



Conference Proceedings

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Health Education Summit Tallinn 2026
International and Interdisciplinary Approaches to Health and Wellbeing Education

Conference Proceedings

May 6-7, 2026, Tallinn, Estonia

Editors

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Welcome from the Rector of Tallinn Health University of Applied Sciences

Dear colleagues, partners and friends,

It is my great pleasure to welcome you to the Health Education Summit Tallinn 2026, bringing together knowledge, experience, and a shared commitment to promoting health and well-being. This conference reflects a core value at Tallinn Health University of Applied Sciences: that healthcare extends beyond what can be measured to include human dignity, personal stories, and the fundamental need to be seen and understood. The themes of this conference, including digital health, ethics in healthcare, interdisciplinarity, occupational well-being, patient-centredness, and quality of care, are not separate domains but interconnected dimensions of a common goal to build healthcare systems that are both effective and humane.

We are living in a time of rapid change. Technological progress offers new opportunities, yet also introduces complex ethical challenges. Technology itself is not empathetic, yet it increasingly shapes our work processes and decisions, influencing how we perceive and understand the individual. We must ensure that the growing complexity of technology does not overshadow the human dimension or cause us to lose sight of the person at the centre of care. Healthcare systems are becoming more intricate, and the expectations of patients and communities continue to grow. In this context, collaboration across disciplines and countries is no longer optional, it is essential.

At the same time, we must not lose sight of what matters most: care begins with human relationships. Science and evidence provide direction, but it is empathy, responsibility, and professional ethics that give meaning to our work.

This conference also reflects the strength of our academic and professional community. We are honoured to host participants from different countries and fields, whose work combines scientific depth with practical value. Together, we are shaping the future of healthcare education and practice.

I would like to thank all authors, speakers, reviewers, and organisers for their contributions to making this conference possible. Your work, ideas, and dedication form the foundation of

this event. I encourage you to use these days not only to share knowledge, but also to listen, reflect, and build connections. Often, the most valuable outcomes arise from conversations that continue well beyond the conference itself.

Welcome to Tallinn, and to a shared space for learning, reflection, and growth.

Ülle Ernits

Rector

Tallinn Health University of Applied Sciences



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KEYNOTE SPEAKER BIOGRAPHIES

Sascha Köpke, RN, PhD, FEANS (Germany)

Sascha Köpke has been a full Professor for Nursing Research since 2011, first at the University of Lübeck and, since 2020, at the University of Cologne, supervising several PhD students and postdoctoral researchers. His research focuses on quality of care in long-term care settings and on the development, evaluation and long-term implementation of complex interventions to improve care across different settings. He has also conducted research on nurse-led decision support and evidence-based patient information. Methodologically, his work includes a wide range of studies within the context of developing and evaluating complex interventions, including qualitative studies, mixed-methods studies, and randomised controlled trials, employing diverse data collection and evaluation methods. In addition, as a Cochrane editor and author, he has a strong interest in systematic reviews.

Kadi Krinal, PhD (Estonia)

Kadi Krinal (PhD) is a Senior Researcher at the Institute of Health Technologies of Tallinn University of Technology and head of the Centre for Digital Health. Kadi has applied her pharmacy education for a long period in various roles within the pharmaceutical industry. Academically, she has been active in the field of media and communication, where she defended her doctoral thesis on health communication in 2017. Her main research interests focus on health and illness communication, including aspects of health literacy and digital health literacy. Her special focus is on rethinking health-, illness-, and prevention-related processes at individual, system, and societal levels.

Professor Hugh P. McKenna, CBE, PhD, B.Sc(Hons), RMN, RGN, RNT, DipN(Lond), AdvDipEd, FFN RCSI, FEANS, FRCN, FAAN, MEA, MEASA (UK)

Professor Hugh P. McKenna is a general and mental health nurse and former Dean of Medical School Development and Pro Vice-Chancellor for Research and Innovation at Ulster University. He has authored over 250 publications, including 17 books, with his work cited more than 21,700 times. A Fellow of four international nursing organisations, he has received major honours, including the Royal College of Nursing's Outstanding Achievement Award (2013) and a Lifetime Achievement Award from the College of Psychiatry (2014). In 2018, he was named among the most influential nurses in the 70-year history of the NHS. Professor McKenna has chaired the UK Research Excellence Framework (REF) expert panels in 2008, 2014, and 2021, determining the allocation of national research funding, and has led similar panels in Sweden and Hong Kong. He holds seven visiting professorships, two honorary doctorates, and is a member of both the Academia Europaea and the European Academy of Sciences and Arts. He currently serves on the UK Department of Health's Clinical Ethics Forum and chairs the Clinical Ethics Committee of the Western Health & Social Care Trust. He has also served as Vice Chair of the Alzheimer's Society UK, Auditor for the Hong Kong Quality Assurance Council, and Editor-in-Chief of the *Journal of Psychiatric and Mental Health Nursing*. In 2023, he was named among the world's top 2% of scientists by Stanford University. In 2024, he joined the UK's REF2029 Research Diversity Advisory Panel and delivered keynotes at major international conferences across Europe and Asia.

Merike Sisask, PhD (Estonia)

Merike Sisask, PhD, is a Professor of Social Health Care at the School of Governance, Law and Society (SOGOLAS) at Tallinn University. She is also a Council Member of the Centre of Excellence for Well-being Sciences (EstWell) and a Board Member of the Estonian-Swedish Mental Health and Suicidology Institute (ERSI). Her main research areas currently include mental health and well-being in communities, the everyday digital lives of children and young people, and suicide studies. She served as the Editor-in-Chief of the *Estonian Human Development Report "Mental health and well-being"* (2023), and her conference presentation, titled "*Creating Mental Well-being – a Collective or Individual Action?*", is inspired by the future scenarios outlined in that report.

Health Education Summit Tallinn 2026

Hosted by Tallinn Health University of Applied Sciences

"International and Interdisciplinary Approaches to Health and Wellbeing Education"

6–7 May 2026

National Library of Estonia (Eesti Rahvusraamatukogu), Tõnismägi 2, Tallinn

CONFERENCE DAY 1 WEDNESDAY, 6 MAY 2026

Moderator of the Day: *Johannes Tralla, journalist, Estonian Public Broadcasting*

08:30 – Registration, Morning coffee

09:30–10:00 – Opening Ceremony & Musical performance by MUBA.

10:00–10:05 Welcome Addresses: **Daniel Rogger**, Representative of the World Bank; **Diana Ingerainen**, Estonian healthcare leader, family physician and politician

10:05–10:40 – Ülle Ernits, PhD, Tallinn Health University of Applied Sciences, Estonia
'Beyond the Measurable: Ethical and Spiritual Dimensions of Patient-Centered Care'

10:40–11:15 – Keynote Address: Professor (Emeritus) Hugh McKenna, Ulster University, UK
'Personalised Health to Planetary Health: The Impact of Nursing'

11:15–12:35 – Sessions 1–4

- **Session 1:** *'Immersive VR as Patient Education within Spa-Based Rehabilitation: A Randomized Evaluation'*, **Alena Lochmannová et al.**, Czech Republic

- **Session 2:** *'Structural Empowerment as an Antecedent of Psychosocial Safety Climate among Estonian Nurses: A Cross-Sectional Study'*, **Ljudmila Linnik et al.**, Estonia
- **Session 3:** *'Curricular Integration of Virtual Simulation: Transforming Nursing Education Through Experiential Learning'*, **Pedro Sousa**, Portugal
- **Session 4:** *'Nurse Educators' Perceptions and Teaching Experience in Online Learning Environment'*, **Siiri Maasen et al.**, Estonia

12:35–13:00 – Poster session (1–5)

(5-minute presentations)

1. *'Fostering Multicultural Clinical Competence and Decision-Making in Nursing Students: Impact of a Blended Intensive Programme'*, **Pedro Sousa**, Portugal
2. *'Innovative Online 3N E-Course for Continuing Professional Development'*, **Liina Männiksaar et al.**, Estonia
3. *'Nursing Students' Perceptions and Experiences of Online Learning in Anatomy and Physiology'*, **Siiri Maasen et al.**, Estonia
4. *'Digital Skills Training for Oncology Health Care Professionals: Experience from Estonia's Participation in the DigiCanTrain Project'*, **Merle Talvik et al.**, Estonia
5. *'Typical Development of Sensory Processing of Children with Childhood Leukaemia: A Systematic Review'*, **Grete Eiche et al.**, Estonia

13:00–14:00 – Lunch Break

Posters and Exhibitions Open

14:00–14:35 – Keynote Address: Kadi Krinal PhD, Tallinn University of Technology, Estonia, 'Hearing the Unspoken: The Hidden Skill in Health Communication'

14:35–14:40 Energiser activity

14:40–15:20 – Sessions 5–6

- **Session 5:** *'Possibilities for Attracting and Retaining Newly Graduated Nurses'*, **Andželika Zavackienė et al.**, Lithuania

- **Session 6:** *'Nursing Students' Evaluation of the Clinical Learning Environment and Supervision Across Different Clinical Practice Settings'*, **Lily Parm et al.**, Estonia

15:20–15:45 – Break & Poster Viewing

15:45–16:30 – Panel Discussion: *“From Competence to Conscience: What Should Health Education Prioritise in 2026?”*

Panelists: Prof. **Kadi Krinal**, Prof. **Alena Lochmannová**, **Kurt Cassar** (Doctoral Candidate), **Raina Uljas** (Master's Candidate)

This panel explores the evolving balance between technical competence and ethical responsibility in health professions education. Set against the backdrop of rapid technological change and increasing system complexity, the discussion highlights the importance of professional identity, moral reasoning, patient-centred values, and social accountability. Bringing together academic and student perspectives, the panel will consider how curricula and learning environments can support the development of reflective, resilient, and ethically grounded healthcare professionals, prepared to meet the challenges of 2026 and beyond.

16:30 – Close of the Day: *Johannes Tralla*

CONFERENCE DAY 2 THURSDAY, 7 MAY 2026

Moderator of the Day: *Johannes Tralla, journalist, Estonian Public Broadcasting*

08:30– Registration, Morning coffee

09:30–10:05 – Keynote 3: Prof. Dr. phil. Sascha Köpke, Universität zu Köln, Germany

Topic: *'Designing and Evaluating Complex Interventions in Healthcare: From Concept to Implementation'*

10:05–11:25 –Sessions 7–10

- **Session 7:** *'Ethical Considerations Among Advanced Practice Nursing Master's Students'*, **Jekaterina Šteinmiller**, Estonia
- **Session 8:** *'The ICM Essential Competencies 2024: Structural Changes, Content Expansions and Implications for Midwifery Education and Regulation'*, **Annely Kärema et al.**, Estonia
- **Session 9:** *'Fatigue and Sleep Quality in Type 2 Diabetes and Their Associations with Complications'*, **Maarja Randväli et al.**, Estonia
- **Session 10:** *'The Determination of Polychlorinated Biphenyls (PCB-s) in Fish Oil and Fish Liver Oil Supplements Sold in Estonia'* **Laine Parts et al.**, Estonia

11:25–11:55 – Poster session (6–12)

(5-minute presentations)

6. *'Parental Attitudes Towards Childhood Immunisation'*, **Andželika Zavackienė et al.**, Lithuania
7. *'General Practitioners' Attitudes and Working Procedures in Assessing Patients' Driving-Related Functional Abilities'*, **Hanna-Maria Pöldma et al.**, Estonia
8. *'Family Nurses' Experiences of Counselling Women During the Menopausal Transition: A Qualitative Study'*, **Marelle Grünthal-Drell et al.**, Estonia
9. *'Functional Indicators Changes in Mechanically Ventilated Patients in the Intensive Care Unit Following Physiotherapy and In-Bed Cycling'*, **Laura Rutkauskienė et al.**, Lithuania

10. *'Patients' Experiences of Cognitive, Emotional, and Psychosocial Challenges in Type 2 Diabetes: A Qualitative Study'*, **Maarja Randväli et al.**, Estonia
11. *'Person–Centred Dementia Care Starts with Person–Centred Language and Engagement with Informal Caregivers'*, **Sandra Bisset et al.**, Estonia
12. *'Management Expectations Reflecting Quality and Ethical Dimensions of Appreciative Management in Elderly Care'*, **Kristi Rannus et al.**, Estonia

12:00–13:00 – Lunch Break

Posters and Exhibitions Open

13:00–13:35 – Keynote Address: Prof. Merike Sisask, Tallinn University, Estonia,
'Creating Mental Well-being – a Collective or Individual Action?'

13:35–14:10 New Doctor Presentation: Kaire Sildver PhD, Tallinn Health University of Applied Sciences, Estonia, *'Operative Deliveries in Estonia and Finland'*

14:10–14:50 –Sessions 11–13

- **Session 11:** *'Strengthening Quality of Care Through Education in Standardised Nursing Language: A Longitudinal Survey among Students, Practitioners, and Educators'*, **Kristi Rannus et al.**, Estonia
- **Session 12:** *'The Relationship Between Stress and Job Satisfaction Among Emergency Nursing Professionals'*, **Asta Mazioniene et al.**, Lithuania
- **Session 13:** *'How Regional Context Shapes the Implementation of Patient–Centered Healthcare: Lithuanian Case'*, **Natalja Istomina et al.**, Lithuania

14:50–15:15 – Coffee Break & Poster Viewing

15:15–15:40 – Posters session (13–17)

(5-minute presentations)

13. *'Home Care for Older Adults: Burden and Well–Being of Family Caregivers'*, **Arūnė Česonienė et al.**, Lithuania
14. *'Association of Cognitive Function, Fear of Falling with Risk of Falls in Older Age'*, **Goda Strautnikaitė et al.**, Lithuania

15. '*Visual Adaptation to Extended Reality Exposure: Evidence and Gaps*', **Dagni Rääpo et al.**, Estonia

16. '*Smart Nutrition, Healthy Smiles: Interdisciplinary Strategies for Bridging and Promoting Oral Health and Nutrition Education in Children*', **Yvonne Buunk–Werkhoven et al.**, Lithuania

17. '*Nurses' Health as a Strategic Priority for Quality Care in Poland*', **Anna Bartosiewicz**, Poland

15:45–16:30 Closing Ceremony: dr. Ulvi Kõrgemaa, Vice Rector of Academic Affairs, Tallinn Health University of Applied Sciences

- Announcement of the next Conference (2028)
- Awards: *Best Poster Award, Best Presentation Award*

ASSOCIATION OF COGNITIVE FUNCTION, FEAR OF FALLING WITH RISK OF FALLS IN OLDER AGE

Fausta Jankauskaitė¹, Goda Strautnikaitė¹, Lina Leimonienė¹

¹Lithuanian University of Health Sciences

Background: Cognitive decline and fear of falling are known to be associated with an increased fall risk, yet their interrelations remain insufficiently explored.

Objective: To determine the associations between cognitive function, fear of falling, and fall risk among older adult patients.

Methods: The study was approved by the Bioethics Center. A total of 77 participants aged 62–89 years took part in the study, of whom 53 (66%) were women. The research instruments included a personal information questionnaire, handgrip dynamometry, the Falls Efficacy Scale–International (FES-I), the Mini-Mental State Examination (MMSE), and the Morse Fall Scale. Reaction time was measured using the “Reaction Speed” mobile application.

Results: Cognitive function was found to decline with increasing fall risk: low fall risk group: 25 (20–28; 25.3) moderate fall risk group: 24.5 (17–30; 24.4) high fall risk group: 20 (10–27; 19.5) ($H=22.301$; $p<0.001$). In the low fall risk group, a strong negative correlation was observed between fear of falling and handgrip strength ($r=-0.644$; $p=0.003$).

Conclusions: Declining cognitive function is associated with an increased risk of falls. Greater fear of falling is related to higher fall risk; however, no significant differences in fear of falling were observed between the moderate and high risk groups. Among individuals with low to moderate fall risk, lower handgrip strength is associated with greater fear of falling, whereas in those with high fall risk, poorer cognitive function is linked to slower reaction time.

Keywords: fall risk, cognitive function, fear of falling, older adults

CURRICULAR INTEGRATION OF VIRTUAL SIMULATION: TRANSFORMING NURSING EDUCATION THROUGH EXPERIENTIAL LEARNING

Pedro Sousa¹

¹ University of Coimbra, Health Sciences Research Unit: Nursing (UICISA: E), Nursing School of Coimbra, Portugal

Background: The integration of digital pedagogies in nursing education has expanded in response to the demand for innovative, flexible, and student-centred learning. Virtual simulation promotes active, immersive learning and complements traditional approaches by enhancing clinical reasoning, decision-making, and engagement. However, its educational impact depends on effective integration within the curriculum.

Objectives: To explore nursing students' perceptions of the BodyInteract® virtual simulator, focusing on the challenges and opportunities related to its integration within the nursing curriculum.

Methods: A mixed-methods study was conducted with 328 final-year undergraduate nursing students using the BodyInteract® platform for the first time. Four clinical scenarios addressing chronic conditions were completed during guided sessions, with optional self-practice. Data were collected from platform usage reports and an online questionnaire completed by 75 students, which included Likert-scale items and open-ended questions. Quantitative data were analysed descriptively using SPSS version 29, while qualitative responses were examined through thematic analysis based on Bardin's framework.

Results: Students reported that BodyInteract® helped to consolidate clinical knowledge and to increase their confidence and interest. However, they identified limitations in curricular integration, suggesting the need for a broader range of clinical cases, improved technical access, and structured debriefing sessions. A clear preference emerged for instructor-led sessions to strengthen clinical reasoning and decision-making.

Conclusions: Virtual simulation holds significant pedagogical value, but its impact is maximised through deliberate curricular planning, faculty engagement, and institutional

support. Student feedback underscores the importance of structured integration and adequate resources to enhance the effectiveness of simulation-based learning.

Keywords: nursing, virtual simulation, learning

DIGITAL SKILLS TRAINING FOR ONCOLOGY HEALTH CARE PROFESSIONALS: EXPERIENCE FROM ESTONIA'S PARTICIPATION IN THE DIGICANTRAIN PROJECT

Merle Talvik¹, Kadri Kõöp¹, Merilin Kuhi¹, Kelly Kivirand¹, Kateriina Rannula¹, Jandra Sule¹

¹ Tallinn Health University of Applied Sciences

Background: DigiCanTrain is a European initiative aimed at improving digital competencies among oncology health care professionals. The project developed a train-the-trainer model and a flexible educational package suitable for various European training providers. Representatives from various fields and regions across Estonia, including those from ten hospitals and six organisations, participated in the project, enriching the collaboration with diverse experiences and perspectives.

Objective: To evaluate the project's effectiveness, identify areas for improvement, and inform future quality enhancement based on participant feedback.

Methods: Number of participants from Estonia who completed the training programme was n=86; number of trainers from Estonia was n=6. Feedback was collected from participating organisations in the form of unstructured written interviews, and participants' experiences were also recorded in narrative form to highlight the impact of the project and individual perspectives. The data were analysed using thematic analysis.

Results: The survey results indicated four main themes: rationale for training, challenges of the training programme, feasibility of the training programme, and individual perspectives. The training helped participants see the scope of digital solutions and the possibilities of their implementation. The main bottlenecks of the training were low interactivity, shortcomings in technical solutions, and the substantial volume of material. Language barriers and time constraints were identified as individual obstacles.

Conclusions: The results of the study emphasised the strategic importance of training, bringing its necessity into focus. The results provide a basis for further refinement of the training model to support active participant engagement and the development of digital skills.

Keywords: digital skills training, experience, oncology, narrative

ETHICAL CHALLENGES IN ADVANCED PRACTICE NURSING RESEARCH: INSIGHTS FROM APN MASTER'S STUDENTS

Jekaterina Šteinmiller¹,

¹ Tallinn Health University of Applied Sciences

Background: Advanced Practice Nurses (APNs) play a key role in promoting quality care and ethical decision-making. As APN education is relatively new in Estonia, understanding students' awareness of ethical issues is crucial for improving training and professional competence.

Objective: To explore APN master's-level students' perceptions of ethical challenges in advanced practice nursing research.

Methods: A total of 136 first-year APN master's-level students participated in the study between 2023 and 2025. Participants described the ethical challenges they might face during their thesis process. Data were collected during the learning process; students were asked to reflect potential ethical challenges and submit their perceptions in written form via the e-learning platform. Data were analysed using qualitative content analysis.

Results: The analysis identified several interrelated categories of ethical concerns, including research ethics and data protection, participant protection and informed consent, academic integrity and research quality, and ethical considerations across the research process. In addition, context-specific categories emerged, such as ethical challenges in clinical practice, high-risk clinical procedures, workplace-based research involving colleagues, and research conducted in sensitive or closed organisational settings. The findings also highlighted ethical issues related to identifying and protecting vulnerable patients and the use of educational and simulation-based methods. Notably, some students did not identify any ethical aspects, indicating limited awareness of research ethics and potential risks.

Conclusions: The findings indicate that APN students require a deeper understanding of ethical principles in both research and clinical practice. The limited recognition of ethical issues among some participants highlights gaps in ethical awareness. Strengthening ethics education through targeted and systematic integration into APN curricula may enhance moral

competence, improve research quality, and support higher standards of nursing care. Future research should further explore specific ethical training needs in APN education.

Keywords: ethical challenges, advanced practice nurse, nursing research

FAMILY NURSES' EXPERIENCES OF COUNSELLING WOMEN DURING THE MENOPAUSAL TRANSITION: A QUALITATIVE STUDY

Marelle Grünthal-Drell¹, Kadri Kööp¹, Angela Eensalu-Lind¹, Raili Alandi¹

¹ Tallinn Health University of Applied Sciences

Background: Menopause marks a significant milestone in a woman's life and can substantially impact her overall well-being and quality of life. In primary care, nurses are often the first health professionals women turn to with menopause-related concerns; however, these encounters remain complex and insufficiently explored.

Objective: The aim of this study was to explore the counselling experiences of family nurses working with women undergoing the menopausal transition.

Methods: This study employed a qualitative research approach. Data were collected through semi-structured interviews with eighteen nurses at three Estonian health centres and analysed using an inductive content analysis method.

Results: The study found that family nurses' experiences and needs in counselling menopausal women are closely tied to the counselling process, patient characteristics, and nurses' professional development. Nurses highlighted the importance, frequency, and scope of counselling, along with its challenges and supports. They described diverse physical and psychosocial issues among patients, as well as varying awareness and readiness for change. Additionally, nurses expressed a need for targeted training, resources, and institutional support to improve counselling and enhance their competencies.

Conclusions: Counselling during the menopausal transition remains limited in family nursing practice. Clear guidelines, targeted training, and accessible resources are needed to strengthen nurses' competence, enhance patient support, and normalise menopause as a natural life stage in primary health care.

Keywords: family nurse, woman's health, menopausal transition, experience, nursing counselling

FATIGUE AND SLEEP QUALITY IN TYPE 2 DIABETES AND THEIR ASSOCIATIONS WITH COMPLICATIONS

Maarja Randväli ¹

¹ Tallinn Health University of Applied Sciences

Background: Fatigue and impaired sleep are common complaints in individuals with type 2 diabetes mellitus (T2D). While sleep disturbances have been extensively studied, fatigue and its associations with diabetes complications remain insufficiently characterised.

Objective: This study aimed to quantify fatigue and sleep quality in T2D and examine their associations with cardiometabolic and psychosocial factors.

Methods: A cross-sectional study was conducted from July to December 2023, including 121 adults with T2D (duration ≥ 1 year, without depression or cognitive impairment) and 117 age- and sex-matched controls. Fatigue was assessed using the validated Flinders Fatigue Scale (FFS) and sleep quality was assessed with the Pittsburgh Sleep Quality Index (PSQI). Associations with comorbidities and sociodemographic variables were analysed using descriptive statistics and chi-square tests (JAMOVI 23.2.8).

Results: T2D participants reported significantly higher fatigue than controls: 33.9% experienced borderline to moderate fatigue and 8.3% severe fatigue (mean FFS 11.1 ± 6.4 vs 10.2 ± 6.2 ; $p < 0.05$). The odds of moderate-to-severe fatigue were 1.9-fold higher in T2D compared with controls (OR 1.9, 95% CI 1.1–3.2). In contrast, poor or very poor sleep quality was reported by 49% of T2D participants, with no significant difference from controls (OR 1.1, 95% CI 0.7–1.7). Fatigue was strongly associated with hypertension (OR 2.2, 95% CI 1.2–3.9; $p = 0.010$), lower socioeconomic status (OR 1.8, 95% CI 1.1–3.0; $p = 0.024$), and comorbidities including dyslipidaemia, sleep apnoea, and anaemia.

Conclusion: Fatigue, rather than impaired sleep quality, emerged as the more distinctive and clinically relevant burden in T2D, closely linked with cardiometabolic and psychosocial comorbidities. To our knowledge, this is the first study in an Estonian population to demonstrate these patterns. Beyond its national context, the findings highlight the systemic impact of T2D and underscore the importance of routine fatigue assessment as a potential early marker of

complications, with implications for diabetes care strategies in comparable European health systems.

Keywords: type 2 diabetes, fatigue, sleep quality, cross-sectional study, complications

FOSTERING MULTICULTURAL CLINICAL COMPETENCE AND DECISION-MAKING IN NURSING STUDENTS: IMPACT OF A BLENDED INTENSIVE PROGRAMME

Pedro Sousa¹, Helena Felizardo¹, Hanna Peltoniemi², Julia Björklund², Verónica Velasco-González³, Leonor Perez Ruiz³, Alessandro Girotto⁴, Elena Bandiera⁴, Emanuele Galli⁴, Pia Hagqvist²

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Background: Nursing students must develop clinical decision-making skills alongside intercultural competence to provide safe, ethical, and person-centred care in diverse healthcare settings. Blended Intensive Programmes (BIPs), promoted through Erasmus+, combine international collaboration with experiential learning to foster these competencies. Objectives: To evaluate the impact of a multicultural BIP on nursing students’ self-perceived clinical decision-making abilities and related professional competencies.

Methods: A mixed-methods design captured both quantitative and qualitative dimensions of learning experience. Quantitative data were collected via structured self-assessment using Likert-scale items on key clinical and transversal competencies. Qualitative data explored participants’ perspectives through open-ended questions about impactful activities and intercultural experiences. Participants were undergraduate nursing students (n = 35) from Portugal, Spain, Italy, and Finland. The BIP comprised two online sessions (Nov 2024, Mar 2025) and one face-to-face week in Portugal (Apr 2025), combining simulation-based learning, team-based activities and cultural exchange. Quantitative data were analysed with SPSS version 29 using descriptive statistics; qualitative data underwent thematic content analysis. Ethical principles were observed.

Results: Students expressed high satisfaction, with 77% rating the experience as “very good.” The most valued activity was simulation (46%). Competencies with the highest mean scores were adaptability in multicultural environments (4.40), teamwork (4.29), and communication (4.26). Qualitative feedback highlighted learning alongside culturally diverse peers, comparing healthcare systems, and increased awareness of communication and empathy in intercultural care.

Conclusion: The BIP enhanced students' perceived clinical decision-making and intercultural competence. Multinational blended formats integrating simulation and collaborative learning are effective strategies to prepare future nurses for global health challenges.

Keywords: multicultural competence, decision-making, nursing students, blended intensive programme

FUNCTIONAL INDICATORS CHANGES IN MECHANICALLY VENTILATED PATIENTS IN THE INTENSIVE CARE UNIT FOLLOWING PHYSIOTHERAPY AND IN-BED CYCLING

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Background: Critically ill patients receiving mechanical ventilation are at high risk of physical deconditioning due to immobility. Early physiotherapy and adjunctive interventions, such as in-bed cycling, may help maintain or improve physical function in this population.

Objective: To evaluate the changes in functional indicators in mechanically ventilated adult patients undergoing physiotherapy, with or without in-bed cycling.

Methods: The study included thirty mechanically ventilated adult patients (18 men and 12 women) hospitalized in the Intensive Care Unit of the Hospital of Lithuanian University of Health Sciences Kaunas Clinics. All received daily physiotherapy. One group underwent conventional physiotherapy (early mobilisation and respiratory exercises), while the other received physiotherapy combined with passive in-bed cycling. Functional status was assessed using ventilation parameters, haemodynamic indicators, oxygen saturation, and the Intensive Care Unit Mobility Scale (ICUMS).

Results: Both groups demonstrated improvement in functional indicators during their ICU stay. In the physiotherapy-only group, a statistically significant increase in ICU Mobility Scale (ICUMS) was observed ($p = 0.029$), indicating enhanced functional mobility throughout the treatment period. In the physiotherapy-plus-cycling group, ICUMS scores also showed an upward trend (from 17.8 to 27.5). Other physiological parameters remained stable ($p > 0.05$). Between-group differences were not statistically significant, though higher mean ICUMS ranks were observed in the cycling group, suggesting a potential additive effect.

Conclusions: Physiotherapy contributes positively to functional recovery in mechanically ventilated ICU patients. The addition of in-bed cycling may enhance these outcomes, supporting its integration into early rehabilitation protocols.

Keywords: physiotherapy, in-bed cycling, intensive care, early mobilisation

GENERAL PRACTITIONERS' ATTITUDES AND WORKING PROCEDURES IN ASSESSING PATIENTS' DRIVING-RELATED FUNCTIONAL ABILITIES

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Background: In Estonia, family physicians play a key role in assessing patients' driving-related skills. However, legislation does not mandate reassessment of medical certificates after serious health events, which allows individuals to continue driving even when their abilities may be impaired.

Objective: This study aimed to explore family physicians' attitudes and practices in driving ability assessment following health changes, and to identify proposals for improving the process as well as future research needs.

Methods: A total of 78 family physicians and substitute physicians in Estonia completed a questionnaire with closed- and open-ended items. Quantitative data were analysed using descriptive statistics, while qualitative data were examined through inductive content analysis.

Results: Family physicians considered driving ability assessment important, especially after major health changes, but their capacity to conduct assessments was limited by workload, uncertainty, and lack of systemic support. Assessments were mostly based on interviews and additional methods, but training and digital information exchange were lacking. Suspension of medical certificates was rare, often due to insufficient or delayed health information. Physicians supported assessment before certificate expiry but noted that legislation does not facilitate this and expressed concern about damaging the doctor–patient relationship. Complex cases were seen as requiring specialist or interdisciplinary input.

Conclusions: Improved organisation requires a standardised assessment pathway, interdisciplinary collaboration, regular training, digital health information exchange, clearer legislation, and further studies on the patient's assessment journey after health changes.

Keywords: assessment of driving-related skills, family physicians

HOME CARE FOR OLDER ADULTS: BURDEN AND WELL-BEING OF FAMILY CAREGIVERS

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Background: The number of older adults is increasing globally and in Lithuania, raising the need for home care. Since formal home care services have been available in Lithuania only since 2021, family members often provide care, creating physical, emotional, and social burdens that affect their well-being.

Objective: To assess the burden of family caregivers and its impact on their well-being while caring for older adults at home.

Methods: A quantitative study (Nov 2024–May 2025) was conducted among family caregivers. Data were analysed using SPSS version 30.0: quantitative variables were presented as means \pm SD, and qualitative variables as frequencies and percentages. Group differences were examined with ANOVA; associations with Pearson correlation ($p < 0.05$).

Results: A total of 83 family caregivers participated (61 women, 22 men; $M = 61.87$ years). Most were daughters (48.2%) or wives (21.7%); 62.7% lived with the care recipient. Moderate burden was observed (30.42 ± 18.02). ANOVA showed higher burden with more caregiving hours: ≤ 10 h – 23.04; 11–20 h – 33.76; ≥ 21 h – 33.80; $F(2,80) = 3.361$, $p = 0.040$, $\eta^2 = 0.078$. Higher burden correlated with lower well-being: social activity $r = -0.558$, sleep $r = -0.576$, personal life $r = -0.514$ ($p < 0.001$). One-third desired emotional support, but only 8.4% received it.

Conclusions: Family caregivers experience moderate burden, which increases with caregiving hours and negatively affects well-being, including social activity, sleep, and personal life. Many family caregivers need emotional support, highlighting the importance of accessible psychosocial interventions, educational strategies, and respite services to promote caregiver well-being and prevent overload.

Keywords: family caregivers, burden, well-being, home care

HOW REGIONAL CONTEXT SHAPES THE IMPLEMENTATION OF PATIENT-CENTERED HEALTHCARE: LITHUANIAN CASE

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Background: In regional areas, the proximity between patients and healthcare professionals fosters stronger relationships, facilitating accessibility, continuity of care, and proactive patient engagement. In contrast, healthcare in large cities is often marked by fragmentation, depersonalisation, and weaker empathetic connections between providers and patients.

Objective: To explore how regional context shapes the implementation of patient-centred healthcare in Lithuania, with particular attention to personalisation, accessibility, and the transfer of best practices between urban and regional settings.

Methods: A qualitative study was conducted using semi-structured interviews with 22 participants, including healthcare professionals, institutional leaders, and local politicians from the Marijampolė region. The interview guide addressed six competency domains: leadership, teamwork, nursing, mental health recognition, digital skills, and patient-centred care. Participants were selected through purposive and snowball sampling to ensure balanced representation across five municipalities. Interviews were held online via Microsoft Teams in May 2025 and transcribed with participants' consent.

Results: The ongoing healthcare reform requires transformative competencies and a renewed emphasis on patient-centred care. While key competencies such as digital literacy, leadership, and interprofessional teamwork are emerging, limited collaboration, weak coordination, and insufficient municipal involvement hinder reform progress. Structural and communication barriers between institutions and the Ministry of Health undermine trust and slow implementation.

Conclusions: Although personalisation in regional healthcare is higher, service provision remains costly and the transfer of best practices slower than in major cities. As centralisation advances, preserving empathetic, patient-centred practices and integrating them

into new organizational models is essential. Policy efforts should strengthen regional initiatives that sustain trust, empathy, and proximity in care delivery.

IMMERSIVE VR AS PATIENT EDUCATION WITHIN SPA-BASED REHABILITATION: A RANDOMIZED EVALUATION

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Background: Digital health tools can turn rehabilitation into an educational process where patients learn pain-coping strategies, safe movement patterns, and self-management. Spa-based programmes offer an interdisciplinary setting that embeds such experiential learning.

Objective: To evaluate whether adding immersive virtual reality to a three-week spa programme enhances patient-centred outcomes and supports health and well-being education.

Methods: In a randomized controlled study, adults with chronic musculoskeletal or neurogenic conditions received standard spa rehabilitation with or without interactive VR sessions delivered three times weekly. Pain was measured using a visual analogue scale. Mobility was assessed with goniometry-based tasks. Prespecified analyses compared change from baseline and between groups and explored moderation by disease duration.

Results: Pain decreased after treatment in the whole sample. Participants who received VR achieved a larger reduction in pain than those receiving standard care. The advantage of VR was most evident among individuals with a shorter history of disease. Mobility improved following VR across all evaluated ranges. The pattern of findings was consistent across measures and aligned with the intended educational effects.

Conclusions: Integrating immersive VR into spa rehabilitation improves clinical outcomes and acts as a patient education modality that strengthens motor learning, pain-management skills, and engagement.

Keywords: virtual reality, patient education, spa rehabilitation, digital health

INNOVATIVE ONLINE 3N E-COURSE FOR CONTINUING PROFESSIONAL DEVELOPMENT

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Background: Continuous Professional Development (CPD) for healthcare professionals requires flexible learning formats that accommodate the schedules of working clinicians and educators.

Objective: We evaluated a fully online e-course, 3N Practical Implementation, delivered as self-paced learning.

Methods: Three cohorts were established based on course delivery periods: Group 1 (November 2024–March 2025), Group 2 (March–April 2025), and Group 3 (September–November 2025; analysis ongoing). In Group 1, 15 participants enrolled and 5 completed the post-course survey (33%), predominantly clinical nurses. In Group 2, 86 participants enrolled and 41 completed the survey (47.7%), comprising nursing educators and professionals from diverse healthcare institutions, including clinical and public health sectors. Group 3 included 44 participants, with analysis underway. A post-course mixed-methods survey was administered, consisting of Likert-type items(1–5) and open-ended questions. Quantitative data were analyzed descriptively, and free-text responses underwent rapid content analysis.

Results: All respondents in Groups 1 and 2 rated the overall course structure positively (46/46, 100%). Topic relevance was highly rated (Group 1: 5/5, 100%; Group 2: 39/41, 95%). Satisfaction with teaching methods was very high in Group 1 (100%) and lower in Group 2 (85%). Technical support was rated highly in both groups (Group 1: 100%; Group 2: 95%). Qualitative feedback in Group 2 highlighted the course’s innovative features, particularly the AI avatar lecturer, while some participants noted initial unfamiliarity with it. Group 1 respondents indicated a need for improved information flow about the course.

Conclusions: Overall, the fully online, self-paced “3N Practical Implementation” e-course is feasible and valued CPD format for clinicians and educators. Findings have guided iterative course enhancements. Analysis of the autumn 2025 cohort is currently underway.

MANAGEMENT EXPECTATIONS REFLECTING QUALITY AND ETHICAL DIMENSIONS OF APPRECIATIVE MANAGEMENT IN ELDERLY CARE

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Background: High-quality elderly care depends strongly on the competence and ethical integrity of line managers. Understanding professionals' expectations of management helps identify leadership qualities that support both care quality and ethical work environments.

Objective: To describe the management expectations of professionals working in elderly care, focusing on how these expectations reflect quality- and ethics-oriented leadership.

Methods: The study was part of a broader research project on appreciative management conducted from May to August 2023 in eight public and private elderly care organisations. Professionals were asked an open-ended question about their three most important expectations for line management. The qualitative data were analysed using content analysis.

Results: Three main categories of expectations emerged: practice-skilled management, value-based management, and inspiring management. Practice-skilled management focused on the coordination of daily work, quality assurance, and client care. Value-based management emphasised equality, ethical fairness, and trust. Inspiring management reflected the need for appreciation, development opportunities, and a positive work climate.

Conclusions: Elderly care professionals expect line managers to demonstrate ethical awareness, professional competence, and motivational presence. Such leadership supports high-quality care, promotes staff wellbeing, and strengthens ethical integrity across care teams.

Keywords: elderly care, line management, appreciative management, ethical leadership, quality of care

NURSE EDUCATORS’ PERCEPTIONS AND TEACHING EXPERIENCE IN ONLINE LEARNING ENVIRONMENT

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Background: Nursing education encompasses theoretical instruction, practical training, and supporting complex learning of future nurses. Previous studies emphasise the crucial role of nurse educators in designing a supportive learning process in an online environment. However, the readiness for teaching and the experiences of nurse educators in the learner-centered online environment are variable. Therefore, there is a need to explore and understand how nurse educators experience teaching plays a crucial role in supporting nurse educators.

Objective: The study aimed to analyse and understand the perceptions of teaching and experiences of nurse educators in an online learning environment.

Method: The qualitative study was conducted at Tallinn Health University of Applied Sciences. Data were gathered through semi-structured group interviews between February 2024 and March 2025. The sample consisted of 25 nurse educators. Data were analysed using content analysis.

Results: Findings showed that nurse educators experienced limited interaction with students, time constraints, students' learning needs, and behavioral issues, all of which may reduce educators' motivation for teaching in an online environment. Recognising the learning needs of nursing students requires both the time and the capacity to consider and respond to students' individual needs.

Conclusion: Nurse educators’ perceptions and experiences in the online learning environment highlight the need for tailored institutional and personal support, including conceptual changes in their perceptions and teaching practices.

Keywords: nurse education, teaching in an online environment, preception and experience, qualitative research

NURSES' HEALTH AS A STRATEGIC PRIORITY FOR QUALITY CARE IN POLAND

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Background: Over the last decade, nursing in Poland has advanced substantially: nurses have gained new competencies, expanded roles, and increased professional recognition. Despite this progress, demanding working conditions, such as high stress, long and irregular shifts, and sustained decision-making, coincide with alarming evidence of premature mortality. Nurses' average life expectancy in Poland is reported to be approximately 20 years shorter than that of the general female population, underscoring the urgent need to protect and promote nurses' health.

Objective: To assess lifestyle-related factors and working-environment conditions that predispose nurses to metabolic disruptions and negatively affect their health.

Methods: More than 1,000 professionally active nurses from the Podkarpackie region (Poland) were examined between 2020 and 2024 following Bioethics Committee approval. Measures included body composition (DXA, BMI), anthropometrics, blood pressure, lipid profile, fasting glucose, physical activity (ActiGraph), as well as burnout and dietary habits using validated questionnaires. Logistic regression and ROC curves were used in statistical analyses.

Results: Most nurses demonstrated significant health risks, particularly overweight and obesity, contributing to metabolic syndrome, cardiovascular disease, and diabetes. Dyslipidaemia was prevalent in the majority, and nearly half had elevated blood pressure. Levels of physical activity were generally low and largely limited to occupational tasks.

Conclusions: Findings highlight the need for system-level actions to support nurses' health, including health education, routine risk monitoring, and organisational strategies that strengthen well-being in the workplace. Protecting nurses' health should be recognised as a strategic priority

for safe, high-quality patient care and workforce sustainability in Poland.

Keywords: nurses, occupational health, metabolic risk, quality of care

NURSING STUDENTS' EVALUATION OF THE CLINICAL LEARNING ENVIRONMENT AND SUPERVISION ACROSS DIFFERENT CLINICAL PRACTICE SETTINGS

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Background: The clinical learning environment and supervision are central to nursing students' professional development, integration of theory and practice, and satisfaction with clinical education.

Objective: As these experiences may vary across placement settings, this study aimed to compare nursing students' evaluations of the clinical learning environment and supervision across clinical placements and to examine associations between the CLES+T dimensions and placement satisfaction.

Methods: This cross-sectional secondary analysis used anonymous 2024–2025 survey data from undergraduate nursing students (n = 802) at Tallinn Health Care College, Estonia. Data were collected using an electronic questionnaire including background items, placement satisfaction, and the 34-item CLES+T scale. Descriptive and inferential statistics were applied.

Results: Overall, students evaluated the clinical learning environment positively. Family medicine centres were rated most favourably, whereas paediatric wards tended to receive the lowest ratings. Significant between-setting differences were found for the pedagogical atmosphere, premises of nursing, and supervisory relationship ($p < .001$), although effect sizes were small. Of the CLES+T dimensions, the pedagogical atmosphere showed the strongest association with overall placement satisfaction ($\rho = .603$, $p < .001$).

Conclusion: Nursing students' experiences differed across placement settings. A supportive pedagogical atmosphere and high-quality supervision appear particularly important for enhancing satisfaction with clinical practice.

Keywords: nursing students, clinical learning environment, clinical supervision, CLES+T, clinical placement, placement satisfaction

NURSING STUDENTS’ PERCEPTIONS AND EXPERIENCES OF ONLINE LEARNING IN ANATOMY AND PHYSIOLOGY

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Background: A solid understanding of anatomy and physiology is essential for high-quality nursing care. The extensive content and complex terminology of these subjects, combined with limited study time, make learning challenging. Online learning provides flexibility and supports self-directed study, while a well-structured course can enhance motivation and improve learning outcomes.

Objective: This study aimed to explore nursing students’ perceptions and experiences of online learning in anatomy and physiology and to provide insights for enhancing the teaching and learning of a web-based course.

Methods: This quantitative cross-sectional study involved 89 first- and second-year nursing students from Tallinn Health University of Applied Sciences who had completed web-based course in anatomy and physiology. Data were collected from September to November 2024 using a structured web-based questionnaire based on the Technology Acceptance Model (TAM). The responses were analysed using descriptive statistics.

Results: The study found that most participants (75%) reported receiving sufficient support from educators, and 87% felt confident in using the online learning environment when prior guidance was provided. The course was perceived as well structured (77%) and well organized (74%), with easily accessible learning materials (99%) and clear, intuitive navigation (84%). Half of the respondents (50%) indicated that online learning had improved the efficiency of their studies, and 59% expressed a generally positive attitude toward the continued use of online learning in the future, while 49% still preferred face-to-face learning.

Conclusions: Educators' support, clear guidance, and active involvement are crucial for effective online learning, while physical presence and hands-on experience remain essential for many students' learning and self-efficacy.

Keywords: nursing students, anatomy and physiology, online learning, TAM

NUTRITIONAL STRATEGIES TO REDUCE OCCUPATIONAL STRESS: THEORETICAL PERSPECTIVE

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Objective: To provide a theoretical overview of nutrition-based strategies to reduce stress in workplace settings and identify evidence-based dietary components relevant to employee well-being.

Methods: A narrative review of scientific literature (2018–2025) focusing on nutrients, dietary patterns, and the gut–brain axis was performed. Studies examining omega-3 fatty acids, magnesium, polyphenols, probiotics, and balanced dietary models were synthesised and mapped to stress-modulating mechanisms.

Results: Research suggests that omega-3 fatty acids, B-vitamins, magnesium, antioxidant-rich foods, and probiotic-containing products support stress resilience through inflammatory, neurotransmitter, and microbiota pathways. Mediterranean-style patterns and higher fibre intake are associated with better mental well-being and reduced perceived stress. Practical workplace applications include nutrition education, healthy food environments, and mindful eating interventions.

Conclusions: Nutrition represents a feasible and evidence-based component of workplace well-being strategies. Integrating nutritional interventions into occupational health programmes may enhance stress management and promote employee well-being. Further empirical research is recommended to validate these strategies in specific workplace settings.

Keywords: nutrition, workplace well-being, occupational stress, brain-microbiota axis, eating behavior

PARENTAL ATTITUDES TOWARDS CHILDHOOD IMMUNISATION

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Background: Childhood vaccination is one of the top priorities of the World Health Organization, helping to save millions of lives. Despite the availability of vaccines, immunisation rates in many countries remain insufficient, leading to outbreaks of communicable diseases. Parents' decisions to vaccinate their children are critical determinants of the effectiveness of immunisation programmes and largely depend on their health literacy and level of awareness. Parental attitudes towards vaccination are influenced by the reliability of information sources, knowledge levels, personal beliefs, and social context, while negative attitudes are often driven by misinformation. Nurses play a vital role in fostering parental trust in vaccination by ensuring access to accurate information and providing both emotional and professional support during the decision-making process.

Objective: To explore parental attitudes towards childhood immunisation.

Methods: A quantitative study was conducted using statistical data analysis. Data were collected through an anonymous questionnaire survey. The research instrument was developed following a systematic analysis of the scientific literature. The study sample included parents raising children aged 0 to 7 years (n = 192).

Results: The findings revealed that the most trusted and influential sources of information about childhood immunisation were physicians and nurses. In contrast, the internet, mass media, and opinions from relatives were perceived as less reliable and had limited influence on vaccination decisions. Overall, parental attitudes towards vaccination were predominantly positive; however, they were found to vary according to social and demographic factors. More favourable attitudes were typically expressed by parents with higher education levels, those living with a partner, and those aged 31–40. The contribution of nurses to the immunisation process was rated as significant, particularly in terms of information dissemination, emotional support, and building trust. Nonetheless, gaps in information accessibility were identified:

some parents reported receiving vaccine-related information only when they explicitly requested it.

Conclusions: Parents place the greatest trust in physicians and nurses as sources of information about childhood immunisation, while the internet, mass media, and opinions of relatives are considered less reliable and have limited influence on vaccination decisions. Parental attitudes toward vaccination are generally positive. More favorable views are expressed by parents with higher education levels, those living with a partner, and those aged 31–40. Nurses play a significant role in providing information, emotional support, and fostering trust. However, some parents still experience limited access to comprehensive information about vaccine composition, possible side effects, and the vaccination procedure.

Keywords: vaccination, parental attitudes, immunisation, information sources, role of nurses

PATIENT’S EXPERIENCES OF COGNITIVE, EMOTIONAL AND PSYCHOSOCIAL CHALLENGES IN TYPE 2 DIABETES: A QUALITATIVE STUDY

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Background: Type 2 diabetes mellitus (T2DM) is a chronic and multifaceted condition that affects physical, cognitive, and psychological health. Beyond glycaemic control, individuals often face persistent difficulties that hinder daily self-management and quality of life. Yet, little is known about how people with T2DM experience these challenges in their everyday lives.

Objective: This study explored how adults living with T2DM perceive and experience cognitive, emotional, and psychosocial difficulties associated with the condition.

Methods: A qualitative descriptive design was used. Semi-structured interviews were conducted with nine adults diagnosed with T2DM for at least one year. Interviews were transcribed verbatim and analysed using an inductive–deductive hybrid content analysis to capture both emergent experiences and theoretically informed categories.

Results: One overarching theme emerged: the multidimensional burden of living with T2DM. Participants described cognitive difficulties such as forgetfulness and reduced initiative that complicated diabetes self-management. Emotional strain, including sadness, frustration, and social withdrawal, was closely linked to these cognitive challenges. Psychosocial stressors – such as financial concerns, dietary restrictions, and limited healthcare support further intensified distress. These dimensions interacted dynamically, with cognitive lapses fuelling emotional exhaustion and systemic barriers amplifying feelings of isolation and hopelessness.

Conclusion: Living with T2DM entails a complex interplay of cognitive, emotional, and psychosocial burdens. Addressing these requires integrated, person-centred care, in which nurses and primary care providers systematically assess cognitive and mental health

needs and provide ongoing psychosocial support to promote well-being and optimise self-management.

Keywords: type 2 diabetes, cognitive difficulties, emotional well-being, psychosocial challenges, qualitative research

PERSON-CENTRED DEMENTIA CARE STARTS WITH PERSON-CENTRED LANGUAGE AND ENGAGEMENT WITH INFORMAL CAREGIVERS

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Background: Across Europe, dementia care systems are shifting toward more inclusive, rights-based models. Scotland’s approach, centred on dignity, autonomy and relational care, has gained international attention. In Estonia, early-stage policy dialogue is exploring how these principles might be adapted locally. The Bisset & Bisset article (2024), published by the Estonian Health Development Institute, examines how language and caregiver inclusion could reframe dementia care in Estonia. Complementing this, Bisset (2023) explores the systemic invisibility of informal caregivers within care policy and discourse.

Objective: To explore how person-centered language and the recognition of informal caregivers can inform the development of dementia care frameworks in Estonia.

Methods: This conceptual paper draws on: a policy and discourse analysis of Scottish dementia care strategies and their relevance to Estonian context, as presented in Bisset & Bisset (2025). A literature-based exploration of intergenerational caregiving dynamics and systemic gaps, as outlined in Bisset (2023). The analysis identifies thematic intersections between language, caregiver identity and service responsiveness.

Results: Deficit-based terminology (e.g., “burden,” “challenging behaviour”) remains prevalent in dementia discourse, contributing to stigma and caregiver marginalisation. Informal caregivers are often excluded from formal care planning, despite their pivotal role in sustaining family-based support. The Estonian context shows readiness for reform, with growing interest in adapting Scotland’s person-centred principles to local systems. Both sources advocate for linguistic reform and caregiver inclusion as foundational to ethical and effective dementia care.

Conclusions: Person-centred dementia care begins with language that affirms identity, relational continuity, and shared agency. By recognising informal caregivers as co-creators of

care, Estonia can build systems that are not only clinically sound but socially just. This presentation contributes to the groundwork for future pilot initiatives by proposing language and engagement strategies that position caregivers as essential partners in dementia care.

Keywords: person-centred care, informal caregivers, compassionate language, health policy

POSSIBILITIES FOR ATTRACTING AND RETAINING NEWLY GRADUATED NURSES

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Background: Nurse turnover and shortages represent one of the major challenges facing the global healthcare system. Nurses' intentions to leave their jobs are influenced by both individual and systemic factors. The latter are most often related to inadequate management and insufficient support from leadership, which are among the most significant contributors to nurse turnover. A new generation of nurses is now entering the labour market, bringing with them different work values and priorities compared to previous generations. Workplace factors such as working hours, the geographical location of healthcare institutions, remuneration, shift work and overtime have varying impacts on job satisfaction when compared across generations. Recognition of the professional development needs of newly graduated nurses and an understanding of their specific expectations are essential for formulating effective recruitment and retention strategies.

Objective: To identify the possibilities for attracting and retaining newly graduated nurses.

Methods: A quantitative study was conducted. Data were collected through an anonymous questionnaire survey. The research instrument was developed following a systematic analysis of scientific literature. The research population comprised newly graduated nurses (n=97).

Results: Analysis of job satisfaction factors revealed that the most important aspects for nurses are: the possibility to work in shifts, clearly defined working hours, workload, guaranteed short-term leave, and the ability to choose work shifts. Nurses under the age of 25 particularly emphasised career opportunities and the ability to ensure high-quality patient care, provided that the organisation creates appropriate conditions. The findings indicate that job attractiveness factors, such as salary, individual time, opportunities for personal activities, quality of leadership, and career prospects, are directly related to considerations of changing professions: the lower the job satisfaction, the more frequently the idea of a career change arises.

Conclusions: The retention of newly graduated nurses is driven by supportive environments, growth opportunities, and recognition, while poor conditions, low pay, and lack of support lead to career changes. Work-life balance, flexibility, and a transparent, value-driven culture further strengthen retention.

Keywords: newly graduated nurses, nurse recruitment, nurse retention

SMART NUTRITION, HEALTHY SMILES: INTERDISCIPLINARY STRATEGIES FOR BRIDGING AND PROMOTING ORAL HEALTH AND NUTRITION EDUCATION IN CHILDREN

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Background: It is well known that nutrition and oral health are inextricably linked and represent a key aspect of overall well-being, especially during childhood and in other vulnerable populations, when lifelong healthy habits are established. Despite increasing global awareness, these domains are often treated separately in health education, limiting their effectiveness in improving public health.

Objective: This study aimed to evaluate the relationship between oral hygiene behaviours, dietary habits, and parental knowledge among children aged 5–12 in Kaunas, Lithuania, to inform integrated, interdisciplinary health education strategies.

Methods: A cross-sectional survey was conducted involving primary school children and their parents. Data were collected using a modified Oral Hygiene Behavior Index (OHB-index) and Oral Health Knowledge Index (OHK-index), assessing daily hygiene routines, parental influence, and dietary patterns, with a focus on essential food groups and the consumption of sugary products.

Results: Findings revealed significant nutritional imbalances, including low intake of cereals, legumes, and fish, and high consumption of sugary snacks and soft drinks. Children's oral health behaviours were strongly correlated with parental knowledge and involvement. The results suggest that oral hygiene and nutrition habits are not isolated but interrelated, and both are heavily shaped by the family context.

Conclusions: Promoting oral health and healthy eating in isolation is insufficient. Interdisciplinary, early-life interventions involving families, schools, and healthcare professionals are essential for building sustainable health behaviors. This study supports the integration of oral health and nutrition education within broader public health and educational frameworks to enhance well-being throughout the life course.

Keywords: oral health, nutrition, health education, interdisciplinary health care

STRENGTHENING QUALITY OF CARE THROUGH EDUCATION IN STANDARDISED NURSING LANGUAGE: A LONGITUDINAL SURVEY AMONG STUDENTS, PRACTITIONERS AND EDUCATORS

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Background: High-quality nursing care depends on precise clinical reasoning and consistent communication. The use of standardised nursing language (SNL) enhances the accuracy, comparability, and visibility of nursing care. In Estonia, national initiatives to integrate SNL into education and practice aim to strengthen the quality and continuity of care. Effective implementation requires structured training and long-term support for both nursing students and professionals.

Objective: To evaluate the short-, medium-, and long-term effects of a practical course in standardised nursing language on participants' knowledge, confidence, and attitudes toward the advanced nursing process as an indicator of quality of care.

Methods: A longitudinal design was used, involving nursing students, practicing nurses, and nurse educators. Surveys were administered before, immediately after, and one year following course completion. Data were collected via an online learning platform and analysed using descriptive and comparative statistics, and qualitative content analysis to identify changes in knowledge, confidence, and perceived application in practice.

Results: The course improved participants' understanding and confidence in applying the advanced nursing process using SNL. Participants recognised its value in ensuring consistent, evidence-based, and patient-centred care. The flexible online format facilitated participation across educational and professional contexts. Findings highlight the need for continued educator capacity building and curricular integration to sustain improvements in care quality. **Conclusions:** Structured education in standardised nursing language strengthens nursing competence and contributes directly to the quality of care. Ongoing reinforcement in both education and leadership is essential to embed SNL as a routine part of professional nursing practice.

Keywords: standardised nursing language, nursing education, quality of care, advanced nursing process, professional development

STRUCTURAL EMPOWERMENT AS AN ANTECEDENT OF PSYCHOSOCIAL SAFETY CLIMATE AMONG ESTONIAN NURSES: A CROSS-SECTIONAL STUDY

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Background: Psychosocial safety climate (PSC) reflects organizational practices that prioritise employees' psychological health. Structural empowerment (SE) – defined as access to information, support, resources, and opportunities – is assumed to strengthen PSC by fostering participation and perceived fairness. Empirical research testing this relationship among nurses remains limited.

Methods: A cross-sectional study was conducted in 2025 among 604 nurses from various hospitals across Estonia; 594 complete responses were analysed. SE and PSC were measured using the validated Conditions of Work Effectiveness Questionnaire II (CWEQ-II) and Psychosocial Safety Climate Scale (PSC-12). Both scales demonstrated high reliability (Cronbach's $\alpha \geq 0.85$). Descriptive statistics and Pearson correlation analyses were applied.

Results: The mean PSC score was 4.10 (SD = 0.22) and SE was 3.47 (SD = 0.66). A moderate positive correlation was found between SE and PSC ($r = 0.30$, $p < 0.01$), indicating that higher empowerment is associated with a stronger psychosocial safety climate. PSC scores remained stable across age and tenure groups (4.07–4.14), while SE was slightly lower among mid-career nurses (3.41–3.46) than early-career nurses (3.51–3.53), suggesting a potential career-phase effect.

Conclusions: The results confirm that SE is an antecedent of PSC. Equitable access to information, resources, and support enhances engagement and psychological safety. Career-phase differences highlight the need to reinforce development opportunities and autonomy for mid-career nurses. Integrating SE and PSC management is essential for nurses' well-being, organisational sustainability, and patient safety.

Keywords: psychosocial safety climate, structural empowerment, nursing, work environment; psychological safety

THE DETERMINATION OF POLYCHLORINATED BIPHENYLS (PCB-S) IN FISH OIL AND FISH LIVER OIL SUPPLEMENTS SOLD IN ESTONIA

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Background: Polychlorinated biphenyls (PCBs) are persistent organic pollutants that accumulate in aquatic ecosystems and fatty fish, posing potential health risks through dietary exposure. Fish oil and fish liver oil supplements are widely consumed for their omega-3 fatty acids (EPA and DHA) which are known to support cardiovascular, cognitive, and inflammatory health. However, concerns remain regarding PCB contamination in commercial fish oil products.

Objective: To determine the concentration of PCB congeners in fish oil and fish liver oil supplements available in Estonian pharmacies and to assess whether detected levels pose any potential health risk to consumers.

Methods: An empirical quantitative study was conducted using gas chromatography–mass spectrometry (GC-MS) and confirmatory GC-MS/MS analysis. Sample preparation followed EVS-EN 1528 and QuEChERS protocols. Six commercially available fish oil and fish liver oil supplements were analysed in duplicate. Calibration curves were established from certified PCB standards, and reference fish oil material was used for quality control. Detection limits were 10 µg/kg (GC-MS) and 1 µg/kg (GC-MS/MS).

Results: All analysed samples demonstrated PCB concentrations below the detection limits in both GC-MS and GC-MS/MS measurements. Internal standards and blank samples confirmed method reliability. These findings are consistent with international data indicating that most contemporary fish oil products meet global safety standards.

Conclusions: Fish oil and fish liver oil supplements sold in Estonian pharmacies are free from detectable PCB contamination and are safe for human consumption regarding these pollutants. The study underscores the effectiveness of purification technologies and quality control in modern fish oil production.

Keywords: polychlorinated biphenyls (PCBs), fish oil, gas chromatography-mass spectrometry, omega-3 fatty acids

THE ICM ESSENTIAL COMPETENCIES 2024: STRUCTURAL CHANGES, CONTENT EXPANSIONS AND IMPLICATIONS FOR MIDWIFERY EDUCATION AND REGULATION

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Background: The International Confederation of Midwives (ICM) Essential Competencies for Midwifery Practice define the global minimum standard for entry-level midwifery. The previous version (2019) was developed in response to the Global Strategy for Women’s, Children’s and Adolescents’ Health (2016–2030) and World Health Organization (WHO) recommendations current at that time. However, rapid developments in global health priorities and updated WHO guidance on sexual and reproductive health have created a need for revision. These changes directly influence how midwives are prepared for practice, emphasizing competencies in SRHR, respectful care, and responsiveness to humanitarian and climate-related challenges.

Objective: To analyse the 2024 revision of the ICM Competencies, compare it with the 2019 version, and explore implications for midwifery education, regulation, and practice. **Methods:** A document analysis of both versions, focusing on structural changes, competency counts, and indicator content, was conducted.

Results: The 2024 version expands the framework from four to five categories, introducing a new focus on SRHR. The number of competencies increased from 31 to 37, with knowledge indicators rising from 132 to 245 and skills/behaviour indicators from 186 to 293. The revision strengthens rights-based and inclusive language while maintaining the overall scope of midwifery practice.

Conclusion: The 2024 competencies enhance clarity, measurability, and alignment with global health priorities. Education programmes and regulatory frameworks should be reviewed to integrate the expanded competencies. These updates reinforce midwifery’s critical role in achieving universal health coverage and gender equity.

Keywords: midwifery education, professional competencies, regulation

THE RELATIONSHIP BETWEEN STRESS AND JOB SATISFACTION AMONG EMERGENCY NURSING PROFESSIONALS

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Background: In recent years, occupational stress and its consequences have become a global occupational health issue. Nursing professionals working in services such as emergency departments and ambulance services face serious illnesses, pain, and death daily, as well as responsibility for human lives and the provision of first aid in unexpected locations. Job satisfaction is a key factor influencing absenteeism, professional burnout, and nurses' decisions to leave or consider leaving the nursing profession.

Objective: To determine the relationship between occupational stress and job satisfaction among emergency nursing professionals.

Methods: A quantitative study was conducted using an online survey. The sample of the study consisted of 265 emergency nursing professionals. The research instrument consisted of the *Expanded Nursing Stress Scale* (The Cronbach's $\alpha = 0.964$). and the *Job Satisfaction Scale* (Cronbach's $\alpha = 0.917$). The following data analysis methods were used: descriptive statistics, comparisons between population groups (Student's t-test), and tests for determining statistical relationships (Spearman, Pearson, linear regression). Statistical significance was set at $p < 0.05$.

Results: It was found that the more frequent stress experienced at work, the less satisfied emergency nursing professionals are with their jobs ($r = -0.402$; $p < 0.001$). The strongest correlations were observed between stress related to problems with supervisory staff ($r = -0.408$; $p < 0.001$) and stress experienced when communicating with patients and their families ($r = -0.381$; $p < 0.001$).

Conclusions: Overall occupational stress has a negative impact on job satisfaction among emergency nursing professionals. The more frequently stress is experienced, the less satisfied emergency nursing professionals are with their work.

Keywords: stress; job satisfaction; emergency medical care; emergency nursing professionals

TYPICAL DEVELOPMENT OF SENSORY PROCESSING OF CHILDREN WITH CHILDHOOD LEUKAEMIA: A SYSTEMATIC REVIEW

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Background: Survival rates for childhood leukaemia have significantly improved in recent decades, shifting the focus toward the long-term effects of treatment. While cognitive, motor, and social outcomes have been studied, the impact of hospital-based treatment on sensory processing remains underexplored.

Objective: To provide an overview of how childhood leukaemia affects the typical development of sensory processing, using Ayres' sensory integration (SI) theory as a guiding framework.

Methods: A systematic literature review was conducted following PRISMA guidelines, with a pragmatic approach appropriate for a master's dissertation. Five databases were initially planned, but sufficient relevant results were obtained after three. A mixed-methods approach with a convergent integrated design was chosen at the outset, however, the final synthesis included only quantitative descriptive studies. Studies were screened and critically appraised using the Mixed Methods Appraisal Tool. A narrative synthesis was employed to interpret findings thematically due to the heterogeneity of study designs and outcomes.

Results: This review demonstrates that childhood leukaemia treatment can disrupt sensory processing at all levels of the SI hierarchy. Persistent impairments were identified at the neurological level, within multiple sensory systems, and in related physical and cognitive domains. These difficulties may negatively impact academic performance, social participation, and daily functioning. Younger children appear to be particularly vulnerable.

Conclusions: This review provides a novel lens for understanding the impacts of leukaemia treatment, helping to bridge the gap between medical remission and the lived experience of childhood leukaemia survivors.

Keywords: childhood leukaemia, sensory processing, sensory integration

VISUAL ADAPTATION TO EXTENDED REALITY EXPOSURE: EVIDENCE AND GAPS

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Background: Extended reality (XR) is increasingly used in healthcare, education, and professional training, enabling immersive engagement. XR exposure can trigger visual adaptation, with some effects persisting beyond use. Research on these processes remains methodologically inconsistent, with limited evidence on adaptation over repeated exposures.

Objective: The purpose of this review was to map existing evidence on visual adaptation in XR, focusing on commonly used metrics, the persistence of adaptation following repeated exposure, and reported strategies for visual recovery.

Methods: A scoping review was conducted following PRISMA guidelines. Searches were performed in PubMed, Scopus, Web of Science, and IEEE Xplore for peer-reviewed and open-access studies published in English between 2015 and 2025. Inclusion criteria required XR exposure and quantitative outcomes related to visual adaptation. A total of 1,170 records were screened, with 52 studies included.

Results: Most studies (n = 40) assessed short-term visual adaptation using oculomotor measures, subjective symptoms, or performance outcomes. Fewer than 15 studies examined adaptation persistence after repeated exposure or addressed recovery strategies. Reported recovery methods were limited and generally restricted to rest breaks.

Conclusions: Current evidence on XR-induced visual adaptation is dominated by short-term assessments, with limited data on long-term effects and recovery mechanisms. Standardised protocols and longitudinal designs are needed to address methodological gaps and inform guidelines for individuals exposed to XR for extended periods.

Keywords: visual adaptation, extended reality, visual recovery, oculomotor function

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