EAST ASIA COCHRANE ALLIANCE
EACA SYMPOSIUM 2025

Network Meta Analysis
Evidence-Based Health Care



2025.10.23~2025.10.24

Date
2025.10.23 (Thur.) ~ 2025.10.24 (Fri.)

Venue
Chang Yung-Fa Foundation International Convention Center
Taipei, Taiwan

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Network Meta Analysis
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AGENDA

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October 23, 2025 Thursday

AGENDA

08:30 - 09:00	Registration	
09:00 - 09:10	Welcome & Objectives	Ken N. Kuo / Cliff Chiehfeng Chen
09:10 - 10:00	Basic Assumptions of NMA and Key Concepts	Edwin Chan Shih-Yen
10:00 - 10:50	How to frame the research question and develop the NMA Protocol	Guo Liang
10:50 - 11:10	Tea Break	
11:10 - 12:00	Methods for searching and screening	Steve McDonald
12:00 - 12:20	Global Access, Local Impact: How the Cochrane Library Supports Everyday Healthcare Decisions	Ivy Yeo
12:20 - 13:00	Lunch Time/ Poster Session	
13:00 - 14:30	Statistical methods for NMA	Hisashi Noma
14:30 - 14:50	Tea Break	
14:50 - 15:30	Checking assumptions in a NMA	Yu-Kang Tu
15:30 - 16:30	Software demo; MetaInsight for NMA	Jia Hui Chai

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October 24, 2025 Friday

AGENDA

09:00 - 09:45	RoB 2.0: A revised tool to assess risk of bias in randomized trials.	Edwin Chan Shih-Yen
09:45 - 10:00	Intro to RoB2 Excel macro	Guo Liang
10:00 - 11:00	Certainty of Evidence for pairwise MA	Hyun Jung Kim
11:00 - 11:20	Tea Break	
11:20 - 12:20	Certainty of evidence for NMA	Edwin Chan Shih-Yen
12:20 - 13:40	Lunch Time/ Poster Session	
13:40 - 14:20	Excellent Poster Oral Presentation	Norio Watanabe / Heather Swan
14:20 - 15:30	Software demo:CINeMA (Confidence in Network Meta-Analysis)	Guo Liang
15:30 - 15:50	Tea Break	
15:50 - 16:50	Presentation and interpretation of results from NMA	Cliff Chiehfeng Chen

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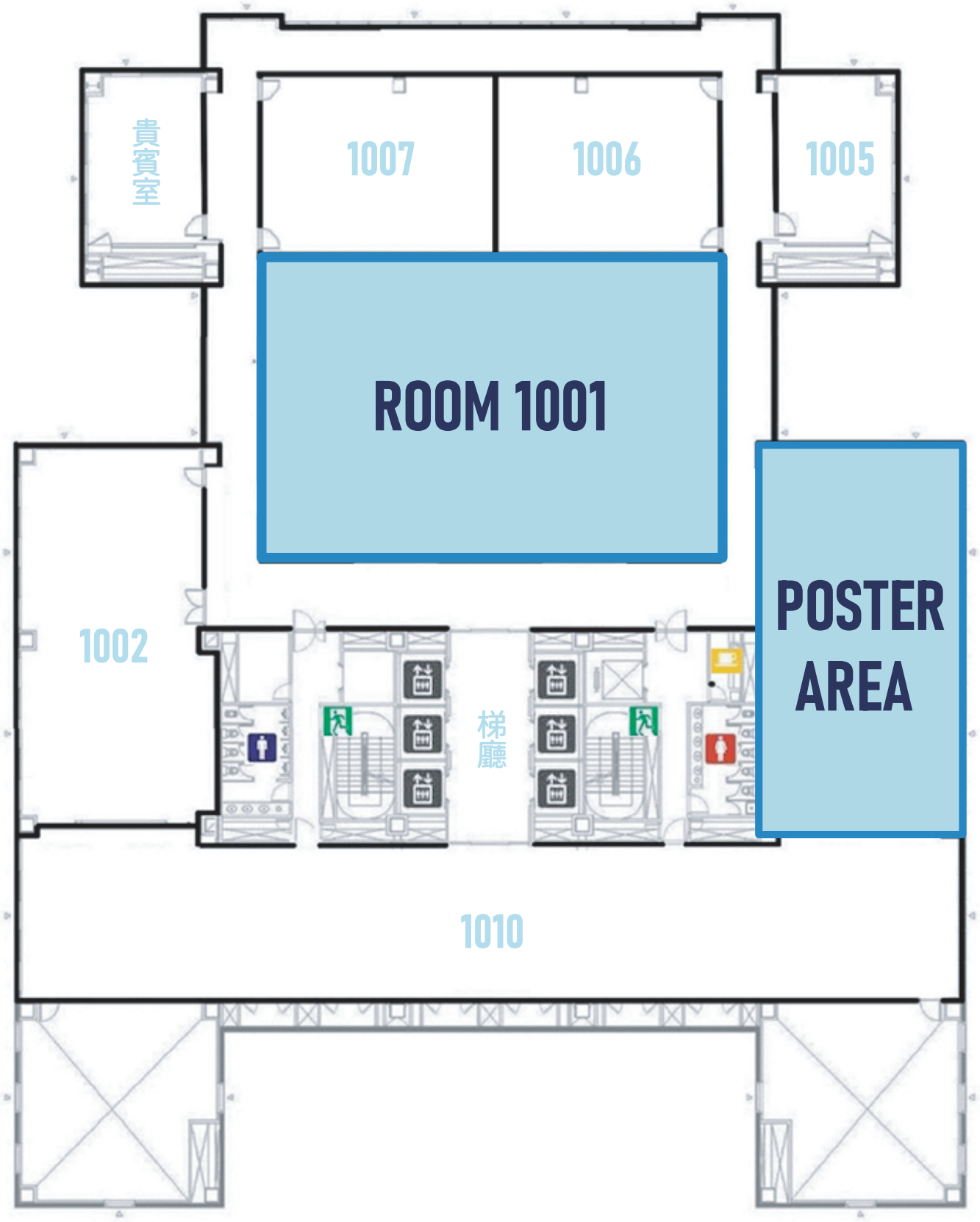
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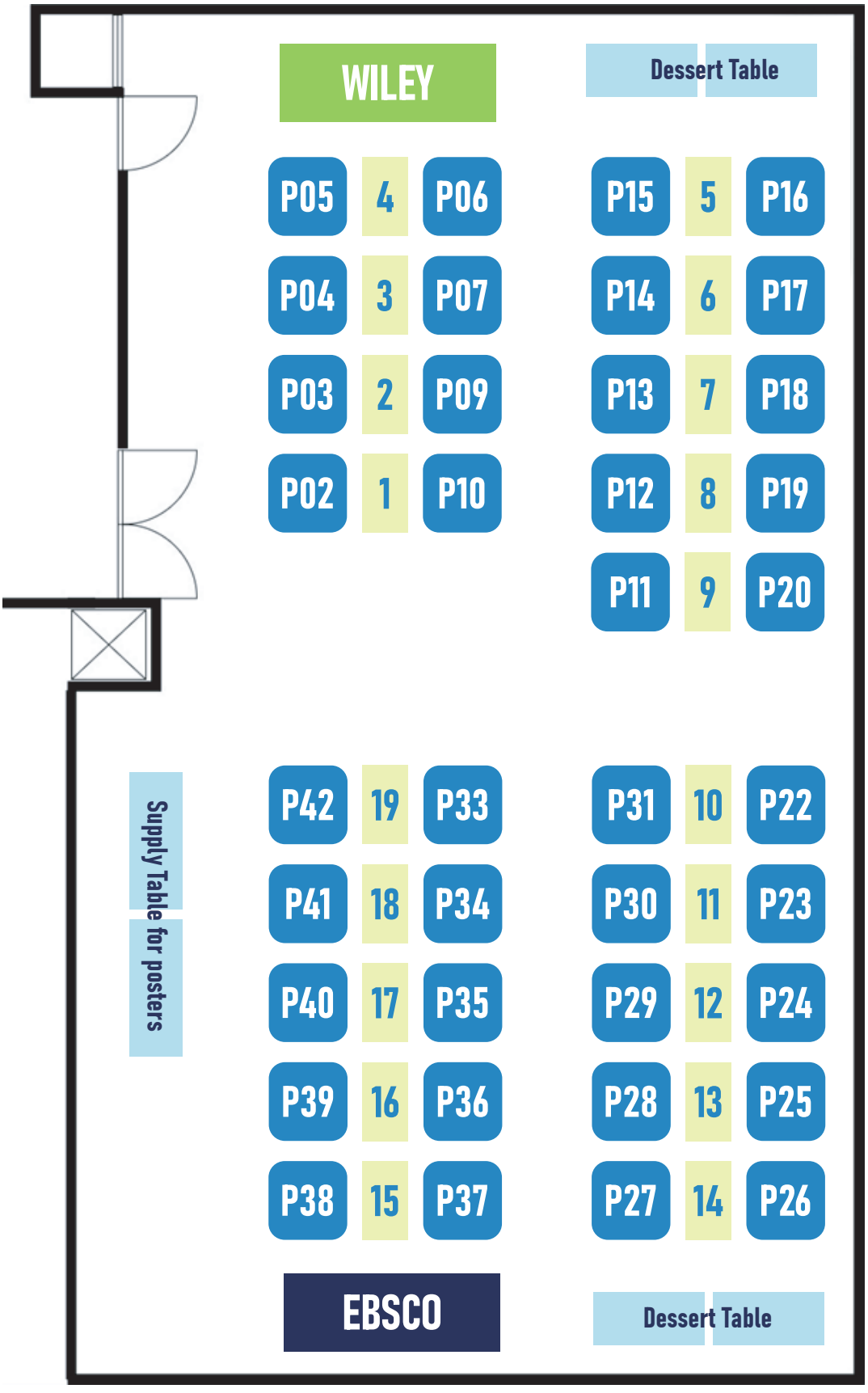
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MAP

VENUE FLOOR PLAN



VENUE FLOOR PLAN



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SPEAKERS





Cochrane Singapore

Edwin Chan Shih-Yen

Dr Edwin Chan trained in veterinary medicine, molecular virology and genetic epidemiology. He has over twenty years of experience as a clinical epidemiologist and is the Chief Scientific Officer of the Singapore Clinical Research Institute (SCRI), an Associate Professor at the Duke-NUS Medical School and the Director of Cochrane Singapore. He has previously served as Deputy Director of the NMRC Clinical Trials and Epidemiology Research Unit, Head of Scientific Management during the setting up of the National Registry of Diseases Office, a statistical consultant to the Singapore Health Sciences Authority and trainer to the Singapore Ministry of Health on the development of evidence-based clinical practice guidelines (CPG). He currently oversees the Biostatistics, Epidemiology and Research Monitoring teams at SCRI as they collaborate with clinician-researchers in the design, execution, analysis and reporting of clinical trials and observational studies.

Besides being active in primary research and systematic reviews, he has taught and organized over three hundred post-graduate workshops and courses on clinical research methodology and evidence synthesis. He currently co-teaches a module on critical appraisal of the research literature to graduate medical students and is a long serving member of an instututional research ethics committee.

Cochrane Singapore

Guo Liang



Dr Guo Liang is a Senior Epidemiologist in Singapore Clinical Research Institute, Consortium for Clinical Research and Innovation, Singapore. She is an active member of Cochrane Singapore. Dr Guo obtained her Bachelor of Medicine, Master of Public Health, and currently working on a Master program on Pharmaceutical Economics. Her working experience covers Centre for Disease Control and Prevention, tertiary hospital, and also research institute. She is experienced in syndrome surveillance, epidemics management, community health promotion, project management (birth cohort, and other various clinical research projects), protocols review, methodology consultation, and also delivering workshops on study design, clinical research, evidence synthesis, clinical practice guideline development, etc. Her research interest covers infectious and non-communicable disease, community health promotion, birth cohort, patient-reported outcomes, systematic review and meta-analysis, healthcare information analytics, program evaluation, and health services research. Over the years, she has broadly collaborated with partners from various medical fields, including field epidemiology, infectious epidemics, chronic disease management, community healthcare, occupational hazard, obstetrics, paediatrics, nephrology. She generates high-quality academic outputs and published several research articles in peer-reviewed journals.







Cochrane Australia

Steve McDonald

Steve McDonald is co-director and senior information specialist at Cochrane Australia based at Monash University, Melbourne. He has extensive experience conducting evidence syntheses for Cochrane and several government agencies, including WHO and Australia's NHMRC. His research interests include search strategy design, innovations to enhance the efficiency of study identification through automation, methods to support living systematic reviews and guidelines, and reporting of systematic reviews. He is the information specialist with the Australian Living Evidence Collaboration, working across several living guidelines, including those in stroke and pregnancy & postnatal care. He was part of the PRISMA 2020 group.

In 2024 he completed his PhD from Monash University, which explored new approaches for identifying evidence for living guidelines. Steve was a co-lead on Project Transform, a three-year flagship health evidence project funded by NHMRC and Cochrane, that developed machine classifiers to improve the efficiency of study identification. He was an elected member of Cochrane's Board of Directors from 2008 to 2015, and previously managed Cochrane's international training program.

Steve graduated in Social and Political Sciences from the University of Cambridge in 1991. In addition to his PhD, he has a Masters in Information Science from Loughborough University and a Graduate Diploma in International Health from Monash University.



Wiley

Ivy Yeo

Ivy is APAC sales manager, leads the Specialty Sales team across the Asia-Pacific region, driving strategic partnerships and delivering tailored solutions for corporate and healthcare institutions. With extensive experience in academic publishing, she works closely with a wide range of stakeholders to expand access to research and support sustainable growth. Ivy is passionate about aligning Wiley's offerings with evolving market needs and advancing evidence-based decision-making across the scholarly ecosystem.







Cochrane Japan

Hisashi Noma

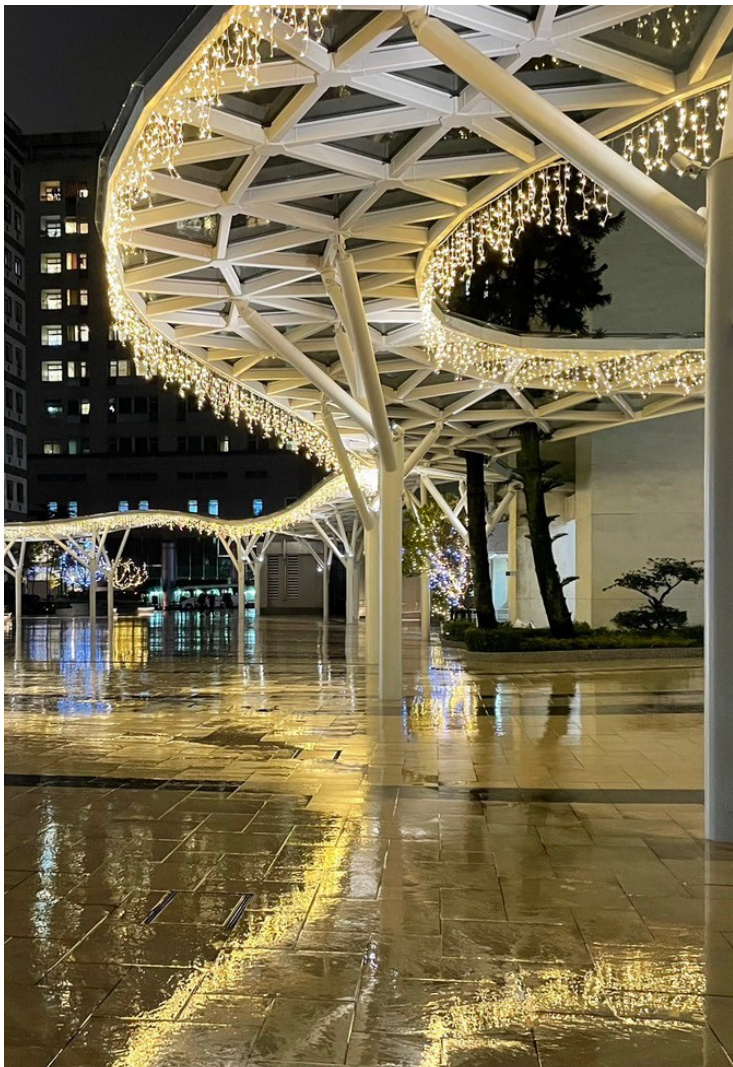
Dr. Noma is a Professor of Biostatistics at the Institute of Statistical Mathematics and the Graduate University for Advanced Studies. He has published over 200 peer-reviewed articles, many of which have appeared in leading statistical and medical journals. He has made many contributions to statistical methods for clinical epidemiology involving research synthesis methods. Dr. Noma has also extensive applied research experience in clinical and epidemiological studies.

Cochrane Taiwan

Yu-Kang Tu



Professor Yu-Kang Tu earned his dental degree from National Taiwan University and completed his specialist training in periodontology. He obtained a master's degree in periodontology from the Eastman Dental Institute at University College London. Subsequently, he pursued a PhD in Statistical Epidemiology at the University of Leeds in the UK, where he was later promoted to Principal Research Fellow. In 2012, he returned to Taiwan and joined the College of Public Health at National Taiwan University. He currently holds the position of Distinguished Professor and Associate Dean. Professor Tu has received several awards for his research and teaching, including the Outstanding Research Award from the National Science and Technology Council in Taiwan last year. His main research interests are advanced methods for evidence synthesis and causal inference in observational studies. He has published more than 400 peer-reviewed articles in international journals, such as BMJ, Lancet Oncology, Lancet Gastroenterology & Hepatology, Annals of Internal Medicine, Circulation, Gastroenterology, and Research Synthesis Methods.







Cochrane Singapore

Jia Hui Chai

Health Economist, Health Economics and Outcome Research (HEOR) department Singapore Clinical Research Institute, Consortium for Clinical Research and Innovation, Singapore Staff member, Cochrane Singapore Jia Hui Chai currently works as a Health Economist at the Health Economics and Outcome Research (HEOR) department, Singapore Clinical Research Institute (SCRI) – a business unit under Consortium for Clinical Research and Innovation, Singapore (CRIS). She is also a staff member of Cochrane Singapore. She received her undergraduate degree in Mathematics with Economics from the University of Malaysia Sabah, Malaysia, and master's degree in public health from the National University of Singapore (NUS). Prior to joining CRIS, she was a Research Associate at the Health Intervention and Policy Evaluation Research (HIPER) Center at the Saw Swee Hock School of Public Health at NUS. She has experience in teaching topics related to economic evaluation and the methods, and the use of R in network meta-analysis. Her research interests include health technology assessment, economic evaluation methods, health services research, evidence synthesis, and real-world data research.

Cochrane Korea

Hyun Jung Kim



Professor Hyun Jung Kim is a distinguished Professor of Public Health at Korea University and a leading authority in evidence-based medicine (EBM) and clinical guideline development in South Korea.

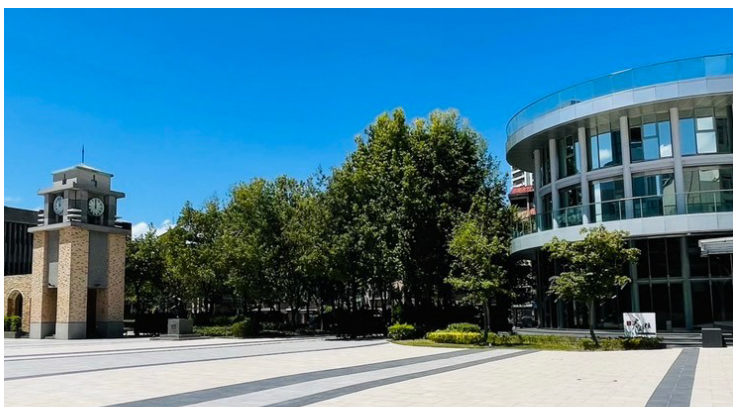
She co-founded Cochrane Korea in 2009 and served as its co-director before assuming the role of director in 2023. Over the past decade, she has been instrumental in developing more than 50 clinical practice guidelines, offering critical methodological support to various medical societies in Korea.

Beyond academia, Professor Kim plays an active role in shaping national healthcare policy. She serves as an advisory member of the Health Insurance Review & Assessment Service (HIRA) and as a clinical guideline specialist at the Korean Academy of Medical Sciences. She is also a founding member and academic director of the Korean Society of Evidence-Based Medicine, established in 2024.

Since 2015, she has been actively involved in launching and expanding the Choosing Wisely Campaign in Korea. Since 2020, she has provided methodological support for the development of the Choosing Wisely Korea Recommendations, working in collaboration with various Korean medical societies and the National Academy of Medicine of Korea to promote evidence-based, high-value care.

Professor Kim's contributions to evidence-based medicine have earned her commendations from the Minister of Health and Welfare in both 2016 and 2022. Recognized internationally, she was named among Elsevier’s World’s Top 2% Scientists.

A prolific researcher, she has published over 200 peer-reviewed articles in high-impact journals. She earned her PhD in Public Health from Korea University in 2010.







Cochrane Taiwan

Cliff Chiehfeng Chen

Dr. Chiehfeng Chen is a leading expert in plastic surgery and evidence-based medicine. He holds a PhD from Taipei Medical University, an MPH from Johns Hopkins University, and an MD from China Medical University. He is a chief plastic surgeon at Wanfang Hospital and Director of the Comprehensive Care Center for Burn and Complex Wounds and the Center for Evidence-Based Medicine.

As Director of Cochrane Taiwan, Dr. Chen promotes systematic reviews and meta-analyses to improve clinical practice. His research focuses on perioperative care, wound management, dermatology, and public health. He also advises Taiwan's National Health Insurance Dispute Mediation Committee and other healthcare boards. His contributions have made him a key figure in evidence-based medicine and public health policy.

Cochrane Japan

Norio Watanabe



Norio Watanabe, MD, PhD, is a psychiatrist–scientist based at a general hospital in Kyoto, Japan. He previously served as an Associate Professor at Kyoto University, where his research bridged sleep medicine, psychiatric epidemiology, and evidence synthesis. He is currently a Visiting Professor at Showa Medical University. Dr. Watanabe has led several randomized controlled trials investigating the effectiveness of brief behavioral therapy for insomnia, as well as mindfulness-based psychotherapy and omega-3 fatty acids for workplace burnout. He has extensive experience in conducting and teaching systematic reviews, and has co-authored network meta-analyses ranking the efficacy of antidepressants and hypnotics, published in high-impact journals such as The Lancet.

In addition to his academic research, Dr. Watanabe serves as Director of Cochrane Japan, where he has spearheaded nationwide evidence-based healthcare initiatives. Under his leadership, Cochrane Japan organizes annual training workshops for new systematic review authors—including healthcare professionals, researchers, and guideline developers—contributing to the wider dissemination and application of high-quality evidence in Japan.







Cochrane Korea

Heather Swan

Heather Swan is project manager at Cochrane Korea and the Institute for Evidence-Based Medicine at Korea University in Seoul. She obtained her master's degree in anthropology from the University of Ottawa. Her master's thesis explored the South Korean response to the COVID-19 pandemic. Her journey with Cochrane began in 2016, when she was a project assistant at the Cochrane Musculoskeletal Group in Ottawa, Canada. She has been an active member of Cochrane Korea for more than seven years. She has contributed to the development of clinical practice guidelines in collaboration with Korean medical societies. She has also co-authored numerous studies using Korea's National Health Insurance data.

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ORAL

Oral.01

Hepatitis B immunity and its potential effects on diabetes mellitus: A retrospective cohort study

AUTHORS AND AFFILIATIONS

Nhu Quynh Phan[1,2], Shih-Jung Lin[3], Ngoc Hoang Le[4], Van Thuan Nguyen[1], Tan Ha Mai[5], Jin-Hua Chen[6,7,8], Min-Huei Hsu[6], Dinh Khanh Hoang[1,9], Phung Manh Thang[2], Ya-Li Huang[10*], Chiehfeng Chen[10,11,12,13*]

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Background & Aims: Hepatitis B virus (HBV) infection affects glucose metabolism and increases diabetes risk; HBV vaccination may reduce this risk. The role of HBV immunity in diabetes prevention among individuals without HBV infection is underexplored. This study aims to evaluate whether HBV immunity reduces diabetes risk in individuals without HBV infection.

Methods: This retrospective cohort study used deidentified electronic medical records from TriNetX. Adults with hepatitis B surface antibody (HBsAb) results without a history of HBV infection or diabetes were identified. Diabetes was



defined on the basis of a diabetes diagnosis, diabetes medication use, or glycated hemoglobin ≥ 6.5%. Propensity score matching was conducted to balance demographics and comorbidities between groups.

Results: The HBV-immunized group had a 15% lower diabetes risk than did the HBV-unimmunized group (HR: 0.85, 95% CI: 0.84-0.87). A dose-response effect was observed, with higher diabetes protection at higher HBsAb levels. HBsAb levels of ≥100 and ≥1000 mIU/mL were associated with 19% and 43% reductions in diabetes risk, respectively, compared with HBsAb <10 mIU/mL. The diabetes protective effect was associated with age. Immunized individuals aged 18 to 44 years, 45 to 64 years, and ≥65 years had 20%, 11%, and 12% lower diabetes risks, respectively, compared with unimmunized individuals.

Significance/Impacts /Implications: HBV immunity may provide protection against diabetes, suggesting broader HBV vaccination as a dual-benefit strategy for the prevention of hepatitis B and diabetes, especially in regions with a high prevalence of both diseases.

Keywords: Hepatitis B, vaccination, immunity, diabetes mellitus, prevention

Oral.02

Oral aspirin for preventing colorectal adenoma recurrence: A systematic review and network meta-analysis of randomized controlled trials

AUTHORS AND AFFILIATIONS

Khanh Dinh Hoang[1,2], Jin-Hua Chen[3], Tsai-Wei Huang[4,5], Yi-No Kang[5,6,7], Chiehfeng Chen[5,8,9]

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8. Department of Public Health, College of Medicine, Taipei Medical University, Taipei, Taiwan
9. Division of Plastic Surgery, Department of Surgery, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan

Background & Aims: Colorectal adenomas have the potential for malignant transformation if left untreated. Multiple randomized controlled trials (RCTs) have been performed to evaluate the efficacy of aspirin in preventing colorectal adenoma recurrence in a population with a history of colorectal adenoma but not colorectal cancer, however, the relationship between aspirin dose and colorectal adenoma recurrence remains unclear. Therefore, the objective of this study is to clarify the relationship between the aspirin dose and colorectal adenoma recurrence and to determine the preferred aspirin dose range for clinical use for colorectal adenoma prevention.

Methods: We conducted pairwise meta-analysis, meta-regression, trial sequential analysis, and network meta-analysis of all eligible studies. The ROB 2.0 tool was used to assess the risk of bias in the studies. The confidence in the network meta-analysis (CINeMA) approach was used to evaluate the confidence of the network meta-analysis results.

Results: The network meta-analysis included eight RCTs (nine reports), comprising

four on aspirin (low or high dose) alone and four on aspirin combined with another

medication, all compared with placebo. In the



network meta-analysis, low-dose aspirin (LDA <300 mg per day) was more effective than high-dose aspirin (HDA >300 mg per day) and placebo, with risk ratios of 0.76 (95% CI: 0.58 to 0.99) and 0.7 (95% CI: 0.54 to 0.91), respectively. LDA was the optimal treatment relative to HDA and placebo (P-score = 0.99). In the trial sequential analysis, LDA was only more effective than placebo when the number of included participants exceeded the optimal information size; this was not the case for HDA.

Significance/Impacts /Implications: LDA has statistically significant efficacy for colorectal adenoma prevention, but compared with HDA, its efficacy remains uncertain. Further trials are therefore required.

Keywords: Oral aspirin, colorectal adenoma, randomized controlled trials, trial sequential analysis, and network meta-analysis

Oral.03

Single-use versus multiple-use gastrointestinal endoscopes: a systematic review and meta-analysis of clinical evidence

AUTHORS AND AFFILIATIONS

Dr Yen-Fu Chen[1,2], Ms Natalie Tyldesley-Marshall[1] , Prof Ramesh Arasaradnam[3,4], on behalf of the SUMU-Endo Project

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2. Department of Health and Welfare, University of Taipei, Taipei, Taiwan
3. Department of Gastroenterology and Hepatology, University Hospitals Coventry and Warwickshire, Coventry, UK
4. Warwick Medical School, University of Warwick, Coventry, UK

Background & Aims: Gastrointestinal (GI) endoscopy is a frequently performed procedure for diagnosis and treatment in gastroenterology. Traditional GI endoscopes require labour- and resource-intensive reprocessing before they can be re-used safely. However the risk of transmission of infection remains a potential concern. Single-use and partially single-use (multiple-use endoscopes with single-use components) endoscopes have been promoted as safer alternatives to multiple-use endoscopes, but a comprehensive review of comparative evidence is lacking. This systematic review aims to critically synthesize clinical evidence for single-use GI endoscopes compared with their multiple-use counterpart.

Methods: We searched the Cochrane Library, MEDLINE, EMBASE, Web of Science, and clinical trial registries to September 2024 for randomised and non-randomised comparative studies, diagnostic test accuracy studies and case series that assessed technical performance, diagnostic accuracy, infection risk, other adverse events and clinical effectiveness of single-use and partially single-use GI endoscopes. Studies providing estimations of infection risks associated with contaminated multiple-use GI endoscopes were also included. Two reviewers carried out study screening and selection, data extraction and risk of bias assessment. Where suitable data available, a random effects model was used to pool results across studies by individual endoscope models. Other evidence was summarised narratively. This project was funded by the UK NIHR Health and Social Care Delivery Research Programme (NIHR152311), and the protocol was registered on PROSPERO (CRD42024496913).

Results: We screened 6,979 citations, of which 50 studies (965,960 patients) were eligible. Twenty-three studies evaluated duodenoscopes, 24 assessed other upper gastrointestinal endoscopes, two evaluated endoscopes for lower gastrointestinal endoscopy, and one covered all three types. Pooled incidence of crossover from



single-use (EXALT Model D) to multiple-use duodenoscope during endoscopic retrograde cholangiopancreatography (ERCP) was 7% (95% CI 5% to 9%), with pooled procedure success rate of 69% (95% CI 45% to 90%) following crossover. Single-use/partially single-use endoscopes generally had slightly inferior technical performance and diagnostic accuracy compared with multiple-use endoscopes. Comparative data on infection risk were sparse and conflicting. Estimated clinical infection risks associated with contaminated multiple-use GI endoscopes ranged from 0.01% to 0.8% for ERCP. These risk estimations were highly uncertain as studies were at risk of detection and reporting bias, and often did not distinguish between infections caused by endogenous and exogenous pathogens. Very little comparative evidence on adverse events was reported.

Significance/Impacts /Implications: To our best knowledge, this is the most comprehensive systematic review covering different types of single-use GI endoscopes to date. Our findings suggest that, except for multiple-use duodenoscopes, infection risk associated with contaminated GI endoscopes appears very low. Reliable quantitative estimates of the risk are still lacking. Considering single-use endoscopes' inferior technical performance and diagnostic accuracy in some circumstances, current evidence does not support a blanket replacement of multiple-use GI endoscopes by single-use/partially single-use endoscopes.

Decisions for adopting single-use and partially single-use endoscopes should continue to be guided by specific clinical needs of individual patients including infection risk, technical performance of endoscopes, the purpose, urgency and accessibility of the endoscopic procedures, cost-effectiveness and environmental impact.

Keywords: single-use endoscope, gastrointestinal endoscopy, infection risk, test accuracy

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EXCELLENT POSTER

Excellent Poster.02

Effectiveness of simulation-based learning on nursing students' attitudes, willingness, and competencies in gerontological nursing: A meta-analysis of Randomized Controlled Trials

AUTHORS AND AFFILIATIONS

Burnett Chila Chiona[1], Jee Young Joo[3], Kee-Hsin Chen[4,5], Megan F Liu[2]

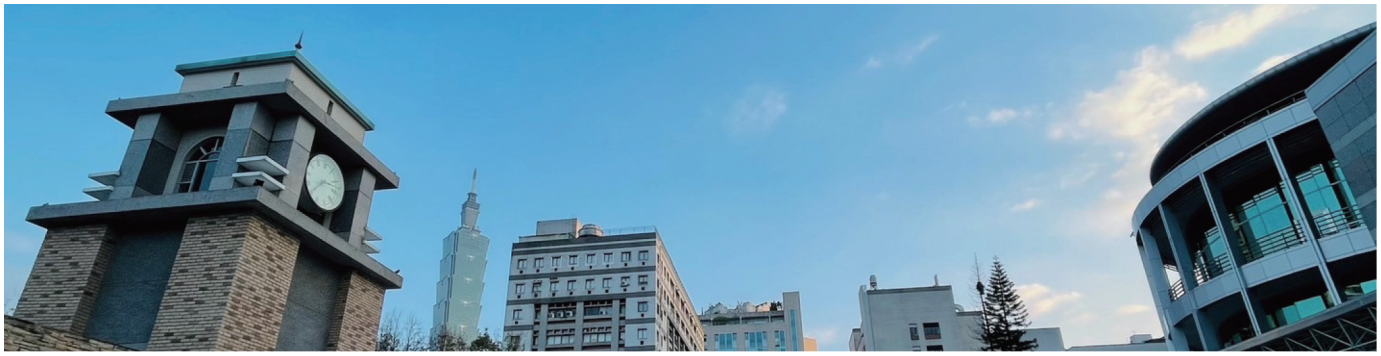
1. Int. PhD program in gerontology and long-term care, Taipei Medical University, Taipei, Taiwan
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4. Associate Professor, Post-Baccalaureate Program in Nursing, College of Nursing, Taipei Medical University, Taipei, Taiwan
5. Deputy Director & Chief Executive Officer, Cochrane Taiwan, Taipei Medical University, Taipei, Taiwan

Background & Aims: The growing global population of older adults necessitates more nurses with positive attitudes, competence, and willingness to provide gerontological and long-term care. However, research indicates that many nursing students lack these attributes. Simulation-based learning (SBL) is proposed as a promising teaching method to address this issue. This study therefore, was aimed to evaluate the effectiveness of Simulation Based Learning in improving nursing students' attitudes, willingness, and performance in gerontological nursing and long-term care-related competencies

Methods: This study is a meta-analysis of randomized controlled trials (RCTs). Embase, CNAHL, ERIC, and PubMed were the four databases that were searched. Studies that examined how SBL affects students' attitudes, willingness, and performance with respect to gerontological-related skills were included. The Cochrane RoB 2 risk of bias assessment tools were used to evaluate the quality of the included studies

Results: The study examined eight randomized controlled trials (RCTs) involving a total of 692 participants. The results show that SBL had no significant effect on improving nursing students' attitudes toward older adults (SMD= 0.22, 95% CI [-0.4,048], P=0.10) or their willingness to work with this population group (SMD= 0.31, 95% CI [-0.15, 0.78], P=0.19). However, SBL had a statistically significant effect on improving students' performance in gerontological and long-term care-related competencies (SMD= 1.48, 95% CI [0.67, 2.28], P <0.001).

Significance/Impacts /Implications: This study emphasizes the significance of simulation-based learning in gerontological nursing education, highlighting its role in enhancing competency development and improving practical application gerontological caring skills among nursing students.



Keywords: Nursing students; Simulation-Based Learning; Nursing Education; Gerontological nursing; Long-term care; Meta-analysis

Excellent Poster.03

Auricular acupressure improves chemotherapy-induced peripheral neuropathic symptoms in patients with colorectal cancer

AUTHORS AND AFFILIATIONS

Tsui-Ju Chang, MS, RN, AHN [1], Ting-Yun Chou, RA [2], Mei-Ling Yeh, PhD, DMS, RN, FAAN[2*]

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2. National Taipei University of Nursing and Health Sciences, Taipei City, Taiwan

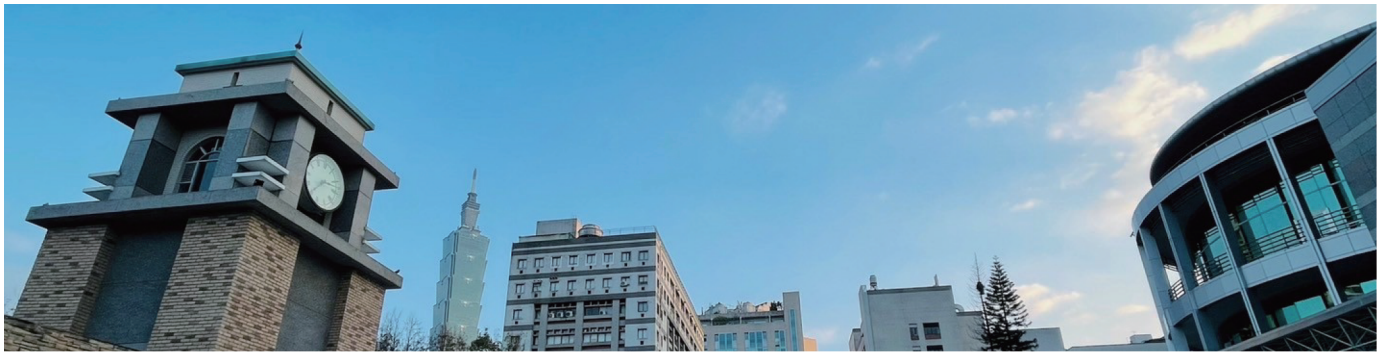
Background: Chemotherapy-induced peripheral neuropathy (CIPN) is a common adverse effect that worsens with increased drug accumulation, impacting patients' daily lives. These effects can be alleviated by auricular acupressure, a therapeutic method that stimulates the vagus nerve pathways in the inner ear, triggering signal transmission to the brain. This process can activate the central nervous system and the pituitary gland to release endorphins, producing pain-relieving effects for the body.

Aims: This study aimed to assess the impact of auricular acupressure on CIPN symptoms and interference with daily life in colorectal cancer patients.

Methods: This randomized controlled trial recruited patients with colorectal cancer and suffering CIPN from a medical center in Taiwan and randomly assigned them into two groups. The AA group (n=34) received acupressure on auricular points of TF4, AH6a, AT4, CO18, SF1, and AH2, administered five days a week for eight weeks. The control group (n=36) received usual care. Data were collected using the Neuropathic Pain Symptom Inventory, Visual Analog Scale, and CIPN Assessment Tool before and at regular 2-week intervals during the 8-week intervention, and 4-week after the end of the chemotherapy course.

Results: The mean age of participants was similar between the AA and control groups, 57.12 vs. 59.78 years. The results of the linear mixed models showed that the AA group had improvement in the interaction effects of group and time in symptoms throughout the intervention period ($p<.001$) and interference with daily life starting from the 4th week ($p<.01$) compared to the control group and the baseline.

Significance/Impacts /Implications: This study discovered that auricular acupressure effectively improved CIPN symptoms and interference with daily life in patients with colorectal cancer. The improvement was observed starting from the 4th week of the intervention and continued until the end. This suggests that auricular acupressure can be a viable option for clinical nursing professionals to care for cancer patients experiencing CIPN symptoms. It also indicated that auricular acupressure should be administered for at least four weeks to alleviate not only CIPN symptoms but also interference with daily life. This randomized controlled



trial aimed to evaluate the effect of auricular acupressure on CIPN symptoms and daily life interference in colorectal cancer patients. As a result, the 8-week auricular acupressure intervention improved patients' CIPN symptoms and interference.

The improvement started from the 4th week of the intervention and continued until the end. Auricular acupressure could be an option for nursing care for cancer patients. It also indicated that auricular acupressure should be administered for at least four weeks to alleviate not only CIPN symptoms but also interference with daily life.

Keywords: auricular acupressure, colorectal cancer, chemotherapy-induced peripheral neuropathy

Excellent Poster.04

Efficacy and safety of Enteral Nutrition Feeding Methods in ICU Patients: A Systematic Review and Network Meta-Analysis

AUTHORS AND AFFILIATIONS

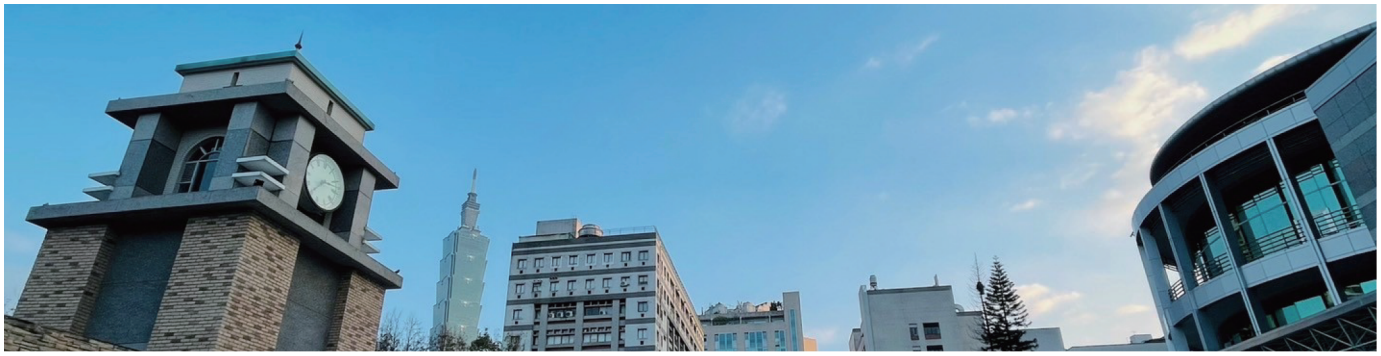
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Background & Aims: Enteral nutrition initiated early is advised for patients in critical condition. Among critically ill patients experiencing enteral feeding intolerance, both continuous and intermittent feeding approaches are commonly employed. Bolus feeding, though less frequently utilized in intensive care settings, offers benefits of convenience and cost-effectiveness. Currently, there is no consensus on the ideal method for enteral nutrition delivery. This network meta-analysis therefore sought to compare the impacts of continuous, intermittent, and bolus feeding techniques on efficacy and safety among critically ill patients.

Methods: We conducted both direct and indirect network meta-analysis using Bayesian models implemented in Stata (version 16.0). We systematically searched for randomized controlled trials (RCTs) comparing different tube feeding methods in ICU patients across three electronic databases: PubMed, Embase, and CENTRAL, with our search extending through March 15, 2025. Our primary outcome was mortality, while aspiration rate served as the secondary outcome. Results were expressed as risk ratios with 95% confidence intervals. Additionally, we calculated probability values for the efficacy of each tube feeding method and determined the optimal approach based on surface under the cumulative ranking curve (SUCRA) values for the primary outcome.

Results: Our network meta-analysis ultimately included nine RCTs with a total of 963 patients. Both continuous feeding and intermittent feeding demonstrated lower mortality rates compared to bolus feeding (RR 0.58, 95% CI 0.38 to 0.89; RR 0.66, 95% CI 0.45 to 0.96, respectively). Continuous and intermittent feeding showed similar outcomes with no significant difference between them (RR 0.88, 95% CI 0.53 to 1.44). Regarding aspiration rates, no statistically significant differences were found among the three tube feeding methods. SUCRA values for mortality efficacy across all studies indicated that continuous feeding had the highest probability of being the optimal feeding method in ICU settings (SUCRA 15.5%), followed by intermittent feeding (SUCRA 35.6%), and bolus feeding (SUCRA 99.8%).



Significance/Impacts /Implications: This study found that continuous feeding was more effective than intermittent and bolus feeding in reducing mortality among critically ill patients, as demonstrated by SUCRA values.

Keywords: Enteral nutrition, feeding methods, intensive care unit, network meta-analysis

Excellent Poster.05

Comparative Efficacy and Safety of Anticoagulants for Venous Thromboembolism in Patients with Cancer: A Systematic Review and Network Meta-analysis

AUTHORS AND AFFILIATIONS

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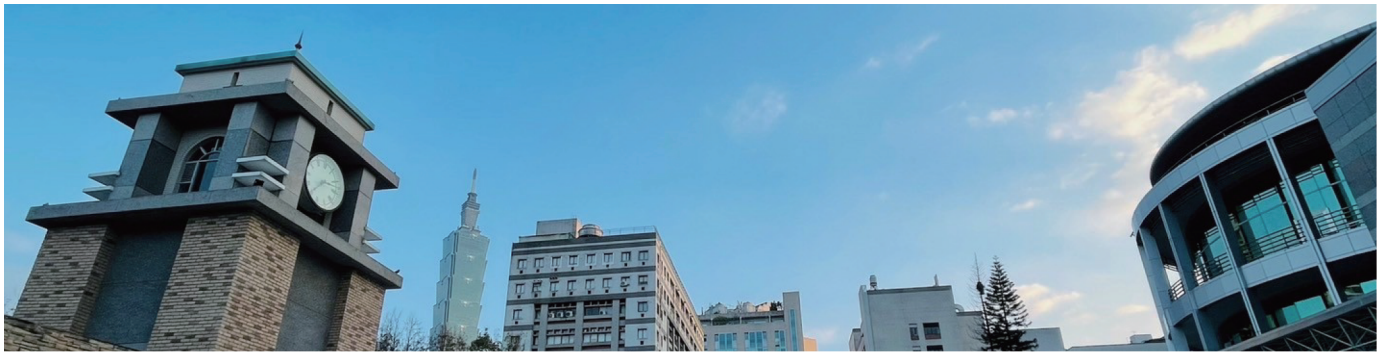
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Background & Aims: Venous thromboembolism (VTE) is a significant complication in cancer patients, necessitating effective and safe anticoagulation strategies. Direct oral anticoagulants (DOACs) have been proposed as an alternative to vitamin K antagonists (VKAs) and low molecular weight heparins (LMWHs), yet their comparative efficacy and safety remain unclear. This study aimed to evaluate the relative effectiveness of these anticoagulants in cancer associated VTE.

Methods: A systematic review and network meta-analysis (NMA) was conducted in accordance with PRISMA-NMA guidelines. We searched PubMed, Embase, and Cochrane Library for randomized controlled trials (RCTs) comparing DOACs, VKAs, and LMWHs in cancer patients with VTE. The primary outcome was recurrent VTE, while secondary outcomes included major bleeding and all-cause mortality. A Bayesian hierarchical model was applied to estimate relative treatment effects, and surface under the cumulative ranking curve (SUCRA) values were used to rank treatment efficacy.

Results: A total of 12 RCTs were included in the NMA. DOACs were associated with a significantly lower risk of recurrent VTE compared to LMWHs (RR: 0.66, 95% CI: 0.52–0.83). The SUCRA rankings for VTE prevention were DOAC: 0.9667, LMWH: 0.2792, and VKA: 0.2541, indicating that DOACs had the highest probability of being the most effective option. However, no significant differences were observed among the anticoagulants for major bleeding or all-cause mortality.

Significance/Impacts /Implications: DOACs demonstrated superior efficacy in preventing recurrent VTE compared to LMWHs, with the highest SUCRA ranking. However, their safety profile in terms of bleeding risk remains comparable to other anticoagulants. These findings support the use of DOACs as a preferred option for cancer associated VTE, while individualized risk assessment remains essential. Further real-world studies are warranted to confirm these findings in clinical practice.



Keywords: Cancer-associated thrombosis, direct oral anticoagulants, low molecular weight heparin, network meta-analysis, venous thromboembolism

Excellent Poster.06

Positive Pressure Extubation Technique for Reducing Aspiration Pneumonia to Intubated Patients in Intensive Care Unit: A Meta-analysis and Trial Sequential Analysis of Randomized Trials

AUTHORS AND AFFILIATIONS

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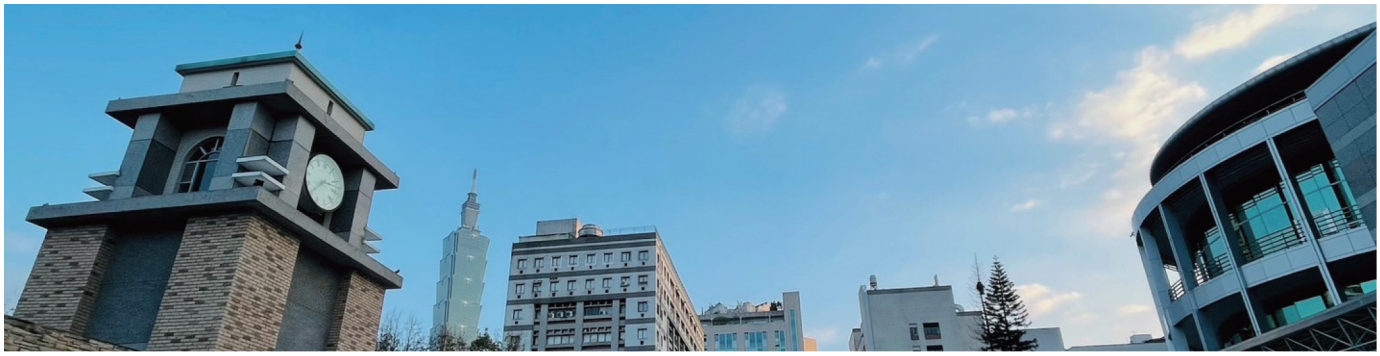
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Background & Aims: Negative pressure extubation technique is the conventional method for mechanically ventilated patients ready for extubation in the intensive care unit. However, deflating the endotracheal tube cuff and removing the tube may lead to aspiration of colonized secretions from the subglottic space, increasing the risk of aspiration pneumonia. In severe cases, such complication can result in extubation failure. Despite its routine use, the safety of this technique is rarely discussed. To evaluate the effectiveness of positive pressure extubation technique in reducing aspiration pneumonia in intubated patients, we conducted a systematic review and meta-analysis.

Methods: We conducted a search in PubMed, Embase, the Cochrane Library, and the ClinicalTrials.gov registry for trials published before April 2025. Individual effect sizes were standardized, and a meta-analysis was performed to calculate the pooled effect size using random-effects models in Review Manager 5.4. The incidence of aspiration pneumonia was assessed following endotracheal tube extubation. To enhance the robustness of the findings and reduce the risk of type I errors from repeated significance testing, trial sequential analysis was also conducted.

Results: A total of 13 trials involving 2,279 patients were included in the analysis. Among these, 6 trials specifically evaluated the incidence of aspiration pneumonia in intubated patients. In the positive pressure extubation technique group, patients were extubated without endotracheal suction after being disconnected from the ventilator. In contrast, in the negative pressure extubation technique group, patients were extubated after completing a spontaneous breathing trial (SBT), and with continuous endotracheal suction throughout the procedure. Patients who received PPET experienced a significantly lower risk of aspiration pneumonia (risk ratio: 0.55; 95% CI: 0.34–0.89; $p = 0.01$) compared to those who underwent NPET (Figure 1). Additionally, trial sequential analysis demonstrated that the Z-curve crossed the O'Brien-Fleming boundaries after the fourth cumulative significance test, indicating firm evidence (Figure 2).

Significance/Impacts /Implications: This study provides evidence that the positive pressure extubation technique significantly reduces the risk of aspiration pneumonia in mechanically ventilated patients compared to the conventional negative pressure method. Given the clinical consequences of aspiration-related



complications, adopting a safer extubation approach is crucial. The findings, further supported by trial sequential analysis, suggest that sufficient evidence has been reached to support a shift in clinical practice. Routine implementation of positive pressure extubation may enhance patient safety and improve extubation outcomes in critical care settings.

Keywords: Positive pressure extubation technique and negative pressure extubation technique

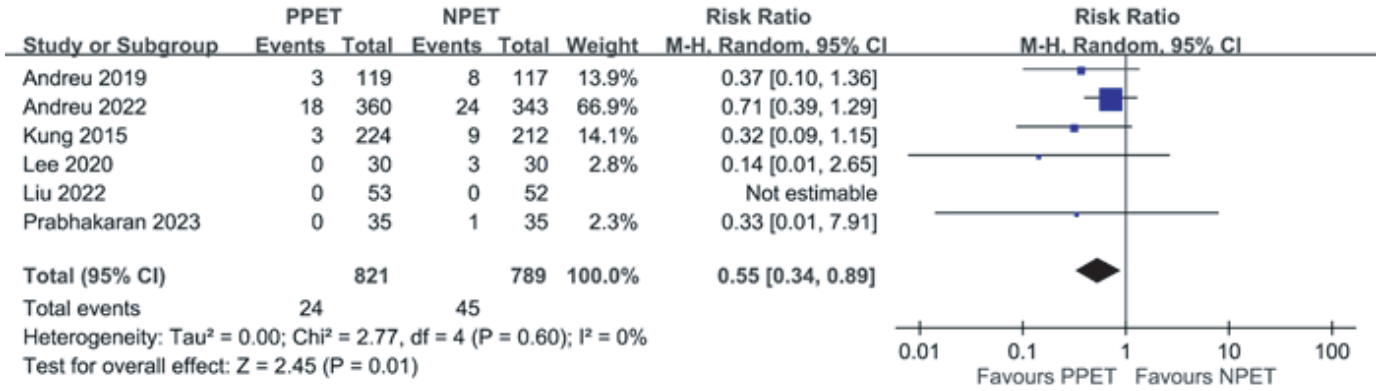


Figure 1. Forest plot of comparison: positive pressure extubation technique versus negative pressure extubation technique; outcome: incidence of aspiration pneumonia

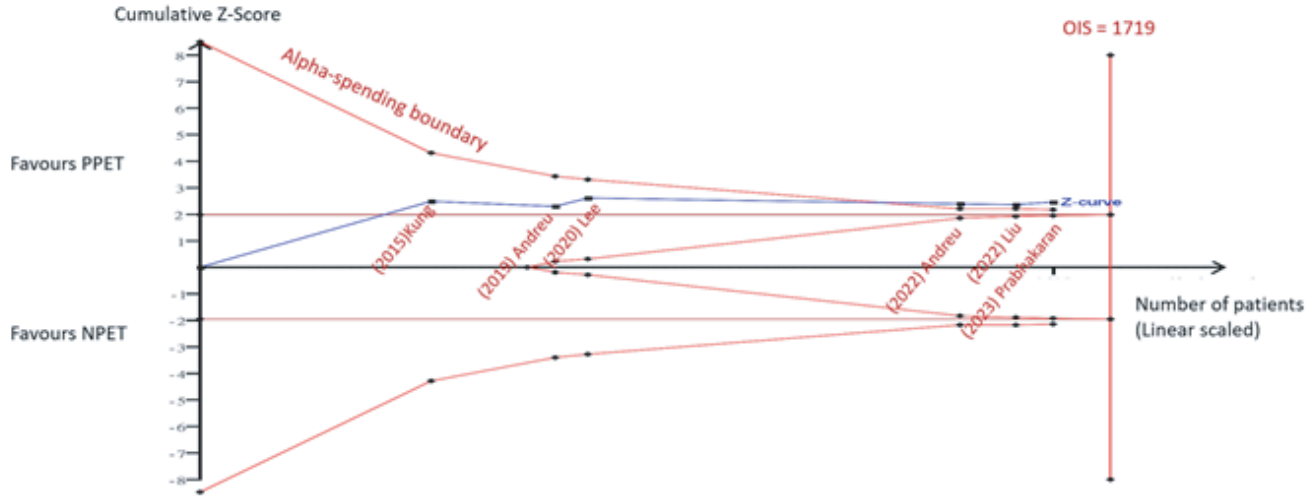


Figure 2. Trial sequential analysis of comparison: positive pressure extubation technique versus negative pressure extubation technique; outcome: incidence of aspiration pneumonia

Excellent Poster.07

The Effect of Electronic Books on Language and Emergent Literacy Development in Preschool Children

AUTHORS AND AFFILIATIONS

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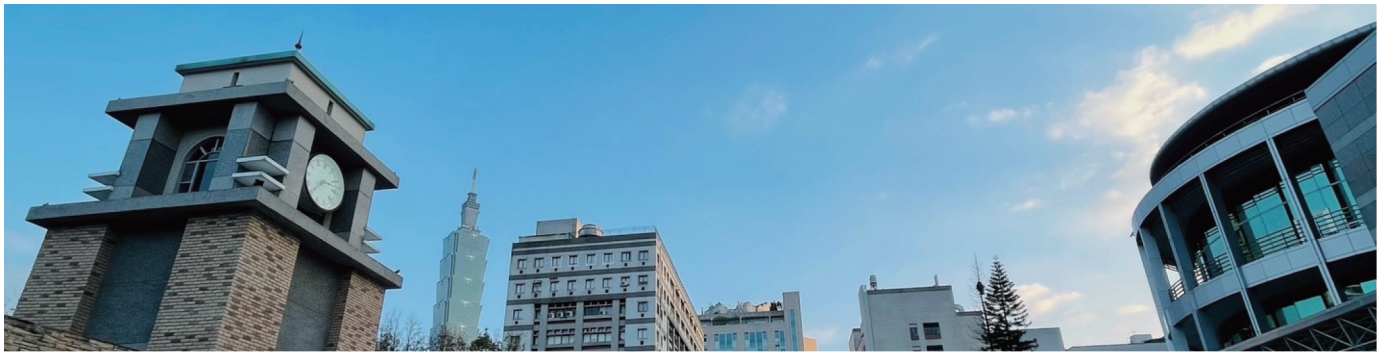
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Background & Aims: Picture books serve as an important tool for promoting the development of children's language and literacy skills, and they are also frequently used by speech-language pathologists as therapeutic materials. With the advancement of technology, electronic books (e-books) have become increasingly popular. Whether e-books can effectively enhance children's language skills is a subject of growing interest among researchers. This study applied the concept of evidence-based medicine to explore the effect of e-books on children's language and literacy skills, providing a reference for clinical shared reading with picture books.

Methods: A literature search was conducted across the Cochrane Library, PubMed, and Embase databases using keywords such as “electronic books,” “children,” “language,” and “emergent literacy.”

Results: The research findings showed that e-books can effectively promote vocabulary, phonological awareness, and print concepts in preschool children with typical development. In addition, children at risk for learning disabilities also demonstrated significant improvements in phonological awareness and vocabulary after reading e-books. Regarding e-book formats, animated e-books have been shown to increase children's attention and facilitate more effective vocabulary acquisition compared to static e-books. However, existing literature presents mixed findings concerning the impact of multimedia and interactive features embedded in e-books.

Significance/Impacts /Implications: E-books not only support the development of language and emergent literacy skills in preschool children with typical development, but also provide benefits for children at risk for learning disabilities. Whether the multimedia and interactive features of e-books are advantageous for children's language learning depends on the design of the e-book. If the e-book includes music and animations that are relevant to the story content, it can be beneficial for children. Additionally, by utilizing the dictionary feature in e-books, children can acquire new vocabulary and expand their vocabulary knowledge. Furthermore, the simultaneous highlighting of spoken words during audio narration can facilitate the integration of spoken and written language, thereby supporting literacy development. In the future, e-books may be used as therapeutic materials for children with learning disabilities in clinical language therapy practice, alongside printed books.



Keywords: electronic books; language; children; emergent literacy

Excellent Poster.08

Auricular acupressure improves chemotherapy- induced peripheral neuropathic symptoms in patients with colorectal cancer

AUTHORS AND AFFILIATIONS

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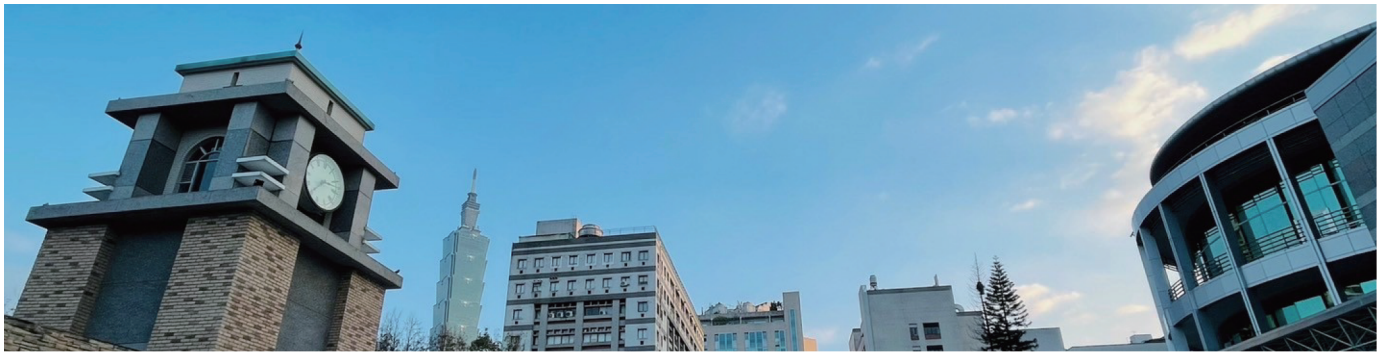
Background: Chemotherapy-induced peripheral neuropathy (CIPN) is a common adverse effect that worsens with increased drug accumulation, impacting patients' daily lives. These effects can be alleviated by auricular acupressure, a therapeutic method that stimulates the vagus nerve pathways in the inner ear, triggering signal transmission to the brain. This process can activate the central nervous system and the pituitary gland to release endorphins, producing pain-relieving effects for the body.

Aims: This study aimed to assess the impact of auricular acupressure on CIPN symptoms and interference with daily life in colorectal cancer patients.

Methods: This randomized controlled trial recruited patients with colorectal cancer and suffering CIPN from a medical center in Taiwan and randomly assigned them into two groups. The AA group (n=34) received acupressure on auricular points of TF4, AH6a, AT4, CO18, SF1, and AH2, administered five days a week for eight weeks. The control group (n=36) received usual care. Data were collected using the Neuropathic Pain Symptom Inventory, Visual Analog Scale, and CIPN Assessment Tool before and at regular 2-week intervals during the 8-week intervention, and 4-week after the end of the chemotherapy course.

Results: The mean age of participants was similar between the AA and control groups, 57.12 vs. 59.78 years. The results of the linear mixed models showed that the AA group had improvement in the interaction effects of group and time in symptoms throughout the intervention period ($p<.001$) and interference with daily life starting from the 4th week ($p<.01$) compared to the control group and the baseline.

Significance/Impacts /Implications: This study discovered that auricular acupressure effectively improved CIPN symptoms and interference with daily life in patients with colorectal cancer. The improvement was observed starting from the 4th week of the intervention and continued until the end. This suggests that auricular acupressure can be a viable option for clinical nursing professionals to care for cancer patients experiencing CIPN symptoms. It also indicated that auricular acupressure should be administered for at least four weeks to alleviate not only CIPN symptoms but also interference with daily life. This randomized controlled



trial aimed to evaluate the effect of auricular acupressure on CIPN symptoms and daily life interference in colorectal cancer patients. As a result, the 8-week auricular acupressure intervention improved patients' CIPN symptoms and interference.

The improvement started from the 4th week of the intervention and continued until the end. Auricular acupressure could be an option for nursing care for cancer patients. It also indicated that auricular acupressure should be administered for at least four weeks to alleviate not only CIPN symptoms but also interference with daily life.

Keywords: auricular acupressure, colorectal cancer, chemotherapy-induced peripheral neuropathy

Excellent Poster.09

A systematic review and network meta-analysis of acupuncture-related interventions on improving chemotherapy-induced peripheral neuropathy

AUTHORS AND AFFILIATIONS

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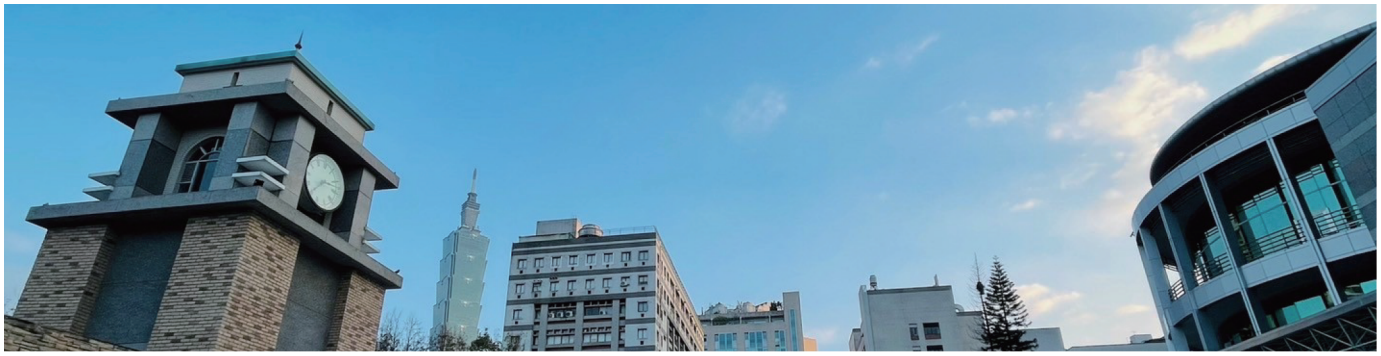
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Backgrounds: Chemotherapy-induced peripheral neuropathy (CIPN) is a common side effect that often causes dose reduction and even chemotherapy interruption, which may in turn negatively affect survival. The previous effects of acupuncture-related interventions in improving neuropathy-related symptoms remain unclear in terms of head-to-head comparisons.

Aims: This systematic review and network meta-analysis aimed to determine the hierarchical effects of acupuncture-related interventions on symptoms associated with CIPN in cancer patients receiving chemotherapy treatment.

Methods: Nine electronic databases were searched, including PubMed, Embase, Cochrane Library, EBSCO, Medline, Airiti Library, China National Knowledge Infrastructure, China Journal full-text database, and Wanfang. Medical subject heading terms and text words were used to search for eligible randomized controlled trials published from database inception to May 2023. Methodological quality was assessed using the Cochrane Collaboration tool to assess the risk of bias 2.0 and levels of confidence. Confidence in Network Meta-Analysis (CINeMA) software was used for network meta- analysis on the intervention effect on CIPN symptoms. The surface under the cumulative ranking curve (SUCRA) was used to determine the intervention hierarchy.

Results: A total of 33 RÇTs involving 2027 participants were included. Pairwise meta-analysis revealed acupuncture-related interventions were superior in effect to usual care, medication, or dietary supplements in reducing CIPN symptoms. In addition, transcutaneous electrical acupoint/nerve stimulation (TEAS) was significantly more effective than for usual care. Furthermore, network meta- analysis revealed that, overall, acupuncture with electrical stimulation (acupuncture-E) had the greatest effect among the various interventions. The SUCRA revealed acupuncture-E ranked highest effect in improving CINP symptoms. This finding suggests that acupuncture-related interventions can provide patients with benefits in improving CIPN symptoms. Especially, acupuncture-E could be the most effective approach in which the provided evidence offers diverse options for cancer patients and healthcare professionals.



Significance/Impacts /Implications: These findings provide insights into the potential benefits of acupuncture-related interventions for managing symptoms associated with CIPN in patients receiving chemotherapy. Among the various interventions, overall, acupuncture-E had the most significant impact and was effective for a minimum duration of 3 weeks. On the other hand, TEAS was identified as a non-invasive and feasible alternative for patients who had concerns about needles or the risk of bleeding. However, it is recommended that TEAS interventions should be carried out for a longer period, preferably lasting 4 weeks, in order to achieve optimal outcomes.

Keywords: acupuncture, chemotherapy-induced peripheral neuropathy, electrical stimulation, moxibustion

Excellent Poster.10

Chatbots for breast cancer education: a systematic review and meta-analysis

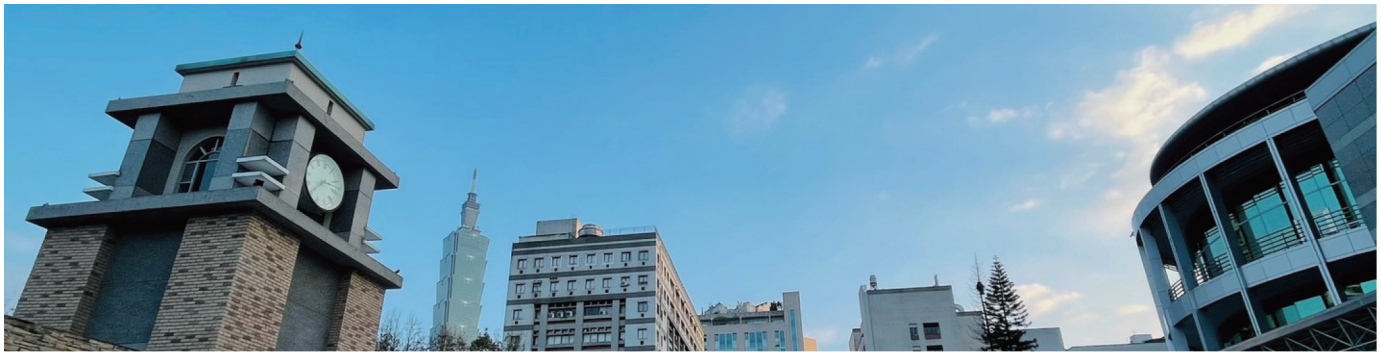
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\+ Kee-Hsin Chen and Chiehfeng Chen contributed equally to this work.



Background & Aims: Effective education and awareness regarding breast cancer are critical. Traditional educational methods often fail to meet the diverse information needs of patients. Patients should be provided with tailored, accessible information to improve their retention and understanding of disease-related information.

Methods: This review, which was conducted in accordance with PRISMA guidelines, included studies from MEDLINE, Embase, and the Cochrane Library up to May 2024. The main inclusion criterion was chatbot interventions for breast cancer education. Meta-analysis was performed using Review Manager and Open Meta-Analyst software.

Results: Of the 208 articles initially identified, 6 studies met the inclusion criteria, involving a total of 1342 women with early-stage or at-risk hereditary breast cancer. The meta-analysis revealed that most participants (85 to 99%) reported high satisfaction with chatbot interventions for breast cancer education, with no significant differences in satisfaction compared to genetic counselors or physicians. The chatbot interventions also showed positive effects on knowledge acquisition (mean proportion=90.8%) and alleviated patients' symptoms significantly more than routine care.

Significance/Impacts /Implications: This systematic review and meta-analysis evaluated the effectiveness of chatbots for providing breast cancer education. By examining patient satisfaction with and the usability and efficacy of chatbot interventions, this study seeks to support the integration of chatbot technology into cancer education.

Keywords: Chatbots, Breast cancer, Healthcare

Excellent Poster.11

Detecting Delirium in Older Adults: A Systematic Review and Network Meta-Analysis

AUTHORS AND AFFILIATIONS

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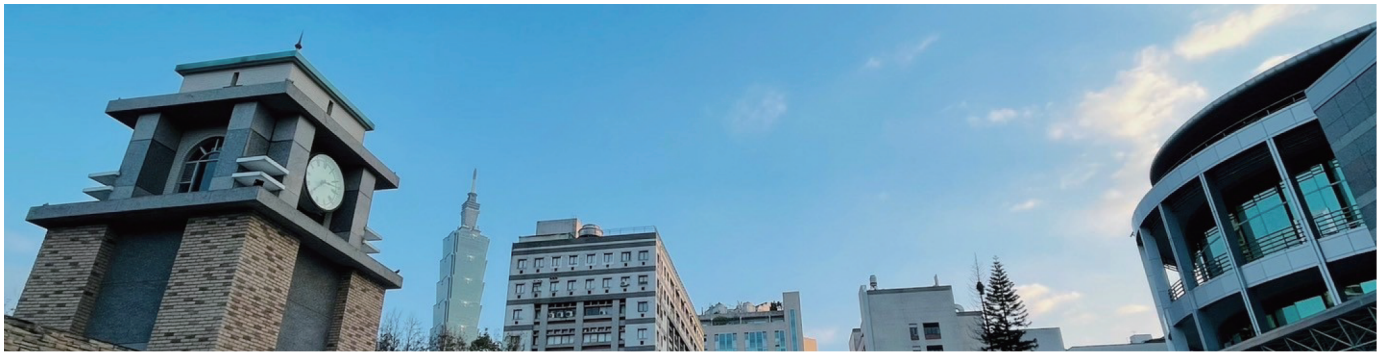
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Background & Aims: Delirium is a common problem for hospitalized elderly. Research has shown that more than 50% of elderly patients suffer from delirium, and delirium is associated with increased mortality, prolonged hospitalization, increased hospitalization costs, hampered functional status, and increased need for long-term care after discharge. However, almost half of the cases of delirium are still not recognized by healthcare providers in time. The specific purpose of this study is to compare the accuracy of a variety of screening methods commonly used by nursing staff, including sensitivity and specificity.

Methods: This research project was conducted according to the network meta-analysis (NMA) report guidelines provided in the first edition of the Cochrane Handbook for Systematic Reviews of Diagnostic Test Accuracy and the PRISMA expansion statement (Cornell, 2015). Use systematic literature review and NMA methods to explore the accuracy of different delirium assessment tools in empirical research, including sensitivity and specificity.

Results: Of 317 articles identified, 88 articles met inclusion criteria and were included in the final analysis. A total of 14,631 participants were included in these 88 studies. The participants' ages ranged from 65 to 99 years old; the incidence of delirium was 3% to 56.1%. Among the included studies, 80 articles were about a single diagnostic tool and 8 articles were about two diagnostic tools comparing the gold standard DSM III, DSM IV, or DSM V. The seven tools included in the analysis were (1) Confusion Assessment Method (CAM), (2) Clock Drawing Test (CDT)) (3)Delirium Observation Screening Scale (4) Neelon and Champagne Confusion Scale (5) 4 "A"s test (4AT) (6) Nursing Delirium Screening Scale (Nu-DESC) (7) Recognizing Acute Delirium as Part of Your Routine (RADAR). All seven diagnostic tools have moderate to high sensitivity and specificity. DOSS ranks the highest sensitivity and specificity.

Significance/Impacts /Implications: This study should be the first systematic literature review to use network meta- analysis to investigate the DTA for delirium in elderly patients in non-ICU settings. The tool with the highest diagnostic accuracy is the Delirium Observation Screening Scale (DOSS), with a sensitivity and specificity of 0.899 and 0.905, respective-



ly. In non-ICU settings, the prevalence of delirium ranges from 3 to 56.1%. The results of this study can provide nurse staff with an evidence-based reference when choosing delirium assessment tools, so as to detect suspected patients as early as possible and to provide appropriate treatments.

Keywords: Delirium, Diagnostic Test Accuracy, Network Meta-Analysis

Excellent Poster.12

Effects of maternal voice on pain among hospitalized infants: Systematic review and meta-analysis of Newborn Infant Pain Scale

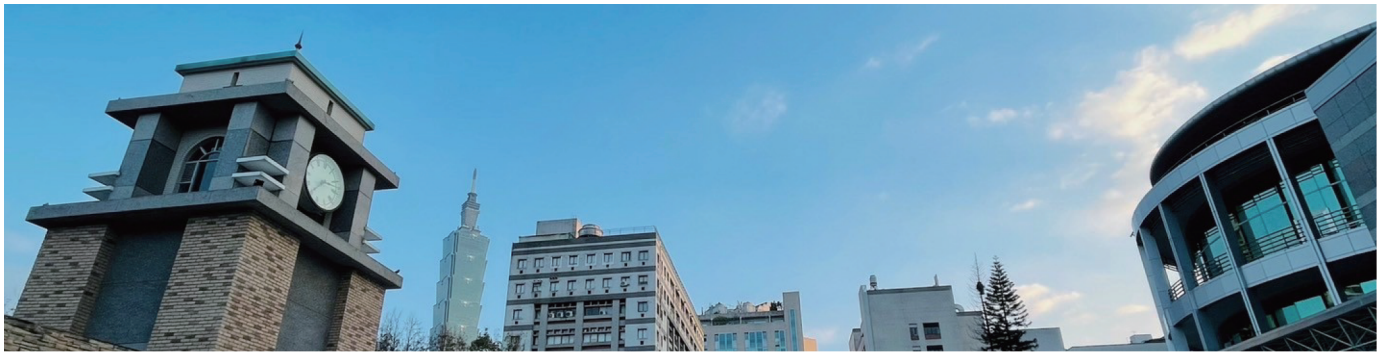
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Background & Aims: Experiencing painful procedures is an inevitable part of medical care for the hospitalized infants. Mother's voice appears to be a pain relief for hospitalized infants during painful procedures. Among the many instruments available to assess the pain response in infants, Newborn Infant Pain Scale (NIPS) is the most widely used. The aim of this review is to synthesize the best available evidence on the effectiveness of maternal voice in reducing NIPS pain scores in hospitalized infants during painful procedures.

Methods: Databases including PubMed, EMBASE, Science direct, ProQuest, CINAHL, China National Knowledge Infrastructure, National Digital Library of Theses and Dissertations in Taiwan, Airiti Library, and Google scholar, were searched for randomized controlled trials (RCTs) involving the effects of maternal voice on the procedural pain of neonates from inception to March 31, 2025. The systematic literature review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Two reviewers independently searched, screened, and evaluated the methodological quality of the inclusion studies. The Critical Appraisal Skills Programme (CASP) was used to appraise the quality of the reviewed studies. RevMan 5.3 software was used for the meta-analysis. The heterogeneity test was highly significant ($p < .05$) with the degree of heterogeneity of 71-98%. Data were pooled using random-effects models.



Excellent Poster.13

Effects of enhanced recovery after surgery on the length of hospital stay of gynecological patients: Systematic review and meta-analysis

AUTHORS AND AFFILIATIONS

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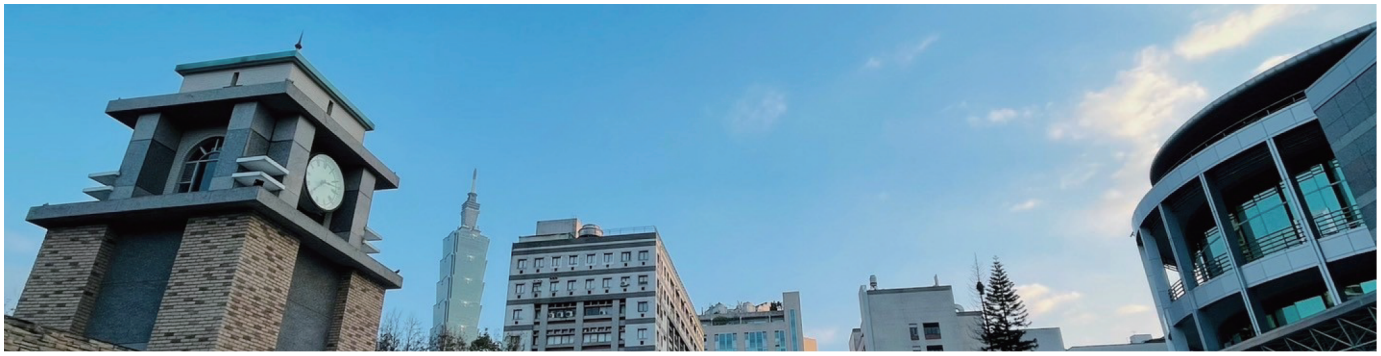
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Background & Aims: With the continuous evolution of surgical techniques, including minimally invasive techniques and personalized treatment strategies for patients with endometrial cancer and ovarian cancer, the recovery efficiency of gynecological patients after surgery has been greatly improved. Compared with the progress of surgery itself, the optimization of care throughout the entire surgical period is still insufficient in clinical practice. ERAS is an integrated, multi-disciplinary, evidence-based care model. Recent empirical reports have shown that Enhanced Recovery After Surgery (ERAS) can help postoperative patients resume physical activities and improve their quality of life better than traditional routine care. The aim of this review was to synthesize the effects of ERAS on the length of stay of gynecological patients.

Methods: The systematic literature review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Databases including PubMed, The Cochrane Library, EMBASE, and Airiti Library, were searched for randomized controlled trials (RCTs) involving the PICO, P: "surgery" or "postoperative", I: "Enhanced Recovery After Surgery" or "ERAS", C: "standard care"; O: "length of stay" or "LOS" or "hospital stay" from inception to April 11, 2025. Two reviewers independently searched, screened, and evaluated the methodological quality of the inclusion studies. The Critical Appraisal Skills Programme (CASP) was used to appraise the quality of the reviewed studies. RevMan 5.4 software was used for the meta-analysis.

Results: A total of 6 high-quality RCTs were included in this systematic review. Mean and standard deviation for the length of stay were used as the main outcomes. The heterogeneity test was highly significant ($p < .001$) with the degree of heterogeneity of 96%. Data were pooled using random-effects models. Our meta-analysis revealed that the length of stay for gynecological surgery patients who received the ERAS program was significantly shorter than that of the usual care group (mean differences = -12.75 hrs., 95% confidence interval = -20.76 to -4.75, $p = .002$).

Significance/Impacts /Implications: Although the included studies were highly heterogeneous—likely due to differences in disease categories, surgical approaches, hospital settings, and the specific composition of



ERAS protocols—the overall trend across the literature was consistent: ERAS significantly shortened hospital stays for gynecologic surgical patients by at least half a day. In Taiwan, where hospital bed shortages and limited medical resources are ongoing challenges, even such a reduction can meaningfully improve patient turnover, reduce healthcare costs, and optimize resource allocation. The implementation of ERAS is more than a strategy to shorten hospital stays—it represents a transformation in care delivery toward holistic, coordinated, and patient-empowering approaches. As clinical healthcare professionals, we see ERAS as a valuable platform to foster interprofessional collaboration, apply evidence-based nursing, and promote active patient participation.

Keywords: Enhanced Recovery After Surgery, gynecological patients, the length of stay

Excellent Poster.14

The effects of Lee Silverman Voice Treatment (LSVT)-BIG in patients with Parkinson's disease: a systematic review and meta-analysis

AUTHORS AND AFFILIATIONS

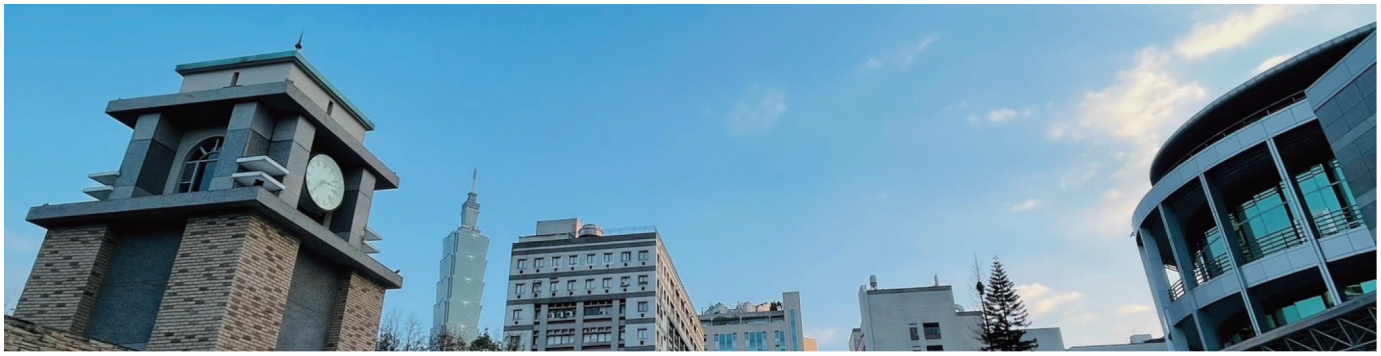
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Background & Aims: Parkinson's disease (PD) affects both motor and non-motor functions, resulting in reduced mobility and quality of life. Developed in 2005, the Lee Silverman Voice Treatment-BIG (LSVT- BIG) program focuses on high-intensity training involving large- amplitude movements for individuals with PD. While some research has reported positive outcomes in functional performance following LSVT- BIG, the results have been inconsistent. Therefore, this study aims to compare the effectiveness of LSVT- BIG with other structured exercise protocols on motor function, balance, and quality of life in individuals with PD.

Methods: This study followed a pre-specified protocol in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols guidelines. A comprehensive literature search was conducted across databases including PubMed, Google Scholar, Scopus, Medline, and Airiti Library up to April 2025. Eligible studies were randomized controlled trials involving individuals with Parkinson's disease, interventions utilizing LSVT-BIG, and outcomes related to motor function, functional mobility, or quality of life. The mean difference (MD) was used to estimate effect size, with a 95% confidence interval (CI) to express the precision of the estimate. The level of statistical significance was set at $p < 0.05$.

Results: A total of seven studies were included in the analysis. Compared to conventional structured exercise protocols, the LSVT-BIG intervention demonstrated a significantly greater improvement in the 10-meter walk test (MD: –0.653, 95% CI: –1.249 to –0.056), indicating enhanced gait speed. However, no significant differences were observed between the LSVT-BIG and comparison groups in the Unified Parkinson's Disease Rating Scale Part III (MD: –1.905, 95% CI: –4.700 to 0.891), the Timed Up and Go test (MD: –0.433, 95% CI: –1.264 to 0.397), or the Parkinson's Disease Questionnaire-39 (MD: 0.443, 95% CI:–2.728 to 3.614).



Significance/Impacts /Implications: The LSVT-BIG significantly improved 10-meter walk test performance, suggesting its effectiveness in enhancing gait speed and supporting its use in Parkinson's rehabilitation. These findings support the integration of LSVT-BIG into clinical rehabilitation programs aiming to improve ambulatory function and reduce fall risk.

Keywords: Motor function, Functional mobility, Quality of life

Excellent Poster.15

Integrating AI and Equity into Information Literacy Training for Medical and Physician Assistant Students

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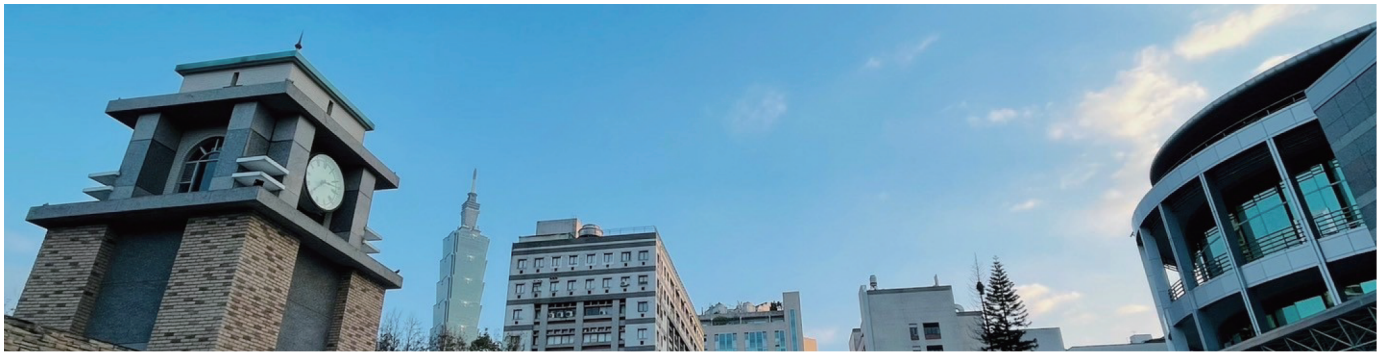
Background & Aims: Information literacy instruction is a core component of early medical and physician assistant (PA) education. At our institution, we identified the need to update our existing PubMed-based sessions to align with student preferences for interactive, socially relevant content and the institution's emphasis on health equity and responsible AI use in clinical care. This project aimed to redesign information literacy sessions by integrating diversity, equity, and inclusion (DEI) principles and AI competencies through a case-based, interdisciplinary approach.

Methods: The revised curriculum centers on a clinical scenario involving an uninsured Latino farmworker experiencing respiratory distress due to wildfire smoke at a rural outreach event. Students apply the PICO framework to formulate clinical questions and use PubMed to locate evidence. The session incorporates point-of-care (POC) tools (UpToDate, DynaMed, Lexicomp, VisualDx) and generative AI tools (ChatGPT, Elicit, Open Evidence) to simulate decision-making for diagnosis, testing, and treatment. Group discussions focus on evaluating AI outputs, recognizing bias in clinical tools (e.g., pulse oximetry), limitations of POC tools in managing patients with multimorbidities, and exploring ethical considerations in AI-assisted care.

Results: The revamped class will launch in January. Evaluation in March will assess student outcomes in three areas: (1) integrating AI tools with traditional evidence-based resources, (2) critical appraisal of retrieved evidence, and (3) ethical awareness of AI use in clinical decision-making. Pre- and post-class surveys, as well as reflective responses, will inform ongoing refinement.

Significance/Impacts /Implications: This updated curriculum takes a practical, student-centered approach to demonstrate a thoughtful approach to integrating traditional literature-searching skills with emerging technologies in clinical care. By anchoring the session in a real-world case focused on health equity and embedding reflective exercises around the ethical use of AI, the course encourages students to think critically about how they can deliver evidence-based, equitable, and patient-centered care.

Keywords: Information literacy, Medical edu-



cation, Evidence-based practice, Literature searching

Excellent Poster.16

Effectiveness of Respiratory Muscle Training on Dyspnea and Pulmonary Function in Patients with Long COVID: A Systematic Review and Meta-analysis

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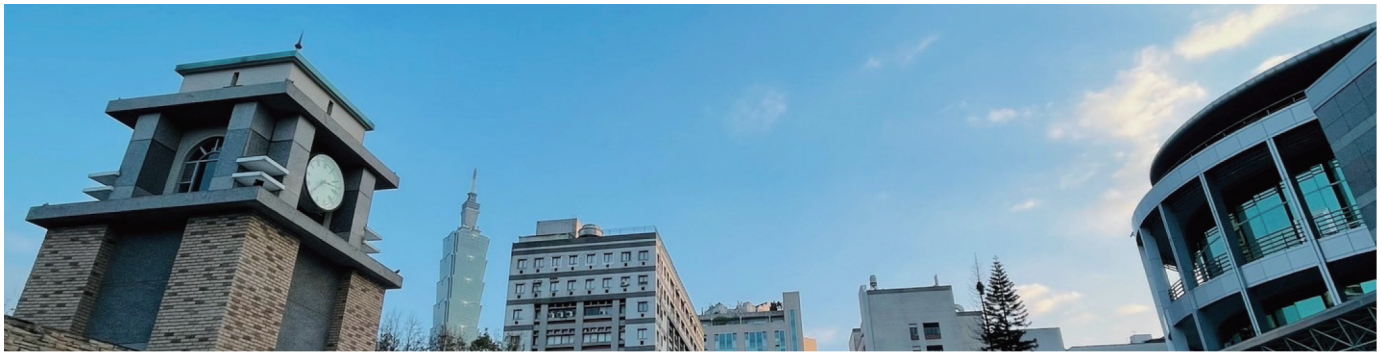
Background & Aims: Long COVID often results in persistent dyspnea and respiratory muscle weakness. Respiratory muscle training (RMT), including inspiratory and expiratory exercises, has been proposed as a targeted rehabilitation strategy. This study aimed to evaluate the effectiveness of RMT in improving dyspnea and respiratory muscle strength.

Methods: A systematic review and meta-analysis were conducted following PRISMA guidelines. Databases searched included CINAHL, Cochrane Library, Embase, Proquest, PubMed, Index to Taiwan Periodical Literature System, Airiti Library. Randomized controlled trials (RCTs) on adults with long COVID receiving RMT were included. Outcomes were dyspnea severity, dyspnea incidence and respiratory pressures (MIP, MEP). Risk of bias was assessed using the JBI checklist, and GRADE was used to rate evidence quality.

Results: Five RCTs (n = 325) were included. Compared to usual care, RMT significantly improved maximal inspiratory pressure (SMD = 0.57 [0.21, 0.94], p = .002; I^2 = 15%) and maximal expiratory pressure (SMD = 0.64 [0.04, 1.25], p = .04; I^2 = 0%). Dyspnea incidence was also significantly reduced (RR = 0.33 [0.19, 0.56], p < .0001; I^2 = 8%). Moreover, there was a trend toward improvement in dyspnea severity (SMD = –1.40 [–3.12, 0.33]; I^2 = 92%), while the high heterogeneity may be attributed to differences in training duration, frequency, and dyspnea assessment scales.

Significance/Impacts /Implications: RMT is an effective non-pharmacological intervention for long COVID rehabilitation. It improves respiratory muscle strength and reduces dyspnea, supported by moderate-certainty evidence. Clinicians should consider integrating structured RMT into care plans, especially for community or home-based recovery.

Keywords: Long COVID, Dyspnea, Respiratory muscle training, Inspiratory pressure, Pulmonary rehabilitation, Meta-analysis



Excellent Poster.17

Chinese Herbal Medicine in the Treatment of Menopausal Insomnia: A Systematic Review and Meta-analysis

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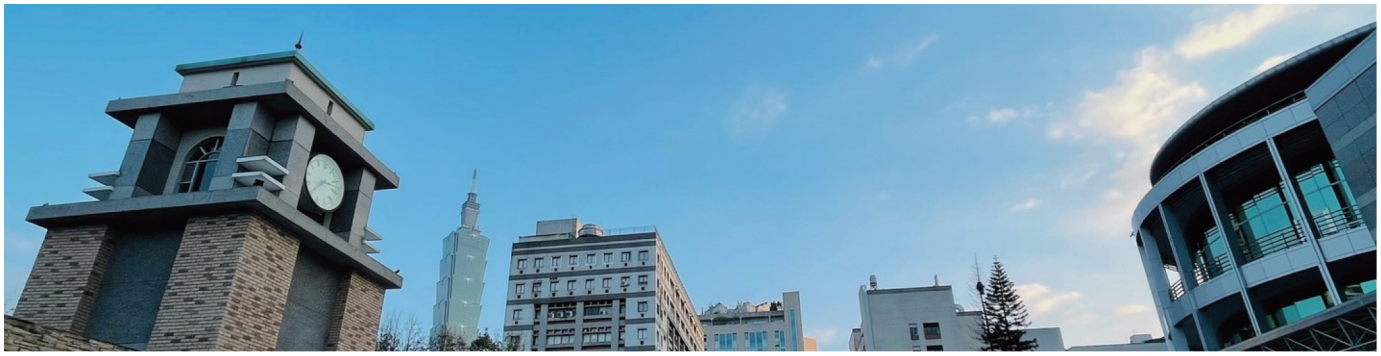
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Background & Aims: Globally, most women experience menopause between the ages of 40 and 60, with 84.2% encountering menopausal symptoms. The primary causes of menopause include reduced blood oestrogen levels and decreased ovarian activity, which lead to significant hormonal shifts. These hormonal changes affect physical, emotional, mental, and social well-being. It includes clinical presentations such as insomnia, hot flushes, vaginal dryness, and mood swings. Consequently, many menopausal women who are impacted by sleep degradation typically report daytime fatigue and difficulty concentrating.

The existing studies predominantly focus on the effectiveness of Chinese herbal medicine (CHM) in treating peri-menopausal insomnia, however, lack of systematic review and meta-analysis specifically evaluating CHM in the treatment of menopausal insomnia. Consequently, there is a research gap in the exploration of the effectiveness and safety of CHM on menopausal insomnia specifically. Therefore, this systematic review and meta-analysis aims to systematically evaluate the effectiveness and safety of CHM in treating menopausal insomnia.

Methods: A thorough literature search across eight databases (PubMed, Embase, Cochrane Library, Web of Science, China National Knowledge Infrastructure, Wan Fang, Chongqing VIP, and SinoMed) to identify randomised controlled trials (RCTs) on CHM for menopausal insomnia published before March 2024. Eligible RCTs were assessed for quality using the Cochrane risk-of-bias tool. Meta-analysis was performed by using RevMan web.

Results: A total of 7 studies were included and assessed for risk of bias which varied between high and low methodological quality. The findings suggest potential benefits of CHM over conventional medicine in treating menopausal insomnia, as reflected in improved Pittsburgh Sleep Quality Index scores and serum oestradiol, levels, reduced serum follicle-stimulating hor-



mone levels, with fewer adverse events. Sensitivity analysis supported the robustness of these studies and funnel plots indicated low publication bias, ensuring the meta-analysis's reliability. The results showed significant improvements in CHM use for treating menopausal insomnia. However, more rigorous and standardised research methodologies in RCTs are necessary to better evaluate the efficacy of CHM in the future and further validate these findings.

Significance/Impacts /Implications: This review found that CHM consistently shows superior outcomes in improving sleeping quality, increasing serum oestradiol levels, and reducing serum follicle-stimulating hormone levels in menopausal women compared to conventional medicine. This suggests the potential insomnia-relieving and endocrine-regulating effects of CHM, which may contribute to its efficacy in treating menopausal insomnia. Moreover, CHM demonstrates a significantly lower incidence of adverse events compared to conventional medicine, suggesting a safer treatment option and underscores CHM's benefits in addressing menopausal insomnia.

Keywords: Chinese Herbal Medicine, Menopausal Insomnia, Systematic Review, Meta-analysis

Excellent Poster.18

Evaluating the Accuracy of ChatGPT in Evidence-Based Medicine: A Focus on Levels of Evidence and Literature Data Extraction

AUTHORS AND AFFILIATIONS

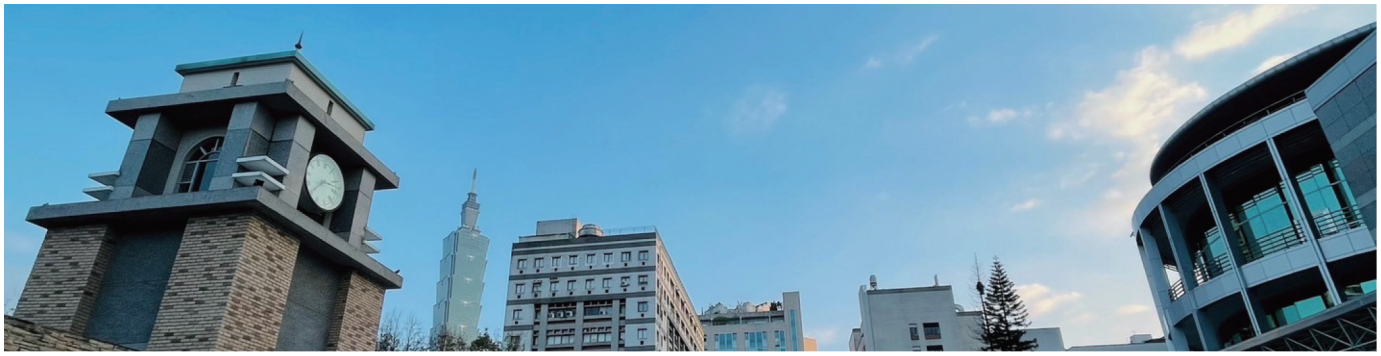
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Background & Aims: The application of generative artificial intelligence (AI) chatbots in the medical field has become a growing trend, including in healthcare. Chat Generative Pre-trained Transformer (ChatGPT), released by OpenAI, is considered one of the most advanced large language models (LLMs) and is capable of offering professional medical knowledge or responding to clinical inquiries. This study aims to investigate the feasibility of utilizing the AI chatbot ChatGPT to address clinical inquiries and select pertinent literature. Specifically, we evaluated ChatGPT's ability to identify and present levels of evidence according to the Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence, format them in APA 7th style, and accurately extract data from the selected literature.

Methods: This research employed OpenAI's ChatGPT. The input prompt was: "Can rapid antigen tests be used to diagnose COVID-19? Please: 1. Provide at least three pieces of evidence in APA 7th format; 2. Specify the type of question and the level of evidence for each according to the Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence (v2.1) criteria; 3. Summarize the findings and data." PubMed was used as the literature search platform. The following categorical items were assessed: 1. Correct APA 7th formatting; 2. Accurate identification of the type of question; 3. Accurate identification of the level of evidence; and 4. Accurate summarization of the findings and data. Each item was scored, resulting in a total possible score of 4. Two independent authors performed the evaluations, and inter-rater reliability was assessed using Cohen's kappa coefficient.

Results: The evaluation of the three evidence references yielded the following: Evidence 1 exhibited an AI hallucination with an incorrect DOI in the APA 7th format and an AI hallucination in the summary of findings, while the type and level of evidence were correctly identified; the score obtained was 2 out of 4. Evidence 2 presented the APA 7th format, type of question, and level of evidence accurately, but misused data cited within the article when summarizing the findings; the score obtained was 3 out of 4. Evidence 3 correctly presented the APA 7th format, type of question, and level of evidence, but demonstrated an AI hallucination in the summary of findings; the score obtained was 3 out of 4. The Cohen's kappa coefficient for inter-rater reliability was 1 (perfect agreement).



Significance/Impacts /Implications: The findings indicate that generative AI demonstrates significant proficiency in identifying literature relevant to clinical questions and appraising the levels of evidence. However, errors, particularly in the misuse and AI hallucination when summarizing findings, necessitate rigorous verification. The integration of AI into EBM fundamentally transforms how clinicians search for and receive information. Continued refinement of these models holds the potential to revolutionize evidence-based medicine and usher in a paradigm shift in the medicine field.

Keywords: artificial intelligence, chatbot, ChatGPT, evidence-based medicine, hallucination

Excellent Poster.19

A Paradigm Shift in Pathological Diagnosis: Evaluating the Efficacy of Artificial Intelligence-Based Digital Pathology Through Evidence-Based Medicine

AUTHORS AND AFFILIATIONS

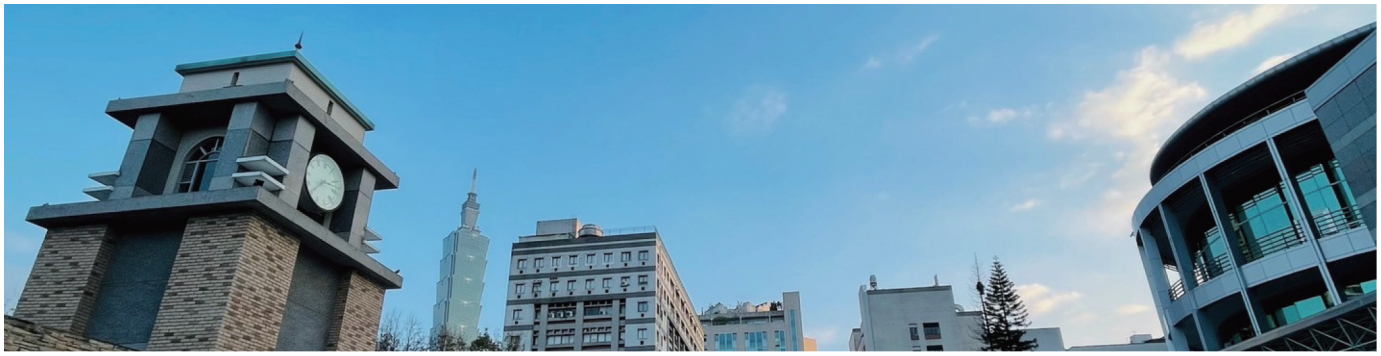
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Background & Aims: Digital pathology (DP) utilizes whole slide imaging (WSI) systems to digitize pathological tissue slides for interpretation by pathologists. In 2016, the U.S. Food and Drug Administration (FDA) released the "Technical Performance Assessment of Digital Pathology Whole Slide Imaging Devices" guidelines for technical performance evaluation. With the rapid advancement of artificial intelligence (AI), artificial intelligence-based digital pathology (AIDP) has emerged as a significant trend. This study aimed to investigate whether AIDP enhances pathological diagnosis using an evidence-based medicine (EBM) approach.

Methods: Following the principles of EBM, we formulated an answerable clinical question using the PICO framework: patient (P): patients with biopsy specimens; intervention (I): artificial intelligence-based digital pathology; comparator (C): light microscopy for routine pathological diagnosis; outcome (O): diagnostic accuracy. We searched for the best available evidence in the PubMed database using the search strategy: (((Artificial intelligence) AND (digital pathology)) AND ("whole slide image")) AND ("diagnostic accuracy"). Article type: meta-analysis and systematic review, publication date: within the last 5 years. The article selected for critical appraisal was: McGenity C, Clarke EL, Jennings C, Matthews G, Cartlidge C, Freduah-Agyemang H, Stocken DD, Treanor D. Artificial intelligence in digital pathology: a systematic review and meta-analysis of diagnostic test accuracy. *NPJ Digit Med*. 2024 May 4;7(1):114. doi: 10.1038/s41746-024-01106-8.

Results: The article included 8 studies, encompassing 50 AI models for meta-analysis. The pooled estimates were as follows: overall sensitivity (SN): 96.3% (95% CI: 94.1%-97.7%), and overall specificity (SP): 93.3% (95% CI: 90.5%-95.4%). For the pathological subspecialties: gastrointestinal pathology (14 AI models): SN: 93% and SP: 94%; breast pathology (8 AI models): SN: 83% and SP: 88%; uropathology (8 AI models): SN: 95% and SP: 96%; hepatobiliary pathology (5 AI models): SN: 90% and SP: 87%; dermatopathology (4 AI models): SN: 89% and SP: 81%; cardiothoracic pathology (3 AI models): SN: 98% and SP: 76%; haematopathology (3 AI models): SN: 95% and SP: 86%; gynaecological pathology (2 AI models): SN: 87% and SP: 83%; soft tissue & bone pathology (1 AI model): SN: 98% and SP: 94%; head & neck pathology (1 AI model): SN: 98% and SP: 72%; and neuropathology (1 AI model): SN: 100% and SP: 95%.



Significance/Impacts /Implications: Using the EBM approach, we found that AIDP demonstrates excellent overall SN and SP, with similarly high accuracy in various subspecialties. However, the routine sign-out of pathology reports using AIDP in pathology laboratories remains limited. Further rigorous assessments are necessary to achieve the goal of directly signing out pathology reports with AIDP. Integrating AIDP into clinical decision-making represents a paradigm shift in pathology diagnostics.

Keywords: artificial intelligence, digital pathology, evidence-based medicine, whole slide imaging

Excellent Poster.20

Synthesizing Evidence on Confidence Outcomes of Healthcare Violence Prevention Training: A Systematic Review and Meta-Analysis

AUTHORS AND AFFILIATIONS

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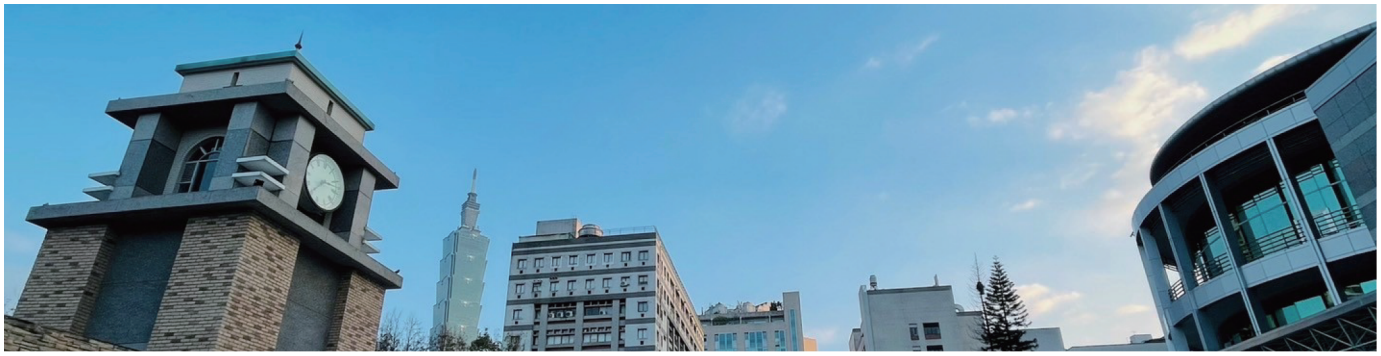
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Background & Aims: The global problem of workplace violence, particularly in health care, creates negative consequences. Studies have demonstrated that workplace violence prevention education training programs improve employees' skills, knowledge, and confidence which leads to a decrease in violent events. However, these programs often cover a wide range of components, and it remains unclear which specific components are most effective. The purpose of the study is to determine the confidence outcomes of educational training programs in dealing with workplace violence on healthcare professionals.

Methods: A systematic review retrieved from four electronic databases that were searched from January 2023 to September 2024. To synthesize the effect of preventative education training programs and random-effect models were applied for meta-analyses.

Results: Ten studies were included in the narrative synthesis while four studies were analyzed in a meta-analysis. The results showed that implementing a workplace violence preventative education program statistically significantly increased participants' confidence (SMD = 0.86, 95% CI = 0.71-1.01).

Significance/Impacts /Implications: This study underscores the critical role of confidence-building in educational interventions aimed at equipping healthcare professionals to manage workplace violence (WPV). The findings suggest that confidence is not merely a by-product of training but a pivotal factor influencing nurses' ability to respond effectively



in violent or high-stress clinical situations. Given the current lack of standardized WPV training, this research supports the integration of structured, confidence-centered educational models into institutional nursing policies. From a policy and practice standpoint, the development of standardized training frameworks—with clearly defined core components and flexibility for contextual adaptation—can enhance the consistency, applicability, and impact of WPV education across diverse healthcare settings. Furthermore, positioning "confidence" as a measurable outcome may offer a valuable indicator for evaluating the effectiveness of WPV prevention programs, contributing to both workforce safety and patient care quality.

Keywords: educational training programs, confidence, workplace violence, healthcare professional, systematic review, meta-analysis

Excellent Poster.22

Evidence-Based Evaluation of MSC-Derived Extracellular Vesicle Interventions in Osteoarthritis Using the GRADE Methodology for Therapeutic Translation

AUTHORS AND AFFILIATIONS

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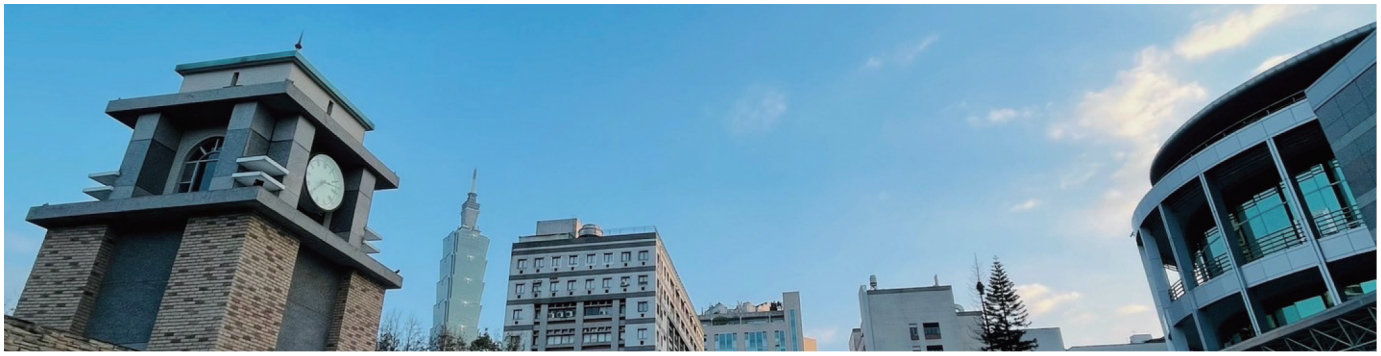
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Background & Aims: Mesenchymal stem cell-derived extracellular vesicles (MSC-EVs) have emerged as a promising cell-free therapy for osteoarthritis (OA), yet their efficacy and methodological consistency across preclinical studies remain unclear.

Methods: A meta-analysis was conducted of preclinical OA models evaluating MSC-EV therapy. Thirty-eight studies included following database searches and screening. Study quality was assessed using MISEV 2023 criteria and the SYRCLE risk of bias tool. Quantitative synthesis was performed for OARSI histological scores, with subgroup and meta-regression analyses exploring the influence of EV source, dosing, OA induction model, and host species. The GRADE framework was employed to evaluate the overall certainty of evidence.

Results: MSC-EV administration significantly improved cartilage outcomes compared with controls. Human-derived EVs (28 studies) reduced OARSI scores by a pooled mean difference of –3.24 (95% CI –5.11 to –1.37), while animal-derived EVs (10 studies) showed a comparable effect (MD –3.64, 95% CI –4.83 to –2.45). Adipose-derived EVs demonstrated the largest improvements (MD –4.32) but with high heterogeneity, whereas bone marrow–derived EVs yielded smaller, highly consistent benefits (MD –1.01, $I^2 = 0\%$). OA models and species also influenced outcomes, with chemically induced models and murine studies showing stronger effects. However, methodological gaps were evident, including inconsistent dosing metrics, limited cargo validation, and poor reporting of blinding and allocation concealment. The GRADE assessment rated the overall certainty of evidence as moderate, emphasizing the need for standardized methodologies and long-term validation.

Conclusion: MSC-EVs demonstrate robust preclinical efficacy in attenuating cartilage degeneration across diverse OA models. Yet, translation is hindered by methodological heterogeneity, incomplete standardization, and insufficient mechanistic validation. Future research should prioritize the development of harmonized protocols and cargo-function stud-



ies to enable the safe and reproducible clinical application of EV-based therapies for osteoarthritis.

Significance/Impacts /Implications: This study offers a benchmark synthesis of preclinical evidence for MSC-EV-based therapies in osteoarthritis, serving as a vital resource for translational researchers and regulatory stakeholders. By combining quantitative effect sizes with qualitative certainty grading, it highlights key factors influencing therapeutic reproducibility and scalability. The findings advocate for a paradigm shift toward harmonized experimental designs, AI-driven modeling, and next-generation in vitro validation systems ultimately accelerating the path from bench to bedside for extracellular vesicle- based regenerative therapies.

Keywords: Mesenchymal stem cell–derived extracellular vesicles, Osteoarthritis therapy, Preclinical models, Cartilage regeneration, Translational potential, Regenerative medicine.

Excellent Poster.23

The Relationship between Insomnia and Alzheimer's disease in Mild Cognitive Impairment: A Systematic Review And Meta-Analysis

AUTHORS AND AFFILIATIONS

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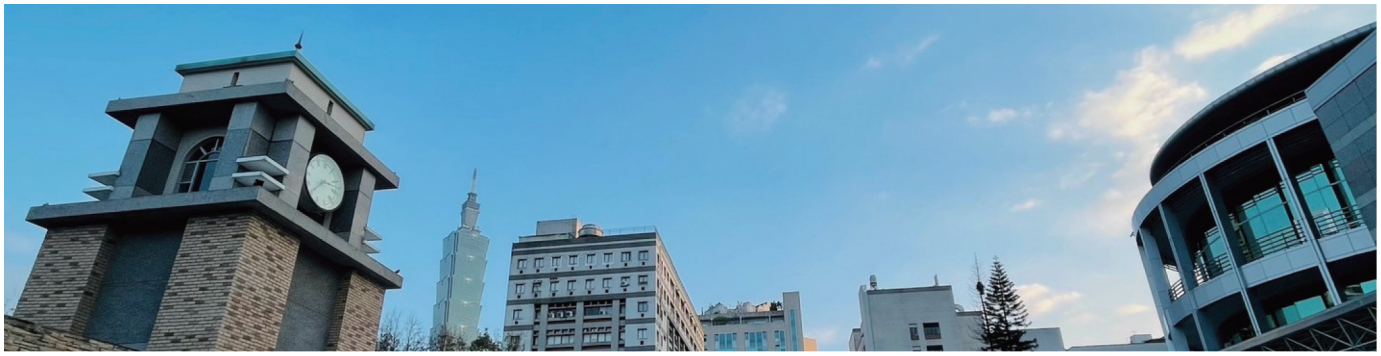
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Background & Aims: Mild cognitive impairment (MCI) is often underrecognized, increasing the risk of progression to Alzheimer's disease (AD). Insomnia has been associated with dementia, and individuals with MCI often experience more severe insomnia than cognitively normal older adults. Although insomnia has been linked to dementia risk, previous studies have rarely focused specifically on MCI populations. Due to the limited availability of evidence-based syntheses targeting for patient with MCI, this study aims to examine whether insomnia increases the risk of progression to AD among individuals with MCI.

Methods: This systematic review and meta-analysis was conducted in accordance with the PRISMA 2020 guidelines and registered in PROSPERO (CRD42024556457). A comprehensive search of 10 electronic databases was performed to identify cohort studies published before February 2025. The search strategy was developed using the PICO framework: (1) Patient – individuals diagnosed with mild cognitive impairment; (2) Exposure – insomnia; (3) Outcome – Alzheimer's dementia. Only cohort studies were included. Two reviewers independently screened the studies and extracted the data, with any discrepancies resolved by a third reviewer. Meta-analysis was performed using Comprehensive Meta-Analysis software (version 3.6).

Results: Six studies were included in the meta-analysis using a random-effects model. The relative risk was 0.95 (95% CI: 0.78–1.16, $p = 0.60$, $I^2 = 83\%$), indicating no significant and high heterogeneity across studies. Further subgroup analyses also revealed no significant associations, and the limited number of studies precluded the conduct of meta-regression. Overall, the findings do not support insomnia as a significant risk factor for the progression from MCI to Alzheimer's disease.

Significance/Impacts /Implications: The findings of this study differ from previous research that identified insomnia as a significant risk factor for the progression to AD, however, this does not imply that insomnia is unimportant. Insomnia remains a clinically significant issue, lots of evidence have demonstrated its negative impact on cognitive function. While it may not directly contribute to the conversion to AD, it can still lead to cognitive decline. The inconsistency between this meta-analysis and previous studies may be attributed to different measurement and diagnose, subjective perceptions,



and the presence of comorbid sleep disorders. These findings underscore the importance of identifying and examining a broader spectrum of potential risk factors beyond insomnia, and further highlight the need for well-designed, large-scale longitudinal studies employing standardized, insomnia-specific assessment tools. Such research is essential to elucidate the role of sleep disturbances within the broader trajectory of neurodegeneration.

Keywords: Mild cognitive impairment, Alzheimer's Disease, Insomnia, Systematic Review, Meta Analysis

Excellent Poster.24

Can Avatar-Based Interventions Improve Self-Care Behaviors in Patients with Heart Failure?

AUTHORS AND AFFILIATIONS

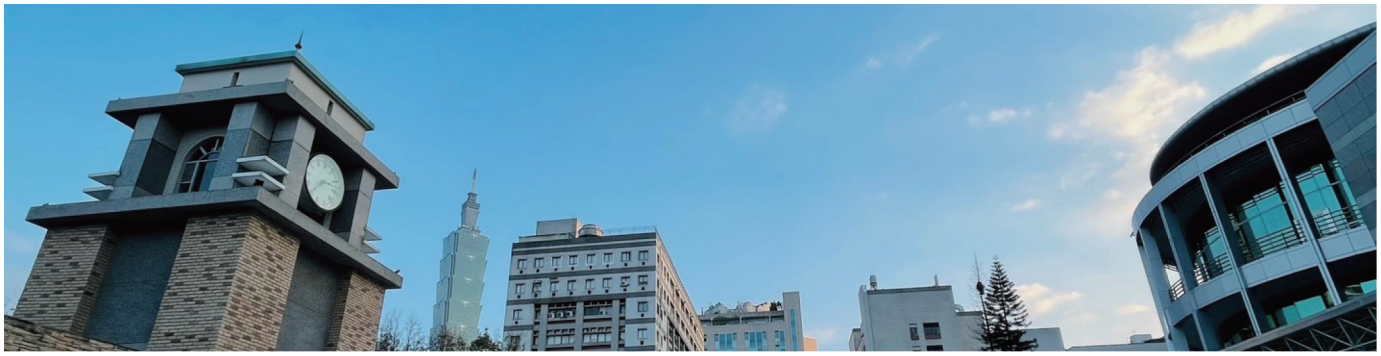
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Background & Aims: Heart failure is a chronic condition associated with a high global mortality rate, with up to 50% of patients dying within five years and approximately 30% being readmitted to the hospital within three months. Studies have shown that inadequate self-care ability is a key factor contributing to disease progression and hospital readmissions in patients with heart failure. Avatar-based interventions, characterized by visual interactivity and self-directed learning, have been widely used in health education and proven effective in enhancing patients' health knowledge. However, the empirical evidence regarding their impact on improving self-care behaviors in heart failure patients remains inconclusive. Therefore, this study aims to investigate whether avatar-based interventions can effectively enhance self-care behaviors in individuals with heart failure.

Methods: This study adopted an evidence-based approach, employing a systematic literature review to address a specific PICO question. The search strategy incorporated Medical Subject Headings (MeSH), natural language terms, and synonyms to identify and screen the best available evidence. To further answer the PICO question, a randomized controlled trial (RCT) was conducted, in which the population (P) included patients with heart failure (Heart failure, Cardiovascular failure), the intervention (I) involved avatar-based education (Avatar, Virtual Human), the comparison (C) was usual care (Usual care, Routine care), and the outcome (O) focused on self-care behaviors (Self-care, Self-health management, Self-care behavior).

Results: According to the PRISMA flow diagram, only one randomized controlled trial (RCT) was ultimately included in the review. The methodological quality of this study was assessed using the 2024 version of the CASP RCT checklist, with the study meeting 9 out of 11 criteria, indicating a moderate risk of bias. Based on the Oxford Centre for Evidence-Based Medicine (CEBM) levels of evidence, it was rated as Level 2. The included RCT, conducted by Wonggom et al. in 2020, employed a non-blinded randomized allocation design and involved a total of 36 participants with a mean age of 69.2 years (SD = 8.5), with 17 patients in the inter-



vention group and 19 in the control group. Patients in the intervention group used an avatar-based educational application at home with flexible learning times for 90 consecutive days after discharge. The results showed an 11.0% improvement in self-care behaviors; however, the difference was not statistically significant (P = 0.129).

Significance/Impacts /Implications: Although the avatar-based intervention did not yield a statistically significant improvement in self-care behaviors (11% increase, p = 0.129), it significantly enhanced patients' self-care knowledge. This suggests its potential as a health education tool, especially for older adults needing flexible, self-paced learning. Avatar applications offer visual guidance and repetitive practice, making them well-suited for post-discharge support. As a supplemental, asynchronous, home-based strategy, this intervention may improve patient understanding and could reduce readmission rates and slow disease progression in the long term.

Keywords: Avatar, heart failure, self-care behavior

Excellent Poster.25

Survival Outcomes of Sequential Regorafenib and Trifluridine/Tipiracil (TAS-102) Therapy in Refractory Metastatic Colorectal Cancer: Systematic Review and Meta-analysis

AUTHORS AND AFFILIATIONS

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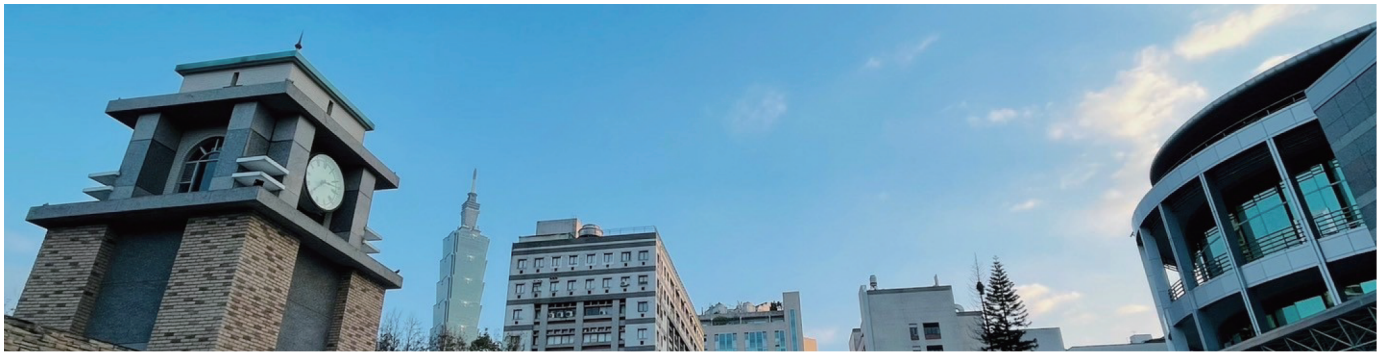
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Background & Aims: Survival benefits of Regorafenib or Trifluridine/Tipiracil (TAS-102) have been demonstrated and recommended by treatment guidelines for the salvage treatment of metastatic colorectal cancer (mCRC) that has recurred after two lines of chemotherapy. However, it remains unclear which drug should be administered first. Therefore, we investigate the sequential use of these two medications to determine which can provide better survival benefits.

Methods: We systematically searched relevant articles through PubMed, Embase, and the Cochrane Library from inception to 31st December 2024. We determined inclusion criteria based on the "PICOS" principle: P –refractory metastatic colorectal cancer patients, I - the sequence treatment of TAS-102 to Regorafenib (TR), C – the sequence treatment of Regorafenib to TAS-102 (RT), O -overall survival (OS), S – randomized control trial or cohort studies. To evaluate the quality of the selected papers, we employed the Cochrane risk-of-bias 2 (RoB 2.0) tool for randomized trials and the Newcastle-Ottawa Scale (NOS) for retrospective studies. We conducted a meta-analysis of published papers using the Review Manager 5.4.1 software.

Results: We retrieved 761 papers and excluded duplicates and those not meeting the inclusion criteria. Eleven retrospective studies and 3,675 mCRC patients were included in our meta-analysis. There are no major biases in the quality of these studies. The sequence of TR treatment was not significantly better than RT (OS: HR 0.99, 95% CI 0.86-1.14; I^2=55%). The subgroup analysis revealed that the Asian population had better survival outcomes with TR than RT, although this result was not statistically significant. (HR 0.94, 95% CI 0.87-1.02; I^2=0%)

Significance/Impacts /Implications: Our study found that no matter the RT or TR treatment sequence, it can prolong the survival time of patients with recurrent metastatic colorectal cancer. In the Asian population, the treatment sequence of TR appears to provide better survival benefits. Clinicians must tailor the treatment method and administration sequence to each patient, taking into account their specific



characteristics and the potential side effects of prescribed drugs.

Keywords: Refractory Metastatic Colorectal Cancer, Regorafenib, Trifluridine/Tipiracil (TAS-102)

Excellent Poster.26

Association of Probiotic Consumption with Reduced Gestational Diabetes Mellitus Risk: A Cross-Sectional NHANES Analysis

AUTHORS AND AFFILIATIONS

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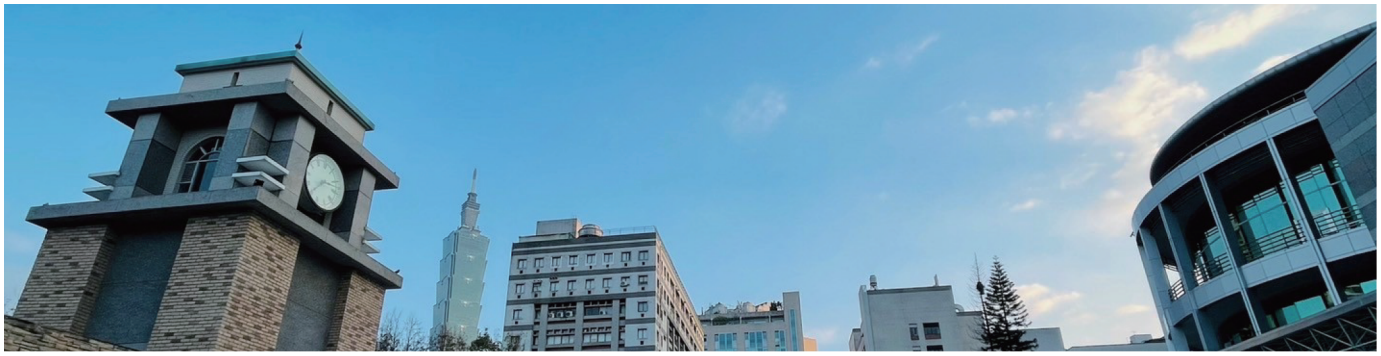
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Background & Aims: Gestational diabetes mellitus (GDM) poses significant health risks to pregnant females. Previous research suggests probiotics may beneficially influence glucose metabolism. The objective of this study is to determine whether probiotic supplementation is associated with GDM and whether physical activity modifies this association in U.S. pregnant females.

Methods: This cross-sectional analysis employed data from the National Health and Nutrition Examination Survey (NHANES) spanning 2009–2018. The analytic sample included 2,285 pregnant females (weighted N ≈ 110.8 million). Self-reported probiotic use was evaluated as exposure, and physician-diagnosed GDM was the outcome. Missing covariates were handled using multiple imputations. Associations were evaluated using weighted logistic regression and modified Poisson models to estimate odds ratios (ORs) and prevalence rate ratios (PRRs), respectively. The potential modifying effect of physical activity levels was examined through interaction analysis.

Results: GDM prevalence was 10.9%. Probiotic use was reported by 15.9% of participants, significantly higher among females without GDM (16.8%) compared to those with GDM (8.4%, p = 0.015). Probiotic supplementation was significantly associated with a lower risk of GDM (adjusted OR 0.46; 95% CI 0.24 - 0.87; adjusted PRR 0.50; 95% CI 0.26 - 0.94). An interaction (p = 0.010) indicated a stronger risk reduction among physically active females using probiotics (adjusted PRR 0.31; 95% CI 0.15 - 0.67), although confidence intervals were wide.

Significance/Impacts /Implications: Probiotic supplementation was linked to a reduced prev-



alence of GDM in U.S. pregnant females. This beneficial effect may be enhanced among physically active individuals, though further research is needed due to imprecise estimates.

Keywords: Probiotic, Gestational Diabetes Mellitus, NHANES, Physical Activity

Excellent Poster.27

Are There Health Benefits of a Mediterranean Diet for Cancer Patients? A Systematic Review

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Background & Aims: Cancer remains a global health burden, and dietary strategies are increasingly recognized for their potential in prevention, treatment, and survivorship. The Mediterranean diet (MD)—rich in vegetables, fruits, whole grains, fish, olive oil, and nuts, and low in red and processed meats—has anti-inflammatory properties and potential benefits for cancer patients. This study systematically reviewed randomized controlled trials (RCTs) to evaluate MD's effects on cancer-related outcomes.

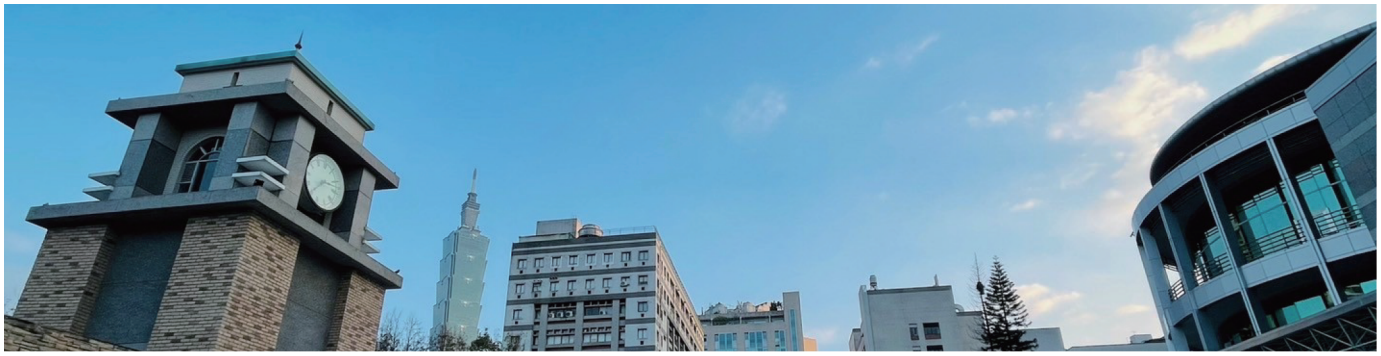
Methods: PubMed, Embase, MEDLINE, and the Cochrane Library were searched up to 31 May 2025. Eligible studies were parallel-group RCTs involving adult cancer patients, comparing an MD intervention with usual care or alternative diets. Two reviewers independently extracted data and assessed risk of bias using the Cochrane ROB 2.0 tool.

Results: Seven RCTs (n = 1,869; covering breast, colorectal, prostate, lung cancers, and mixed solid tumors) met inclusion criteria. Intervention duration ranged from 8 weeks to 5 years. All trials were low risk in randomization. Due to non-blinding, six trials had 'some concerns' in intervention adherence and subjective outcome measures; none were high risk overall. No serious MD-related adverse events were reported.

In the largest trial (DIANA-5; n = 1,542), 5-year breast cancer recurrence did not differ significantly overall (HR 0.99, 95% CI 0.69–1.40), but high MD adherence was associated with a 41% lower recurrence risk (HR 0.59, 0.36–0.92). Other trials lacked power to detect recurrence or survival differences.

Inflammatory markers improved in three trials, showing reductions in TNF-α (up to −0.47 pg/mL), IL-6/IL-8, and attenuation of the Advanced Lung Cancer Inflammation Index ($p \leq 0.03$). Four studies reported metabolic benefits including 1.5–3.0 kg weight loss, 2.6 cm waist circumference reduction, and 1.2–15 mg/dL fasting glucose decreases. In colorectal cancer cachexia, MD led to weight (+0.9 kg) and lean mass (+0.35 kg) gains; in overweight breast cancer survivors, modest reductions in weight and waist size were observed.

Two pilot RCTs demonstrated clinically mean-



ingful fatigue reductions (FACIT-F +7.2 points) and improved quality of life (QLQ-C30/FACIT-G +6.8 to +9.2 points).

Significance/Impacts /Implications: Current RCT evidence (low risk to 'some concerns') supports MD's safety and suggests short- to mid-term benefits in reducing systemic inflammation, improving metabolic control, alleviating fatigue, and enhancing quality of life in cancer patients. While high MD adherence may lower recurrence risk, evidence remains inconclusive. Larger, long-term RCTs with objective adherence measures and tumor-specific outcomes are needed. Meanwhile, integrating MD-based nutrition into supportive cancer care appears to be a feasible, low-risk strategy.

Keywords: Mediterranean diet, Cancer, Health Benefits, Systematic Review

Excellent Poster.28

Evidence-Based Optimization of Prehospital ECMO-CPR Activation to Improve Survival and Neurological Outcomes

AUTHORS AND AFFILIATIONS

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Background & Aims: Extracorporeal cardiopulmonary resuscitation (ECPR) is increasingly used for refractory out-of-hospital cardiac arrest (OHCA) and its effectiveness depends on early initiation, streamlined workflows, and coordinated team performance. In 2023, our emergency department performed 11 ECPR cases, with only one patient surviving to discharge (9%). We aim to conduct an evidence-based review and implement targeted interventions in our emergency department to enhance ECPR delivery. Key strategies include optimizing activation criteria, reducing cannulation time, and strengthening interprofessional coordination to improve survival and neurological outcomes in OHCA patients.

Methods: This project focused on out-of-hospital cardiac arrest (OHCA) patients receiving ECPR in the emergency department. The intervention targeted ECMO-related processes: activation protocols, cannulation techniques, setup efficiency, and team-based practice. Usual care served as the comparator. Primary outcomes included survival to discharge, neurological status, and time to successful cannulation.

An evidence-based intervention was developed through a literature review following PRISMA 2020 guidelines. Studies (2020–2024) in English or Chinese were included if they meet our PICO. Eligible designs included RCTs, systematic reviews, and meta-analyses. Quality was assessed using the Cochrane RoB 2.0 tool and CASP checklists; evidence strength was graded with the GRADE approach.

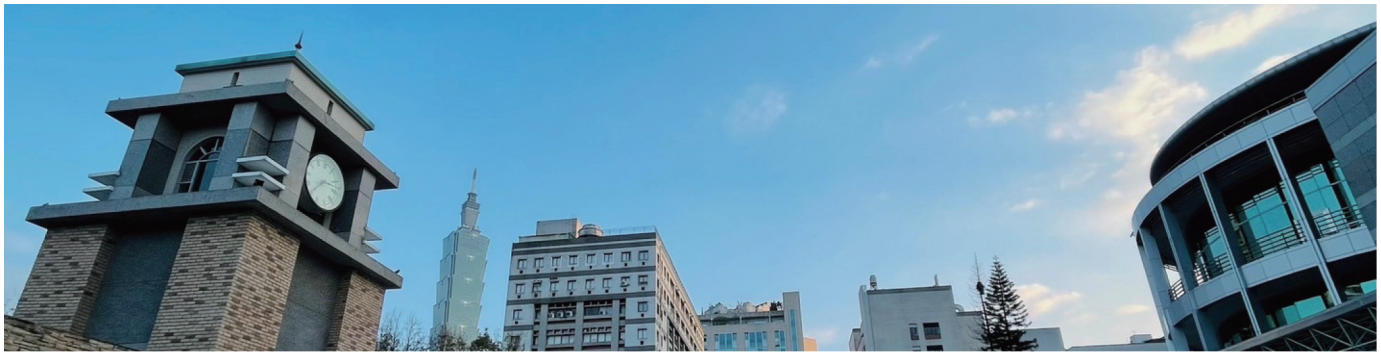
Results: Eight high-quality studies were included (3 RCTs, 5 SRs/MAs) and key evidence-based strategies relevant to our setting were identified.

Time to Cannulation: Initiating ECPR within 60 minutes was associated with improvement in both survival and neurological outcomes (OR 1.14, 95% CI 1.17 to 1.69 per 10 minutes).

Workflow Design: Pre-positioned ECMO kits, standardized cannulation standard operating procedures (SOPs), and structured team communication.

Training and Collaboration: Interdisciplinary simulation-based training and Team Resource Management (TRM) can improve team preparedness and reduce procedural errors during high-stakes resuscitations.

The GRADE of included studies showed moderate to low quality due to limited long-term data,



heterogeneity and small sample size.

Significance/Impacts /Implications: We implemented evidence-based interventions to improve ECPR, including prehospital EMT coordination and early activation protocols. In-hospital measures involved ECMO machine relocation, standardized kits, checklist-based workflows, and an ECPR decision algorithm. Regular interdisciplinary simulations ensured team readiness. Future efforts will focus on training integration, KPI monitoring, regional data sharing, and AI-assisted ECPR activation.

Keywords: Extracorporeal cardiopulmonary resuscitation, survival, neurologic outcome

Excellent Poster.29

High-Fidelity Simulation for Improving nursing CPR Performance: A Systematic Review and meta-analysis

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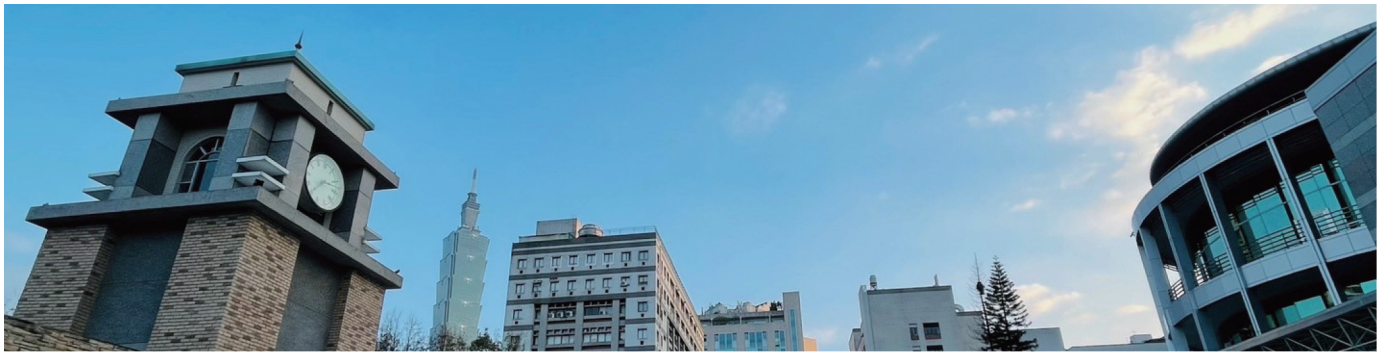
Background & Aims: Cardiopulmonary resuscitation (CPR) is a critical lifesaving skill. Traditional CPR training methods, often lecture-based, have shown limited retention and inconsistent translation to clinical performance. High-fidelity simulation (HFS) offers a dynamic, interactive environment that mimics real clinical scenarios, allowing learners to practice under realistic conditions. Growing evidence supports the use of HFS to enhance CPR-related knowledge, psychomotor skills, self-efficacy, and decision-making under pressure. To evaluate the effectiveness of high-fidelity simulation-based training compared to traditional or non-simulation methods in improving CPR outcomes among healthcare learners.

Methods: We systematically searched four electronic databases, Cochrane, PubMed, Embase, and CEPS for randomized controlled trials that investigated the effects of High-Fidelity Simulation for Improving nursing CPR Performance on knowledge ,skill, confidence ,self-efficacy, and anxiety. We performed a Cochrane risk-of bias assessment and calculated the pooled standard mean difference in the outcomes of the test and control groups after the intervention period.

Results: Ten randomized controlled trials were retrieved that included a total of 612 patients. Pooled data from the RCTs demonstrated a benefit in improvement of knowledge [mean difference (MD)=1.32; 95% confidence interval (CI): 0.08–2.56, P=0.04, I 2=95%] ,skill performance (SMD=1.75; 95% CI: 1.45–2.05, P<.00001, I 2=96%) and self-confidence (SMD=6.36; 95% CI: 5.21–7.52, P<.00001, I 2=22%)for HF simulation when compared with traditional training. Studies measuring knowledge and skill performance at three months, participants' satisfaction demonstrated significant benefit for HF simulation.

Significance/Impacts /Implications: High-fidelity simulation significantly improves CPR skill performance outcomes compared to traditional methods, with moderate-to-large effect size. This supports the integration of simulation-based CPR education into training curricula for sustainable skill development.

Keywords: High-fidelity simulation, systematic review, CPR, competent



Excellent Poster.30

Evaluation of Generative Artificial Intelligence Chatbots in Answering Clinical PICO Questions for Evidence-Based Medicine

AUTHORS AND AFFILIATIONS

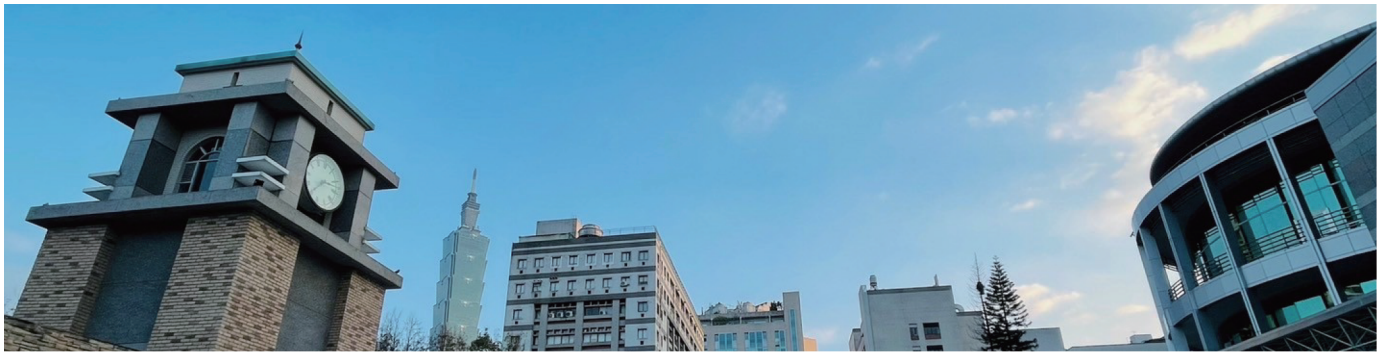
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Background & Aims: In recent years, artificial intelligence (AI) companies have developed generative AI chatbots based on large language models (LLMs), such as OpenAI's ChatGPT, Google's Gemini, Microsoft's Copilot, and DeepSeek from China. These tools offer innovative resources for various industries, including healthcare. This study aims to explore the feasibility of using generative AI chatbots to answer clinical questions. We employed the evidence-based medicine PICO framework (Population, Intervention, Comparison, Outcome) to address the clinical question. We assessed whether AI chatbots could accurately answer clinical PICO questions and summarize PICO conclusions.

Methods: We utilized ChatGPT, Gemini, Copilot, and DeepSeek. The initial questions included: "Is fecal microbiota transplantation (FMT) effective for treating recurrent *Clostridioides difficile* infection (RCDI)? Will the cure rate be better than vancomycin antibiotic treatment? Please formulate the clinical question into a PICO framework question." Advanced questions included: "What is the definition of recurrent *Clostridioides difficile* infection?" and "What is the definition of fecal microbiota transplantation?" The following categorical items were assessed: 1. Understanding PICO definitions, 2. Accurate answer to P, 3. Accurate answer to I, 4. Accurate answer to C, 5. Accurate answer to O, 6. Correct summary of PICO conclusions, 7. Accurate definition of FMT, 8. Accurate definition of RCDI, 9. Provision of source links. The total score was 9 points. Finally, we also compared the overall completeness of the four AI narratives. Two authors independently scored the results, and Cohen's kappa coefficient was used to evaluate the agreement between the two raters.

Results: The authors established the standard PICO question: P: patients with RCDI; I: fecal microbiota transplantation; C: vancomycin antibiotic treatment; O: cure rate for RCDI. The scores assigned by the first author were: ChatGPT (8), Gemini (9), Copilot (9), and DeepSeek (8). The scores assigned by the second author were: ChatGPT (8), Gemini (9), Copilot (9), and DeepSeek (8). The score difference was due to ChatGPT and DeepSeek not providing source links. Finally, the authors consistently rated the overall narrative completeness of ChatGPT, Gemini, Copilot, and DeepSeek similarly. The kappa value was 1, indicating perfect agreement between the two raters.



Significance/Impacts /Implications: The results indicate that generative AI demonstrates excellent capability in formulating clinical questions into PICO questions and summarizing conclusions. All AI models accurately answered the clinical questions, allowing users to select a model based on their needs and preferences. The application of AI in EBM fundamentally changes how patients and clinicians access and receive information, potentially leading to a paradigm shift in medicine.

Keywords: artificial intelligence, large language models, *Clostridioides difficile* infection, evidence-based medicine, fecal microbiota transplantation.

Excellent Poster.31

Clinical Evaluation of Fecal Microbiota Transplantation for Recurrent *Clostridium difficile* Infection: An Evidence-Based Medicine Approach

AUTHORS AND AFFILIATIONS

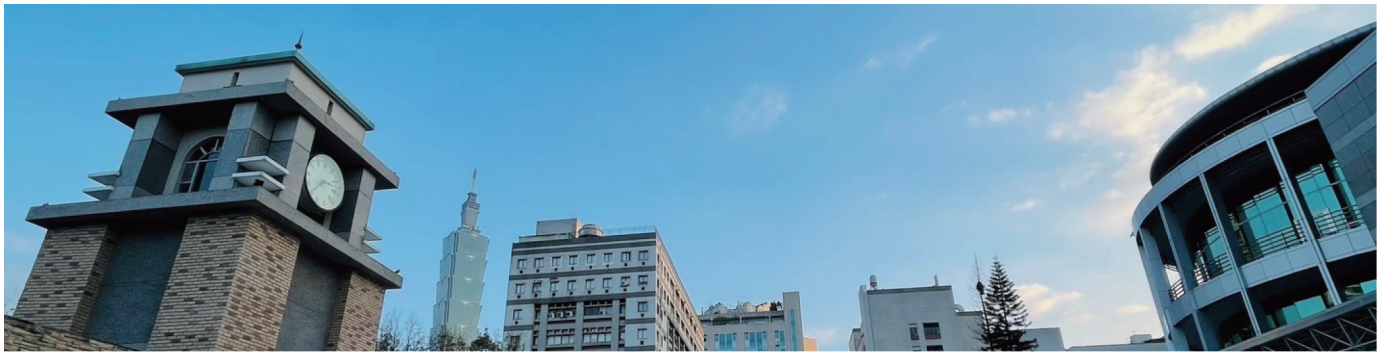
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Background & Aims: This clinical case involves a 75-year-old male patient who received a single prophylactic dose of cefazolin (1g) for surgery during hospitalization. Seven days after discharge, he presented with explosive diarrhea and abdominal cramping and was re-admitted. He was diagnosed with *Clostridioides difficile infection* (CDI) and pseudomembranous colitis. Initial antibiotic treatments with vancomycin failed, and the patient experienced multiple relapses. Therefore, the doctor diagnosed the patient with recurrent *Clostridioides difficile* infection (rCDI), and antibiotic treatments were discontinued. Fecal microbiota transplantation (FMT) was recommended to restore gut microbiota balance. Studies have confirmed that FMT is effective for treating both recurrent and refractory CDI. Therefore, this study aimed to apply the evidence-based medicine (EBM) approach to explore the clinical question: Is FMT effective for rCDI treatment? Is its cure rate superior to that of vancomycin?

Methods: According to EBM steps, we first identified the clinical question using the PICO framework: P (Patient): patients with recurrent *Clostridium difficile* infection (rCDI); I (Intervention): fecal microbiota transplantation; C (Comparator): antibiotic treatment; O (Outcome): cure rate for rCDI. We conducted a PubMed search using the strategy: ((recurrent *Clostridium difficile* infection) AND (fecal microbiota transplantation)) AND (cure rate), limited to meta-analyses and systematic reviews published within the last 5 years. The article selected for critical appraisal was: Yang L, Li W, Zhang X, Tian J, Ma X, Han L, Wei H, Meng W. The evaluation of different types fecal bacteria products for the treatment of recurrent *Clostridium difficile* associated diarrhea: A systematic review and network meta-analysis. *Front Surg*. 2022 Jul 20; 9:927970. doi: 10.3389/fsurg.2022.927970.

Results: The article included 10 RCTs with a total of 765 rCDI patients. Subgroup analysis revealed that FMT had a significantly higher cure rate compared to antibiotic treatment (OR = 9.36, 95% CI: 2.43–36.03, $p = 0.001$). No significant differences were found between frozen fecal bacteria vs. lyophilized fecal bacteria (OR = 1.31, 95% CI: 0.53–3.25, $p = 0.95$), or between fresh and frozen fecal bacteria (OR = 1.98, 95% CI: 0.16–24.54, $p = 0.08$). Head-to-head comparisons showed that both fresh fecal microbiota vs. vancomycin (OR = 8.98, 95% CI: 1.84–43.92) and frozen fecal microbiota vs. vancomycin (OR = 7.44, 95% CI:



1.39–39.75) were statistically superior. However, no significant differences were observed between the various FMT types (fresh, frozen, lyophilized, or autologous) as their ORs were all <1 and $p > 0.05$.

Significance/Impacts /Implications: FMT is more effective than vancomycin for the treatment of rCDI. Although fresh fecal microbiota appears to be the most effective form, no statistically significant differences were observed among the different preparation methods. Therefore, fresh, frozen, or lyophilized fecal bacteria may all achieve comparable therapeutic outcomes. Applying an EBM approach to clinical decision-making represents a paradigm shift in modern medicine.

Keywords: evidence-based medicine, fecal microbiota transplantation, recurrent *Clostridium difficile* infection, vancomycin

Excellent Poster.33

Title of the Abstract: Can Vitamin D Supplementation Prevent Falls in Older Adults? A Systematic Review

AUTHORS AND AFFILIATIONS

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Background & Aims: With the rapid aging of the global population, falls among older adults have become a significant public health issue. Falls are one of the leading causes of injury and death among the elderly, not only that increasing healthcare costs but also caregiving demands. Osteoporosis, sarcopenia, and muscle weakness are the main risk factors for falls. Vitamin D plays a crucial role in calcium absorption, bone metabolism, and muscle function. Some studies suggest that vitamin D supplementation may reduce fall risk, particularly in individuals with vitamin D deficiency. However, the effectiveness of vitamin D in fall prevention remains controversial. Therefore, the purpose of this study to evaluate whether vitamin D supplementation can effectively prevent falls in older adults.

Methods: This study adopted an empirical approach, using a search strategy of a systematic literature review to answer specific PICO questions. The study combined Medical Subject Headings (MeSH), natural language and synonyms to search and screen the best evidence, and provided that the PICO (P (Patient):Older adults (aged, elder, elderly, older, geriatric, gerontology, senior*, senium, pensioner, old age) ; I (Intervention): Vitamin D supplementation (Cholecalciferol, D3, D2Vitamin D, Ergocalciferol) ; C (Comparison of intervention)routine care(Usual care); O (Outcome): Fall prevention (Fall*) for answers through this systematic review and meta-analysis.

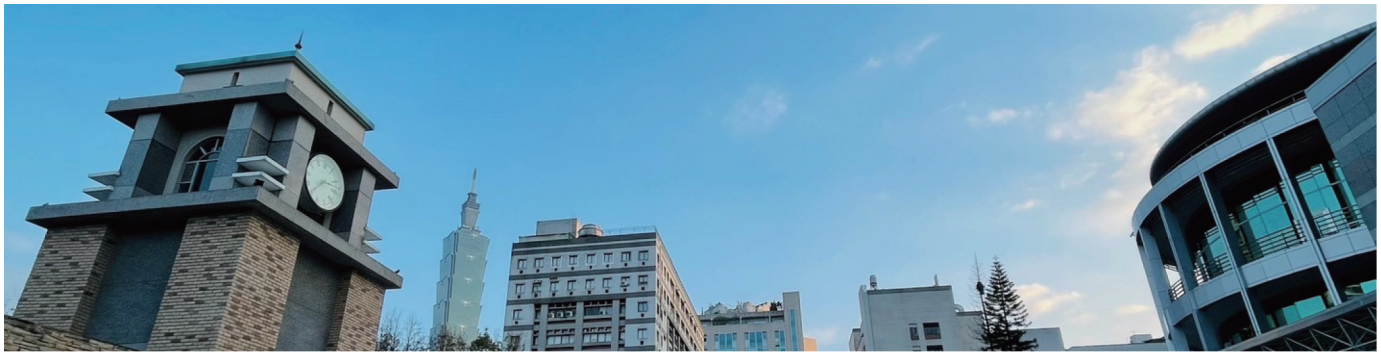
Results:

1.Study Quality Assessment

The final selection included a meta-analysis to the PRISMA process. The meta-analyses were evaluated using the AMSTAR 2 checklist. The meta-analysis met 14/16 criteria, risk of bias low risk, rated as high quality.

2. Study Results

Xiong et al. (2024) included 12 randomized controlled trials, total of 3202 participants, aged 55-75 years, were included in the con-



trolled clinical trials, the included countries two article the United States, one article Switzerland, four article Japan, three article China, one article Indonesia, and one article Thailand. Showing that active vitamin D analogs can reduce the risk of falls by 19% (RR = 0.81, 95% CI: 0.67-0.98) and significantly increase quadriceps strength (95% CI: 0.13-0.50).

3. The standardized mean difference in muscle strength between the calcium-supplemented and non-supplemented groups in all included studies was 0.054(95% CI = -0.14 - 0.25) and 0.25(95% CI = -0.04 - 0.54), showing Calcium supplementation does not increase the effect of active vitamin D on muscle strength.

Significance/Impacts /Implications: According to the results of this meta-analysis study, Calcium supplementation does not appear to increase the benefits of supplementation with active vitamin D analogs on muscle strength, showing Calcium supplementation does not increase the effect of active vitamin D on muscle strength. This findings are challenges previous perspective that the combination of vitamin D and calcium may be more effective in treatment musculoskeletal diseases, in argue of improving muscle strength, active vitamin D analogs used alone may have the same effect as combined calcium supplementation in improving muscle strength.

Keywords: elderly, vitamin D, falls.

Excellent Poster.34

Post-Discharge Suicide Risk Among Psychiatric Patients: A Systematic Review of Cohort Studies

AUTHORS AND AFFILIATIONS

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Background & Aims: Among psychiatric inpatients, the risk of suicide significantly increases during the short-term period following discharge, especially within the first one to three months.

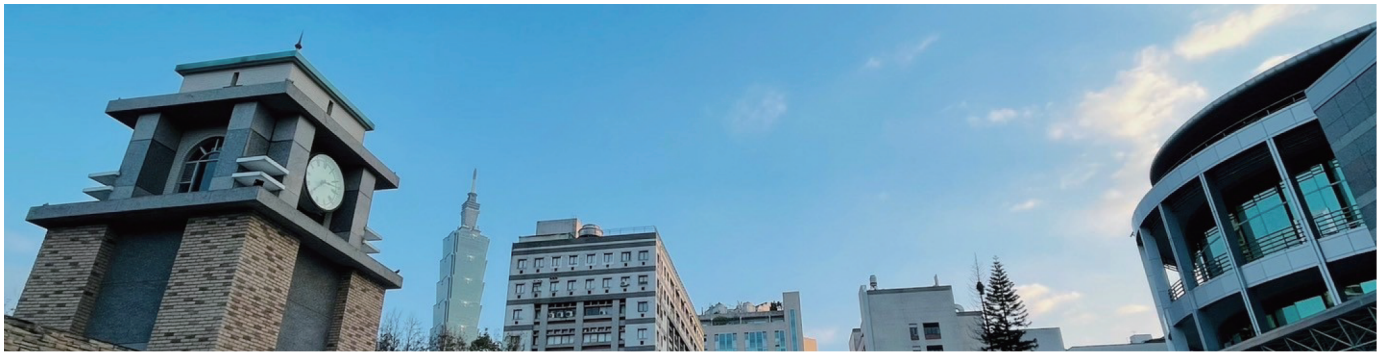
Evidence indicates that nearly 40% of suicidal behaviors occur within the first three months after discharge, and 70% within the first year. Notably, the mortality rate during this period is more than twenty times higher than that of the general population. These findings highlight that, even with adequate management of mental illness, patients often face unanticipated stressors upon reintegration into the community. Although current clinical practice includes discharge planning and post-discharge interventions, a substantial gap in systematic transitional care persists. This study therefore aims to systematically synthesis the risk of suicide among psychiatric patients after discharge, and to provide evidence- based clinical care and policy recommendations.

Methods: This study adopted an evidence-based approach, using a systematic review search strategy to search four databases in order to answer a specific PICO question. The study combined Medical Subject Headings (MeSH), natural language, and synonyms, and conducted the search and screening of the best evidence through a systematic review approach.

Results:

1.In the PRISMA flow diagram, only two systematic reviews with meta-analyses were ultimately included as the primary analytical texts. The quality assessment was conducted using the 2024 version of the CASP checklist for systematic review of cohort study, and both studies met 10/10 and 9/10 criteria respectively, indicating a low risk of bias. According to the Oxford Centre for Evidence-Based Medicine (CEBM) levels of evidence, both studies were classified as Level 1 evidence.

2.The first study by Swaraj et al. (2019) provided a detailed quantification of mortality rates following discharge from psychiatric inpatient care, integrating data from 71 studies published over a 50-year period. Studies involving older patients with higher natural mor-



tality rates were excluded. The results showed that the risk of suicidal behavior among psychiatric patients within 2 weeks post-discharge was 16.6% (95% CI: 16.1–17.0), within 1 month was 26.4% (95% CI: 25.9–26.9), within 3 months was 40.8% (95% CI: 40.2–41.4), and within 12 months reached 73.2% (95% CI: 72.7–73.7).

3.The second study by Chung et al. (2019) included 34 studies published from 1945 to 2017. The analysis focused on the first week and first month as high-risk periods, showing a significantly increased risk of suicide during these times (95% CI: 1.38– 8.5).

Significance/Impacts /Implications: Based on the results of this integrated analysis, psychiatric patients face a significantly elevated risk of suicide during the short-term period after discharge, particularly within the first week to one month. Although psychiatric inpatient treatment effectively stabilizes acute symptoms, the transitional period following discharge is often overlooked as a high- risk phase. It is recommended that discharge planning be enhanced to include suicide risk education, emotional management strategies, and family education and support to ensure effective support for patients as they reintegrate into the community. Future recommendations include integrating discharge planning services with multidisciplinary collaboration among inpatient, outpatient, and community support teams, providing intensive follow-up and psychological counseling to help patients and their families cope with emotional challenges. This not only enhances the patient's sense of safety but also helps families respond effectively. In clinical practice, integrating risk distribution trends, key risk factors, and preventive intervention strategies from high-quality evidence-based studies can provide feasible clinical recommendations and policy directions to strengthen systematic support during the discharge transition phase, thereby improving the safety and quality of care for psychiatric patients.

Keywords: psychiatric patients, mental disorder, discharge, hospitalization, suicidal behavior

Excellent Poster.35

Estimating the Prevalence of Falls Among Older Adults in Africa: A Meta-Analysis of Community and Health-care-Based Studies

AUTHORS AND AFFILIATIONS

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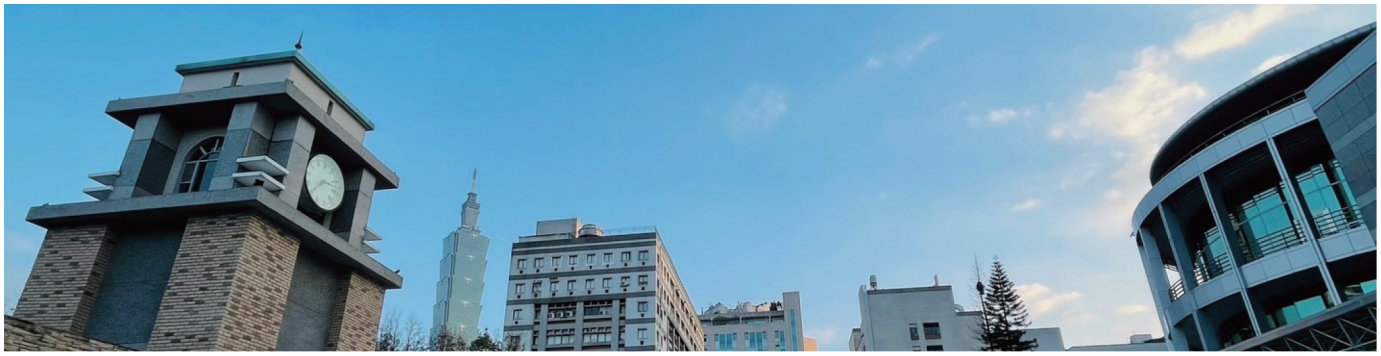
Background & Aims: Falls are a major public health concern among older adults and a leading cause of morbidity and mortality globally. Despite a growing aging population in Africa, the burden of falls in this region remains underexplored. This meta-analysis aimed to estimate the pooled prevalence of falls among older adults in Africa across both community and healthcare settings.

Methods: A systematic literature search was conducted in PubMed, Embase, CINAHL, Scopus, Web of Science, and Google Scholar, following PRISMA guidelines. Studies were included if they reported the prevalence of falls among older adults (aged ≥60 years) in African community or healthcare settings. Data were extracted independently by two reviewers, and study quality was assessed using the Hoy et al. Risk of Bias Tool. A random-effects meta-analysis was performed to calculate pooled prevalence estimates, with heterogeneity assessed using the I^2 statistic.

Results: Ten cross-sectional studies involving 6,414 older adults from six African countries met the inclusion criteria. The overall pooled prevalence of falls was 29% (95% CI: 22%–36%), with substantial heterogeneity (I^2 = 96.6%). Subgroup analysis showed a pooled prevalence of 24% (95% CI: 17%–32%) in community-based studies (I^2 = 94.2%) and 34% (95% CI: 23%–46%) in healthcare-based studies (I^2 = 97.9%). The wide prediction intervals indicate significant variation in prevalence across different populations and settings.

Significance/Impacts /Implications: Falls among older adults in Africa are common and particularly prevalent in healthcare settings. The high heterogeneity underscores the need for context-specific fall prevention strategies. Further research is warranted to explore the underlying risk factors and develop tailored interventions to reduce fall-related morbidity in this rapidly aging region.

Keywords: Falls, Older adults, Africa, Meta-analysis, Prevalence, Community, Health facilities, Geriatric syndromes.



Excellent Poster.36

Unilateral vs. Bilateral Robot-Assisted Upper Limb Training in Stroke Rehabilitation: A Literature Review

AUTHORS AND AFFILIATIONS

Han-Ting Tsai[1,2]

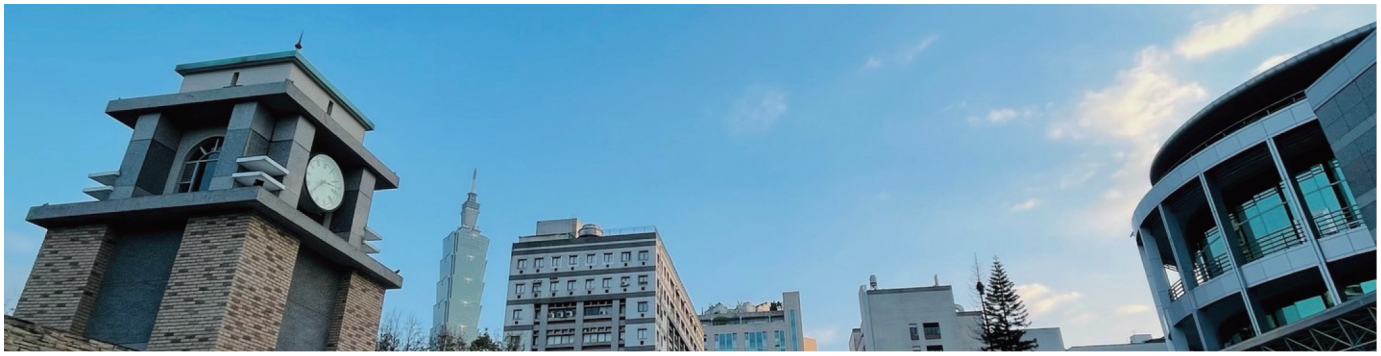
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Background & Aims: Robot-assisted therapy (RAT) offers high-repetition, task-specific upper limb training for stroke rehabilitation. While both unilateral (URT) and bilateral (BRT) robotic strategies are widely used, their comparative effectiveness remains debated. This review aims to explore whether unilateral and bilateral robot-assisted interventions yield different outcomes in post-stroke upper limb rehabilitation, including motor function, activity performance, and neuromuscular or neurophysiological measures.

Methods: A narrative review and quantitative synthesis were conducted. Seven randomized or comparative studies involving stroke survivors who received either URT or BRT were included. Outcomes were categorized as motor impairment (e.g., Fugl-Meyer Assessment, FMA), activity performance (e.g., WMFT, Barthel Index), and neuromuscular or neurophysiological indicators (e.g., EMG, EEG). A fixed-effect meta-analysis was performed on post-treatment FMA scores.

Results: All included studies reported motor gains in both URT and BRT groups. However, the meta-analysis revealed no statistically significant difference between the two interventions in terms of FMA improvement (mean difference = 1.89, 95% CI: –1.37 to 5.16, P = 0.26), with no heterogeneity (I^2 = 0%). In activity performance, some studies favored BRT for improving independence and bilateral coordination, while others reported similar outcomes. In neuromuscular and neurophysiological domains, BRT showed benefits such as reduced trunk compensation, enhanced bilateral EMG activation, and restored interhemispheric connectivity. Conversely, URT was associated with faster movement execution and improved motor timing (e.g., WMFT time scores).

Significance/Impacts /Implications: URT and BRT both contribute to motor recovery following stroke, though their strengths may differ by outcome domain. BRT appears more advantageous for symmetrical activation and compensatory control, whereas URT may better support movement speed and targeted skill development. Clinicians should consider patient-specific goals, recovery phase, and functional priorities when selecting robot-assisted approaches.



Keywords: Stroke, robot-assisted therapy, unilateral training, bilateral training, upper limb, motor function

Excellent Poster.37

Evidence-Based Decision-Making Framework to Off-Label Dupilumab in Refractory Eosinophilic Otitis Media: A Case Report

AUTHORS AND AFFILIATIONS

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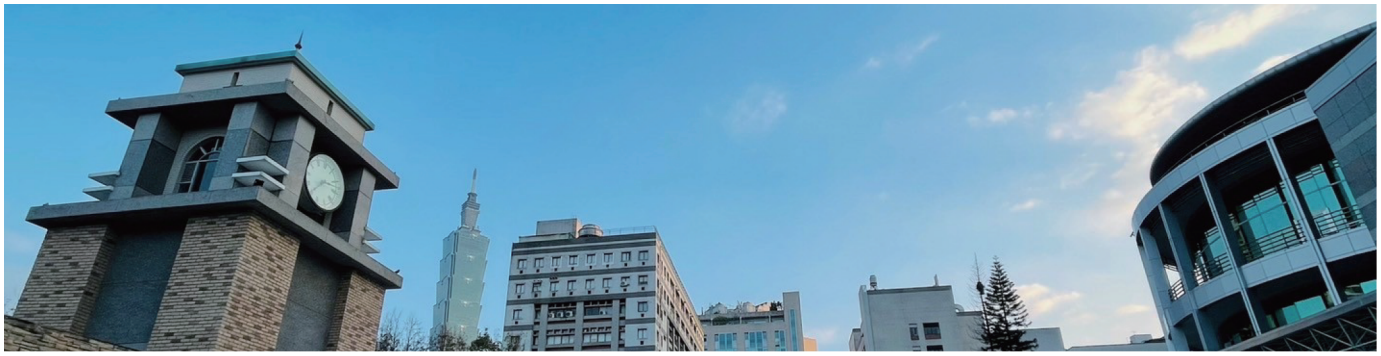
Background & Aims: Eosinophilic otitis media (EOM) is an uncommon, type-2–mediated middle-ear disease that often fails to respond to conventional surgery and corticosteroids. Dupilumab (anti-IL-4Rα) has shown promise but evidence remains limited. We aimed to demonstrate how a structured evidence-based health care (EBHC) process justified off-label dupilumab use in a single refractory EOM patient.

Methods: We performed a rapid search (MEDLINE, Embase, Cochrane, 2010-2024) for EOM treated with dupilumab or other biologics. Six studies (five case reports, one cohort; n = 18) were critically appraised; GRADE certainty was very low. Anticipated benefit, potential harms, and patient values were synthesized in a decision-aid. Shared decision making led the patient to select dupilumab 300 mg subcutaneously every 2 weeks after ventilation tube placement.

Results: The 30-year-old woman's air–bone gap improved from 30 dB to 10 dB and speech discrimination from 72 % to 96 % over 18 months. Transient peripheral eosinophilia (> 1 000 cells/μL) occurred without relapse. No further surgery or systemic steroids were needed.

Significance/Impacts /Implications: This report illustrates the practical application of EBHC principles—evidence retrieval, critical appraisal, GRADE assessment, and shared decision making—to safely implement an off-label biologic in a rare otologic condition. The framework can guide clinicians facing therapeutic uncertainty in low-evidence contexts.

Keywords: dupilumab; eosinophilic otitis media; evidence-based health care; shared decision making; biologics



Excellent Poster.38

Applications of ChatGPT in Pharmacy Education and Clinical Practice: A Systematic Literature Review

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3. China Medical University, Taichung, Taiwan

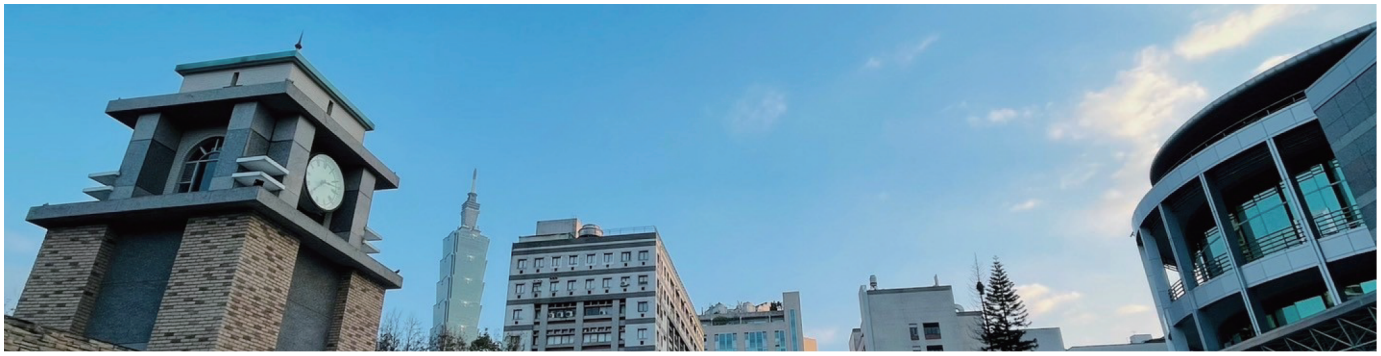
Background & Aims: ChatGPT, a large language model, has shown extensive application potential across various domains. This systematic review aims to evaluate the applications, effectiveness, and limitations of ChatGPT in pharmacy education and clinical practice.

Methods: A systematic literature review was conducted, searching Embase, ERIC, PubMed, and Scopus databases. We included studies with "ChatGPT" in the title that featured a defined research design or methodology, and used human comparators such as pharmacy students, educators, or pharmacists, while excluding review articles. The modified CASP checklist was used for quality appraisal, and relevant information was synthesized.

Results: Out of 28 full-text articles, 9 met the inclusion criteria. ChatGPT demonstrates potential in pharmacy education and practice as a learning aid, virtual tutor, and for enhancing course management and writing efficiency. Students generally showed interest and perceived benefits. However, its performance in clinical tasks was inconsistent, with limitations in accuracy and reliability, particularly concerning complex calculations, individualized judgments, and up-to-date information. Potential issues include generating erroneous information ("hallucinations"), data bias, academic integrity concerns, ethical privacy issues, and a lack of clear guidelines. The importance of human oversight and formal integration into training was emphasized.

Significance/Impacts /Implications: ChatGPT presents significant opportunities in pharmacy education and practice. In education, it serves as a learning aid for students, offering personalized support and enhancing comprehension, while also boosting faculty efficiency in course management and content generation. This integration cultivates crucial AI literacy for future professionals. In practice, ChatGPT can streamline tasks like drug information retrieval and documentation, potentially alleviating pharmacist workload by handling routine queries and administrative duties.

However, significant challenges persist. Accuracy and reliability are major concerns, with inconsistent performance in complex clinical tasks and a propensity for generating erroneous information ("hallucinations"). Its information



timeliness is limited, and it lacks the nuanced human judgment and contextual awareness vital for individualized patient care. Ethical issues such as data privacy, bias, and academic integrity are also prominent.

The core takeaway emphasizes that ChatGPT is a supplementary tool, not a replacement for human expertise. Rigorous human oversight and validation of its output are crucial. Future efforts must focus on integrating AI training into pharmacy curricula, developing domain-specific AI models, and establishing clear usage guidelines to harness its potential responsibly while mitigating risks. Embracing this technological shift is essential for the future of pharmacy.

Keywords: ChatGPT, pharmacy education, Clinical Practice

Excellent Poster.39

Comparative Analysis of Hybrid Therapy versus SBRT/SRS for Spinal Metastasis: a Systematic Review and Meta-analysis

AUTHORS AND AFFILIATIONS

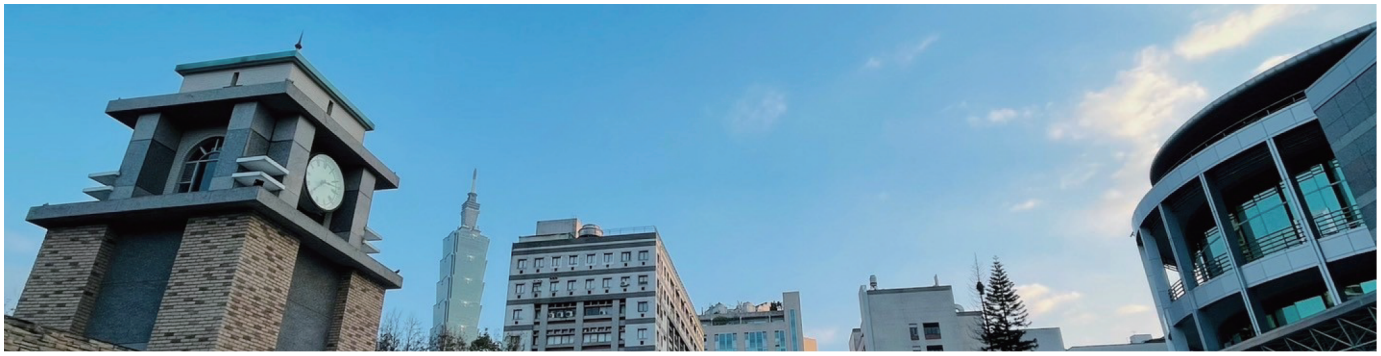
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Background & Aims: Spinal metastases are the most common type of skeletal metastatic disease and may result in metastatic epidural spinal cord compression (MESCC) in 5% to 10% of cancer patients. The advent of stereotactic body radiation therapy (SBRT) and stereotactic radiosurgery (SRS) has revolutionized spinal metastasis management and reshaped surgical approaches, enabling the use of separation surgery to establish a safe margin for radiation delivery. Despite these advancements, comparative data on treatment outcomes between separation surgery followed by SBRT (hybrid therapy) and SBRT alone remain limited. This systematic review and meta-analysis assessed the effectiveness of hybrid therapy versus SBRT alone.

Methods: This systematic review and meta-analysis followed PRISMA guidelines and was registered with PROSPERO (CRD42023438244). A comprehensive literature search of PubMed, Embase, Scopus, Web of Science, and The Cochrane Library was conducted to identify studies comparing stereotactic body radiation therapy (SBRT) alone versus hybrid therapy (separation surgery followed by SBRT) in patients with spinal metastases. Primary and secondary outcomes were 1- and 2-year local failure and overall mortality rates. Data were extracted independently by two reviewers, and study quality was assessed using ROBINS-I and GRADE tools. Meta-analyses were performed using a random-effects model in R.

Results: A total of 23 studies comprising 3026 patients were included in the analysis. The 1-year local failure (LF) rate was 12% (95% CI: 0.08–0.17) for the hybrid therapy group and 10% (95% CI: 0.05–0.17) for the SBRT group, with no significant difference (*p* value = 0.55). The 2-year LF rates were 12% (95% CI:



0.08–0.19) for hybrid therapy and 14% (95% CI: 0.07–0.25) for SBRT (*p* value = 0.72). However, the 1-year overall mortality (OM) rate was significantly higher in the hybrid therapy group at 36% (95% CI: 0.30–0.43) compared to 19% (95% CI: 0.10–0.33) in the SBRT group (*p* value = 0.03). The 2-year OM rates were 50% (95% CI: 0.35–0.65) for hybrid therapy and 36% (95% CI: 0.24–0.49) for SBRT (*p* value = 0.18).

Significance/Impacts /Implications: Hybrid therapy and SBRT offer comparable local control outcomes for patients with spinal metastases; however, hybrid therapy is associated with an increased risk of short-term mortality.

Keywords: Spinal metastasis; Stereotactic body radiation therapy (SBRT); Stereotactic radiosurgery (SRS); Separation surgery; Hybrid therapy

Excellent Poster.40

The Effect of Mother–Newborn Skin-to-Skin Contact on the Risk of Postpartum Hemorrhage: A Systematic Review and Meta-analysis

AUTHORS AND AFFILIATIONS

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Background & Aims: Postpartum hemorrhage is a major contributor to maternal mortality, particularly in low-resource settings. While active management with uterotonics like oxytocin is standard, access issues and side effects limit their universal use. Skin-to-skin contact (SSC) has been proposed as a low-cost alternative to promote uterine contraction via endogenous oxytocin, but its effect on postpartum blood loss remains unclear.

The aims of this study was to evaluate whether mother-infant skin-to-skin contact (SSC) reduces the risk of postpartum hemorrhage (PPH) during the third stage of labor.

Methods: Systematic review and meta-analysis of randomized controlled trials comparing skin-to-skin contact with routine care during the third stage of labor.

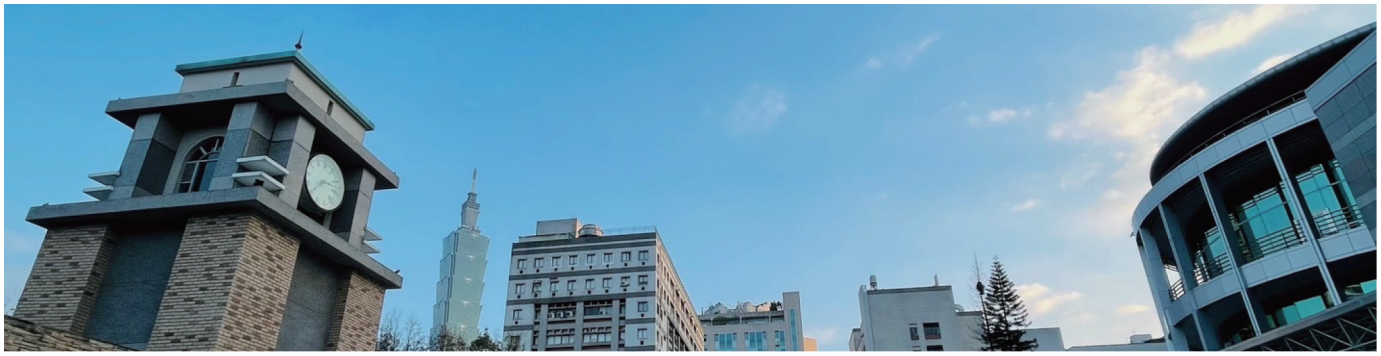
Relevant studies were identified through searches in PubMed, Cochrane Library, Embase, and CINAHL Plus, covering publications up to April 2025.

Only randomized controlled trials comparing SSC to routine care were included. Risk of bias was assessed using the Cochrane RoB 2 tool. Meta-analysis was performed using Review Manager (RevMan Web) with a random-effects model.

Results: Six RCTs involving 1928 participants included in the analysis. SSC significantly reduced postpartum blood loss compared to routine care (Mean Difference [MD] = -189.74, 95% Confidence Interval [CI]: -366.93 to -12.56; $I^2 = 98\%$). However, substantial heterogeneity was present across studies. Differences in SSC duration and outcome measurement timing may have contributed to the variation in results. No statistically significant differences were observed in hemoglobin, hematocrit, or oxytocin levels.

Conclusion: Mother-infant skin-to-skin contact may serve as an effective adjunctive intervention to reduce postpartum blood loss during the third stage of labor. As a non-invasive, low-cost strategy, SSC may be particularly valuable in settings with limited access to uterotonics. Further high-quality trials with standardized SSC protocols are warranted to confirm its clinical benefits.

This meta-analysis highlights SSC as a promising, feasible intervention to support maternal



hemodynamic recovery after childbirth. Its low cost and ease of implementation make it especially suitable for resource-limited settings. Incorporating SSC into postpartum care may contribute to improved maternal outcomes globally.

Keywords: Skin-to-skin contact; Postpartum hemorrhage; Third stage of labor; Systematic review; Meta-analysis.

Excellent Poster.41

Current Strategies for Live Attenuated African Swine Fever Vaccines: Insights from a Systematic Review and Meta-analysis

AUTHORS AND AFFILIATIONS

Professor Won, Gayeon[1],Eurade Ntakiyisumba [1], Dr. Maryum Tanveer [1] ,Fabrice Hirwa[1]

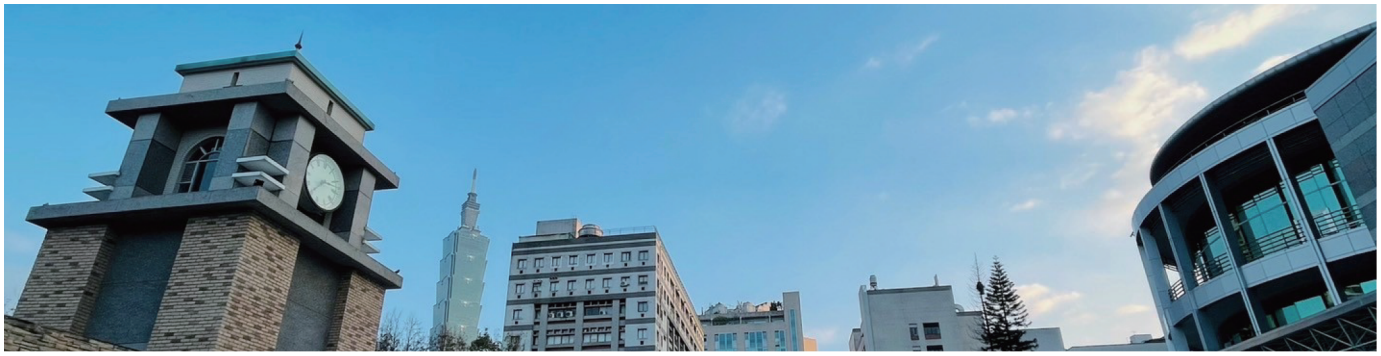
1. College of Veterinary Medicine, Jeonbuk National University, Iksan Campus, Gobong-ro 79, Iksan 54596, Republic of Korea

Background & Aims: African swine fever (ASF) remains a devastating transboundary disease with no licensed vaccine. Live attenuated vaccines (LAVs) are considered the most advanced candidates, yet their protective consistency and biosafety remain debated. While numerous experimental studies exist, findings are fragmented and often contradictory. This study systematically reviewed available LAV trials and conducted a meta-analysis to provide an integrated and quantitative assessment of current vaccine strategies.

Methods: Following PRISMA guidelines, international and Korean databases were searched up to November 2023. Fifty-five studies comprising 155 trials in domestic pigs were included. Data were extracted on vaccine backbone strain, attenuation strategy, challenge strain, and outcomes (mortality, clinical signs, fever, and adverse effects). Random-effects models were used to estimate pooled effect sizes, and subgroup analyses explored moderators of heterogeneity.

Results: Overall, LAVs significantly reduced ASF-associated mortality (VE ≈ 70%), clinical signs (VE ≈ 66%), and fever (VE ≈ 54%) compared with unvaccinated controls. The most effective strategy was gene deletion of virulence and immune escape–associated genes (MGF100/110/300/360/530, CD2v, p54, p30, pp220, pp62, etc.) in virulent strains, yielding VEs up to 73% against mortality and 70% against clinical signs. Specific gene-deleted mutants of GZ201801, SY18, and Georgia 2007/1 strains provided the highest protection (84 – 92%). In contrast, naturally attenuated isolates or cell-passaged strains showed weaker and more variable protection (47 – 63%). Importantly, vaccination often induced adverse reactions particularly fever and clinical signs highlighting residual safety concerns. Vaccine efficacy was consistently higher against homologous than heterologous challenge strains, underscoring limited cross-protection.

Significance/Impacts /Implications: This systematic review and meta-analysis offer the first consolidated evidence on ASF live attenuated vaccines. By pooling data from multiple trials, it increases statistical power and provides more reliable effect estimates than single studies. The approach clarified which attenuation strategies and viral backbones consistently improved protection, while highlighting safety concerns often masked in individual reports.



Moreover, the analysis resolved inconsistencies across studies and identified strain- and strategy-dependent variability, offering insights into why outcomes differ. Together, these strengths underscore the value of evidence synthesis in guiding vaccine prioritization and support the development of safer, standardized ASF vaccines for field use.

Keywords: ASFV, Evidence-based medicine, Immunization, Vaccine efficacy

Excellent Poster.42

Which Vaccines Work Best for Porcine Edema Disease? Evidence from a Systematic Review and Network Meta-analysis

AUTHORS AND AFFILIATIONS

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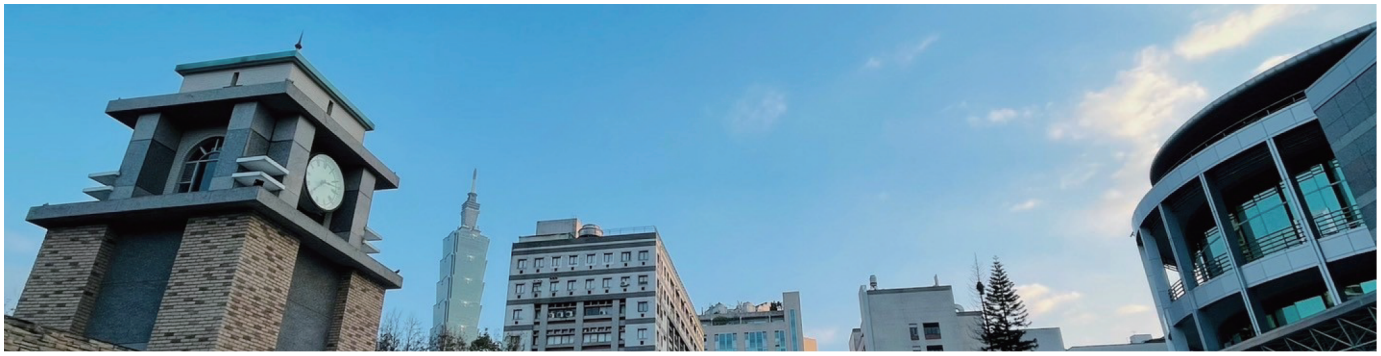
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Background & Aims: Porcine edema disease (ED), caused by Shiga toxin 2e (Stx2e)-producing *Escherichia coli*, remains a major cause of mortality in weaned piglets. Multiple vaccine platforms such as Stx2e toxoids, recombinant B-subunit proteins, chimeric subunits, and whole-cell bacterins, have been tested, yet their comparative effectiveness is unclear. This study aimed to systematically consolidate available evidence and, through a network meta-analysis (NMA), identify the most effective strategies against ED.

Methods: A systematic search of PubMed, Scopus, and Web of Science was conducted up to March 2025 under PRISMA guidelines. Eligible studies included experimental or field trials reporting vaccine efficacy against ED. Extracted data included vaccine antigen type, immunization regimen, mortality, and clinical outcomes. Random-effects pairwise meta-analysis was performed to estimate pooled protection, while NMA enabled indirect comparison and ranking of vaccines lacking head-to-head evaluation.

Results: From 312 screened records, 18 studies were included. Recombinant Stx2e B-subunit vaccines showed the highest protective effect, reducing mortality by over 80% relative to controls (OR 0.18, 95% CI 0.09–0.34). Formalin-inactivated Stx2e toxoid vaccines also demonstrated strong efficacy (70–80% protection), whereas fusion proteins combining Stx2e B-subunit with pilus antigens (FedF/F18 fimbriae) offered enhanced immune responses but slightly lower protection (65–70%). By contrast, whole-cell bacterins conferred inconsistent outcomes, often below 50%. The NMA ranked recombinant B-subunit vaccines highest, followed by toxoid-based vaccines, with bacterins lowest. Heterogeneity was partly explained by pig age, production system, and challenge dose.

Significance/Impacts /Implications: By integrating fragmented trial data, this systematic review provides the most comprehensive evidence to date on ED vaccines. The network meta-analysis clarified relative performance across vaccine types, demonstrating the superiority of recombinant B-subunit and toxoid-based platforms, while exposing the limited value of bacterins. These findings highlight how systematic evidence synthesis not only resolves inconsistencies across individual trials but also enables indirect comparison and rank-



ing to inform vaccine policy. The results provide a practical evidence-based framework for optimizing ED prevention and guiding future vaccine development in swine production.

Keywords: Swine, STEC, ED, Vaccine

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