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Leading Innovations in Nursing Knowledge

THEME

“Nursing Inquiry in the AI Era: Continuity and Innovation”

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10:00 – 14:00(KST)



COLLEGE OF NURSING
SEOUL NATIONAL UNIVERSITY



**Research Institute of
Nursing Science**



서울대학교 연구처
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Seoul National University

Symposium Program

Time (KST)	Session	Speaker / Moderator / Content
Facilitator Yeungmin Yoo, Seoul National University, Korea		
10:00–10:10	Opening Ceremony	Dean Sunghee H Tak, Seoul National University, Korea
10:10–10:40	Bridging Networks: From GradLINK 2025 to 2026	Presenters Dongkyun Kim, Seoul National University, Korea Seohyeon Kim, Gachon University, Korea Yu-Chun Chang, Kaohsiung Medical University Chung-Ho Memorial Hospital, Taiwan
10:40–11:25	Keynote Lecture	Topic Navigating AI in Nursing : Opportunities, Risks, and Professional Responsibility Speaker Professor Hyeoneui Kim, Seoul National University, Korea
11:25–11:30	Break	
11:30–13:00	Concurrent Sessions	Track A Quantitative & Data-Driven Methods in Nursing Research— Navigating Opportunities and Challenges in the AI Era Moderators ① Professor Kyongsuk Lee, Seoul National University, Korea ② Yeongrok Jeong, Seoul National University, Korea Presenters James Lim, The University of Sydney, Australia Chen-I Lee (Sherry), Taipei Medical University, Taiwan Minji Kang, Seoul National University, Korea Yujin Park, Seoul National University, Korea Jeongin Choe, Seoul National University, Korea Huijing Xu, Seoul National University, Korea Arina Qona'ah, Universitas Airlangga, Indonesia Anita Hasan, Universiti Malaya, Malaysia
		Track B Qualitative & Mixed Methods in Nursing Research— Sustaining Rigor and Human-Centeredness in a Changing Research Landscape Moderators ① Professor Jay Jung Jae Lee, The University of Sydney, Australia ② Sookyoung Lee, Seoul National University, Korea Presenters Ying-Tzu Tseng, National Taiwan University, Taiwan Melissa Heufel, The University of Sydney, Australia Beata Gidaszewski, The University of Sydney, Australia Myrian Fan, The Chinese University of Hong Kong, Hong Kong Meiling Han, Chiang Mai University, Thailand Mijeong Park, Seoul National University, Korea
		Track C Evidence Synthesis & Implementation Research in Nursing— Building Trustworthy Evidence and Closing the Research-Practice Gap Moderators ① Professor Bomin Jeon, Seoul National University, Korea ② Yeonkyeong Ra, Seoul National University, Korea Presenters Nhi Thi Vo, The Chinese University of Hong Kong, Hong Kong Elsie Mari, The University of Sydney, Australia Yoonsoo Eo, University of Wisconsin-Madison School of Nursing, USA Sidik Maulana, Universitas Padjadjaran, Indonesia Nicholas Neo, National University of Singapore, Singapore Mayu Sakamoto, Shiga University of Medical Science, Japan Ida Ayu Agung Laksmi, Universitas Airlangga, Indonesia Jingjing Wang, Shandong University, China
13:00–13:05	Break	
13:05–13:40	Cross-Track Synthesis & Panel Discussion	Topic Shared Challenges and Future Agendas in Nursing Inquiry in the Era of AI Moderators Professor Jongwon Yoo, Seoul National University, Korea Panelists Yeongrok Jeong, Sookyoung Lee & Yeonkyeong Ra, Seoul National University, Korea
13:40–14:00	Closing Ceremony	Yeungmin Yoo, Seoul National University, Korea

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01 A scoping review of AI-based chatbots in nutrition related-weight management

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Aim(s): Artificial intelligence (AI) -based chatbots are increasingly used in health care, including nutrition counselling and weight management. However, there is limited evidence on the quality, safety, and cultural relevance of chatbot-generated advice. This is especially concerning for individuals from culturally and linguistically diverse (CALD) backgrounds and those with low health literacy, who already face barriers in accessing traditional nutrition care. This scoping review aimed to identify and map the current literature on AI-based chatbots in nutrition-related weight management for adults, as well as highlight and collate evidence on equity, safety and accessibility, with a particular focus on CALD individuals (however not a requirement for eligibility criteria).

Methods: In accordance with the Joanna Briggs Institute methodology for evidence synthesis, a scoping review was conducted across 9 databases, including Medline, EMBASE, CINAHL and EBM Reviews. Studies were included if they involved human adult participants, incorporated an AI-based chatbot and focused on nutrition-related weight management.

Results: A total of 12 records were included in the final review. Majority of the studies were published post 2020 (n = 11) and based in the Asia region (n = 6). Many of the chatbots investigated were non-generative AI chatbots (n = 9) and did not have multilingual capacity (n = 7). Reporting on safety and equitable factors was limited, including nil adverse events (n = 2), occupation (n = 4) and socioeconomic status (n = 4).

Conclusions: Ultimately, this scoping review leads to a call for action for more research to be conducted to reduce the knowledge gaps and disparities in healthcare for CALD groups. Future research needs to prioritise transparent safety reporting and thorough indexing of equitable factors, whilst focusing more on generative AI based chatbots and their iterative advancements in the context of a variety of ethnic and language groups amongst CALD individuals.

Keywords: artificial intelligence, chatbot, conversational agent, nutrition, weight management.

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02 Explainable artificial intelligence for early prediction of ICU delirium: Development and validation of a clinical decision support model

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Aim(s): Delirium is a severe ICU complication with up to 31% prevalence. Despite the availability of structured screening tools, early detection and consistent diagnosis remain significant challenges. This study aims to develop an interpretable delirium predictive model that visualizes risk factor contributions to guide targeted interventions.

Methods: Retrospective data from 2020–2025 medical/surgical ICUs were analyzed. Six machine learning algorithms were evaluated using an 80/20 train/test split, feature selection, and 10-fold cross-validation. Model performance was assessed using AUROC, F1-score, recall, precision, and specificity, with the optimal model selected by F1-score. SHAP (SHapley Additive exPlanations) values provided model interpretability, and the final model was deployed via Streamlit.

Results: Among 12,000 patient records (35% delirium incidence), 14 optimal features were selected from 103 predictors. LightGBM emerged as the best model, achieving an F1-score of 0.81, AUROC of 0.93, recall of 0.91, and specificity of 0.82 on the testing set. SHAP analysis identified Glasgow Coma Scale (GCS) score, sedative use, and age as the most significant predictors. The model and its SHAP visualizations were successfully integrated into an interactive Streamlit web application for real-time decision support.

Conclusion: The LightGBM model combined with SHAP interpretability offers a highly accurate, feasible tool for early ICU delirium prediction. By bridging complex machine learning with bedside clinical practice, this Streamlit-based platform enables clinicians to identify patient-specific risk factor weights, facilitating timely, targeted preventative interventions to improve patient outcomes.

Keywords: artificial intelligence, delirium, intensive care unit

03 Personal assistant service patterns and health behaviors among adults with disabilities: A latent class analysis

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Aim(s): This study aimed to classify patterns of Personal Assistant Service (PAS) among adults with disabilities in Korea using latent class analysis (LCA) based on the Behavioral Model for Vulnerable Populations (BMVP), and to examine their associations with health behaviors.

Methods: A cross-sectional descriptive study was conducted using data from the Disability and Life Dynamics Panel (2018-2023). The most recent observation per individual was selected, yielding 482 PAS users. LCA was performed using six dichotomized service-need domains: overall activities of daily living, mobility, home cleaning and management, health management, leisure and social participation, and meal management. Multinomial logistic regression examined factors associated with class membership, and modified Poisson regression assessed associations between latent classes and five health behaviors (physical activity, smoking, alcohol use, fast food consumption, and health screening).

Results: Three latent classes were identified: “Comprehensive Support” (36.3%), “Physical and Social Support” (36.1%), and “Household Support” (27.6%). Compared with non-users, service users showed greater socioeconomic and health vulnerability, including more severe disability, lower income, living alone, lower social support, and higher depression. Women and individuals with greater disability severity and daily-living limitations showed higher odds of belonging to the Comprehensive Support class. After adjusting for covariates, the Comprehensive Support class showed a significantly lower prevalence of physical activity and alcohol consumption compared to the Household Support class, while previously observed differences in fast food intake were attenuated.

Conclusions: PAS is associated with health behaviors among adults with disabilities, although current service structures may not fully address health enhancing behaviors. Expanding PAS to include tailored physical activity support, health management, and psychosocial care may help reduce health disparities among adults with disabilities.

Keywords: health behavior, latent class analysis, persons with disabilities, personal health services

04 Development of an IMB model-based diabetes self-management education program with artificial intelligence phone calls for older adults

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Aim(s): This study aimed to develop an artificial intelligence (AI) phone call-supported diabetes self-management education (DSME) program for older adults with diabetes.

Methods: The program was developed following Newman's self-management intervention development framework. A systematic review and meta-analysis were conducted to identify effective components of diabetes self-management interventions. In-depth interviews with older adults with diabetes were performed to explore self-management needs and barriers. The findings were integrated using the Information–Motivation–Behavioral Skills (IMB) model to guide intervention development. The educational materials, AI phone call scenarios, and intervention protocol were subsequently reviewed by an expert panel to establish content validity.

Results: The systematic review demonstrated that IMB model-based diabetes self-management interventions significantly improved HbA1c, particularly when delivered by nurses using blended face-to-face and remote approaches. Interviews revealed unmet needs for practical dietary and exercise education, infrequent self-monitoring of blood glucose, and limited knowledge of hypoglycemia management. Based on these findings, the Diabetes Self-Management Education with Artificial Intelligence Phone Calls (DSME-AIP) program was developed. The final program consisted of eight weekly group education sessions supported by weekly AI phone calls that provided self-management monitoring, motivational feedback, and individualized reinforcement. The intervention also included behavioral skills training and group discussions to enhance diabetes self-management among older adults.

Conclusions: The DSME-AIP program provides a theory-informed and user-centered diabetes self-management intervention that combines face-to-face education with AI phone call support. This program offers an accessible digital health approach that may facilitate sustainable diabetes self-management among older adults with limited digital literacy.

Keywords: artificial intelligence, diabetes mellitus, older adults, self-management

Acknowledgement: This work was partially funded by the Sigma Theta Tau International Honor Society of Nursing Lambda Alpha Chapter-at-Large in 2025.

05 Factors associated with intention to use generative artificial intelligence in nursing practice: A cross-sectional study

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Aim(s): Generative artificial intelligence (GAI) is increasingly used to support healthcare professionals, yet the factors shaping nurses' intention to adopt it in clinical practice remain poorly understood. This study aimed to investigate nurses' intention to use GAI, identify its current application areas, and determine associated factors based on the Unified Theory of Acceptance and Use of Technology (UTAUT) and perceived risk theory.

Methods: A cross-sectional online survey was conducted between March 17 and 28, 2025, involving 176 registered nurses at a tertiary hospital in Seoul, South Korea. A 46-item instrument measured intention to use GAI along with performance expectancy, effort expectancy, social influence, facilitating conditions, work-related GAI usage experience, voluntariness of use, perceived risk, and GAI literacy. Data were analyzed using descriptive statistics, Mann–Whitney U tests, Kruskal–Wallis H tests, Spearman's correlation, multiple regression, and post-hoc subgroup analyses.

Results: Overall, 61.4% of participants had no prior workplace experience with GAI, while 38.6% had used it, primarily for educational material development (50.0%) and research data analysis (26.5%). Multiple regression showed that voluntariness of use ($\beta=.358$, $p<.001$), performance expectancy ($\beta=.344$, $p<.001$), and GAI literacy ($\beta=.192$, $p=.010$) were significantly associated with usage intention, whereas experience, effort expectancy, social influence, facilitating conditions, and perceived risk were not. In subgroup analysis, voluntariness of use was the only factor associated with continued usage intention among nurses with prior GAI experience.

Conclusions: Nurses' acceptance of GAI was associated with self-directed motivation, practical utility, and foundational literacy, with intrinsic motivation and personal agency more salient among experienced users. This study extends the UTAUT framework to the nursing GAI context, and implementation strategies should emphasize stratified literacy programs and autonomy-preserving workflows within defined professional boundaries. Future multi-site, longitudinal research is needed to evaluate long-term impacts on clinical outcomes and nursing efficiency.

Keywords: generative artificial intelligence, intention to use, nurses, nursing practice, technology

06 Identifying social determinants of health among patient with colon cancer using SNS—derived person-generated health data

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Aim(s): Colon cancer remains a major cause of cancer-related mortality worldwide, yet the extent to which social determinants of health (SDOH) and health behaviors shape disparities in general health status among patients with colon cancer remains insufficiently understood. Data from SNS platforms, as a form of person-generated health data (PGHD), provide rich information about patients' social contexts, lived experiences, and health-related concerns. This study aimed to use a large language model (LLM) to identify SDOH factors associated with general health status among patients with colon cancer and to refine the SDOH framework using SNS-derived data. By integrating patient-reported experiences and social contexts captured through SNS interactions, this study seeks to inform the development of more tailored, data-informed nursing interventions.

Methods: We collected posts from r/coloncancer subreddit from May 2024 to May 2025 and randomly selected 100 entries for further analysis. After data preprocessing and anonymization, we applied prompt-engineering techniques with GPT-4o to extract SDOH-related information and generate hierarchical thematic categories aligned with the Healthy People 2030 domains. To assess whether the LLM appropriately generated subdomain concepts, two researchers independently reviewed the outputs and conducted systematic evaluation.

Results: The LLM generated 60 subdomains across the five SDOH domains. Independent evaluation of the LLM-generated thematic categories demonstrated a high level of inter-rater agreement between the two reviewers (weighted kappa = 0.844). After removing disagreements, 33 subdomains were retained: Economic Stability (3), Education Access and Quality (2), Health Care Access and Quality (22), Neighborhood and Built Environment (1), and Social and Community Context (5).

Conclusions: Findings highlight the potential of SNS-derived data as a meaningful data source for identifying SDOH factors among colon cancer patients. Future research will incorporate larger SNS datasets and more advanced LLMs to enhance the robustness of SDOH extraction and expand the granularity of SDOH subdomain classifications.

Keywords: colon cancer, large language model, person-generated health data, social determinants of health

07 Development of an AI-based predictive model for cardiovascular disease risk among patients with diabetes mellitus in Indonesia: Pilot study

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Aim(s): Cardiovascular disease (CVD) is the leading cause of mortality among patients with Type 2 Diabetes Mellitus (T2DM). In Indonesia, CVD risk is influenced by both clinical factors (hyperglycemia, hypertension, dyslipidemia, obesity) and psychosocial factors (depression, anxiety, diabetes distress, and social support), yet these determinants have rarely been investigated comprehensively. Moreover, the lack of a standardized multicenter database has limited the development of machine learning-based CVD risk prediction models tailored to the Indonesian population. This study aims to identify the clinical and psychosocial determinants of CVD risk in Indonesian adults with T2DM and to establish a standardized multicenter dataset for developing artificial intelligence-based prediction models.

Methods: A multicenter cross-sectional observational study will be conducted in Community Health Center in East and West Java. Using purposive sampling, 1000 adults with T2DM diagnosed for at least one year will be recruited. Clinical variables include demographic characteristics, disease duration, blood pressure, body mass index, waist circumference, fasting blood glucose, LDL cholesterol, smoking status, and history of hypertension or dyslipidemia. Psychosocial factors will be assessed using the PHQ-9, GAD-7, DDS-17, and MSPSS, while CVD risk will be evaluated using the WHO/ISH Risk Prediction Chart 2023. Multivariate logistic regression will identify significant determinants of CVD risk. A standardized dataset will then be developed through data preprocessing, feature selection, and validation to support machine learning algorithms, including Random Forest, Gradient Boosting, Support Vector Machine, and Neural Network.

Conclusion: The findings are expected to support AI-driven CVD risk prediction and improve evidence-based diabetes care in Indonesia.

Keyword: cardiovascular disease risk, machine learning, multicenter study, psychosocial factors, type 2 diabetes mellitus

08 Development of the building age-friendly communication skills module for diploma nursing students: Phase 1 needs analysis and validation

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Aim(s): To conduct a Phase 1 needs analysis and validation process for developing the Building Age-friendly Communication Skills (BACs) Module to enhance diploma nursing students' communication skills and attitudes towards older people.

Methods: A Design and Development Research Type 1 approach guided by ADDIE was used. Phase 1 comprised needs analysis, design, development, and validation. A structured literature review informed the module content and educational strategies. A cross-sectional survey was conducted among Year 1 and Year 2 diploma nursing students ($n = 174$; response rate = 99.4%) using the Health Professionals Communication Skills Scale (HP-CSS) and Kogan's Attitudes Toward Older People Scale (KATOP). Data were analysed using descriptive statistics, reliability analysis, Pearson correlation, simple linear regression, and multiple linear regression. Findings were discussed in structured design and development meetings, and the module package was refined through expert content validation and student face validation.

Results: HP-CSS and KATOP demonstrated acceptable reliability, with Cronbach's alpha values of 0.830 and 0.728, respectively. Communication skills were positively associated with attitudes towards older people ($r = 0.294$, $p < 0.001$). In adjusted models, attitudes towards older people were independently associated with communication skills ($\beta = 0.252$, $p < 0.001$), while communication skills were independently associated with attitudes towards older people ($\beta = 0.232$, $p = 0.002$). Year of study was also independently associated with attitudes towards older people ($\beta = 0.205$, $p = 0.026$). The final BACs package comprised a structured workshop, short films, reflective activities, role-play, simulation, debriefing, quizzes, and Google Site learning materials. Content validation findings were acceptable, with S-CVI/Ave values ranging from 0.97 to 1.00.

Conclusions: Phase 1 established the educational need for a structured, validated, and contextually relevant BACs Module for diploma nursing students.

Keywords: ADDIE model, age-friendly communication, attitudes, module development, nursing education

09 Immersive virtual reality in perinatal mental health: A systematic review

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Aim(s): To synthesize current evidence on the effects of immersive virtual reality (VR) interventions on perinatal mental health outcomes, particularly anxiety and depression, among pregnant and postpartum women, and to identify therapeutic architectures and summarize their proposed mechanisms.

Methods: This systematic review followed PRISMA 2020 and was prospectively registered (PROSPERO CRD420261351574). PubMed, Embase, Cochrane Library (CENTRAL), CINAHL, and Web of Science were searched from inception through May 13, 2026, supplemented by hand-searching the reference lists of eligible studies. Randomized controlled trials and controlled quasi-experimental studies evaluating immersive VR in perinatal women and reporting psychological outcomes were included. Two reviewers independently screened studies, extracted data, and assessed risk of bias using RoB 2 and ROBINS-I. Data were synthesized narratively.

Results: Twenty studies (18 randomized controlled trials and 2 quasi-experimental studies) published between 2016 and 2025 were identified, revealing five major therapeutic architectures: procedural distraction, relaxation-oriented, nature-restorative, psychoeducational, and mind-body/mental health-oriented VR. Across this evidence base, immersive VR showed the greatest potential for managing anxiety during acute obstetric care, whereas evidence for broader or longer-term psychological outcomes, including depression, remained limited and concentrated in a few psychologically structured interventions. The reporting of physiological outcomes and adverse events was inconsistent, and substantial methodological heterogeneity was observed across VR content, study populations, and outcome measures.

Conclusions: This review maps the current landscape of immersive VR for perinatal mental health and identifies key opportunities and challenges for its integration into perinatal care. These findings provide a framework for future intervention development and evaluation by emphasizing architecture-specific intervention designs, standardized outcome measures, consistent safety reporting, and stronger evidence for depression.

Keywords: anxiety, depression, immersive virtual reality, perinatal mental health, systematic review

10 Improving end of life care for patients presenting to the Emergency Department (ED): A mixed methods study

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Aim(s): End-of-life care encompasses the physical, emotional, spiritual and social aspects of care to support the dying patient and their families/carers. Evidence-practice gaps in how end-of-life care is delivered in the ED locally have been identified. The aim of this PhD program of research is to determine and better understand local barriers to quality end of life care in the ED to develop targeted implementation strategies to improve the end-of-life journey.

Methods: This research follows a mixed-methods explanatory sequential design, integrating quantitative and qualitative data to comprehensively address the research questions. The research is underpinned by the knowledge-to-action cycle conceptual framework and behaviour change theory to facilitate the translation of research into practice.

Results: An integrative review of international literature exploring existing pathways for end-of-life patients in the ED found wide variation in screening for and treating end-of-life care needs in the ED. With no published tool to evaluate end-of-life care in the ED, an audit tool was developed informed by a scoping literature review and a face and content validation study. This tool has been used to conduct a retrospective medical record review of local deaths to review quality of end-of-life care, that will inform the future phases of the research.

Conclusions: Four individual studies as part of the program of research towards PhD have been completed. The thesis will be developed as a thesis by publication, with three of the studies currently published, and writing of the fourth manuscript nearing completion for submission to a relevant journal. There are two phases remaining, an examination of perceived barriers and facilitators to providing high-quality end-of-life care in the ED, and the integration of all findings to inform the development of an intervention and implementation plan, mapping behaviour change techniques for the identified barriers using the Behaviour Change Wheel.

Keywords: emergency department, emergency nursing, end-of-life care

11 Clinicians, perineal trauma and responsible AI: Lessons from a mixed methods doctoral journey

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Aim(s): To share the design and lessons from a mixed methods doctoral program examining clinicians' contributions to perineal trauma during vaginal birth, and to reflect on responsible artificial intelligence (AI) use as a learning, analysis and writing support tool.

Methods: The program brought together four linked studies: a scoping review; a retrospective cohort study comparing births attended by registered and student midwives; a qualitative study of women's postnatal experiences after perineal trauma; and a cross-sectional study of birth satisfaction in Australian public maternity care. AI was used for idea testing, structure, language refinement, interpretation checking and critical review, while all claims, analyses, citations and submitted text remained author-controlled and source-verified.

Results: The studies shifted my thinking from a narrow focus on clinician "effect" toward a more complex understanding of clinician contribution. Clinician role, experience, training, attitudes and work context were linked to perineal outcomes, but student midwife involvement was not independently associated with obstetric anal sphincter injury. Women's experiences were shaped by support, communication, emotional safety, consistency and system constraints, not clinical outcomes alone. AI helped me map arguments, test assumptions and learn statistical and philosophical concepts more actively.

Conclusions: Clinician contribution to perineal trauma is not a simple individual-risk story. It sits within supervision, education, service pressures, relational care and women's expectations. Used transparently and critically, AI can support doctoral learning and scholarly writing without replacing researcher judgment, accountability or original interpretation.

Keywords: artificial intelligence, maternity care, mixed methods, perineal trauma, vaginal birth

12 Clarifying the scope of evidence synthesis: Reflections from a systematic review

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Aim(s): To clarify the methodological scope of systematic reviews in psychosocial oncology nursing, drawing on scholarly dialogue that followed publication of a meta-analysis examining theory-guided positive psychological interventions (PPIs) for women with breast cancer.

Methods: The original systematic review synthesised randomised controlled trials (RCTs) evaluating theory-guided PPIs on quality of life (QoL) outcomes among women with breast cancer. Reporting adhered to PRISMA 2020 guidelines. Risk of bias was assessed using the revised Cochrane Risk of Bias tool (RoB 2.0), and certainty of evidence was evaluated using the GRADE framework. Owing to variation in outcome instruments across studies, pooled effects were calculated using standardised mean differences. Following publication, academic commentary raised questions regarding intervention heterogeneity, clinical interpretability, and contextual applicability. These issues were examined to clarify the epistemological boundaries of aggregate evidence synthesis.

Results: Five RCTs (n = 412) were included. The pooled analysis demonstrated a statistically significant improvement in QoL with moderate certainty of evidence. Scholarly discussion emphasised the distinctions between quantitative synthesis and clinical implementation, including challenges in applying minimal clinically important differences across diverse outcome measures and the limits of external applicability. These considerations reinforce that systematic reviews address predefined synthesis questions and remain bounded by the design and reporting of included trials.

Conclusions: This experience underscores the importance of clarifying the scope of evidence synthesis in psychosocial oncology nursing. Systematic reviews synthesise available trial data within predefined methodological boundaries. They do not replace mechanism-driven, implementation, or personalised care research. Clear articulation of scope strengthens interpretation, supports responsible translation into practice, and advances methodological precision in nursing science.

Keywords: evidence synthesis; oncology nursing; positive psychological interventions; quality of life; systematic review

13 Empathy development process among family caregivers of persons with dementia in China: A grounded theory study

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Aim: The aim of the study was to explore how family caregivers develop empathy while taking care of persons with dementia in China.

Methods: This study adopted grounded theory methodology. Data were collected through semi-structured interviews between February to November 2025. Data were analysed following Strauss and Corbin's grounded theory methods, including open, axial, and selective coding with constant comparison. Theoretical sampling was guided by emerging categories and recruitment continued until theoretical saturation was reached at 21 participants.

Results: "Stepping into Their Reality of Dementia to Develop Empathetic Caregiving" emerged as core category representing empathy development as a dynamic and iterative process. This process consisted of four interrelated phases. Phase one was holding onto a shared reality, which consisted of experiencing emotional distress, correcting cognitive errors, and managing altered behaviors. Phase two was negotiating between reality, which consisted of moving beyond correction, accepting dementia as an illness reality, and letting go of recovery-oriented expectations. Phase three was accepting the new reality, which consisted of entering the patient's subjective reality, adjusting communication and caregiving practices, and practicing empathy through daily interactions. Phase four was integrating empathy as caregiving role, which consisted of embedding empathy as a way of life, redefining caregiving as everyday companionship, sustaining emotional balance in daily care, and living with it. The whole process was influenced by facilitators and barriers.

Conclusions: This study generated new knowledge regarding the empathy development in dementia caregiving of family caregivers evolves through a recursive, relational process rather than a static attribute. This grounded theory provides a culturally situated framework to inform the design of interventions and assessment strategies that support sustainable, empathy-oriented caregiving.

Keywords: caregivers, China, dementia, empathy, grounded theory

14 Neonatal intensive care unit nurses' end-of-life care experience: Becoming a more empathetic professional caregiver

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Aim(s): This study aimed to explore the experiences of neonatal intensive care unit (NICU) nurses providing end-of-life care for infants in South Korea, with a particular focus on how recurrent exposure to infant deaths shapes the development of empathy.

Methods: In this qualitative descriptive study, semi-structured interviews were conducted with 11 nurses from a tertiary Level IV NICU in Seoul, South Korea, each with ≥ 6 months of experience caring for terminally ill infants and having experienced at least 2 infant deaths. Reflective thematic analysis of Braun and Clarke was used for analysis.

Results: Three main themes emerged: (1) Providing emotionally detached end-of-life care in the NICU; (2) Developing empathy through end-of-life care; and (3) Becoming a more empathetic professional caregiver.

Conclusion: Recurrent exposure to infant death may shape empathy as a professional capacity through reflection and collegial support, enabling nurses to develop more compassionate and relational approaches to neonatal end-of-life care.

Keywords: empathy, infant, neonatal intensive care unit, nurse, palliative care, terminal care

15 Developing a health literacy-tailored self-management intervention for people with hypertension and low health literacy

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Aim(s): People with hypertension and low health literacy often have challenges in understanding and performing self-management behaviours, leading to suboptimal blood pressure control. This paper reported the development of a health literacy-tailored self-management intervention for this group.

Methods: The intervention was developed based on the results of a systematic review assessing evidence on self-management interventions tailored to the health literacy levels of people with hypertension, and a qualitative study exploring experiences, facilitators and barriers for building self-management skills among people with hypertension and low health literacy. Evidence-based strategies grounded in Bandura's principles of self-efficacy were adopted to enhance participants' confidence in managing their health. The intervention was reviewed by an expert panel comprising one physician, two community nurses, and nurse academics. Two individuals with hypertension and low health literacy were invited to review the intervention for understandability and cultural appropriateness. Revisions to the intervention were made based on the feedback.

Results: A 6-week community-based health literacy-tailored self-management intervention was developed. It consists of three weekly 60-minute face-to-face group education sessions followed by three weekly 20-minute individual follow-up phone calls. Innovative health literacy-specific strategies are designed, including a photobook with QR links to audio/video explanations, step-by-step guided hands-on practice, and individualised feedback. Specific strategies to enhance self-efficacy include training in self-management skills (particularly communication with healthcare providers, appraisal of health information), peer modelling, and ongoing encouragement and reinforcement through individual follow-up phone calls.

Conclusions: The intervention will be examined in a large-scale randomised controlled trial of people with hypertension and low health literacy. The results will provide evidence on the incorporation of health literacy-tailored strategies into routine hypertension care in primary care settings and guide the refinement of accessible health education materials for hypertension management among people with hypertension and low health literacy.

Keywords: health literacy, hypertension, self-management

16 Nurse involved hospital avoidance outreach in aged care: A mixed-methods systematic review

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Aims: Unplanned hospital transfers from aged care homes remain a persistent challenge, often driven by limited onsite clinical capacity, workforce shortages, and insufficient medical support. These transfers can expose older residents to avoidable risks. Hospital avoidance outreach interventions have emerged as an innovative approach to provide timely assessment and management in place. However, previous reviews have frequently excluded studies involving nurses, leaving a gap in understanding the contribution and impact of nurse involved models. This mixed method systematic review examined the effectiveness, experiences, and implementation of nurse involved hospital avoidance outreach interventions for residents of aged care homes.

Methods: A systematic search identified quantitative, qualitative, and mixed method studies evaluating nurse led or nurse involved hospital avoidance outreach interventions. Data were synthesised narratively, and thematic synthesis was applied to qualitative findings to explore experiences and implementation factors.

Results: Twenty four studies met inclusion criteria, including sixteen quantitative, seven qualitative, and one mixed method study. Most studies (n=21) were conducted in Australia, with others (n=5) from European countries. Sixteen nurse led models were associated with reductions in emergency department presentations, re-presentations and hospital admissions via the emergency department. Four studies reported cost savings, although findings were heterogeneous. Health professionals reported positive experiences, but the perspectives of aged care home residents and their families were underrepresented. Key enablers of intervention success included staff support, leadership, rapid response outreach interventions, technological infrastructure, and outreach team expertise. Operational barriers include inconsistent guidelines and policies, limited service hours, and challenges with technology implementation.

Conclusion: Nurse involved hospital avoidance outreach interventions show promise in reducing unnecessary hospital transfers and supporting timely, person centred care within aged care homes. The key enablers and barriers to implementation highlight opportunities to strengthen and scale nurse led models. Further research is warranted to address identified gaps and inform future service design.

Keywords: emergency service, homes for the aged, interprofessional relations, nurses, nursing homes, patient transfer

17 Post-intensive care unit (ICU) symptom experiences in ICU survivors: A scoping review

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Aims: A growing number of intensive care unit (ICU) survivors experience persistent physical, cognitive, or mental health symptoms or impairments post-ICU discharge, collectively known as post-intensive care syndrome (PICS). Characterizing post-ICU symptom experiences is essential for understanding PICS from a patient-centered perspective and for designing effective interventions to improve long-term health outcomes. However, there is limited collation of existing literature on this topic. This scoping review aimed to map, collate, and synthesize existing knowledge about PICS symptom experiences (types and dimensions) in adult ICU survivors, including co-occurring symptoms, symptom relationships, and symptom clusters (co-occurring and related symptoms).

Methods: We conducted a systematic search of PubMed, CINAHL, PsycINFO, and SCOPUS for studies published in English that collected data between January 2020 and December 2023. Eligible studies were conducted in the United States, included adult (≥ 18 years) ICU survivors, and described two or more subjective, self-reported symptoms within one year of ICU discharge.

Results: Of 1,278 articles screened, 13 studies met the inclusion criteria. Mental health symptoms, such as depression and anxiety, were the most commonly reported, appearing in 11 and 9 studies, respectively. Nine studies reported symptom prevalence, eight reported symptom intensity, and none reported symptom frequency, distress, or meaning. Among 13 studies reporting co-occurring symptoms, two studies reported symptom relationships, with one suggesting potential symptom clusters.

Conclusion: Significant gaps remain in the literature regarding a comprehensive, patient-centered understanding of PICS symptom experiences. Future research should address symptom frequency, distress, meaning, as well as symptom relationships and clusters, to inform effective post-discharge symptom management interventions for ICU survivors.

Keywords: critical illness, ICU survivors, PICS, post-intensive care syndrome, symptoms

18 Prevalence and factors associated with linkage to HIV care following diagnosis: A systematic review and meta-analysis from 8 countries in Southeast Asia

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Aims(s): This study aimed to assess the estimate and factors influencing the linkage to HIV care following diagnosis among Southeast Asian people living with HIV (PLWH).

Methods: A systematic review and meta-analysis was conducted adhered to the preferred reporting item for systematic review and meta-analysis (PRISMA). This study was systematically searched in Scopus, PubMed, Web of Science, EBSCOhost, and Cochrane Central Register of Controlled Trials (CENTRAL) for peer-reviewed observational studies. In addition, hand-searching was conducted in ScienceDirect and Google to identify additional sources. The prevalence of the linkage of HIV care among Southeast Asian PLWH within a 95% confidence interval (CI) using a generalized log-linear model was extracted and estimated. We also estimate OR using the restricted maximum likelihood method and meta-regression to assess the association between linkage to care and participant characteristics, including demographic and clinical baseline characteristics. All statistical analysis were performed using a random effects model, and heterogeneity using the I² statistic.

Results: From an initial 3,240 articles, 22 studies with 108,971 pooled samples met the inclusion criteria and were analyzed. The estimated prevalence of linkage to care was 66.51% (95% CI: 53.27; 77.59). Linkage to care was higher in studies conducted within the past 10 years (76.35%, 95% CI: 59.53; 87.63) compared to those conducted more than 10 years ago (56.75%, 95% CI: 39.60; 87.63). The included studies covered eight Southeast Asian countries: Indonesia, Thailand, Myanmar, Vietnam, the Philippines, Cambodia, Singapore, and Lao PDR. Country-level estimates varied widely, ranging from 29.2% in Lao PDR to 97.41% in Singapore. The likelihood factors of linkage to care were significantly associated with individuals with college education (OR = 2.29, p = 0.02). However, gender, marital status, occupation, HIV-transmission, and CD4 count were not significantly associated with linkage to care. Meta-regression analysis showed that none of the assessed factors were significantly associated with linkage to care.

Conclusions: The prevalence of linkage to HIV care in Southeast Asia remains below the global target of 95%, with significant variability across studies and populations. Public health strategies and nursing targeted interventions that address educational and literacy barriers are needed to improve linkage to HIV care in the region and advance toward achieving global HIV goals.

Keywords: continuum of care, HIV, HIV care, linkage to care, Southeast Asia

19 AI-powered patients and beyond: A scoping review of generative artificial intelligence in simulation-based healthcare education

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Aim(s): The integration of generative artificial intelligence (GenAI) into simulation-based learning has become increasingly prevalent. This scoping review aimed to comprehensively examine the current landscape of GenAI use in simulation-based education.

Methods: A search of six databases (Medline, CINAHL, Embase, Web of Science, PsycINFO, ERIC) and two grey literature sources (ProQuest Dissertations and Theses Global, Google Scholar) was conducted from inception until 21 February 2025. Of the 2,355 records initially retrieved, 1,681 were screened by two independent reviewers at the title and abstract level, with 186 progressing to full-text assessment. Included studies were mapped for study characteristics and GenAI-related features. Outcome measures were categorised according to the New World Kirkpatrick Model. Benefits, limitations, and ethical considerations associated with GenAI use in healthcare simulation were additionally synthesised.

Results: The 28 included articles, published between 2023 and 2025, were primarily drawn from medicine (n = 14) and nursing (n = 10). GenAI-enhanced simulation was perceived as accurate, realistic, and feasible (Kirkpatrick Level 1), with early evidence indicating benefits as an adjunct to conventional simulation and improvements in knowledge, communication, and non-technical skills (Kirkpatrick Level 2). Applications spanned the simulation phases, with GenAI used to design and develop activities (n = 7), portray simulated characters (n = 16), and deliver automated feedback (n = 7). Additionally, one study employed GenAI-produced video backstories during pre-briefing, while another supplemented instructor-led debriefing with access to a GenAI chatbot. A maturation of GenAI use was also evident across the included studies, marked by the migration to newer GPT models, the employment of advanced GenAI functionalities, and the development of prompt testing frameworks.

Conclusions: Future work in GenAI-enhanced simulation should address applications in under-explored simulation phases (e.g. pre-briefing and debriefing), alongside AI competency development among simulation educators and hybrid intelligence approaches that integrate human and artificial cognition.

Keywords: artificial intelligence, nursing education, large language model, simulation training, virtual reality

20 Evaluation of users' experiences with an AI-enabled self-help and mutual support application

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Aim(s): We developed *kiku-kiku*, an Artificial Intelligence (AI)-enabled application to promote self-help and mutual support for mental health. It enables users to assess their mental health status, access coping strategies shared by others, and share their own coping experiences. These functions are designed to promote self-regulation while fostering mutual support. The application includes a five-item stress check, AI-generated coping strategy recommendations, browsing coping strategies posted by other users, and posting one's own coping strategies. This study evaluated users' experiences following the pilot implementation of the application and identified areas for improvement.

Methods: Thirty-two individuals affiliated with the authors' department, including seminar students and former participants in educational workshops, were invited to use the application for one week in June, 2026 and complete an anonymous questionnaire using Google Forms questionnaire. Participation was voluntary. Ethical approval was obtained (RRB26-010-2). The questionnaire included participant characteristics, application use frequency, the Japanese version of the System Usability Scale (SUS), user experience items rated on a 1-10 linear scale, and open-ended questions. Responses were analyzed using Microsoft Excel.

Results: Sixteen participants completed the survey (response rate: 50.0%). The most common usage frequency was four to five times (n=7). Ratings for interest in others' coping strategies and the usefulness of sharing one's own experiences showed. Based on SUS Ranges, eight participants were classified as "Acceptable–Marginal High." The open-ended responses indicated that participants appreciated the application's ease of use and expressed interest in coping strategies shared by other users.

Conclusions: The application demonstrated acceptability and usability, indicating the need for clearer guidance on its purpose and use. Encouraging users to share coping strategies may enrich the application's resources. Further refinement of AI functions is needed to provide more individualized stress assessment and context-appropriate coping recommendations.

Keywords: application, artificial intelligence, mental health, mutual support, self-help

21 Harnessing artificial intelligence in emergency care: A scoping review

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Aim(s): To identify and map the available evidence on the use of artificial intelligence in emergency care, including the types of AI technologies applied, their clinical and operational applications, reported outcomes, and implementation challenges.

Methods: A scoping review was conducted using the Arksey and O'Malley framework refined by the Joanna Briggs Institute and reported according to PRISMA-ScR. Scopus, Taylor & Francis Online, and ProQuest were searched for original studies examining AI in emergency departments, prehospital services, or emergency medical services. Of 947 records identified, 47 duplicates and 669 records were removed before screening. A total of 231 titles and abstracts were screened, 21 full-text articles were assessed, and 19 studies were included. Data were synthesized descriptively and thematically.

Results: Nineteen studies published between 2019 and 2026 were included. Three themes emerged: triage automation and accuracy, clinical outcome prediction, and operational efficiency and patient safety. Machine learning, deep learning, natural language processing, and large language models supported FRENCH, ESI, KTAS, CTAS, and MTS triage systems. Several models matched or exceeded conventional triage performance and predicted hospitalization, intensive care admission, mortality, and length of stay more accurately than SOFA or ESI. AI-supported systems also reduced decision time and documentation burden. Major limitations included retrospective and single-centre designs, class imbalance, overfitting, and limited prospective validation.

Conclusions: AI has substantial potential to strengthen triage, early risk stratification, and operational efficiency in emergency nursing. Nevertheless, it should complement rather than replace nurses' clinical judgement. Safe implementation requires prospective validation, explain-ability, ethical governance, institutional readiness, and AI competency among emergency nurses.

Keywords: artificial intelligence, clinical decision support, emergency care, emergency nursing, triage

22 Feasibility and effectiveness of a dyadic physical activity behavioral promotion program for breast cancer patients undergoing chemotherapy and their spouses

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Aim(s): To analyze the feasibility, acceptability, and preliminary effectiveness of a newly developed dyadic physical activity behavior promotion program for breast cancer patients undergoing chemotherapy and their spouses.

Methods: In this pilot study, eligible breast cancer patient-spouse dyads were recruited to participate in the intervention. A one-group pretest-posttest was conducted to comprehensively evaluate feasibility (recruitment, retention, participation, and adverse event rates), acceptability (participant satisfaction), and preliminary efficacy (physical activity, quality of life, sleep disorders, and couple intimacy). The intervention program itself was developed based on the interdependence theory and communal coping theory, a scoping review behavioral interventions targeting physical activity in cancer patient-spouse dyads, qualitative interviews (26 dyads), and Delphi expert consensus.

Results: The final developed intervention program consisted of eight thematic activities spanning two chemotherapy cycles, with each session lasting 30–45 minutes and delivered using a combination of online and offline formats. Fifteen patient-spouse dyads were enrolled in the pilot study. The intervention demonstrated good feasibility, with a recruitment rate of 57.69%, a retention rate of 73.33%, a participation rate of 84.17%, and no reported adverse events. Furthermore, it showed high acceptability, reflected by an overall satisfaction score of 4.85 ± 0.36 . The results showed modest improvements in physical activity levels, quality of life, couple intimacy, and spousal sleep disorders in patients and their spouses (effect sizes $d=0.67 \sim 1.22$).

Conclusions: The dyadic physical activity behavioral promotion program demonstrated high feasibility and acceptability, as well as its certain positive effects on physical activity, quality of life, couple intimacy and spousal sleep disorders. Future research should employ large sample randomized controlled trials to further validate the effectiveness of the intervention.

Keywords: breast cancer, couple, digital health intervention, physical activity

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