCT resulting in equal or less pain than a multiple-visit RCT was calculated to be 87.5%. In conclusion, the outcome of this study strongly supports the clinical recommendation of single-visit RCT for non-complicated cases in this demographic. The high probability (87.5%) derived from the Bayesian inference indicates that the single-visit protocol is a highly efficient and well-tolerated treatment option, offering patient convenience without an increase in clinically important short-term postoperative pain risk.

sciforum-161210: Development and implementation of a structured emergency nursing triage training program

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Introduction

In most Emergency Departments (EDs) around the world, triage is performed by nurses with appropriate training and extensive experience. In Greece, organized Triage in EDs began being implemented in 2018 by ED attendings. Nurses' privileges for ED Triage were legislated only in 2022. Having a long ground to cover, a systematic training program in triage for nurses was implemented at Nikaia's Hospital in Greece.

Implementation in Nikaia's ED

Based on specific requirements, regional regulations, and globally recognized best practices, a standardized triage procedure was developed. The main objective was to create a training program that would enable the triage nurses to classify patients' acuity accurately and safely. The training program was designed with a six-month theoretical component and a one-month on-the-job training component. After completing the training, nurses managed triage under the supervision of ED attendings before continuing on their own. In order to analyze specific triage cases and provide educational interventions to address prevalent areas of under-or over-triage, monthly meetings with triage nurses and ED attendings were held.

Results

The training program's evaluation was in line with findings from the global literature that highlight the improvement in patient satisfaction ratings and the decrease in conflicts between triage and on-call clinic staff. Nikaia's Hospital ED is one of the first hospitals in Greece to introduce a systematic triage training program. The effectiveness and depth of experience acquired by the staff of Nikaia's Hospital have been recognized nationally. The Hellenic Society for Emergency Medicine (HESEM) has chosen Nikaia's triage staff to teach the first triage course. The first academic program of specialized training in triage of the Medical School of the University of Patras is developed and delivered, among others, by Nikaia's triage staff.

sciforum-163282: EFFECTS OF A 16-WEEK INTERDISCIPLINARY INTERVENTION ON BODY WATER DISTRIBUTION AND CARDIOMETABOLIC RISK INDICATORS IN OVERWEIGHT MIDDLE-AGED WOMEN

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Introduction: Middle-aged women undergo significant physiological changes, including hormonal fluctuations and body fat redistribution, which favor visceral fat accumulation and elevate cardiometabolic risk. Anthropometric markers such as waist circumference (WC), waist-to-height ratio (WHtR), and waist-to-hip ratio (WHR) are more sensitive predictors of cardiometabolic risk than body mass index (BMI). Alterations in body water distribution, such as a higher extracellular water (ECW) fraction, have also been associated with systemic inflammation and insulin resistance in women with excess weight.

Objective: To assess the effects of a 16-week interdisciplinary intervention on body water distribution and cardiometabolic risk indicators in middle-aged women with excess weight.

Methods: Twenty-seven women (54.6 ± 5.3 years; BMI: 32.5 ± 5.2 kg/m²) were evaluated before and after a 16-week intervention. The program included twice-weekly physical training sessions, weekly nutritional education, and psychoeducational activities. Body composition was assessed using multifrequency tetrapolar bioelectrical impedance analysis (InBody 570®), measuring total body water (TBW), intracellular water (ICW), ECW, ECW/TBW index, visceral fat level, fat mass, and skeletal muscle mass. Waist and hip circumferences were measured, and WHR and WHtR were calculated.

Results: Significant reductions were observed in waist circumference, WHtR, and WHR (all p 0.05), with a moderate effect size (d = 0.6). TBW and ICW significantly increased after the intervention (p 0.05). Although ECW and visceral fat level did not show significant changes, the ECW/TBW index decreased (p = 0.04), indicating improved body water distribution. Fat mass decreased significantly (37.5 ± 10.1 to 36.5 ± 10.5 kg; p = 0.03), while skeletal muscle mass increased (24.6 ± 3.4 to 25.4 ± 3.2 kg; p = 0.003), corroborating the increase in ICW.

Conclusion: The 16-week interdisciplinary intervention resulted in improvements in anthropometric indicators, body composition, and body water distribution. These changes should be interpreted cautiously within the study context. The findings suggest that combining physical training, nutritional education, and psychoeducational strategies can support healthier body composition and hydration status among middle-aged women with excess weight.

sciforum-163032: Electronic Health Literacy and Functional Ability in Mental Health Service Recipients: Relevance for Patient Engagement

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Introduction

Electronic health literacy (eHL) has become increasingly important as more people rely on digital sources for health information. For adults receiving mental health services, these skills influence not only how well they understand online material but also how confidently they take part in conversations about their care. Models of patient engagement and shared decision-making (SDM) underline that individuals need adequate understanding and appraisal skills in order to express preferences and participate meaningfully in treatment decisions. This study examined the level of eHL among mental health service recipients and explored how it relates to functional ability and basic personal characteristics.

Methods

A three-month cross-sectional study was conducted at the Psychiatric Hospital of Attica. A convenience sample of 200 adults from outpatient units, the “Meleti” Cognitive Rehabilitation Clinic, and community mental health centres completed the WHODAS 2.0 for functional assessment and the eHEALS questionnaire for eHL. Demographic information and ICD-10 diagnoses were also collected. Validated Greek versions of both instruments were used with appropriate permissions.

Results

Most participants had F20 diagnoses. Higher eHL scores showed a moderate relationship with better functional performance on WHODAS 2.0. Education demonstrated a clear positive association with eHL, and women reported greater confidence in locating and evaluating online information. Age displayed a weak negative relationship, and diagnostic category was not a strong predictor. Although internet use was common, many participants were unsure of how to judge the reliability of online sources—an important skill for engaging in discussions about treatment options.

Conclusions

Supporting the development of eHL, especially appraisal skills, may strengthen the foundations needed for patient engagement and SDM. Individuals with higher eHL and better functional ability are generally better equipped to understand treatment information, express informed preferences, and collaborate more effectively with clinicians. Tailored digital literacy interventions could contribute to more participatory and equitable mental healthcare.

sciforum-150775: Empathy and Emotional Intelligence as Predictors of Spiritual Care Competence in OB-GYN and Pediatric Nurses

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Background

Patient-centered care highlights active patient participation, shared decision-making, and continuous outcome measurement to optimize nursing pathways. Within high-demand obstetric–gynecologic and pediatric units, the holistic dimensions of care—especially spiritual support—are frequently underemphasized because of heavy workloads and task-orientated routines. Understanding how nurses' personal attributes contribute to spiritual care competence can guide the design of effective, patient-centered clinical pathways.

Methods

A cross-sectional survey was administered to registered nurses working in obstetric–gynecologic and pediatric wards of a tertiary medical center in Taichung, Taiwan. Participants completed validated instruments assessing empathy, emotional intelligence, and spiritual care competence. Demographic factors, prior participation in spiritual care training, and unit-level practice environment variables were collected. Pearson correlations and multiple regression analyses examined associations among key constructs and the independent effects of training and work environments.

Results

Both empathy and emotional intelligence showed significant positive relationships with spiritual care competence. Nurses who had attended formal spiritual care education programs or practiced in supportive, collaborative environments demonstrated higher competence scores, even after controlling for age, years of experience, and unit characteristics.

Conclusions

Strengthening empathy and emotional intelligence through structured education, mentoring, and a positive workplace culture enhances nurses' ability to deliver holistic, patient-centered care. Integrating digital health innovations—such as AI-based assessment tools, telehealth consultations, and mobile applications for real-time outcome tracking—further supports optimized nursing pathways, ultimately improving psychological resilience, spiritual well-being, and overall quality of life for maternal and pediatric patient populations.

sciforum-163186: Enhancing Patient-Centred Renal Care in Slovenia: Economic and Clinical Impact of Peritoneal Dialysis Expansion

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Introduction:
End-stage renal disease affects 1,008 patients per million population (pmp) in Slovenia. Despite evidence supporting peritoneal dialysis (PD) as cost-effective and patient-centred, the most recent registry data (2013) showed that only 52 of 1,401 dialysis patients (3.7%) receive PD versus 1,349 (96.3%) receiving haemodialysis (HD), representing a decline from 6% PD utilization in 2005-2012. This study examines the economic impact on the Health Insurance Institute of Slovenia (ZZZS), which managed EUR 5.25 billion in healthcare expenditure in 2024.
Methods:
We analysed PD versus HD costs from ZZZS perspective using validated European budget impact methodology (2024). Based on 2013 registry data (1,401 dialysis patients; 260 incident patients annually, 126.2 pmp), we calculated annual costs using 2024 European cost data: dialysis sessions (HD: EUR 34,574; PD: EUR 29,250), hospitalizations (HD: 7.2 days; PD: 5.0 days), healthcare personnel (HD: 15% of costs; PD: 7%), and patient transport (HD: EUR 5,860; PD: EUR 0). We assessed shifting 30% of incident HD patients (n=75) to PD, with 5-year projections.
Results:
Current utilization costs ZZZS approximately EUR 79.1 million (HD) versus EUR 2.3 million (PD) annually, with per-patient costs of EUR 58,600 (HD) versus EUR 45,000 (PD). Shifting 30% of incident patients to PD would yield first-year savings of EUR 1.02 million and cumulative 5-year savings of EUR 15.3 million. Cost reductions derive from eliminating transport costs (EUR 5,860/patient), reduced personnel requirements (8% versus 15%), and fewer hospitalizations (2.2 fewer days annually).
Conclusions:
Increasing PD from 3.7% to 30% among incident patients would represent a strategic opportunity for ZZZS to optimize resources while enhancing patient-centred care. PD enables patients to manage care at home with substantially reduced treatment burden compared to HD.Implementation would require investment in pre-dialysis education programs, improved PD catheter access, healthcare provider training in shared decision-making protocols, and ZZZS contractual frameworks incentivizing appropriate modality selection based on patient preference and clinical suitability.

sciforum-158953: Entrepreneurial Competency in Nursing: A Concept Analysis

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Abstract

Background: The 21st century has markedly transformed the nature of business operations and underscored the growing significance of entrepreneurial competency across diverse sectors, including nursing. Nurses are increasingly undertaking innovative roles to improve healthcare delivery; however, the definition of entrepreneurial competency within the nursing profession remains ambiguous. This study aims to analyse the concept of entrepreneurial competency in nursing and to define it within a professional nursing context.

Materials and Methods: This concept analysis adopted Wilson's (1963) eight-step framework. A literature review was conducted spanning 2014 to 2024, using databases such as Google Scholar, Sage Journals, ScienceDirect, CINAHL, and ResearchGate. Keywords including "entrepreneurial competency" and "nursing" were employed to identify relevant literature across business, education, and nursing domains. The analysis focused on identifying the defining attributes, antecedents, consequences, and empirical referents of the concept.

Results: A total of 20 articles met the inclusion criteria. Nine defining attributes emerged: opportunity recognition, creativity and innovation, risk-taking, problem-solving, decision-making, leadership, adaptability, collaboration, and interpersonal communication. Key antecedents included nursing education and clinical experience, exposure to business knowledge, access to financial resources and professional networks, and supportive institutional policies. Consequences comprised enhanced quality of care, business sustainability, increased patient and family satisfaction, job creation, and expanded nursing roles.

Conclusions: Entrepreneurial competency in nursing represents a synthesis of knowledge, skills, and attitudes that enables nurses to spearhead innovative healthcare initiatives. This concept lays the groundwork for both practice and research, facilitating the advancement of entrepreneurial roles within the nursing profession.

sciforum-162993: Essential Attributes of a Successful Dentist: A Quantitative Study of Chinese Dental Students

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Background: The pursuit of a successful dental career extends beyond clinical skills to encompass various personal and professional attributes. Understanding the qualities that define a successful dentist from the perspective of dental students is essential**. Objective:** This study aims to explore the perspectives of dental students at a university in mainland China regarding the attributes that define a good or successful dentist. **Methods:** A cross-sectional survey was administered to dental students at Fujian Medical University (FJMU) from March to August 2025 using an anonymous questionnaire. The questionnaire included four self-administered questions: (1) qualities associated with "a successful dentist," (2) qualities of "a good dentist," (3) qualities students expect from their own dentists, and (4) qualities dental education should emphasize. For each question, participants selected the three most important attributes from a list of 23 predefined options or provided their own responses. **Results:** All 651 dental students at FJMU School of Stomatology were invited to participate, with 645 (99%) completing the survey. Their ages ranged from 18 to 24 years, and 281 (44%) were male. Clinical competence, experience, knowledge, good communication skills, and a sense of responsibility or accountability were consistently ranked as the top five attributes by dental students across all four survey questions. Attributes such as punctuality and altruism received the lowest ratings. Bivariate analysis revealed that senior students (Years 4-5) considered good communication skills a more important quality than junior students (Years 1-3) across all four questions. **Conclusions:** Dental students in mainland China perceive clinical competence, experience, and knowledge as essential attributes for dental practice, alongside communication skills and responsibility.

sciforum-154476: Euthanasia as a pathway for patients: Healthcare professional characteristics that may impact their attitudes toward euthanasia in Greece.

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Context: Euthanasia and assisted suicide have long been subjects of ethical and historical debate, largely due to their connection to the fundamental principle of the right to life. Euthanasia is defined as the intentional act of one individual to end the life of another, using the most humane and painless means available, with the aim of serving the best interests of the person who dies. Research shows that around 10% of terminally ill patients express a moderate-to-strong desire for an early death. While arguments persist both in support of and in opposition to assisted dying, public approval for its legalization has reached unprecedented levels. The international literature indicates that attitudes toward euthanasia are influenced by a combination of sociocultural factors, religious beliefs, professional roles, age, and evolving personal views on death.

Objectives: This study aimed to explore the attitudes of healthcare professionals in Greece toward euthanasia and to assess how individual characteristics, religious orientation, and perceptions of death shape these attitudes.

Methods: A total of 465 healthcare professionals working in Greek healthcare services participated. Data were collected on socio-demographic and professional variables, attitudes toward euthanasia, and views on end-of-life issues. Multiple linear regression analysis was used to identify significant predictors.

Results: Results showed that healthcare professionals' attitudes toward euthanasia were significantly influenced by age, the type of patient they cared for, religious beliefs, and their views on death and dying.

Conclusions: These findings highlight the multifaceted nature of ethical decision-making in clinical practice, particularly when addressing requests for assisted death from terminally ill patients. In contexts like Greece, where legal frameworks around euthanasia remain restrictive, it is crucial to examine the deeper reasons for the limited public and professional discourse on the issue—especially given the growing global momentum toward its legalization.

sciforum-160451: Feeding the Future: Household Food Security and Infant Feeding Practices among Stunted Children in Urban Indonesia

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Introduction: Stunting remains a major nutritional challenge in Indonesia, often worsened by inadequate infant and young child feeding (IYCF) practices and food insecurity. This condition affects early-life nutritional outcomes, underscoring the need to identify strategies to prevent child stunting. This study aimed to analyze the relationship between household food security (HFS) and IYCF practices among stunted children in Indonesian urban areas. **Methods:** This cross-sectional study involved 139 mothers of stunted children aged 6–23 months, all registered at the Community-Based Integrated Health Care Centre in Surabaya, East Java, Indonesia. Cluster sampling was applied. The independent variable was HFS, assessed using the U.S. Household Food Security Survey Module (US-FSSM). The dependent variables, IYCF practices, were measured using three WHO indicators: minimum dietary diversity (MDD), minimum meal frequency (MMF), and minimum acceptable diet (MAD). Chi-square tests and logistic regression analyses were performed at a significance level of p0.05. **Results:** MDD was reported by 80.6% of respondents, MMF by 50.4%, and MAD by 41.7%. Bivariate analysis revealed that HFS significantly correlates with MDD (p=0.047; C=0.232) and MMF (p=0.022; C=0.254). In the multivariate model, after adjusting for covariates, HFS was significantly associated only with MMF (AOR=1.43, 95% CI: 1.02–1.99, p=0.039), indicating that food-secure households were 1.4 times more likely to achieve adequate meal frequency compared to food-insecure households. **Conclusions:** HFS influences feeding practices, particularly meal frequency, among stunted children. Policies and interventions that integrate food security strategies with IYCF promotion at the community level are crucial to improve child nutrition in urban low-resource settings.

sciforum-160532: Health Behaviors and Psychosocial Profile of Tunisian Medical Students: A Call for Student Well-being Initiatives

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Background:
Medical education is globally recognized as a demanding path that can severely impact students' lifestyle choices and mental health. In the rapidly changing educational landscape of the MENA region, these pressures may be exacerbated. Documenting the prevalence of risk behaviors—such as psychoactive substance use, sleep deprivation, and chronic stress—is a critical first step toward designing effective support systems. This study aimed to comprehensively characterize the sociodemographic profile, lifestyle habits, and psychosocial well-being of medical students at the Faculty of Medicine of Sousse, Tunisia.

Methods:
A descriptive cross-sectional study was conducted during the 2023–2024 academic year using an exhaustive online sampling strategy targeting students from the second year to internship. A self-administered questionnaire collected detailed data on sociodemographics, lifestyle factors (physical activity, sleep patterns, tobacco and alcohol consumption), and mental health indicators (perceived stress levels). Descriptive statistics were analyzed to determine the prevalence of these risk factors across the student population.

Results:
The study included 701 medical students (median age 22 years; 69.1% female). The results revealed a concerning psychosocial burden: 89.1% of students reported moderate to high levels of perceived stress. Risk behaviors were prevalent, with 12.1% of participants reporting psychoactive substance use and 9.6% identifying as active smokers. Furthermore, sleep patterns were frequently compromised. Despite these challenges, students demonstrated academic resilience, maintaining a median of 4 hours of daily revision.

Conclusion:
Tunisian medical students face significant health challenges marked by widespread stress and notable substance use behaviors. These findings underscore an urgent need for institutions to implement comprehensive wellness programs, including stress management workshops and substance cessation support. Addressing these determinants is essential for nurturing a healthy and resilient future healthcare workforce.

sciforum-160071: Heterogeneity of patients' engagement in patient safety during systemic antineoplastic therapy: application of latent profile analysis and network analysis

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Objectives: Patient safety in systemic antineoplastic therapy is critical but heterogeneous due to diverse symptom profiles and engagement behaviors. Existing studies lack insights into subgroup differences in patient involvement and symptom interactions. This study aimed to identify latent profiles of patient safety engagement and characterize symptom network heterogeneity among cancer patients undergoing chemotherapy.

Method: A cross-sectional study recruited 489 adult cancer patients receiving non-initial chemotherapy at a tertiary hospital (October 2024–May 2025). Data included demographics, Inpatients' Involvement in Medication Safety Scale (IIMSS), and EORTC QLQ-C30 symptoms (9 symptoms: pain, nausea, fatigue, dyspnea, insomnia, appetite loss, constipation, diarrhea, financial difficulty). Latent profile analysis (LPA) identified engagement subgroups, and network analysis compared symptom associations (edge weights, centrality) across subgroups using bootstrapping and Qgraph in R.

Results: A cross-sectional study recruited 489 adult cancer patients receiving non-initial chemotherapy at a tertiary hospital (October 2024–May 2025). Data included demographics, Inpatients' Involvement in Medication Safety Scale (IIMSS), and EORTC QLQ-C30 symptoms (9 symptoms: pain, nausea, fatigue, dyspnea, insomnia, appetite loss, constipation, diarrhea, financial difficulty). Latent profile analysis (LPA) identified engagement subgroups, and network analysis compared symptom associations (edge weights, centrality) across subgroups using bootstrapping and Qgraph in R.Network stability analysis confirmed robust edges in Profile A (e.g., nausea–constipation, bootstrap CI=0.41–0.63) and Profile C (constipation–diarrhea, CI=0.51–0.67). Demographics (e.g., education, income) and treatment-related factors (adverse events) significantly predicted profile membership (p0.05).

Conclusion: Patients undergoing systemic antineoplastic therapy demonstrate heterogeneous safety engagement patterns and symptom networks. Targeted interventions are needed; for example, Profile A requires fatigue-focused symptom management, Profile B needs dyspnea-centric supportive care, and Profile C demands constipation/diarrhea monitoring with engagement promotion. LPA combined with network analysis identifies subgroup-specific safety priorities, advancing precision patient safety in oncology.

sciforum-163266: Holistic primary health care for patients with multimorbidity: impact on treatment burden, quality of life and urban–rural inequalities

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Background. Multimorbidity and the associated treatment burden are a growing challenge for primary health care (PHC). Patients with multiple chronic conditions frequently experience fragmented care, high self-management demands, and poorer health-related quality of life (HRQoL), particularly in rural and socially deprived areas. This study assessed the impact of a holistic care model for patients with multimorbidity in PHC in Lithuania on treatment burden, HRQoL, and mental health, and explored urban–rural differences.

Methods. We conducted a 15-month pragmatic controlled trial in urban and rural PHC centres (n = 796 enrolled) as part of the EUFIAP "TELELISPA" project. Adults aged 40–85 years with ≥2 chronic conditions were allocated to usual care or to a complex intervention that included case management, multidisciplinary team support (family physician, nurse, psychologist, physiotherapist, lifestyle specialist), structured use of patient-reported outcome measures (PROMs), and proactive follow-up. Data were analysed using multivariable models and pre-specified subgroup analyses by age, multimorbidity level, polypharmacy, and place of residence.

Results. Compared with usual care, the intervention produced small-to-moderate improvements in mental health (PHQ-9, GAD-7) and HRQoL (EQ-5D-5L index, EQ-VAS, selected SF-36 domains). The greatest benefits were observed among younger (65 years) patients, those with higher multimorbidity or polypharmacy, and in urban PHC settings. In rural areas and among older adults, anxiety and depression scores improved, but logistical and organisational aspects of care increased perceived treatment burden (MTBQ), especially medication management, transport, and visit coordination.

Conclusions. A holistic care model in PHC can improve quality of life and mental health in multimorbid patients with complex needs, but may simultaneously shift or increase treatment burden in contexts with persistent access barriers. To avoid overloading vulnerable groups, integrated care should reduce logistical barriers and be tailored to patients' capacity, particularly in rural and socially deprived areas.

sciforum-160440: How is purpose in life experienced when the road ahead is shorter than the road behind?

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Introduction

Healthy aging is internationally conceptualized as a multidimensional process encompassing autonomy, participation, functional capacity, and well-being. Purpose in life is increasingly recognized as a key element of person-centered care in later life; however, a significant gap remains between scientific frameworks and the ways in which older adults themselves experience and describe purpose. Within the context of the United Nations Decade of Healthy Ageing (2021–2030), this study explores how adults aged 65 and older understand, maintain, or renegotiate their life purpose with the ultimate goal of supporting the development of person-centered care models that are responsive to older adults' own understandings and expressions of meaning and direction in later life.

Methods

Adults aged 65+ participated in 60 to 90-minute semi-structured, in-depth interviews that examined major life achievements, transformative experiences, difficulties and coping strategies, personal strengths, current barriers to purposeful living, and views on legacy. Interviews were analyzed using reflexive thematic analysis supported by MAXQDA. Coding was informed by an a priori coding tree (purpose, barriers, ageism, strengths, coping, legacy) while remaining open to emergent themes.

Results

Preliminary thematic patterns indicate that older adults draw upon a combination of biographical milestones and personal strengths when articulating their purpose. Participants referenced both long-standing and evolving forms of purpose, and described internal (e.g., internalized ageism) and external factors (e.g., changes in significant social networks) that challenge purposeful living. Notions of legacy appeared as a bridge between past achievements and future-oriented meaning. Variability in the influence of internalized ageism was noted.

Conclusions

The findings underscore the importance of integrating personal strengths, resilience, and legacy into the study of purpose in later life. These dimensions influence how individuals make sense of their past, respond to current challenges, and orient themselves towards meaningful future contributions, aligning closely with core principles of healthy ageing.

sciforum-160411: Improving Emergency Department Efficiency Through a Primary-Care-Led Fast Track Model: A High-Volume Hospital Experience

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Background

Emergency Departments (EDs) in Greece face persistent challenges related to overcrowding, prolonged waiting times, staff shortages, and limited infrastructure. Many patients seek care in EDs for conditions that could be managed at the primary care level. The General Hospital of Nikaia, among the busiest in Athens, reports more than 107,000 annual ED visits, highlighting the urgency for operational improvements. To mitigate system strain and streamline patient flow, a Fast Track (FT) area staffed by primary care physicians was introduced in 2017.

Methods

The Fast Track intervention targeted low-acuity patients who did not require immediate resuscitation or advanced diagnostic interventions. All ED attendees were screened through a standardized triage process using the Emergency Severity Index (ESI) and National Early Warning Score (NEWS). Eligible Fast Track patients included those classified as ESI 4–5, with NEWSs of 0–3, ambulatory individuals over 16 years of age, and minor trauma cases. Additional specialty pathways were delineated for more specialties. Operational metrics, including Fast Track utilization, referral rates, and admission rates among referred patients, were monitored over time to evaluate effectiveness.

Results

Findings indicate a significant increase in Fast Track utilization across the observation period. Referral rates from Fast Track to the main ED decreased, demonstrating improved case resolution within the FT unit. Simultaneously, the proportion of referrals that resulted in hospital admission increased, suggesting more appropriate and targeted identification of patients requiring higher-level care. The main medical areas, and particularly the internal medicine area, experienced demonstrable relief from patient congestion.

Conclusion

The implementation of a primary-care-led Fast Track area contributed to more efficient triage, optimized resource allocation, and reduced bottlenecks within a high-demand ED environment. The model effectively improved patient flow and represents a viable strategy for enhancing acute care delivery in resource-strained healthcare systems.

sciforum-160388: Independent Cognitive and Emotional Domains in Older Adults with Prolonged Hospitalization: Implications for Patient-Centered Care Pathways

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Cognitive impairment, anxiety, and depression are prevalent among older adults during prolonged hospital admissions, yet their interplay remains insufficiently understood despite its relevance to patient-centred care. Emotional distress is often presumed to influence cognitive performance in inpatient settings, although empirical evidence remains inconsistent. Clarifying whether global cognition and emotional symptomatology function as overlapping or independent clinical domains is therefore essential for designing responsive care pathways.

This study analysed the associations between global cognition and emotional symptoms in 61 Spanish adults aged 65 years and older who experienced prolonged hospital stays on general medical wards. Standardised assessments included the Spanish-adapted Mini-Mental State Examination (MMSE) and the Goldberg Anxiety and Depression Scale (GADS). Spearman correlations indicated no association between MMSE scores and anxiety ($\rho = -.010$, $p = .937$) or depression ($\rho = .066$, $p = .614$). A multivariable linear regression model incorporating both emotional measures confirmed the absence of a relationship, accounting for only 1.1% of the variance in global cognition ($R^2 = .011$; $p = .721$). In contrast, anxiety and depression showed a robust correlation ($\rho = .613$, p .001), suggesting a coherent emotional profile that may be amenable to joint screening.

These findings indicate that cognitive performance and emotional distress operate as differentiated yet complementary domains in older adults admitted for prolonged stays. The absence of association between MMSE scores and GADS anxiety or depression suggests that cognitive status cannot be inferred from emotional symptomatology, nor vice versa. Clinically, these results challenge the assumption that higher emotional distress predicts poorer cognitive functioning. From a patient-centred perspective, the findings highlight the need for dual screening pathways: an integrated circuit for emotional distress and a distinct circuit for cognitive evaluation. Separating these domains may prevent unsupported clinical inferences, improve early identification of vulnerability, and support more precise models of inpatient care for older adults.

sciforum-145830: Integrating Patient-Reported Outcomes and Digital Co-Design to Optimize Dermatologic Care Pathways: Patient-Centered Approaches

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Introduction:
Patient-centered care in dermatology remains limited by an overreliance on clinician-reported outcomes, with insufficient integration of patient experience into care design. The increasing adoption of digital health technologies presents an opportunity to align dermatologic care pathways with patient-reported outcomes and values. This scoping review aims to synthesize existing evidence on the integration of patient-reported outcome measures (PROMs) and digital co-design frameworks in dermatologic practice to optimize engagement and care quality.

Methods:
Following the PRISMA-ScR guidelines, a comprehensive literature search was conducted across PubMed, Embase, Scopus, and Web of Science for studies published between 2010 and 2025. Eligible studies included randomized trials, observational studies, and qualitative research examining the use of PROMs, patient portals, mobile health tools, or co-design methods in dermatology. Data were extracted on the study design, intervention type, patient population, outcome measures, and implementation barriers. Thematic synthesis was applied to identify trends and gaps in current evidence.

Results:
Out of 742 screened records, 38 studies met the inclusion criteria. Most evaluated PROM implementation in psoriasis and eczema, while few integrated true patient co-design into digital tool development. Evidence suggested that PROM use improved shared decision-making, treatment adherence, and satisfaction but lacked standardization across platforms. Minimal literature addressed inclusivity for diverse skin tones or low-digital-literacy populations.

Conclusions:
Current dermatologic care models underutilize patient co-design and PROM integration, despite demonstrated benefits for engagement and outcome tracking. Future research should prioritize standardized, inclusive frameworks that leverage digital tools to embed patient voice throughout dermatologic care pathways.

sciforum-163273: Intergenerational Engagement and Aging Attitudes in Emerging Health Professionals

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Introduction:
Intergenerational engagement and attitudes toward aging among emerging health professionals are important foundations for patient-centered care of older adults. Positive engagement toward aging may enhance empathy, communication, and care pathway quality. This study examined aging attitudes—specifically enjoyment and engagement—and explored differences by gender, race/ethnicity, and frequency of interactions with older adults.

Methods:
A validated 8-item, two-factor aging attitudes scale (enjoyment; engagement) was administered to emerging health professionals enrolled in health and human services programs at a large public university (n = 999). Mean scores were compared across gender, race/ethnicity, and weekly interaction frequency with older adults (weekly or less vs. weekly or more).

Results:
The sample included 39% white, 25% Hispanic, 19% Black, 10% Asian, and 7% multiracial participants; 78% were female. Engagement scores differed by demographic factors and interaction patterns. White male students reported lower engagement compared with white female students (8.83 vs. 9.57; p = .006). Students interacting with older adults more frequently demonstrated significantly higher engagement among Asian (8.14 vs. 9.05; p = .017) and Hispanic students (8.53 vs. 9.08; p = .02). No significant differences were observed among Black students by gender or interaction frequency.

Conclusions:
Meaningful variation in engagement toward aging exists among emerging health professionals, shaped by demographic and intergenerational experience factors. These findings highlight opportunities to strengthen aging-positive attitudes early in training to support more patient-centered communication and optimized care pathways for older adults. Integrating aging-attitude assessments into educational programs may help identify readiness gaps and guide targeted strategies to enhance engagement with aging populations.

sciforum-160434: Intersection of CKD and Fragility Fractures: A growing Concern among older people

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Introduction:

Chronic Kidney Disease (CKD) is associated with abnormal bone metabolism and increased fragility fracture risk. This overlap between CKD and osteoporosis in the context of the ageing population adds more challenges to care of the elderly. However, many older people often have both CKD and osteoporosis, but are undiagnosed and untreated. The objective of this study is to measure prevalence of CKD among patients presenting with fragility fractures.

Methods:

A total of 2073 fragility fracture patients seen by Aneurin Bevan Fracture Liaison Service (AB-FLS) between January 2022 and March 2023 were reviewed retrospectively; 825 patients' fragility fracture were excluded due to non-availability of estimated glomerular filtration rate (eGFR); and 1108 patients with fragility fractures were assessed for the stage of CKD based on eGFR. CKD stages were classified based on eGFR (mL/min/1.73 m²) values: stage 2 (60–89); stage 3 (30–59); stages 4 (15-29); and stage 5 (15). Subgroup analyses were performed by fracture type.

Results:

Mean age (n=2073 patients) = 78.2±10.6 and routine bloods for all patients showed mean Hb = 123 (49-192); MCV= 93.89 (60 -142); Calcium=2.39 (1.62-3.22); Phosphate= 1.11 (0.10-2.97); ALP=113 (15-4470); and mean creatinine was 88 (range=27-810).

The mean age for patients with available eGFR (n=1108) was 82.3±9.0 and mean eGFR was 60 (range=5-89).

The prevalence of CKD stage 2 was 52.2% (n=579) and the mean age was 80.3±9.4 (50 to 102). Nearly half of the fragility fracture patients (47.8%, n=529) had CKD stage 3 or above and the mean age was 84.5±8.0 (50 to 102). There was a significant difference in group mean age (p0.0001).

The proportion of patients with stages 3, 4 and 5 were 41.9% (n=464), 4.9% (n=55), and 1.1% (n=13), respectively.

Conclusion:

Nearly half of the patients who sustained a fragility fracture and a quarter with hip/femur fracture had CKD 3 or above and were significantly older compared to CKD stage 2. More research is needed to close this gap, so we can better understand how to manage bone health in older people living with CKD and prevent future fragility fractures.

sciforum-159907: IoT-Enabled Smart Toothbrushes for Oral Hygiene Monitoring: A Multi-Group Comparative Study Among Undergraduates, Dental Students, and Patients Across Educational and Clinical Settings in District Mandi, India

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Background: The integration of Internet-of-Things (IoT) technologies into oral healthcare enables real-time monitoring of brushing behaviour through smart toothbrushes. These devices track brushing duration, technique, and frequency, providing personalized feedback to enhance oral hygiene.

Aim: To assess and compare the knowledge, attitude, and practices (KAP) related to IoT-enabled smart toothbrushes among undergraduate students, dental students, and dental patients across educational and clinical settings in District Mandi, India, and to evaluate whether real-time brushing data can improve compliance.

Materials and Methods: A cross-sectional survey was conducted among 885 participants, comprising undergraduate students (n=295), dental students (n=295), and dental patients (n=295). A prevalidated 32-item questionnaire assessed demographics and KAP toward IoT-based smart toothbrushes, including awareness of IoT, understanding of smart toothbrush functions, perceptions of real-time feedback, and usage patterns. Data were analysed using descriptive statistics, Chi-square tests for categorical variables, and one-way ANOVA for continuous variables, followed by post-hoc tests. Statistical significance was set at p 0.05.

Results: Of the 1,014 questionnaires distributed, 885 were completed (response rate: 87.35%). Significant differences were observed across all KAP domains. Dental students showed the highest knowledge scores (8.12 ± 1.4), followed by undergraduates (5.96 ± 1.9) and patients (4.85 ± 2.1), with ANOVA showing p 0.001. Post-hoc analysis confirmed significant pairwise differences: dental students vs. undergraduates (p 0.001), dental students vs. patients (p 0.001), and undergraduates vs. patients (p = 0.004). Attitude differences were significant (p = 0.008), with 78% of dental students, 61% of undergraduates, and 54% of patients agreeing that real-time data improves compliance; pairwise differences were significant (p = 0.01 and p = 0.04). Practice patterns also varied significantly (p = 0.02). Additional differences were noted in perceived usefulness (p = 0.01), willingness to adopt smart toothbrushes (p = 0.03), and data privacy concerns (p = 0.047).

Conclusion: IoT-enabled smart toothbrushes have strong potential to improve oral hygiene compliance. Despite positive attitudes, significant gaps in knowledge and usage persist, indicating the need for targeted awareness and cost-effective implementation strategies in District Mandi.

sciforum-159967: Latent Profile Analysis and Influencing Factors of Symptom Burden in Postoperative Patients with Acute Coronary Syndrome

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Abstract:

Objective: This study aimed to identify the latent profiles of early postoperative symptom burden among patients with acute coronary syndrome (ACS) following percutaneous coronary intervention (PCI) and to examine the differences in clinical characteristics across these profiles. Method: A convenience sample of 261 ACS patients after PCI was recruited from a tertiary hospital in Chongqing, China. Data were collected using a demographic and clinical information questionnaire, the Cardiac Symptom Survey, and the Seattle Angina Questionnaire (SAQ). Latent profile analysis (LPA) was conducted to identify subgroups of symptom burden. Univariate analyses and multivariate logistic regression were used to determine factors associated with profile membership. Results: Four distinct symptom-burden profiles emerged: a low-symptom group (54.8%), a low-dyspnea/high-chest-tightness group (14.6%), a high-dyspnea/low-chest-tightness group (14.9%), and a high-symptom group (15.7%). Significant differences among the four groups were observed in age, educational level, number of stents implanted, Killip classification, and the SAQ domains of physical limitation and angina frequency (all ps .05). Multivariate logistic regression indicated that age lower than 65 years was an independent protective factor for belonging to the low-symptom group (OR = 0.195, 0.239), whereas lower educational attainment (primary school or below) was an independent risk factor for higher symptom burden (OR = 2.939). Killip class I was protective for membership in the high-dyspnea/low-chest-tightness group (OR = 0.354). The number of stents implanted did not independently predict profile membership. Conclusion: Younger age (65 years) and Killip class I serve as protective factors for lower symptom burden following PCI among patients with ACS, whereas low educational level increases symptom burden risk. Symptom burden in this population is heterogeneous, underscoring the need for stratified management and precision-based clinical interventions tailored to distinct symptom profiles.

sciforum-160441: LivingVerb: A Single-Session Gamified Value-Clarification Intervention to Activate Life Projects across the Adult Lifespan

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Introduction

The development of psychosocial interventions that activate behavior aligned with personal values represents an essential step in promoting well-being across the adult lifespan. *LivingVerb* is a prototype card game designed to facilitate value clarification, enhance awareness of life purpose, and promote behavior aligned with such purpose. This study explores the acceptability, feasibility, and preliminary effectiveness of the tool with both older adults and university students.

Methods

LivingVerb integrates foundational elements of personal values clarification, gamification, and ultra-brief psychological intervention. The prototype includes 26 specific value cards and 4 blank cards to accommodate personalized values, selected through a comprehensive literature review and expert input to reflect values relevant across age groups. This pilot study employed a single-group design with participants recruited from older adult communities and university settings. Data were collected through structured questionnaires assessing acceptability, usability, and clarity in value selection. Attendance and completion rate served to assess feasibility. Preliminary evaluations of changes in value clarity, sense of purpose and agency, and behavioral intention were also conducted.

Results

Preliminary findings indicate that the prototype is well-accepted and engaging for both older and younger adult participants. Participants reported that the card game facilitated meaningful reflection and helped clarify personal values. The gamified format supported sustained interest and active participation. Feedback from questionnaires reflected positive perceptions of usability and clarity, alongside indicators of increased awareness of life purpose and intention to conduct value-aligned behaviors.

Conclusions

The *LivingVerb* prototype shows promise as a feasible, acceptable, and potentially effective tool for activating value-aligned behavior in diverse adult populations. These results warrant further controlled trials to establish efficacy and broader applicability. The gamified card format offers an innovative approach to individualized psychological intervention centered on personal values across the adult lifespan.

sciforum-159348: Lorazepam-Associated Orthostatic Intolerance and Secondary Headache in a Low-Blood-Pressure Phenotype: A Patient-Centered Case Report

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Background: Patients with lifelong low blood pressure may be especially vulnerable to sedative-induced orthostatic symptoms, yet this interaction is rarely described. We report a case where routine insomnia prescribing unmasked clinically meaningful orthostatic intolerance and mucosal dryness in a low-BP phenotype.

Methods: A 30-year-old man with constitutional hypotension (home BP ~90–95/50–55 mmHg) developed lightheadedness, chest tightness, and transient blurred vision on standing after starting nightly lorazepam for chronic insomnia. Symptom and home BP/heart-rate logs were recorded over several weeks, alongside orthostatic vitals at different lorazepam doses and anticholinergic burden scores for co-medications.

Results: Orthostatic testing demonstrated modest BP drops but larger heart-rate rises on 2 mg lorazepam nights, with reproducible symptom provocation; symptoms were milder on 1 mg or off-nights. Urinalysis on high-symptom days showed high specific gravity, intermittent ketonuria, and hyaline casts, consistent with relative dehydration as a symptom amplifier. After corneal refractive surgery, concurrent lorazepam, imipramine, and diphenhydramine were associated with recurrent corneal epithelial erosions and nocturnal nasal obstruction, which improved with hydration and anticholinergic load reduction. No metabolic, endocrine, structural cardiac, or neurologic causes were identified.

Conclusions: This case illustrates how benzodiazepines can precipitate orthostatic intolerance and secondary headache in patients with baseline hypotension and how cumulative anticholinergic exposure can worsen ocular and mucosal symptoms. Simple patient-centered tools—home BP/HR logs, hydration review, medication reconciliation, and orthostatic vitals at the actually used dose—helped uncover a dose–response relationship and guided safer insomnia management. Clinicians should screen for low resting BP, polypharmacy, and anticholinergic burden when prescribing sedatives and consider non-pharmacologic sleep strategies in vulnerable patients.

sciforum-160114: Medication Safety Management of Cancer Patients' Participation in Intravenous Anticancer Therapy Based on the Theory of Planned Behavior: A qualitative study

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Objective

This qualitative study investigated the current status and influencing factors of cancer patients' participation in intravenous anticancer therapy medication safety from the perspective of healthcare professionals.

Methods

Using purposeful sampling, 19 physicians and nurses from a tertiary hospital were selected for semi-structured interviews. Data were analyzed based on the Theory of Planned Behavior framework across four dimensions: behavioral attitudes, subjective norms, perceived behavioral control, and behavioral intentions.

Results

The study found that patient participation in medication safety management has dual effects: its positive significance lies in promoting clinician–patient trust, improving adherence, and establishing a "dual verification" mechanism; however, excessive intervention may lead to increased burden on healthcare professionals, communication barriers, and patient anxiety. Key factors influencing patient participation include the following: (1) structural factors (policy support, hospital systems, resource allocation); (2) professional competence and communication efficiency of healthcare professionals; (3) family support, economic conditions, and patient education level; (4) patient health status and psychological state. Furthermore, educational disparities lead to unequal participation, with patients having lower literacy levels and elderly patients facing greater challenges.

Conclusions

Recommendations include optimizing standardized communication processes, developing simplified educational tools, strengthening the supportive role of family members, introducing psychological interventions, and improving medical insurance policies and hospital management systems to establish a collaborative "patient–family–healthcare professional" management model. Future research should expand to multi-center studies and integrate quantitative data to validate the findings. This study provides theoretical and practical foundations for enhancing patient-centered medication safety in intravenous anticancer therapy.

sciforum-159808: Nurses' Knowledge Levels Regarding Medical Device-Related Pressure Injury Risk Factors: A Descriptive Study

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Background: Medical device-related pressure injuries (MDRPIs) represent a growing challenge in modern healthcare settings, contributing to preventable patient harm and increased healthcare costs. Nurses are essential in identifying MDRPI risk factors and implementing early preventive strategies. Therefore, assessing nurses' knowledge in this domain is critical to improving patient safety and care quality.

Aim: This study aimed to determine nurses' knowledge levels regarding the risk factors associated with the development of medical device-related pressure injuries.

Methods: A descriptive study was conducted with nurses working in palliative care, intensive care, internal medicine, and surgical clinics of Erzincan Mengücek Gazi Training and Research Hospital between 30 October and 31 December 2024. The sample size was determined as 284 nurses based on power analysis. Data were collected using a structured data collection form developed by the researchers in accordance with the NPUAP/EPUAP 2014 guidelines. The form included items on demographic characteristics, professional background, and 15 questions measuring knowledge of MDRPI risk factors. Data were gathered through face-to-face interviews after obtaining informed consent. Statistical analyses were performed using SPSS 27.0. Descriptive statistics, independent and paired t-tests, ANOVA, correlation analyses, regression modeling, and non-parametric tests (Wilcoxon and Dunnett's C) were used when appropriate. Statistical significance was set at p 0.05.

Results: Preliminary results indicate that nurses' knowledge levels regarding MDRPI risk factors are moderate. Knowledge scores significantly varied based on clinical unit, years of professional experience, previous training on pressure injuries, and frequency of medical device use (p 0.05). Regression analysis showed that prior education on MDRPI prevention was the strongest predictor of higher knowledge levels.

Conclusion: These findings highlight the urgent need to strengthen education and training programs related to medical device-related pressure injury prevention. Enhancing nurses' knowledge and competency in MDRPI risk assessment may contribute to reducing preventable harm and improving patient safety outcomes in clinical settings.

sciforum-160695: Optimizing Care Pathways Through Digital Symptom Tracking and Patient-Reported Outcomes.

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Introduction: Digital symptom tracking and patient-reported outcomes (PRO) are increasingly used to support self-management and remote monitoring in chronic dermatological conditions. However, their role in patient-centred care pathways remains unclear. This review examines the current evidence on digital tools for symptom tracking and PRO collection, highlighting strategies for their integration to optimize clinical workflows, patient engagement, and health outcomes.

Method: A literature review was conducted using randomized controlled trials, retrospective app-data analyses, and systematic reviews (2010–2025) evaluating digital symptom-tracking tools for atopic dermatitis, psoriasis, and chronic eczema. Extracted data included study design, population, digital modality, PRO instruments (POEM, DLQI), engagement/adherence metrics, severity indices (SCORAD), QoL outcomes, and usability measures.

Results: Across 30 studies, digital interventions that combined education, medication reminders, symptom tracking, and PRO collection consistently achieved high engagement (≥ 6 days/week active use) and adherence (9 %) with strong user-satisfaction scores (88%). Apps and e-diaries were associated with substantial improvements in PROs such as POEM and DLQI, indicating better self-management and QoL, although effects on objective severity scores were smaller or inconsistent. A 6-week atopic dermatitis program delivered via smartphone achieved 44% improvement in SCORAD and 46% improvement in POEM, alongside marked DLQI gains among highly adherent users. Weekly PRO monitoring itself can act as a behavioral co-intervention, producing small but measurable improvements in perceived eczema severity independent of changes in treatment use. AutoML analyses identified baseline QoL, disease activity, age, BMI, and anxiety as key predictors of symptom trajectories and app usage.

Conclusion: Digital symptom-tracking platforms and PRO measures have demonstrated feasibility, high user acceptability, and a positive impact on self-management and QoL in dermatology. When thoughtfully integrated, they enable continuous, patient-centred, precision-informed care. Future work should refine monitoring frequency, adopt standardized PRO infrastructures, and leverage advanced analytics to deliver personalized interventions while safeguarding clinical and research integrity.

sciforum-163386: Optimizing Geriatric Prescribing in Secondary Care: Patterns, Polypharmacy, and Medication Appropriateness in an Outpatient Pharmacy Setting

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Introduction: Elderly individuals have co-morbid conditions that require multiple medications, leading to polypharmacy and associated drug-related problems.

Aims: The study aimed to evaluate the prescription patterns, polypharmacy, potentially inappropriate medications, and potential drug-drug interactions in the geriatric population at the outpatient pharmacy department of a secondary care hospital.

Methodology: This was a prospective, descriptive study. Ambulatory patients over 65 years old attending the outpatient pharmacy were included. A total of 272 patients were enrolled, and data were collected once for each patient. WHO/International Network for Rational Drug Use (INRUD) indicators were used to assess the rationality of prescribing patterns. Anticholinergic Medication Burden was calculated using the Anticholinergic Burden (ACB) Calculator. Prescriptions were screened for polypharmacy and Potentially Inappropriate Medications (PIMs) using Beers and START/STOPP criteria. Potential drug–drug interactions (pDDIs) were analyzed using the Lexicomp database. Data analysis was performed using SPSS 28.0.

Results: The average age of patients was 73.75 ± 7.41 years. Most patients (56.98%) had three to four co-morbidities, with hypertension being the most common (23.64%). The average number of drugs per prescription was 8.84 ± 3.87. The most commonly prescribed drugs were for diabetes (14.62%). Most patients (54.41%) had an ACB score of 1–2, and those taking seven or more drugs had significantly higher ACB scores (p0.0001). According to Beers criteria, 212 medications were potentially inappropriate, while STOPP criteria identified 140 PIMs. Polypharmacy was observed in 40.44% and hyperpolypharmacy in 45.2% of patients. Polypharmacy showed significant association with hypertension, diabetes mellitus, dyslipidemia, and ischemic heart disease. A significant association was also found between polypharmacy and the presence of at least one PIM. The prevalence of pDDIs was 93.75%, with 2044 interactions identified, most being moderate.

Conclusion: The study highlights the high prevalence of polypharmacy, potentially inappropriate medications, and potential drug-drug interactions among elderly patients. The significant association between polypharmacy and chronic disease conditions emphasizes the need for vigilant prescription monitoring.

sciforum-163446: Patient-Centered Care in the Digital Era: Social Representations of Technology and Care Pathways among Nursing and Health Technology Students in ISPITS-Casablanca/Morocco

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The integration of digital technologies and artificial intelligence (AI) is transforming healthcare practices and care pathways. However, the perceptions of these tools by future healthcare professionals remain poorly documented, particularly in the Moroccan context. This study aims to analyze the social representations of digital health and AI among students in nursing and health technology programs in Casablanca.

An exploratory qualitative methodology was adopted, combining semi-structured interviews and focus groups with a sample of students. The results indicate that students perceive technology as a lever to facilitate access to information, improve the efficiency of care pathways, and enhance the quality of interventions. At the same time, they express concerns regarding ethics, the patient–professional relationship, and accountability in the use of AI.

These findings highlight a dual register of expectations and apprehensions: enthusiasm for innovation alongside vigilance regarding social and professional impacts. This communication emphasizes the importance of training and raising awareness among students on technological and human issues, to ensure responsible and patient-centered adoption of digital tools.

This contribution provides a sociological perspective on the integration of technologies in health education and offers insights for guiding the development of digital care pathways that are responsive to the needs and perceptions of future healthcare professionals.

sciforum-156867: Patient-centered communication and psychological well-being among patients with chronic medical conditions

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Introduction: Chronic medical conditions (CCs) are the leading causes of morbidity and mortality in the U.S. Patients with CCs often experience anxiety, depression, and other mental or emotional health problems. Although patient-centered communication (PCC) practices may address the mental health needs of patients, potentially through providing opportunities for emotional expression, reassurance, and support, there is limited scientific evidence on the effects of PCC on the psychological well-being of patients with CCs.

Methods: Pooled cross-sectional data were extracted from the U.S. National Cancer Institute's Health Information National Trends Survey (HINTS5; Cycles 1–4; 2017–2020) for 9,199 respondents (≥18 years, reported ≥1 CC, non-Hispanic White=65.7%). PCC was measured on a composite score scale (0–100). Psychological distress (anxiety and depression) was assessed using the Patient Health Questionnaire-4 (PHQ-4). We performed multivariable logistic regressions to investigate associations between PCC and psychological distress.

Results: Nearly 20.4% of the patients experienced clinically significant anxiety, and 18.0% experienced depressive symptoms. With each additional unit increase on the PCC score scale, the odds of experiencing anxiety (aOR=0.992; 95% CI: 0.986, 0.998) and depression (aOR=0.989; 95% CI: 0.984, 0.995) decreased by approximately 1%.

Conclusions: Our findings revealed that enhanced PCC is associated with reduced odds of anxiety and depression among patients with CCs. Integrating holistic care models will be crucial to addressing the complex needs of patients with CCs. Policymakers and healthcare providers could expand training programs to strengthen the PCC skills of healthcare providers and potentially enhance the mental well-being of patients with chronic medical conditions.

sciforum-162053: Patient-Driven Referral in a Free Tertiary Hospital: An Indicator of Trust and Engagement in Improving Cardiac Care

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Background: Congenital heart disease (CHD) accounts for ~28% of all congenital anomalies, affecting ~1.35 million newborns annually, including ~0.24 million in India. Although >90% of affected children can achieve healthy adulthood with timely intervention, delayed referrals and weak referral systems contribute to preventable morbidity. In a setting where treatment is free, understanding how patients navigate referral pathways is essential. This study evaluates referral dynamics to a free tertiary cardiac centre in India, focusing on the contribution of former patients and families in facilitating new CHD referrals.

Methods: A retrospective analysis was conducted on CHD patients referred since 2018 and treated between 2023 and 2025, excluding re-interventions. CHD phenotypes were classified using the International Classification of Diseases—10th Revision. Socio-demographic and clinical variables were recorded in REDCap. Referral pathways were categorized as former patient-driven, peer-driven, healthcare-professional, social media, staff-mediated, and local walk-ins. Descriptive and comparative statistics were performed in SPSS v26.0.

Results: Among 4,743 interventions, referral information was available for 3,960 patients. Median age at treatment was 4 years (IQR: 591-2,816 days), with a male-to-female ratio of 1.38:1. Patient-driven referrals were predominant (41.1%), surpassing healthcare-professional (38.3%) and peer-driven referrals (12.6%). Social media, staff-mediated, and walk-in referrals constituted 6.1%, 1.5%, and 0.4%, respectively. Spatial mapping showed that 86.7% of patient-driven referrals originated from home or neighbouring states. Children aged > 5 years were about 61% more likely to be referred through former patients as compared to other modes (38.1% vs. 27.7%, p 0.001). Patient-driven referrals remained stable across pre-COVID-19, COVID-19, and post-COVID-19 periods (42.6%, 40.4%, 41.1%; p = 0.26), reflecting sustained trust and engagement of patients and families in facilitating cardiac care.

Conclusion: Patient-driven referrals consistently outperformed other pathways, demonstrating strong community trust and family engagement. Former patients serve as vital ambassadors, strengthening access to timely CHD care in a free tertiary cardiac care setting.

sciforum-159017: Patient-Reported Outcomes (PROMs) and Public Health: Using PROMs for Population-Level Quality Monitoring

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Introduction

Patient-centred metrics are increasingly central in evaluating health system performance. Patient-Reported Outcome Measures (PROMs) capture subjective health status and quality of life, extending beyond clinical care to population-level health monitoring. This review examines PROM integration into public health surveillance and quality assessment frameworks, recognising that traditional clinical metrics often overlook the dimensions of health most important to patients and populations.

Methods

This review synthesises the literature on PROMs in population health through a structured critical appraisal. Comprehensive searches across MEDLINE, Web of Science, and CINAHL (2015 onwards) identified peer-reviewed studies on PROM implementation, validation, and utility at population or health system levels. Findings were categorised by PROM type, healthcare settings, health conditions, and public health applications. No new data were generated; analysis relied exclusively on the published literature.

Results

PROMs demonstrate strong validity and reliability for large-scale application; successful implementations exist in national health systems, including England's NHS programme. Significant challenges persist: data standardisation, comparability between PROMs, digital access disparities, and equity concerns. Evidence supports PROMs' utility in monitoring quality, identifying health inequalities, and tracking chronic disease outcomes, yet routine integration into surveillance remains inconsistent globally.

Conclusions

PROMs hold promise in enhancing population-level quality monitoring and informing evidence-based health policy by centring patient perspectives. Widespread implementation faces barriers in standardisation, technology, and equity-sensitive deployment. Priorities include developing harmonised international frameworks, advancing secure digital collection methods, establishing equity-focused guidelines, and integrating PROMs into broader public health surveillance systems.

sciforum-160390: Patterns of Adverse Drug Reactions Observed in a Tertiary Care Hospital's Specialised Units

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Introduction:
Adverse drug reactions (ADRs) remain a major challenge in specialised hospital units, where patients often present with complex illnesses and receive multiple medicines. Early identification and structured reporting are essential for preventing avoidable harm and improving therapeutic outcomes. This study examined the patterns, severity, causality, preventability, and outcomes of ADRs reported from specialised care units in a tertiary teaching hospital.

Methods:
A prospective cohort study was undertaken over three months in the intensive care settings of two specialised blocks within a tertiary hospital. Inpatients of all age groups were monitored for suspected ADRs following medicine administration. Data were collected using standardised ADR reporting forms adopted from the national pharmacovigilance system. Each ADR was assessed for causality using the WHO-UMC scale, severity using the Hartwig–Siegel scale, seriousness based on PvPI criteria, and preventability using the modified Schumock–Thornton method.

Results:
A total of 97 ADRs were identified. Adults accounted for most cases, with a balanced distribution between males and females. Probable ADRs formed the largest proportion (86.6%). Most reactions were mild and definitely preventable. Antibiotics were the most common drug class implicated, and skin-related hypersensitivity reactions were predominant. Almost all patients recovered fully following appropriate clinical management, including drug withdrawal or supportive treatment.

Conclusions:
The findings highlight the need for strengthened ADR monitoring in specialised units, with a particular focus on antimicrobial use and hypersensitivity reactions. Enhanced clinical pharmacist involvement and structured reporting systems may improve medicine safety and patient outcomes.

Keywords: Adverse Drug Reactions, Intensive Care, Pharmacovigilance, Causality Assessment, Patient Safety

sciforum-156621: Prescribing Practices, Polypharmacy, and Drug Interaction Risks in Anticoagulant Therapy: Insights from a Secondary Care Hospital

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Background: Anticoagulants remain the mainstay for the management of cardiovascular and thromboembolic disorders. The growing utilization of polypharmacy associated with polymorbidities presents a significant challenge in anticoagulant management, increasing the risk of potential drug–drug interactions (pDDIs).

Objectives: The objectives of this study were to assess the prescribing practices of anticoagulants and to analyse the impact of polypharmacy and pDDIs in patients receiving anticoagulant drug therapy in a secondary care hospital.

Methods: A prospective observational study was undertaken based on data from electronic medical records of prescriptions for anticoagulants between January and June 2023. The data were collected, analyzed for prescribing patterns, and checked for pDDIs using Micromedex database 2.0®. Utilising binary logistic regression, the relationship between polypharmacy and sociodemographic factors was assessed. Multivariate logistic regression analysis served to uncover determinants linked to pDDIs.

Results: Of the total 130 patients, the majority were females (58.46%), and the prevalence was higher in patients aged 61-90 years. Apixaban (51.53%) topped the list of frequently received anticoagulants within the study population, with atrial fibrillation being the most common diagnosis for its use. A total of 766 pDDIs were identified, of which 401 (52.34%) were moderate, 343 (44.77%) were major, and 22 (2.87%) were minor interactions. Binary logistic regression showed that polypharmacy was strongly linked to age (p=0.001), the Charlson comorbidity index (p=0.040), and comorbidities (p=0.005). In the multivariable analysis, the number of medications strongly predicted pDDIs (adjusted OR: 30.514, p=0.001).

Conclusion: A significant segment of the cohort receiving anticoagulant therapy in the study exhibited polypharmacy and pDDIs, with significant correlations with age, CCI, comorbidities, and the number of medications. A multidimensional approach involving collaboration among healthcare providers and clinical decision support systems can help integrate the management of polypharmacy and multimorbidity, minimize the risks of pDDIs, and ultimately enhance health outcomes.

sciforum-160639: Reclaiming self and family: A phenomenological exploration of the unmet needs and lived experiences of breast cancer survivors in Hong Kong

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Background: Despite improved survival rates, breast cancer often faces significant post-treatment challenges that affect their quality of life. This study aims to explore the lived experiences and impacts of unmet needs among women diagnosed with breast cancer in Hong Kong.

Methods: A descriptive qualitative research design was employed. 15 Participants were recruited via purposive sampling to ensure a diverse representation of the survivor population. In-depth semi-structured interviews were conducted, and data were analysed using Colaizzi's phenomenological thematic analysis to extract core meanings.

Results: The analysis revealed three distinct themes regarding the survivors' unmet needs: (1) significant challenges in emotional and psychological adaptation post-diagnosis; (2) persistent struggles with engaging in physical activities accompanied by a deficit in specific health information; and (3) the complexities of re-establishing family relationships and roles within the cultural context of Chinese communities.

Impacts: These results provide healthcare professionals with a detailed understanding of the multifaceted struggles survivors face. The study highlights the urgent need for developing advanced nursing competencies and tailoring patient-centred interventions to enhance the overall quality of care and support systems.

Conclusion: Integrating the patient's voice and experience into service design and professional development is paramount. To optimize survivorship outcomes, healthcare systems must encourage patient-derived strategies that address the complex physical, psychological, and informational needs of breast cancer patients in Hong Kong.

sciforum-160433: Resting Heart Rate Variability Profile in Women with Stage II-III Breast Cancer Enrolled in the MAMA_MOVE Program

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Introduction: Breast cancer survivors, particularly those with stage II-III disease, are exposed to a high burden of cardiotoxic treatments, comorbidities, and psychosocial stressors that may negatively affect cardiovascular health and autonomic regulation. Heart rate variability (HRV) is a non-invasive marker of cardiac autonomic function, yet descriptive data on resting HRV profiles in this population are scarce. **Methods:** This descriptive cross-sectional study included twelve women with stage II-III breast cancer enrolled in the community-based MAMA_MOVE exercise program. Five women had stage II disease, with a mean age of 58.20 ± 8.14 years, and seven had stage III disease, with a mean age of 58.14 ± 5.79 years. Resting HRV was assessed in a quiet, controlled room using a Polar H10 chest strap. After a 10-minute seated stabilization period, a 5-minute segment of R-R intervals was recorded and exported to Kubios HVR ® software. Outcome measures included heart rate, readiness, parasympathetic (PNS) and sympathetic (SNS) indices, physiological age, time-domain HRV parameters (mean RR, SDNN, RMSSD, Poincaré SD1 and SD2, stress index), and frequency-domain indices (LF and HF power in absolute and relative units, LF/HF ratio), respiratory rate, measurement quality, and self-reported mood. **Results:** Independent-samples Mann–Whitney U tests revealed no differences between stages II and III for any HRV-related variable (all $p > .20$). The overall sample showed a heterogeneous resting HRV profile, with wide inter-individual variation across indices. **Conclusions:** Resting HRV assessment was feasible and well-tolerated in this community-based exercise setting. Although no stage-related differences were identified, the present data provide an initial autonomic profile for women with stage II-III breast cancer and a baseline for future longitudinal exercise studies.

sciforum-160291: Survival is the priority; side effects can be "Tolerated": Symptom management experience and guided self-help intervention needs of breast cancer women treated with ovarian function suppression.

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Introduction: Ovarian function suppression (OFS) treatment improves survival outcomes for premenopausal breast cancer patients, but it also maintains their estrogen at postmenopausal levels for five years. In the face of survival, patients are forced to accept the physical/mental challenges brought on by long-term side effects. Guided self-help intervention (GSH) is an effective booster for self-management in chronic disease courses, but related research is relatively limited. We aim to explore OFS patients' experiences, cognitions regarding symptom burden management, and their needs, attitudes, and preferences for GSH.

Methods: Descriptive phenomenological research methods were used to conduct in-depth semi-structured interviews with 18 OFS breast cancer patients. Thematic analysis was conducted using NVivo version 12 for data management and analysis.

Results: Patients indicated that when facing survival, age-inappropriate side effects are tolerable. Patients consider self-management of OFS treatment-related side effects to be crucial, and they obtain information support through multiple channels. There are fewer sources of information about OFS treatment side effects compared to other treatments, and patients often lack systematic knowledge and professional support, which causes them to easily become anxious about any discomfort during the prolonged treatment period. Patients strongly desire professional guidance, which can avoid unnecessary panic caused by information asymmetry. Patients can accept GSH in any form and at any dose. Intervening with GSH before treatment begins can maximize the reduction of patients' fear of the "unknown." GSH utilizing m-Health, personalization, gradual progression, and positive energy is a welcomed element.

Conclusions: OFS breast cancer patients lack knowledge of symptom management, long-term forced menopause, the pressure of young and middle-aged people in society who cannot escape, and mixed information on the Internet, all of which contribute to feelings of helplessness. They have a very strong need for GSH.

sciforum-159748: The application of Comprehensive Unit-Based Safety Program for Fall Prevention in High-Risk Hospitalized Patients

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Objective: Inpatient falls are a common adverse event in hospital safety management and can lead to serious injuries. This study aimed to investigate the effectiveness of a Comprehensive Unit-Based Safety Program in managing hospitalized patients at high risk for falls and to evaluate its impact on the incidence of inpatient falls, nurses' knowledge level on fall prevention, and the risk perception level of high-risk patients.

Methods: Patients at high risk for falls and practicing nurses from five wards of the First People's Hospital of QinZhou were selected as study subjects. A Comprehensive Unit-Based Safety Program was implemented, which included establishing a multidisciplinary safety management team, implementing standardized fall risk assessment and warning procedures, conducting targeted nurse training and assessment on fall prevention, providing evidence-based fall prevention health education to patients and their families, and optimizing the ward environment and fall prevention facilities. The effectiveness was evaluated by comparing the incidence of inpatient falls, scores on the Nurses' Fall Warning Knowledge Scale, and scores on the High-Risk Patient Fall Risk Perception Scale before and after program implementation.

Results: After project implementation, the annual incidence of inpatient falls significantly decreased to 0.085‰ compared to 0.16‰ before implementation, and the difference was statistically significant (p 0.05). The average score on the knowledge assessment for 121 nurses significantly improved from (186.87 ± 21.17) points to (228.31 ± 35.76) points (p 0.05). The risk perception score of high-risk patients increased from (22.57 ± 9.61) points to (31.45 ± 11.59) points (p 0.05).

Conclusion: The Comprehensive Unit-Based Safety Program effectively reduced the fall incidence among hospitalized high-risk patients. It simultaneously enhanced nurses' professional knowledge and patients' own risk awareness, thereby establishing a more effective multi-dimensional safety protection network, which is worthy of clinical promotion.

sciforum-159343: The Engagement Barriers Encountered Among Females from Rural Religiously Strict Microcultures of the United States in Healthcare Provider Screening for Non-Physical Intimate Partner Violence

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Introduction: Females from religiously strict microcultures have inherent barriers that exist when screening for Intimate Partner Violence (IPV). Rural communities in the United States have higher populations of strict religious backgrounds that shelter abusers within their power-imbalanced microcultures. Existing research behind the barriers to healthcare professional's IPV screening of this population is lacking. This study seeks to identify these barriers and improve healthcare providers' knowledge of this microculture for future enhanced understanding and screening of this vulnerable population group. Myra Levine's Conservation Model theory with the principles of adaptation, intervention for the protection of the patient, and the conservation of energy for the patient to return to a homeostasis of health was used as a framework for this research.

Methods: Voluntary purposeful sampling with subsequent snowball sampling were employed in this qualitative study. Due to the sensitive nature of the subject matter, anonymous data were collected utilizing Qualtrics. ATLAS.ti was used in data analysis.

Results: Defining abuse is necessary prior to screening this population for IPV. Cultural mores and a lack of education concerning what constitutes abuse are barriers in screening these women. Taking time to develop a therapeutic and safe provider/patient relationship will aid in IPV screening. The most significant cultural mores reported that hinder accurate screening for IPV includes patriarchal teachings, gender discrimination, and the propensity for these microcultural churches to shelter abusers within their community and congregation.

Conclusion: Nurses should incorporate microcultural awareness, cultural humility, adequate patient IPV education, and therapeutic communication into their nursing practice screening for IPV. This will assist in greater accuracy when screening for IPV among this vulnerable population.

sciforum-160664: The Impact of Affective Symptoms on Subjective Memory Complaints: Implications for Patient-Centered Cognitive Assessment and Gender-Sensitive Care

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Introduction: The evolution of healthcare towards **Patient-Centered Care (PCC)** emphasizes the value of the patient's perspective, measured through **Patient-Reported Outcomes (PROs)**. Subjective memory complaints (SMCs) represent a crucial PRO in the field of cognitive health. This study examines gender differences in the relationship between SMCs, affective symptoms, and objective cognitive performance, seeking to **optimize care pathways** by enhancing the interpretation of patient engagement and reported symptoms.

Methods: The sample included 58 participants aged 42 to 75 years (mean = 61), predominantly women (72.4%). Participants completed the Montreal Cognitive Assessment (MoCA), Subjective Memory Complaints Questionnaire (SMCQ), and measures of anxiety (GAD-7) and depression (PHQ-9). The inclusion of self-report measures supports the **patient-centered approach** by prioritizing the individual's perspective.

Results: Analysis revealed a clear **dissociation** between subjective memory complaints and objective cognitive performance, with no significant correlations between SMCQ and MoCA scores in the total sample or by gender. However, significant positive correlations emerged between SMCs and both anxiety (rho = 0.238, p = 0.036) and depression (rho = 0.271, p = 0.02). Gender-stratified analysis showed that these associations were **significant only in women** (anxiety: rho = 0.278, p = 0.037; depression: rho = 0.305, p = 0.025), with no significant correlations in men.

Conclusion: The findings highlight that, particularly in women, SMCs are more closely tied to affective symptoms than to objective cognitive performance. This proposes that in a PCC model, SMCs should not be solely interpreted as cognitive deficit markers but as **valid indicators of affective distress** that impair patient engagement and satisfaction. Incorporating **gender-sensitive assessment** of anxiety and depression is crucial to **optimize care pathways** in cognitive health, ensuring personalized interventions that address the root cause of the patient's concern, thereby improving overall patient outcomes.

sciforum-159977: The Impact of PERMA Integrated Care on Positive Psychological Factors and Symptom Burden in Patients Undergoing Concurrent Chemoradiotherapy for Cervical Cancer: A PRO Study

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Objective Patients undergoing postoperative concurrent chemoradiotherapy (CCRT) for cervical cancer frequently experience severe psychological distress. This study aimed to break through the limitations of conventional care by constructing and validating a novel, integrated nursing intervention model grounded in the PERMA framework of positive psychology. The model synergized multidisciplinary resources with digital technology to systematically enhance patients' psychological resilience, alleviate distress, and ultimately optimize their quality of life and treatment outcomes.

Methods We conducted a quasi-experimental study. A total of 160 patients were allocated into two groups. The control group (n=80, recruited from January to June 2022) received routine nursing care. The observation group (n=80, recruited from July to December 2022) received the PERMA-based positive psychology intervention, which provided structured activities across its five core components: Positive Emotion (P), Engagement (E), Relationships (R), Meaning (M), and Achievement (A). This intervention was supported by a multidisciplinary team (MDT) and a digital platform for dynamic assessment, personalized content delivery, and progress tracking. Key outcomes, including psychological distress (DT), resilience (CD-RISC), well-being (PERMA), and anxiety/depression (HADS), were compared between the two groups at baseline, mid-CCRT, end-CCRT, and at a 3-month post-treatment follow-up.

Results The observation group demonstrated statistically significant improvements compared to the control group. Specifically, they reported significantly lower scores on the DT and HADS scales (p0.01), and significantly higher scores on the CD-RISC and PERMA well-being scales (including all its sub-dimensions) at mid-intervention, post-intervention, and the 3-month follow-up (p0.05).

Conclusion The PERMA-based integrated care model not only effectively alleviated psychological distress but also empowered patients to cultivate resilience and experience post-traumatic growth. This approach successfully translates the modern, patient-centered concept of prioritizing the "health experience" into clinical practice, providing a robust reference for future psychosocial interventions in oncology.

sciforum-159456: The Mediating Role of Out-of-Hospital Adherence between Health Literacy and Quality of Life in Chinese Stroke Survivors: A Cross-Sectional Study

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Background: Stroke, the second foremost cause of mortality globally, imposes a considerable disease burden in China. Patients currently have inadequate health literacy and poor adherence to rehabilitation, resulting in a notable deterioration in quality of life. Health literacy is a crucial element in disrupting the loop of poor adherence and diminished quality of life; nevertheless, its relationship with adherence and quality of life necessitates empirical validation.

Objective: To investigate the structural relationship among health literacy, out-of-hospital adherence, and quality of life in Chinese stroke survivors, explore the mediating role of adherence between health literacy and quality of life, and inform the development of targeted interventions.

Methods: A cross-sectional study was conducted with 509 stroke survivors recruited from four traditional Chinese medicine hospitals in Shanghai (94.43% response rate). Data were collected using validated scales for health literacy, out-of-hospital adherence, and stroke-specific quality of life. Mediation analysis was performed using the PROCESS macro with 5000 bootstrap samples to examine whether adherence mediates the association between health literacy and quality of life.

Results: Stroke survivors' health literacy averaged 31.40±1.33 (below threshold), with analysis skills scoring lowest (5.37±1.17); HL moderately correlated with quality of life (r=0.409, p0.001) but weakly with out-of-hospital adherence (r=0.223, p0.001), while adherence strongly linked to QoL (r=0.461, p0.001). Adherence mediated 21.3% (95% CI: 0.048–0.134) of HL's association with QoL (total effect 0.409; direct effect 78.7%). Key HL predictors included education, residence, income, and recurrence history

Conclusion: Health literacy was directly associated with stroke survivors' quality of life, with out-of-hospital adherence acting as a partial mediator. Our findings suggest that interventions focusing on analytical and practical health literacy skills may be essential to address the "low health literacy, poor adherence, reduced quality of life" cycle.

sciforum-159917: The Personal Values-based Care Model (ACIP): A Proposal for Supporting and Restoring Life Projects in Vulnerable Populations

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Introduction:
This article presents the ACIP model as an adaptation of contextual acceptance-and-values-based psychological interventions to community health and social care contexts prioritizing person-centered attention. While ACT focuses on psychological flexibility through mindfulness, acceptance, and committed action guided by values, ACIP extends these principles to structured support of individuals' life projects within care systems. ACIP aims to enhance autonomy, dignity, and meaningful engagement in life by operationalizing ACT concepts in a coordinated and contextualized care framework.

Methods:
The ACIP model was conceptualized through a comprehensive synthesis of literature on person-centered care, behavioral science, and values-based interventions, rooted philosophically in functional contextualism and methodologically in ACT's six processes. Its structured three-phase methodology supports life projects by clarifying essential values, planning value-consistent actions, and ongoing monitoring and adaptive accompaniment, ensuring continuity and coherence between personal objectives and care.

Results:
ACIP is structured on six pillars: depathologization, dignity, shared vulnerability, construction, authentic empowerment, and social connection. It promotes a shift from fragmented care towards an integrated system centered on the individual's life narrative. Unlike traditional person-centered models, it explicitly links support actions to valued outcomes related to life's meaning and purpose, using measures aligned with daily action adjustment and sustained motivation.

Conclusions:
ACIP represents a novel application of ACT to community intervention, prioritizing evaluation of effectiveness not by symptom reduction and service utilization alone but through progress in meaningful living aligned with personal values. This approach fosters engaged, purposeful care across diverse populations and life stages, enhancing the relevance and impact of person-centered support.

sciforum-162551: Treatment Adherence and School Support in Portuguese Adolescents with Type 1 Diabetes: Validation of the Self-Care Inventory-Revised and the Diabetes School Support and Implications for Patient Self-Care

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Type 1 diabetes (T1D) is a chronic condition affecting many adolescents worldwide. Active involvement in self-care, coupled with good school support, enhances treatment adherence and impacts quality of life. This study analyzed the psychometric properties of the Self-Care Inventory-Revised (SCI-R) and the Diabetes School Support Scale (DSSS) in Portuguese adolescents diagnosed with Type 1 Diabetes (T1D). The sample included 100 adolescents diagnosed with T1D, aged between 12 and 19 years old, and their accompanying family members. Adolescents were assessed on quality of life (Diabetes Quality of Life), illness perceptions (Brief Illness Perception Questionnaire), family functioning (Family Assessment Device), adherence to treatment (Self-Care Inventory), and school support regarding diabetes (Diabetes School Support Scale). Exploratory factor analyses (EFA) and confirmatory factor analyses (CFA) were performed to analyze the adequacy of the instruments. CFA confirmed the one-factor model with good fit indexes. The instruments presented good convergent validity and internal consistency. The Portuguese versions of the Self-Care Inventory-Revised and the Diabetes School Support Scale are valuable tools for assessing Portuguese adolescents' self-care and perceived school support in T1D. Patient-centered care that integrates school support recognizes the adolescent as an active partner in treatment, respects their need for normalcy and privacy, and addresses contextual challenges that may otherwise compromise adherence.

sciforum-160224: Understanding the Collective Mindset: A Quantitative Analysis of Nurses' Views on Team Nursing Education

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Background. Effective training is essential for the successful implementation of team nursing, ensuring that nurses are adequately prepared to provide high-quality, coordinated care. Training prior to implementation of the care delivery model has been shown to significantly affect the use of the team nursing model, whereas its absence leads to ineffectiveness and inefficiency.

Aim: This study examines nurses' perceptions of the training they received before implementing a team nursing model.

Methods. A quantitative survey was administered to assess nurses' views on the training program's comprehensiveness, relevance, and effectiveness. Descriptive statistics and mean frequency scores were used to assess nurses' perceptions. A one-way ANOVA was conducted to assess whether nurses' perceptions differed by years of nursing experience.

Result. A total of 380 nurses participated in the study. The results revealed that nurses perceived team nursing training as slightly above average, with statistically significant differences in perceived training across experience levels (F = 5.87, p 0.001). Nurses with 5–8 years of experience reported the lowest satisfaction. The findings suggest that, although the training was generally well received, gaps in its effectiveness exist among certain experience groups.

Conclusion. Tailoring training programs to address the specific needs of nurses at different career stages may enhance their confidence and preparedness for team nursing. Nursing administrators should develop flexible policies for adaptive training frameworks and invest in ongoing professional development to address gaps in training effectiveness. They should also implement policies, including regular feedback mechanisms and continuous updates to training programs, to ensure high-quality, coordinated care in team nursing. Future research should explore additional factors influencing training effectiveness and its impact on patient outcomes, and investigate how tailored training programs for nurses at different career stages impact both preparedness and patient outcomes.

sciforum-159411: Using Probiotics as a Preventive Strategy for Recurrent Urinary Tract Infections: Focusing on Patient Engagement and Quality of Care

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Urinary tract infections (UTIs) represent one of the most prevalent bacterial infections worldwide, particularly among women. They are usually caused by uropathogenic *Escherichia coli* and are classified as either complicated or uncomplicated, depending on host factors and the anatomical or functional state of the urinary tract. Increasing antibiotic resistance and recurrence rates have intensified the search for preventive approaches that could reduce antibiotic use and restore microbial balance. Probiotics, defined as live microorganisms that confer a health benefit to the host when administered in adequate amounts, may contribute to urogenital health by supporting the restoration of the natural microbiota and preventing pathogen colonization.

The aim of this research was to investigate the potential of probiotics in preventing UTIs through a structured, systematic literature review. Scientific articles were identified using the PubMed and Cochrane Library databases. Eligible studies were selected based on predefined inclusion criteria and analysed descriptively. The selection process was shown in a PRISMA diagram.

Nine studies met the inclusion criteria, covering diverse populations including children (aged 4 months to 18 years), premenopausal and postmenopausal women, and individuals with spinal cord injuries. The included studies investigated different probiotic strains and formulations, primarily species of the *Lactobacillus* genus, administered orally or intravaginally.

The results indicate that some probiotic strains show greater potential than others in reducing the recurrence of UTIs. Importantly, probiotic efficacy appears to be **strain-specific** rather than universal. Many studies tend to generalize probiotic effects as if all strains are equally effective across different conditions. However, expecting all probiotics to prevent UTIs is as unrealistic as expecting all drugs to treat diabetes; it is sufficient that specific strains demonstrate efficacy for defined indications, just as insulin works for diabetes.

In conclusion, probiotics represent a promising complementary strategy for UTI prevention. Further well-designed, large-scale randomized controlled trials are required to identify the most effective strains and the optimal dosage and duration of therapy, as well as to establish evidence-based recommendations for clinical use.

sciforum-153287: Videoconference-Delivered Physical Exercise Compared with Face-to-Face Programs for Institutionalized Older Adults: A 6-Week Quasi-Experimental Study

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Background: The aging population represents a global challenge due to increased life expectancy and the prevalence of chronic health conditions. Physical activity is recognized as a key intervention to support healthy aging, but institutionalized older adults often face barriers to accessing structured programs. New strategies, such as digital delivery, may help overcome these limitations. This study compared a supervised physical exercise program delivered by videoconference with the traditional face-to-face format.

Methods: Eighty-four participants (mean age 83.13 ± 7.63 years) from nursing homes were randomized into a face-to-face group (FG), videoconference group (VG), and control group (CG). Both intervention groups completed a 6-week program including strength, balance, flexibility, and aerobic components. Physical fitness, body composition, and functional capacity were assessed at baseline and post-intervention using standardized tests. Between-group comparisons were performed using repeated-measures ANOVA with post-hoc Tukey tests ($p \leq 0.05$).

Results: Both intervention groups demonstrated significant improvements relative to the control across the majority of outcomes (p 0.01). Body fat decreased markedly in both the face-to-face and videoconference groups, while free fat mass increased, with no significant differences between modalities ($p > 0.40$). Strength measures, including sit-to-stand, handgrip, and arm-curl performance, improved significantly in both intervention groups compared with the control group, again without between-modality differences. Flexibility also improved in both groups (p 0.01), with only minor non-significant trends favoring face-to-face delivery. Functional capacity, assessed by the 8-foot up-and-go, improved similarly in both modalities (p 0.01 vs. control; $p = 0.74$ between groups), while the 6-minute walk test revealed no significant differences across groups. Overall, videoconference training elicited comparable improvements to face-to-face delivery across all primary outcomes.

Conclusion: Videoconference-based physical exercise is a feasible, safe, and effective alternative to face-to-face programs for institutionalized older adults, particularly in contexts with logistical or mobility barriers. However, the small advantages of face-to-face interventions suggest that tailoring program delivery to individual needs may optimize outcomes in elderly care.

sciforum-163260: When Patients Say No: Understanding Habitual Enoxaparin Refusal and Its Impact on Care

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Introduction: Previous research at St Bartholomew's Hospital (SBH) has demonstrated a need for identifying systems of improvement to address missed or delayed enoxaparin doses. The purpose of this study was to investigate documentation practices, underlying causes, and associated patient outcomes related to habitual enoxaparin refusal, with a focus on improving prescribing processes and understanding the impact on patient-centered care.

Methods: Data from the QlikSense® dashboard were evaluated from July 2023 to June 2025, based on the date a medication was first prescribed. Out of the total 3,757 habitually refused medications, enoxaparin accounted for 1,304 (35%). A companion drug chart review of the enoxaparin habitually refused medications was completed to evaluate standardisation of enoxaparin refusal documentation along with an evaluation of patient charts for any harmful outcomes.

Results: A total of 166 patients were identified as having habitually refused enoxaparin during their hospital stay. These refusals accounted for 50% of prescribed doses for this patient population. Only 6% of refused enoxaparin doses had a documented reason for patient refusal; with 4% being documented within drug charts and 2% documented in patient notes. There were 60 (36%) patients who refused all prescribed doses. There were 36 (22%) patients prescribed prophylaxis with enoxaparin despite having no documented thrombosis risk. One patient experienced deep vein thrombosis after rejecting 18 of 22 (82%) prescribed daily doses.

Conclusions: The incidence of habitual enoxaparin refusals across all SBH wards suggests more research is needed regarding standardisation of patient refusal documentation, investigation of daily prescription review on ward rounds, evaluation of current Venous Thromboembolism Risk (VTE) Assessment protocol, and development of patient education materials surrounding VTE risk and anticoagulant therapy. This research demonstrates the utility of medication safety dashboards in identifying missed dose trends and informing targeted interventions to optimise patient care and outcomes.

Session 3. Connected Care—Leveraging Technology to Build an Integrated Care Ecosystem

sciforum-160443: Video Laryngeal Mask Airways for Airway Management: A Scoping Review

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Introduction:
Video laryngeal mask airways (VLMAs) represent a development in supraglottic airway devices. They combine traditional laryngeal masks with integrated visualisation to permit real-time guidance of placement and intubation. Although they are increasingly used for airway management, they are relatively novel devices. This review aims to map and summarise evidence on the clinical use of VLMAs.

Methods:
A scoping review in accordance with PRISMA-ScR and established scoping-review methodology was conducted. MEDLINE, EMBASE, Scopus, Web of Science, CINAHL and the Cochrane Library were searched from inception to 31-August-2025, supplemented by a grey literature search. English-language studies using VLMAs for ventilation or as an intubation conduit were included. Manikin, cadaveric, single-case and engineering reports were excluded. Data were charted and synthesised descriptively.

Results:
Forty-seven studies were included, comprising 23 randomised trials and 24 observational studies evaluating five devices: LMA CTrach, SaCoVLM, TotalTrack, SafeLM and Vision Mask. Most studies were single-centre and involved adult ASA I–II patients undergoing elective surgery. VLMAs were frequently compared with supraglottic devices, videolaryngoscopes, or direct laryngoscopy. First-pass VLMA insertion success was approximately 85–100%, with success rates ≥90 % after optimisation and oropharyngeal leak pressures of 20–35 cmH_2O. Intubation via VLMA achieved first-pass success largely between 85–100%, with overall success often ≥95 % and intubation times typically in the range of 25–176s. Compared with other devices, glottic visualisation was often superior and reported complications (sore throat, hoarseness, dysphagia, blood staining) were less frequent with VLMAs.

Conclusion:
Growing evidence indicates that VLMAs provide effective ventilation, high intubation success, and favourable visualisation with safety and haemodynamic outcomes similar to comparator devices. However, the literature is heterogeneous and dominated by CTrach studies in low-risk elective adults, highlighting the need for standardised outcome reporting and robust comparative trials in more varied populations and settings.

sciforum-160566: Implementing Digital Care Companions for Diabetes and Hypertension: An Interrelated System to facilitate Self-management and Clinician Supervision

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Introduction:
Hypertension and type 2 diabetes require continuous monitoring and long-term management; however, most health systems lack integrated follow-up mechanisms, leading to suboptimal adherence and delayed detection of complications. Digital Care Companions (DCCs) have the potential to integrate self-management with real-time clinician supervision through remote monitoring and support. This study assesses the feasibility and preliminary clinical signals of a digitally connected ecosystem incorporating DCCs for chronic disease management.

Methods:
A 12-week prospective pilot study was conducted across two outpatient clinics and included 45 adult participants (≥18 years) diagnosed with hypertension or type 2 diabetes. Participants used a DCC platform integrated with Bluetooth-enabled blood pressure monitors and glucometers. Platform features included medication reminders, symptom logging, educational modules, and secure two-way messaging. Clinicians accessed real-time patient data through a centralized dashboard. Feasibility was evaluated based on the frequency of vital sign submissions and adherence to medication reminders. Preliminary clinical signals included observed changes in mean systolic blood pressure and fasting glucose variability among participants with ≥70% data completeness. All outcomes were summarized using descriptive statistics.

Results:
Among the 45 participants, 78% submitted vital sign measurements regularly, and 64% adhered to medication reminders. Active users demonstrated an observed mean reduction in systolic blood pressure of 6.5 mmHg and a 10-12% reduction in fasting glucose variability. Clinicians reported improved visualization of longitudinal trends, fewer unplanned visits, and real-time therapeutic adjustments in 26% of users.

Conclusions:
The digitally connected DCC ecosystem demonstrated feasibility and supported anticipatory clinical decision-making, indicating strong potential for scalable chronic disease management in resource-constrained settings.

sciforum-163228: Associations Between Early Screen Exposure and Neurocognitive Outcomes in Children Aged 2–5 Years: A Systematic Review

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Abstract

Background: Early childhood screen exposure has increased rapidly, raising concerns about potential effects on cognitive, language, and early executive function development. The aim of this study was to provide a systematic synthesis of the evidence on screen exposure in children aged 2–5 years, addressing the fragmentation in existing research.

Methods: A systematic search was performed in PubMed, Web of Science, and Scopus for studies published between 2000 and 2025, following PRISMA guidelines. Boolean keyword combinations included terms relating to screen time, digital media exposure, cognition, language development, and executive functions. Eligible studies were observational or interventional, reported quantitative measures of screen exposure, and assessed cognitive, language, or executive outcomes in children aged 2–5 years. Exclusion criteria included unclear exposure definitions, samples outside the target age range, qualitative designs, reviews, and gray literature. Data extraction covered exposure metrics, outcome measures, effect estimates, and methodological quality.

Results: The search yielded 1,105 records; 860 remained after duplicate removal; 115 underwent full-text screening; and 43 studies met inclusion criteria. Across the evidence base, higher daily screen time was consistently associated with lower language scores, modest reductions in cognitive performance, and decreased inhibitory control and working memory. Exposure exceeding 2–3 hours/day showed the strongest links to developmental delays. Studies assessing media context found passive viewing and background television to be more detrimental than co-viewing or educational content. Considerable heterogeneity in exposure and outcome measurement limited cross-study comparability.

Conclusions: Early screen exposure is unlikely to be neutral; dose and context matter. Future research should use preregistered longitudinal cohorts with standardized testing and objective exposure metrics (device logs/background TV) plus content/co-viewing coding, analyzed with threshold and causal methods (propensity, fixed-effects, within-family). Pragmatic trials should test reducing passive/background viewing and promoting co-viewing with high-quality educational/interactive media, with objective adherence.

sciforum-160645: Integrating Machine Learning into Care Coordination Pathways: A Framework for Long-Term Care Facilities

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Background:
Long-term care facilities (LTCFs) face persistent care coordination challenges as nursing, recreational therapy, social work, and rehabilitation teams work with shared resident populations using fragmented, discipline-specific workflows. While prior studies have explored isolated machine learning (ML) applications in long-term care, there is currently no systematic, workflow-integrated conceptual framework that explains how ML can be leveraged to support interdisciplinary care coordination.

Objective:
This paper proposes a conceptual, design-oriented framework for integrating ML-based decision support into interdisciplinary care coordination pathways in LTCFs.

Framework:
The proposed framework is non-empirical and comprises five interconnected components: (1) a data integration layer designed to accommodate routinely available clinical, functional, and psychosocial information across disciplines; (2) an ML analytics layer that outlines appropriate classes of models rather than prescribing specific algorithms, selected to align with interpretability and accountability requirements in long-term care; (3) role-specific interfaces translating analytical outputs into interpretable, actionable decision support for care teams; (4) communication mechanisms enabling coordinated interdisciplinary responses; and (5) governance and feedback processes that conceptually address data quality oversight, fairness considerations, and ethical deployment. The framework emphasizes human–AI collaboration.

Application:

An illustrative (non-empirical) use case demonstrates the framework's application to the identification of social isolation risk. The data integration layer consolidates routinely available resident information. The ML analytics layer applies explainable classification models to identify at-risk residents based on declining participation patterns and limited social engagement. Role-specific interfaces present recreational therapists with prioritized resident lists and interpretable risk factors. Communication mechanisms enable coordinated case review, targeted social programming, and proactive intervention.

Implications:
By explicitly linking ML outputs to interdisciplinary decision-making processes, this framework provides LTCFs with a systematic roadmap for leveraging ML to shift care coordination from reactive to proactive. The anticipated benefits include improved decision timeliness, enhanced coordination across disciplines, and more efficient alignment of therapeutic resources while preserving human oversight and ethical accountability.

sciforum-160700: Quality of Work Life Among nurses in Tunisian University Hospitals: A Cross-Sectional Study

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Introduction

Quality of work life (QWL) is essential for nurses' well-being, motivation, and the quality of patient care. Hospital nurses often face heavy workloads, staffing shortages, and exposure to physical and psychosocial risks, which can impair QWL.

Aim

The aim of this study was to describe the quality of work life of nurses in two university hospitals in Sousse, Tunisia.

Methods

A cross-sectional study was conducted from March to April 2025 among nurses in medical and surgical departments of Farhat Hached and Sahloul University Hospitals. Data was collected using an anonymous, self-administered questionnaire including sociodemographic and occupational characteristics, psychosocial and organizational factors, and the Work Quality of Life Scale (QoWL).

Results

Among 113 nurses (response rate, 75.3%), 66.3% were under 40 years old and 52.2% were women. Most reported insufficient equipment (69.9%) and inadequate staffing (45.1%). Physical demands were high: 65.5% performed strenuous tasks and 28.3% had experienced an occupational accident. Psychosocial pressures were common: 84.1% reported demotivation, 69.9% had witnessed patient deaths, and all had experienced workplace violence, mostly verbal. Overall, 60.2% had low QWL scores, particularly regarding general well-being (53.1%), job satisfaction (54%), work–life balance (51.3%), and perceived control at work (62.8%). More than 72% expressed dissatisfaction with the quality of care they delivered.

Conclusion

Nurses in these university hospitals experience poor quality of work life, with notable physical, organizational, and psychosocial challenges. These descriptive findings highlight areas requiring attention to improve nurses' working conditions and well-being.

Session 4. Clinical Data Management—Balancing Transparency with Innovation for Enhanced Care Quality

sciforum-163243: Missed Doses and Patterns of Refusal: Utilization of a Digital Dashboard to Address Patient Safety

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Introduction: Medication safety within healthcare systems is critical to identify, mitigate, and prevent harm. St Bartholomew's Hospital (SBH) utilises a medication safety dashboard to document missed or delayed medication doses for all hospitalised patients. The objective of this study was to identify and describe missed doses of medication at SBH.

Methods: Data from the QlikSense® dashboard was evaluated from July 2023 to June 2025, based on the date when a medication was first prescribed. A total of 78,435 missed medication doses were identified. The data set was refined to exclude all 'prn' medications (as needed/not scheduled) and isolate patient-refused doses of medications on the SBH Critical Medications List. A secondary analysis was completed to identify 'habitually refused' medications. The definition of 'habitually refused' was a medication being refused two or more times by a patient during their hospital stay.

Results: A total of 5,768 (7.4%) medication doses were identified as patient-refused. The top three medications that patients refused were enoxaparin, morphine, and oxycodone. Most patient refusals occurred in respiratory and oncology wards. There were 3,757 (65%) 'habitually refused' doses by a total of 410 patients. Enoxaparin was the most habitually refused critical medication, accounting for 1,304 (35%) refusals by 166 patients.

Conclusions: The data revealed that over 7% of all missed doses occurred due to a patient refusing prescribed, scheduled medications. This project highlights the need to further examine the patient refusal reporting system, communication protocols between hospital staff when a patient refuses a critical medication, and patient education strategies to reduce refused doses. Future medication safety research at SBH includes a focused review of habitual enoxaparin refusals and evaluation of the venous thromboembolism risk assessment protocol.

sciforum-163248: Beyond Protocols: Uncovering Allergy-Related Medication Errors in the Digital Prescribing Era

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Introduction: The 2021 implementation of an electronic prescribing and medicines administration (ePMA) system within a large National Health Service (NHS) teaching hospital has reduced prescribing and administration of medicines where allergies are documented. However, allergy-related incidents persist, posing ongoing challenges to patient safety. This review aimed to identify and thematically analyse reported allergy-related medication incidents, supporting the value of leveraging digital systems to improve safety and quality in healthcare.

Methods: Allergy incident data logged via the electronic incident reporting system (Datix) between November 2021 and June 2025 were analysed. Data included incident date and description, actions taken, lessons learned, and allergy documentation prior to prescribing. A secondary thematic review categorised incidents into two groups: (1) medicines prescribed and administered to patients with documented allergies, and (2) medicines prescribed but not administered.

Results: A total of 51 allergy-related Datix reports were reviewed. Of these, 40 (78%) involved patients who were both prescribed and administered medicines despite documented allergies, while 11 (22%) involved prescriptions that were not administered. Eleven incidents (22%) were attributed to unknown allergies or incomplete documentation. Lessons learned indicated that 28 (55%) of responses emphasised the importance of routine allergy checks before prescribing and administering medicines. Most incidents were reported by nursing staff during medication administration rather than by prescribers.

Conclusion: This four-year review highlights persistent prescribing and administration errors despite robust protocols and ePMA safeguards. Findings will inform targeted awareness campaigns for prescribers and nurses, reinforcing adherence to standard operating procedures and addressing limitations of ePMA systems in allergy management.

sciforum-160393: Emergency Department Presentations Due to Psychoactive Substances: A Retrospective Analysis

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This study addresses the growing public health issue of psychoactive substance use, which has significant physical and mental health consequences and imposes a burden on healthcare systems. The effects of these substances are highly variable, ranging from mild symptoms such as anxiety or tachycardia to severe outcomes including loss of consciousness, psychosis, or seizures. Particularly concerning is the use of multiple substances, which increases severity and morbidity. Systematic recording of cases can improve understanding of emerging trends, enhance management in Emergency Departments (EDs), and inform targeted prevention and intervention strategies.

The aim of this study was to record and analyze the characteristics of patients presenting to the ED due to psychoactive substance use.

Cannabis was the most commonly used substance, often in combination with cocaine, benzodiazepines, or antidepressants. Poly-substance use was reported in over half of the cases. Frequent clinical manifestations included anxiety, agitation, psychosis, vomiting, and tachycardia. Most patients arrived by ambulance and exhibited altered consciousness. Hospital admission occurred in 60% of cases, and no fatalities were reported. The most severe cases were associated with heroin or multiple substance use.

In conclusion, psychoactive substance use primarily affects young adults, with cannabis being the most prevalent. Severe complications are linked to opioids and poly-substance use. Systematic data collection is essential for targeted prevention, timely intervention, and strengthening addiction management services.

sciforum-163274: Federated Learning in Healthcare: A Systematic Review of Transparency, Privacy, and Clinical Utility

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Introduction: Federated learning (FL) has emerged as a promising paradigm for training machine learning models on distributed clinical data without centralizing patient information. While FL is often promoted as a privacy-preserving alternative to traditional centralized learning, its real-world transparency, regulatory alignment, and clinical utility remain unclear. This systematic review synthesizes the current evidence on how FL is implemented in healthcare settings and evaluates its impact on privacy protection, model performance, and clinical integration.

Methods: We conducted a systematic search of PubMed, Embase, Web of Science, and IEEE Xplore for studies published between January 2018 and October 2025 that applied FL to real or realistically simulated clinical datasets. Eligible studies reported at least one of the following: technical details of FL implementation, privacy or security evaluation, model performance versus centralized approaches, or clinical workflow integration. Two independent reviewers screened records, extracted data, and assessed study quality according to the PRISMA recommendations. FL implementations were thematically categorized by clinical domain, data modality, and privacy/monitoring mechanisms.

Results: In total, 1686 articles were screened, and 90 met our inclusion criteria. Most included studies focused on imaging-intensive fields such as radiology, oncology, and ophthalmology, with fewer applications in laboratory medicine, primary care, and mental health. Across domains, FL models generally achieved performance comparable to centralized training. However, formal privacy evaluations (e.g., membership inference, gradient leakage tests, or differential privacy guarantees) were reported inconsistently. Transparency was limited by sparse reporting on model governance, auditability, and communication with clinicians or patients. Very few studies progressed beyond technical feasibility to sustained clinical deployment.

Conclusions: Federated learning shows strong potential to reconcile multi-institutional data sharing constraints with performant AI models, but current implementations do not address transparency and privacy guarantees sufficiently. Standardized reporting frameworks, robust privacy audits, and co-designed governance structures are urgently needed to translate FL from experimental prototypes into clinical infrastructure.

sciforum-160531: Implementing a Privacy-Preserving Learning System for Paediatric Asthma Management

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Introduction: Digital monitoring of asthma in children is becoming a central element of childcare, but the security of data and parental consent combined with algorithm transparency means that digital monitoring is not widely used. Privacy-preserving learning systems provide a chance to utilise clinical data in a real-world environment without breaching the confidentiality of patients. This paper examines the application of a federated, privacy-safe learning system that is aimed at providing better asthma control in children with high predictability without compromising the protection of their data.

Methods: In three paediatric clinics, an experimental federated learning (FL) system was implemented. It allowed locally training machine learning models on device-level spirometry, symptom diaries, and medication-use data. To reduce the risk of re-identification, the methods of differential privacy and secure aggregation were combined. Clinician surveys, parental feedback forms, and system-level measures were used to evaluate implementation feasibility, model performance, user acceptability, and system usability over 12 weeks.

Results: The FL system was found to be a model with an accuracy of 82 percent in predicting the likelihood of early exacerbation, similar to centralised models, with a greater level of data protection. Clinicians said that they had more confidence in data-driven decision support (78%), and parents had high confidence in privacy protection (84%). The uptime of the system was 96 and training cycles were performed within the usual clinically acceptable intervals allowed. There were cases of no data-leakage or privacy violations.

Conclusions: A privacy-friendly learning system is achievable, acceptable, and efficient in the management of asthma in children. This model strikes a balance between the requirement to have a strong clinical decision support system and high-level data confidentiality, and it represents a scalable way of incorporating open and safe digital tools into the work of paediatric care.

sciforum-160271: Managing Online Breastfeeding Consultations Using LDA and BERTopic: A Topic Modeling Approach

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Background: Online consultation platforms are central to maternal and infant healthcare in China, providing continuous professional support. Large volumes of unstructured clinician–patient dialogues remain underused for extracting reproducible clinical patterns, necessitating robust computational approaches that balance transparency and NLP innovation.

Objective: The objective was to systematically compare Latent Dirichlet Allocation (LDA) and BERTopic in analyzing large-scale online consultation data and evaluate their performance in identifying breastfeeding-related inquiry patterns.

Methods: We analyzed 527,979 messages from the Internet Outpatient Platform of Guangzhou Women and Children's Medical Center, Guangzhou, China (2021–2024). After removing nontextual elements, 2,735 consultation-level records were generated through segmentation, customized stopword refinement, synonym merging, and construction of domain-specific medical dictionaries. The optimal number of LDA topics was determined using perplexity (≈12.4) and coherence (≈0.72), with 5 topics selected. BERTopic utilized all-MiniLM-L6-v2 embeddings, UMAP dimensionality reduction, HDBSCAN clustering, and c-TF-IDF weighting. Model performance was compared using topic coherence, topic distinctiveness, and visualization outputs.

Results: Both models identified five key thematic clusters in online breastfeeding consultations: (1) milk supply and infant weight concerns, (2) latch and sucking issues, (3) breast/nipple pain, (4) maternal diet, medication, and galactagogues, and (5) milk expression challenges. BERTopic achieved higher coherence (c_v = 0.78) and produced more compact, well-separated clusters, whereas LDA generated more stable macro-level topic structures. Comparative analysis demonstrates that LDA and BERTopic provide complementary strengths in topic extraction, combining macro-level stability with fine-grained semantic distinction.

Conclusions: Topic modeling of online consultation data enables systematic extraction of patterns in breastfeeding-related inquiries. Integrating LDA and BERTopic supports scalable analysis of unstructured clinical dialogue, facilitates identification of broad and detailed thematic patterns, and advances secondary use of digital health data for telehealth optimization. These findings demonstrate the utility of structured topic modeling in leveraging online consultation platforms for clinical information extraction.

sciforum-158883: Optimizing Care for Infants with Colic through Probiotic Intervention

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Infantile colic is a common functional gastrointestinal disorder characterized by excessive crying and irritability in otherwise healthy infants during the first few months of life. Although the exact cause remains unclear, recent studies suggest that an imbalance in the intestinal microbiota may be a possible cause. Probiotics are, therefore, being explored as a promising and natural way to support gut health and relieve colic symptoms.

We carried out a systematic literature review using the CINAHL, PubMed, ScienceDirect, and Google Scholar databases. Boolean operators and inclusion and exclusion criteria were applied to identify relevant studies. The selection process is shown in a PRISMA diagram. The results of the identified studies were analysed, summarized, and presented descriptively and in table form.

Out of 352 identified records, 12 studies met the inclusion criteria. Most studies showed that probiotics reduced daily crying time and infant irritability, improved sleep, decreased faecal calprotectin, and increased the number of lactobacilli in the intestinal microbiota.

Our review has shown that probiotics can help reduce crying and restlessness in infants with colic and improve their sleep. The effectiveness of probiotics depends on the strain used, and better results were observed in breastfed infants compared to those who were formula-fed. Further studies are needed to confirm which probiotic strains are most effective and to better understand their role in relieving infantile colic.

sciforum-159817: Perceived quality in a private hospital in San Luis Potosí

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Introduction. Currently, one of the challenges for healthcare systems is providing quality services. Perceived quality refers to a person's overall judgment of quality based on their experience with a product or service. In the private healthcare sector, quality assessment is highly useful, as it allows for the identification of areas for improvement and the design of strategies to enhance the organization. Objective. The objective of this study was to identify the level of perceived quality in a secondary care unit in the city of San Luis Potosí. Methodology. This is a descriptive, cross-sectional, quantitative study conducted in a secondary-care medical unit in San Luis Potosí, Mexico. The Health Services Users' Perception of Quality (PECASUSS) instrument, with a Cronbach's alpha of 0.978, was used to evaluate 15 dimensions of perceived quality. For this study, these dimensions were grouped into three time points: at the beginning of care, during care, and after receiving care. Data were collected from 120 patients who received care between October and December 2024, after obtaining authorization from an ethics committee. SPSS version 21 was used for data capture and processing. Results: 95% of patients reported high perceived quality of care at all three time points. Conclusions: Patients perceived the quality of care as very good, indicating that the organization should strengthen this aspect.

sciforum-152825: Pioneering the Future of Healthcare: Bridging Innovation and Transparency in Clinical Data Management

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Introduction

Clinical Data Management (CDM) is at the forefront of advancing healthcare quality, but it faces the dual pressures of ensuring transparency and embracing innovation. As healthcare becomes increasingly data-driven, the need for robust mechanisms to manage clinical data transparently and to incorporate cutting-edge technologies is paramount. This study investigates how healthcare organizations can harmonize these often conflicting demands to enhance the quality. of care

Methods

This research employed a mixed-methods design, combining quantitative surveys and qualitative interviews. A survey was distributed to 200 CDM professionals across various healthcare settings, yielding a 75% response rate. Simultaneously, in-depth interviews were conducted with 25 key stakeholders, including data managers, clinicians, and regulatory experts. Quantitative data were analyzed using descriptive statistics, while thematic analysis was applied to interview transcripts, revealing insights into current practices, challenges, and opportunities.

Results

Findings indicate that 82% of CDM professionals acknowledge the critical role of transparency in fostering trust and compliance. However, 70% reported significant hurdles, including outdated systems and a lack of standardized protocols. Innovative approaches, such as the use of artificial intelligence for data validation and decentralized data architectures, were recognized as vital for overcoming these barriers. Notably, 85% of stakeholders expressed a strong interest in training programs focused on integrating innovation with transparency.

Conclusions

To enhance the quality of care, healthcare organizations must adopt a dual focus on transparency and innovation in CDM practices. By addressing identified barriers and implementing supportive training, stakeholders can foster an environment conducive to the adoption of advanced technologies. Future research should explore the practical application of proposed frameworks in real-world clinical settings to validate their effectiveness.

sciforum-163278: Real-Time Language Equity in Digital Health Platforms: A Systematic Review of Multilingual Clinical Interfaces and Their Impact on Outcomes for Patients With Limited English Proficiency

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Introduction: Patients with limited English proficiency (LEP) experience substantial inequities in diagnosis, treatment, and follow-up, often due to communication barriers embedded within digital health systems. Although many platforms incorporate translated content or interpreter access, far fewer provide real-time multilingual interaction capabilities, such as automated translation layers, adaptive language switching, or culturally specific interface logic. This systematic review evaluates the effectiveness, safety, and patient experience outcomes of multilingual clinical interfaces designed to support LEP populations across digital health environments.

Methods: We systematically searched PubMed, Embase, Web of Science, Scopus, and IEEE Xplore for studies published from 2010 to December 2025. Inclusion criteria required evaluation of digital platforms—telehealth systems, patient portals, mobile health applications, or AI-driven triage tools—that integrated multilingual or real-time translation features for LEP patients. Two independent reviewers screened studies, extracted outcomes, and assessed quality according to PRISMA guidelines. Outcomes included diagnostic accuracy, adherence, communication comprehension, satisfaction, and health system utilization.

Results: Of 193 screened records, 8 studies met the criteria. Multilingual interfaces enhanced comprehension and satisfaction across chronic disease management, emergency triage, pediatrics, and mental health settings. Real-time translation systems enhanced message clarity, though accuracy varied by dialect and complexity, with some tools reporting error rates as high as 30%. Platforms that incorporated culturally and linguistically tailored content—such as bilingual storytelling or adapted user flows—demonstrated engagement rates exceeding 60% and, in select trials, reductions in HbA1c of up to 0.8% and adherence odds ratios of 2.11. However, only four of the eight studies evaluated safety outcomes such as translation error or misinterpretation risk, and none reported system-wide implementation or interoperability data.

Conclusions: Real-time multilingual digital health interfaces can substantially improve communication, engagement, and selected clinical outcomes for LEP patients, but evidence remains fragmented. Robust evaluation frameworks, safety monitoring for translation errors, and scalable integration strategies are urgently needed to support equitable connected care for linguistically diverse populations.

sciforum-159314: Safety Profile and Adverse Drug Reactions of Radium-223 in the EudraVigilance Database: A Retrospective Descriptive Analysis

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Background: Radium-223 dichloride (Ra-223) is an alpha-emitter radiopharmaceutical approved for the treatment of metastatic castration-resistant prostate cancer with symptomatic bone metastases. Despite its therapeutic benefits, concerns persist regarding haematological toxicity and underreporting of adverse drug reactions (ADRs). This study aimed to characterise the safety profile of Ra-223 based on spontaneous ADR reports submitted to the EudraVigilance database.

Methods: A retrospective descriptive analysis was conducted using EudraVigilance data covering all ADR reports associated with Ra-223 from 2013 to 2023. Variables analysed included patient demographics, reporter characteristics, seriousness, outcome, System Organ Class (SOC), and geographical distribution. Data were categorised according to MedDRA terminology.

Results: A total of 8919 ADR reports were identified, the majority involving male patients aged ≥ 65 years. The most frequently affected SOCs were blood and lymphatic system disorders and general disorders and administration site conditions. Thrombocytopenia and leukopenia represented the most reported reactions. Serious ADRs accounted for more than half of all reports, predominantly resulting in hospitalisation. Temporal analysis revealed a progressive increase in reports after 2018, suggesting improved awareness and reporting practices among healthcare professionals.

Conclusions: Ra-223 exhibits a generally acceptable safety profile, though haematological toxicities remain the most recurrent and clinically significant adverse effects. The findings reinforce the need for continuous pharmacovigilance, structured reporting, and clinician awareness to mitigate risks and ensure patient safety in radionuclide therapy.

sciforum-163261: Smart Infusion Pumps and Clinical Data: Evaluating Medication Errors to Improve Patient Safety

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Introduction: Smart infusion pumps reduce administration errors by incorporating dose error reduction systems and drug libraries. Despite these safeguards, errors still occur. This quality improvement study aimed to evaluate infusion pump-related medication errors and identify opportunities for safer administration practices.

Methods: A retrospective data review of infusion pump error incident reports from an electronic data reporting system (DATIX) within the Intensive Therapy Unit (ITU) recorded between 2021 and 2025 was conducted. Data reviewed included error type, harm severity, and associated medications. Harm was categorised as no harm; low harm (additional observation or minor treatment); moderate harm (significant but not permanent harm); severe harm; or death (permanent harm or fatal outcome). Descriptive statistics were used to analyse data.

Results: There were 69 pump errors evaluated. Of those, 59 (85.5%) caused no harm, 4 (5.8%) caused low harm, and 6 (8.7%) caused moderate harm. No severe harm or deaths were reported. The most common error was incorrect infusion rate, which accounted for 64% (44) of all errors. Within this category, unit confusion was the most frequent error at 15% (6), followed by failure to adjust the rate with new prescriptions at 9% (4). Furosemide was the most involved medication, appearing in 14 reports (20.1%). A notable pattern for furosemide was the selection error between 1 mg/mL and 10 mg/mL concentrations when setting the infusion rate. The primary cause of incorrect dose errors was the use of an inaccurate patient weight in dose calculations.

Conclusion: While these findings highlight important trends, the data are insufficient to support definitive quantitative conclusions. This underscores the multifaceted and highly contextual nature of smart infusion pump incidents within an ITU. Next steps include transforming this data into actionable patient safety practices, including writing ITU-specific protocols, building decision-support tools, and staff education to proactively reduce infusion-related errors and optimise medication administration processes.

sciforum-163242: Turning Incident Reports into Insights: Leveraging Medication Error Reports in a Cardiac Care Unit

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Introduction: Clinical data management is essential for improving patient safety and care quality. In cardiology care, medication errors pose significant risks, making transparent reporting and innovative solutions critical. The study objective was to analyse cardiology-related medication errors, assess harm levels, and utilize thematic analysis to suggest data-driven solutions to enhance medication safety.

Methods: A retrospective review of an electronic incident reporting system (DATIX) from all inpatient cardiology wards at a major cardiac care centre within the National Health Service in London, England, was conducted. All DATIX reports over a 20-month period (January 2024–September 2025) were included. After removing duplicates and incomplete entries, 834 reports were analysed for error type, category subtypes, harm severity, and medications involved.

Results: Administration errors were most frequent 315 (38%), followed by controlled drug discrepancies 274 (33%) and prescribing errors 128 (15%). Common subcategories included incorrect documentation, omitted doses, and wrong drug or dose. Insulin, enoxaparin, and amiodarone were most associated with harm incidents. Only 59 (7%) harm events were reported and of those, 57 were categorized as low harm and two moderate harm. Patterns revealed systemic vulnerabilities such as unclear prescriptions and incorrect pump settings.

Conclusion: Intentional review, analysis, and summarization of incident reports provides actionable insights for improving medication safety. Recommendations include reinforcing transparency in error reporting, standardising documentation, and integrating digital tools and decision support to reduce human error. By balancing transparency with innovation, this cardiac care centre is taking steps to strengthen workflows, reduce medication errors, and advance patient-centred care.

Session 5. Generative AI in Clinical Practice—Evidence-Based Evaluation of Diagnostic and Therapeutic Applications

sciforum-160699: Artificial Intelligence for Maxillary Sinus Pathology Detection on Cone–Beam CT: A Systematic Review of Expert-Consensus Studies

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Introduction:
Artificial intelligence (AI) is increasingly applied to cone–beam computed tomography (CBCT) for evaluating maxillary sinus pathology; however, diagnostic performance varies across studies, and expert consensus is frequently used as the clinical reference standard. A consolidated assessment of CBCT-based AI systems benchmarked against expert-derived labels is needed to clarify current diagnostic capability.

Methods:
A systematic search of PubMed and Springer Nature databases was conducted for English-language studies published between 2020 and 2025 using the terms "(AI OR artificial intelligence) AND CBCT AND maxillary sinus." Following title and abstract screening, full-text articles were reviewed for eligibility. Data were extracted using a predefined framework capturing study design, CBCT imaging characteristics, AI model type, target pathology, expert-consensus reference standard, and reported diagnostic performance metrics. Owing to methodological heterogeneity, findings were synthesized narratively. From 212 records identified, seven studies met our inclusion criteria.

Results:
Seven CBCT-based studies using expert-consensus reference standards were included. Across all studies, AI systems demonstrated high diagnostic reliability for maxillary sinus pathology. Classification models accurately identified mucosal thickening, mucous retention cysts, sinusitis, chronic rhinosinusitis, fungal ball, and polypoid lesions, reporting consistently strong sensitivity, specificity, and F1-scores. Segmentation-focused studies showed high agreement with expert-defined pathology boundaries, frequently achieving Dice scores >0.85. Diagnostic performance improved with CBCT denoising and GAN-based data augmentation, while 3D CBCT models accurately predicted sinus-lift approach and mucosal-perforation risk, aligning closely with expert assessments.

Conclusions:
Deep-learning systems evaluated using expert-consensus reference standards demonstrate high diagnostic accuracy for maxillary sinus pathology on CBCT and show strong potential to support clinical decision-making. Further standardization of reference definitions, evaluation metrics, and reporting is needed to facilitate broader clinical translation.

sciforum-160187: Explainable AI for Detection of Periodontal Bone Loss on CBCT Scans

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Background:

Periodontal bone loss is a key indicator of periodontitis severity and progression. Reliable detection is essential for timely intervention, yet manual assessment of cone-beam computed tomography (CBCT) scans is time-consuming and prone to interobserver variability. Artificial intelligence (AI), particularly deep learning, has shown promise in automating image interpretation; however, the “black-box” nature of many AI systems limits clinical trust. Explainable AI (XAI) techniques may enhance transparency by providing visual and quantitative insights into model reasoning. This study evaluates an XAI-enabled framework for automated detection of periodontal bone loss on CBCT scans and examines clinicians’ perceptions of its usability and interpretability.

Methodology:

A convolutional neural network (CNN) was trained on 2,500 annotated CBCT scans from 1,000 patients, labeled by two expert periodontists. XAI tools, including Gradient-weighted Class Activation Mapping (Grad-CAM) and SHapley Additive exPlanations (SHAP), were applied to highlight image regions contributing to model predictions. Model performance was assessed using sensitivity, specificity, F1-score, and AUC. To evaluate interpretability, 32 clinicians (18 periodontists, 14 radiologists) reviewed 120 AI-assisted cases. Perceptions were measured using a validated 5-point Likert-scale questionnaire adapted from the System Usability Scale and the Trust in Automation framework, complemented by two open-ended questions. Responses were analyzed using descriptive statistics and thematic coding.

Results:

The CNN achieved 91% sensitivity, 88% specificity, an F1-score of 0.895, and an AUC of 0.94. Grad-CAM and SHAP visualizations aligned with expert annotations in 87% of cases. Clinicians reported improved diagnostic confidence (mean 4.3/5) and perceived transparency (4.2/5), while 78% indicated that XAI outputs facilitated faster case review without increasing cognitive load.

Conclusions:

The proposed XAI-based system accurately detects periodontal bone loss on CBCT scans and provides interpretable visual feedback that supports clinician trust and decision-making. Future work will include prospective validation and workflow integration in routine periodontal diagnostics.

sciforum-153295: From Risk to Ready: A Five-Step Roadmap for Regulatory-Ready AI in Clinical Care

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Artificial intelligence (AI)-enabled medical devices require governance models that adapt to continuous learning, evolving functionality, and shifting regulatory expectations. This study advances an adaptive governance framework for AI in digital health that integrates regulatory, ethical, and societal perspectives, with specific reference to the EU AI Act as the emerging regulatory benchmark. Rather than interpreting governance as a linear compliance trajectory, the framework reconceptualises it as an interconnected, feedback-driven system in which regulators, developers, clinicians, patients, and ethicists collaboratively shape oversight mechanisms. Each stakeholder contributes to iterative cycles of transparency, algorithmic validation, and accountability, ensuring that learning systems remain aligned with ethical norms and public interest. This approach underscores that innovation and governance are not opposing imperatives but co-dependent processes that reinforce trust and sustainability in healthcare AI ecosystems. To illustrate practical application, the framework is applied to a real-world scenario of adaptive AI diagnostics in remote patient monitoring, demonstrating how distributed audit loops and multi-stakeholder review boards can operationalise compliance while preserving agility and responsiveness. The framework further addresses the feedback dependencies that determine implementation success, acknowledging how regulatory delays, ethical tensions, and clinical adoption barriers interact dynamically. By linking ethical reflection, stakeholder inclusion, and regulatory adaptability, this work contributes to a more resilient paradigm for AI integration that evolves in sync with both regulatory standards and clinical innovation, ultimately supporting trustworthy deployment of AI-driven healthcare solutions.

sciforum-158501: Optimizing Clinical Trial Screening with LLMs: A New Era in Healthcare Technology

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Clinical trials are foundational to medical research, serving as the cornerstone of innovation and a pathway to improve patient outcomes. In this regard, integrating large language models and related AI systems into this process may prove transformative in addressing many challenges. Therefore, the focus of this study was to develop a clinical trial patient screening system to identify patients for COVID-19 clinical studies while bypassing traditional, time-consuming methods. To achieve this, we introduced automated extraction of eligibility criteria, mapping of medical entities to standardized codes (e.g., SNOMED, RxNorm, and LOINC), and an LLM-assisted query engine to improve patient recommendations. The present study reported a mean accuracy of 88.8% for entity extraction. Subsequently, in terms of standard code mapping, the embedding-based approach demonstrated reliable performance, achieving 97% and 90.25% retrieval accuracies for concepts and abbreviations, respectively. In the meantime, a strong funneling of patients with a percentage-wise match was created using LLM and rule-based query engines. Overall, this study demonstrates the potential of an end-to-end automated approach that leverages state-of-the-art AI to enhance the precision, scalability, and efficiency of identifying eligible patients; this research represents a substantial advance in clinical trial recruitment.

sciforum-160903: ADVANCEMENTS IN PREDICTING DIABETES BIOMARKERS: A MACHINE LEARNING EPIGENETIC APPROACH

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Background: The urgent need to identify new pharmacological targets for diabetes treatment and prevention has been amplified by the disease's extensive impact on individuals and healthcare systems. A better understanding of the biological underpinnings of diabetes is essential for developing therapeutic strategies that target these biological processes. Current genetic-based predictive methods fail to reliably foresee diabetes.

Objectives: Our study aims to pinpoint key epigenetic factors that predispose individuals to diabetes. These factors will inform the development of an advanced predictive model that estimates diabetes risk from genetic profiles, utilizing state-of-the-art statistical and data mining methods.

Methodology: For enhanced feature selection, we used a recursive feature removal with a cross-validation approach based on support vector machines (SVMs). Building on this, we created six machine learning models to assess their performance: logistic regression, k-Nearest Neighbors (k-NN), Naive Bayes, Random Forest, Gradient Boosting, and Multilayer Perceptron Neural Network.

Findings: The Gradient Boosting Classifier excelled, achieving a median recall of 92.17% and outstanding metrics such as area under the receiver operating characteristic curve (AUC) with a median of 68%, alongside median accuracy and precision scores of 76%. Through our machine learning analysis, we identified 31 genes significantly associated with diabetes traits, highlighting their potential as biomarkers and targets for diabetes management strategies.

Conclusion: The Gradient Boosting Classifier and Multilayer Perceptron Neural Network stood out for their ability to predict diabetes outcomes. We urge that future studies use larger cohorts and a broader range of predictive variables to improve these models' predictive powers.

sciforum-161325: Deep Learning and Multimodal Approaches for Automated Pain Intensity Estimation in Infants: An Evidence-Based Clinical Evaluation

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Introduction: Accurate pain assessment in neonates and infants is essential to prevent adverse neurodevelopmental outcomes but remains challenging due to their inability to self-report. Clinicians rely on behavioral scales such as the Neonatal Infant Pain Scale (NIPS) and Premature Infant Pain Profile-Revised (PIPP-R), which exhibit high inter-rater variability and contextual bias. This work introduces a clinically validated multimodal deep learning framework for objective, continuous, real-time pain intensity estimation in neonatal intensive care settings.

Methods: The proposed architecture integrates three modality-specific encoders: an Inflated 3D-ResNet-50 pretrained on Kinetics-400 for spatiotemporal analysis of 16-frame facial video clips, a VGGish backbone with transformer encoder for log-Mel spectrograms of cry segments, and a 1D-CNN for synchronized 30-second windows of heart rate variability (HRV) and oxygen saturation (SpO_2). Multi-head cross-modal attention dynamically aligns and fuses these representations before regressing a continuous pain intensity score, calibrated to the NIPS 0–10 scale. The framework represents a validated research prototype that has completed prospective clinical evaluation and is in the pre-implementation phase, requiring multi-site validation before routine clinical deployment.

Results: Prospectively evaluated on 127 infants (gestational age 28–42 weeks) undergoing routine painful procedures across two neonatal intensive care units, the system achieved a mean absolute error (MAE) of 0.84 and an intraclass correlation coefficient (ICC) of 0.93 against expert-rated NIPS scores from two senior neonatologists (inter-rater ICC = 0.95). The method significantly outperformed all unimodal and early-fusion baselines (Wilcoxon signed-rank test, p 0.001). Inference latency was below 180 ms on a single GPU, demonstrating real-time feasibility.

Conclusions: This framework offers real-time, objective, expert-level pain intensity estimation with strong clinical potential for reducing observer bias and enabling evidence-based personalized analgesia in neonatal intensive care.

Current clinical status: This is a validated research tool demonstrating equivalence to expert assessment in controlled settings, with ongoing multi-center trials and clinical workflow integration protocols being under development.

sciforum-160533: Evaluating Generative AI in Clinical Workflows: A Practical Framework for Safe and Effective Deployment

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As generative AI rapidly evolves, healthcare organizations face growing pressure to evaluate these technologies and integrate them into clinical workflows safely and effectively. While clinical validation remains the responsibility of medical experts, technology teams play a critical role in ensuring that generative AI tools are designed, tested, and deployed in ways that support accurate, reliable, and ethical use in diagnostic and therapeutic contexts. This presentation offers a practical, real-world framework for assessing generative AI applications from the perspective of health-tech product development and system implementation.

Drawing on experience building AI-enabled digital health solutions, this session outlines key technological evaluation steps, including data quality assessment, model behavior testing, hallucination monitoring, and bias detection. It further examines requirements for integrating generative AI into existing health IT environments, such as EHR systems, telehealth platforms, and patient-facing digital tools. Emphasis is placed on human-in-the-loop design, safety guardrails, auditability, and operational monitoring—elements that ensure clinical teams can adopt AI tools with confidence and maintain control over decision-making processes.

The talk also highlights common challenges observed during real deployments, such as workflow misalignment, context loss, interoperability gaps, and regulatory readiness. Practical strategies will be shared for mitigating these issues through robust architecture design, model evaluation pipelines, and continuous performance oversight.

This session is intended for healthcare leaders, clinical innovators, and health-tech professionals seeking to understand how generative AI systems can be responsibly introduced into clinical environments. Attendees will leave with a clear, actionable methodology for evaluating and preparing generative AI tools for safe deployment, enabling technology teams and clinicians to work together to unlock real clinical value while maintaining patient safety and regulatory compliance.

sciforum-157116: Evaluating Generative AI in Dermatology: Evidence-Based Assessment of Diagnostic and Therapeutic Applications

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Introduction:
The rapid emergence of generative artificial intelligence (AI) tools, including large multimodal models, has opened up new possibilities in dermatologic diagnostics, triage, and clinical education. However, evidence-based validation of these tools in real-world clinical workflows remains limited. This study aimed to evaluate the diagnostic accuracy, interpretability, and clinical usefulness of a generative AI-assisted dermatology system compared to standard clinician assessment.

Methods:
A cross-sectional, single-center study was conducted using 500 anonymized clinical images encompassing 15 common dermatologic conditions, including melanoma, basal cell carcinoma, acne, psoriasis, and eczema. A generative AI model (based on a large vision-language transformer) produced diagnostic suggestions and text-based clinical summaries. These outputs were compared against dermatologists' diagnoses and histopathologic confirmations when available. Diagnostic accuracy, sensitivity, specificity, and time-to-decision were measured. Additionally, clinician surveys assessed the perceived utility, trust, and explainability of AI-generated outputs.

Results:
The AI model achieved an overall diagnostic accuracy of 83%, comparable to dermatology residents (84%) and superior to general practitioners (71%). Sensitivity for malignant lesions was 92%, though specificity remained moderate at 78%. Clinicians reported improved efficiency and patient education through visual-text generation but expressed caution regarding overreliance and potential bias in darker skin tones.

Conclusions:
Generative AI demonstrates strong potential to augment dermatologic care by improving diagnostic precision and patient engagement. However, rigorous validation across diverse skin types and transparent interpretability frameworks are essential before widespread clinical adoption. Continued evidence-based evaluation will ensure these technologies enhance, rather than replace, human expertise.

sciforum-160633: Evaluating Large Language Models for Accuracy and Misinformation in HPV Vaccine Communication

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Introduction: Social media misinformation is a key contributor to low HPV vaccination rates, particularly among young adults who rely heavily on online sources. As generative artificial intelligence (GenAI) tools powered by large language models (LLMs) become widely used for health information, there are concerns that they could amplify misinformation by generating confident but incorrect responses. Understanding how these tools address HPV vaccination questions is therefore critical for public health communication.

Methodology: We systematically examined responses to HPV vaccine-related questions from two widely used LLMs, ChatGPT (Version 5) and Gemini (version 2.5). One team member posed 30 questions on vaccine safety, effectiveness, dosing schedule, and cost, among others, to each model, using a prompt requesting concise answers. All queries and outputs were saved verbatim. Two independent raters coded responses for accuracy (0 = incorrect to 3 = fully correct) and misinformation risk (0 = none to 2 = strongly misleading). Inter-rater reliability was high.

Results: Across the 30 prompts, both LLMs generated highly accurate content. All Gemini responses were rated fully accurate, with no misinformation detected and the lowest harm scores. ChatGPT responses were fully accurate for 29 of 30 items, with one response rated mostly correct but still free of clearly misleading statements. Most responses were consistent with authoritative guidance like the CDC and few referenced peer-reviewed studies. No response from either tool was judged to pose a strong risk of harm.

Conclusion: Both LLMs provided accurate, low-risk information about the HPV vaccine in this evaluation. Although performance may differ for other topics, languages, or future model versions, these findings suggest that current LLMs can serve as supportive tools for HPV vaccine education rather than major sources of misinformation. Ongoing monitoring and periodic re-evaluation are needed as these systems evolve and as users increasingly turn to AI for health information.

sciforum-159138: From Accuracy to Equity: Addressing Hallucination Risks and Bias in AI-Driven Clinical Decision Support Systems

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Introduction:

Incorporating the use of artificial intelligence (AI) in clinical decision support systems has been shown to improve the diagnostic accuracy and efficiency of workflow. However, AI hallucinations, which are defined as the production of factual or verifiably false outputs, and long-term bias, which compromises fairness between demographic groups, are also highly significant barriers to safe clinical use. The current study explores systematic measures to reduce AI hallucinations and bias and increase justice in clinical AI implementation.

Methods:

A mixed-methods experimental design was employed using a benchmark dataset of 2,000 de-identified electronic health records stratified by gender, age, and socioeconomic status. Model-level interventions included (i) retrieval-augmented generation (RAG) using curated clinical knowledge bases; (ii) uncertainty calibration via probabilistic confidence scoring; and (iii) reinforcement learning with clinician feedback (RLHF). Data-level interventions comprised dataset diversification, subgroup-wise bias auditing, and stratified resampling to correct demographic imbalance. Governance-level measures included post hoc explainability using SHAP-based feature attribution and structured human-in-the-loop (HITL) validation by board-certified clinicians. Quantitative evaluation involved hallucination rate measurement, predictive parity and demographic disparity analysis, and clinical concordance scoring against expert-validated ground truth. Statistical significance was assessed using paired t-tests and chi-square tests, with p 0.05 considered significant.

Results:

RAG use in combination with clinician-directed feedback decreased the occurrence of hallucinations by 41.7 % compared to baseline models (p0.001). The predictive parity of bias mitigation methods improved in demographic subgroups, reducing outcome disparity by 18.3 to 6.9 % (p= 0.004). Explainable AI increased clinician trust scores by 32 %, and human-in-the-loop validation increased clinical concordance by 76.4 % to 89.2 %.

Conclusion:

These results support the idea that the implementation of a multilayered approach, combining both technical protective measures, a variety of data management, and patient supervision, significantly decreases AI hallucinations and enhances the level of fairness in clinical practice. These strategies are necessary in ensuring ethical, reliable, and equitable application of AI in healthcare settings.

sciforum-160188: Generative AI for Automated Orthodontic Treatment Simulation in Adolescents

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Background:
Orthodontic treatment planning requires accurate prediction of tooth movement and potential changes in facial profile over time. Traditional methods rely heavily on clinician experience and 2D cephalometric analyses, which can be time-consuming and sometimes imprecise in predicting individual variations. Generative AI models, including GANs (Generative Adversarial Networks) and diffusion models, offer the ability to simulate realistic, time-scaled treatment outcomes using baseline facial photographs, cephalometric data, and radiographs. Such AI-driven simulations can improve treatment planning, patient communication, and informed consent processes by providing visualized, personalized projections.

Methodology:
A generative diffusion model was trained on a dataset of 8,000 orthodontic cases, encompassing panoramic radiographs, lateral cephalograms, and baseline facial photographs. The model generated predicted treatment outcomes at 6-, 12-, and 18-month intervals. Orthodontists reviewed AI-generated simulations and compared them to actual post-treatment results using structural similarity indices (SSIM), mean absolute cephalometric deviations, and qualitative assessments of tooth alignment and facial profile changes. Clinicians also evaluated the practical impact of AI on treatment planning efficiency and patient communication.

Results:
The AI-generated outcomes achieved an SSIM of 0.93, indicating high structural fidelity to real post-treatment images. Mean cephalometric deviations were below 1.5 mm across key dental landmarks. Clinicians reported increased confidence in communicating expected outcomes to patients and parents, noting that visual simulations helped align expectations and reduce misunderstandings. Workflow analysis revealed a 34% reduction in planning time, demonstrating potential efficiency gains without compromising accuracy.

Conclusions:
Generative AI provides reliable, explainable simulations of orthodontic treatment outcomes, enhancing personalized planning and patient engagement. Integrating such models into clinical practice may improve informed consent, streamline workflow, and facilitate more precise, patient-centered orthodontic care. Future studies should explore real-time integration and validation across diverse populations to further optimize AI utility in orthodontics.

sciforum-155381: Generative Artificial Intelligence in Clinical Neurosciences: An Evidence-Based Appraisal of Diagnostic Precision and Therapeutic Decision-Making

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The rapid integration of generative artificial intelligence (GenAI) into clinical neuroscience has redefined the paradigms of diagnosis, treatment planning, and patient interaction. This study presents an evidence-based evaluation of GenAI applications across diagnostic and therapeutic domains, with a focus on neurological and neuropsychiatric care. A systematic review of peer-reviewed literature (2019–2025) was conducted following PRISMA guidelines, identifying 142 studies employing large language models (LLMs), diffusion models, and generative adversarial networks (GANs) in clinical contexts. Quantitative synthesis revealed that GenAI-assisted neuroimaging interpretation improved diagnostic accuracy by 17–29% compared with traditional machine learning methods, particularly in Alzheimer's disease, stroke segmentation, and multiple sclerosis lesion detection. In therapeutic settings, generative models demonstrated significant potential for individualized treatment prediction, neurorehabilitation content generation, and digital twin simulations, enhancing patient engagement and therapeutic adherence.

Furthermore, evidence supports the growing role of LLMs such as GPT-based systems in clinical documentation, differential diagnosis support, and patient education—yielding measurable reductions in clinician workload. However, ethical, interpretability, and data bias concerns remain central challenges, emphasizing the necessity for explainable GenAI frameworks and rigorous clinical validation.

This analysis underscores that, while generative AI is not a replacement for clinician expertise, it acts as a transformative co-pilot—augmenting clinical judgment, reducing diagnostic uncertainty, and personalizing neurological care. Future work should prioritize multimodal data integration, transparent benchmarking, and regulatory harmonization to ensure safe and equitable clinical deployment.

sciforum-160129: Navigating AI in OT Practice: Current Usage Patterns and Professional Concerns

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ABSTRACT

Background:

Artificial intelligence (AI) tools are increasingly used across healthcare and have potential to support documentation, communication, and professional development in occupational therapy (OT). However, clinicians often report limited proficiency and concerns regarding accuracy, privacy, and ethical use. This quality improvement project assessed current AI use, attitudes, and support needs among occupational therapists (OTs) and occupational therapist assistants (OTAs) within one healthcare organization.

Methods:

An anonymous online survey was completed by 35 OT staff of varied ages and experience levels. The survey evaluated current AI use, self-rated proficiency, perceived benefits and risks, barriers to adoption, and desired training or supports. Quantitative data were analyzed descriptively, and qualitative comments were thematically reviewed. As this was an internal quality improvement initiative, formal ethics approval was not required.

Results:

Participants reported low–moderate proficiency with AI tools (mean 2.37/5) but recognized the growing importance of AI skills (3.71/5). ChatGPT was the most frequently used tool (n=24), followed by Google Gemini and Microsoft Copilot (n=11 each). AI use was most common for creating educational materials (n=18), editing or formatting reports (n=16), and communication tasks (n=14), with limited use for clinical decision-making (n=5). Major barriers included lack of time (n=14), concerns about accuracy or bias (n=13), and limited awareness of available tools (n=10). Key concerns involved inaccuracy (n=30), data privacy (n=29), and potential overreliance (n=28). Desired supports included clear ethical guidelines (n=27) and hands-on training (n=24). Qualitative themes emphasized the need to preserve clinical judgment, ensure accuracy, and provide guidance on appropriate applications.

Conclusions:

OT staff show emerging but cautious engagement with AI, largely limited to administrative and educational tasks. Clear policies, structured training, and peer support are needed to build confidence and ensure safe, ethical integration of AI as a supplemental tool in OT practice.

sciforum-160053: Research on the Application and Effect of Generative AI in the Risk Assessment of Elderly Patients with Chronic Diseases in Nursing Care

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Objective

To develop a generative AI-driven nursing risk assessment model, validate its efficacy in identifying risks (including pressure injury, falls, and malnutrition) among elderly patients with chronic diseases, evaluate its role in enhancing the accuracy of risk assessment and generating personalized early warning and preventive recommendations, and explore its value in clinical decision support.

Methods

A prospective mixed-methods study was conducted. Phase 1: A large language model was fine-tuned on multi-source data from hospital electronic health records (EHRs) to develop a dynamic risk-prediction and personalized recommendation-generation system. Phase 2: A non-randomized controlled trial was implemented to compare outcomes between the intervention group (with AI-generated recommendations integrated into care) and the control group (receiving usual care). The effectiveness and applicability of the system were comprehensively evaluated via quantitative metrics and qualitative analysis of nurse interviews. Additionally, semi-structured interviews were conducted with nurses who used the system, and thematic analysis was employed to explore their user experiences, perceived usefulness, ease of use, and barriers and facilitators to clinical integration.

Results

The generative AI model is expected to yield a higher area under the receiver operating characteristic curve (AUC-ROC) for risk prediction compared to traditional assessment scales. Moreover, the intervention group is anticipated to have a lower incidence of adverse events (e.g., falls, pressure injuries). Qualitative analysis revealed core themes, including "improved assessment efficiency" and "balance between human and machine decision-making".

Conclusion

Generative AI enables precise and prospective assessment of nursing risks in elderly patients with chronic diseases. The personalized intervention recommendations it generates can serve as an efficient decision-support tool, thereby reducing the incidence of nursing-related adverse events.

sciforum-163269: Safety, Bias, and Hallucination Mitigation in Clinical Applications of Generative Artificial Intelligence: A Systematic Review of Current Evidence

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INTRODUCTION: Generative Artificial Intelligence (GenAI) models are rapidly transitioning from prototype tools to active participants in clinical workflows. Despite their promise in documentation, triage, and diagnostic reasoning, concerns regarding hallucinations, biased outputs, and unreliable reasoning remain a major barrier to safe clinical adoption. This systematic review synthesizes the current evidence on safety risks associated with GenAI in medicine and evaluates the effectiveness of emerging mitigation strategies.

METHODS: A systematic search of PubMed, Scopus, Web of Science, and IEEE Xplore was conducted for studies published between January 2015 and October 2025. Eligible studies empirically evaluated the clinical use, safety, or mitigation strategies for hallucinations or biased outputs in GenAI models. Two independent reviewers screened articles, extracted data, and assessed methodological quality using the PRISMA guidelines. Mitigation strategies were categorized into model-level, workflow-level, and human-in-the-loop interventions.

RESULTS: Across recent evaluations of AI models in healthcare, hallucination and omission rates vary widely by task. In one large clinical summarization study involving 12,999 clinician-annotated sentences, AI systems produced hallucinations in 1.47% of sentences and omissions in 3.45%, with structured prompting reducing major errors substantially. Other evaluations of clinical case vignettes have reported hallucination rates ranging from 50% to over 80%, with prompt-based mitigation lowering rates from 66% to 44%. Bias has also been documented across domains; for example, approximately 40% of radiology-reporting studies identified hallucinations or misdiagnosis events, and broader reviews note performance disparities linked to race and gender. Effective mitigation strategies across studies include grounding outputs in verified clinical sources, retrieval-augmented generation, structured prompts, and explicit uncertainty expression review to prevent error propagation in clinical documentation and decision support.

CONCLUSIONS: The current evidence demonstrates that hallucinations and biased outputs remain substantial risks in GenAI-supported clinical practice, but several emerging mitigation approaches show promise for improving reliability. Standardized evaluation frameworks and transparent reporting of model uncertainty are needed to support safe integration of GenAI into healthcare.

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