

BOOK OF ABSTRACT

5th ICoHPJam

International Conference Health Polytechnic of Jambi
Jambi, Indonesia, 29-30 April 2025

"Satu Sehat"
The Transformation of Indonesia Healthcare System:
Opportunities, Challenges, and Solutions for Improving
the Management of Non-Communicable Diseases

5th International Conference Health Polytechnic of Jambi (ICoHPJam) 2025

**“Satu Sehat” The Transformation of Indonesia Healthcare
System: Opportunities, Challenges, and Solutions for Improving
the Management of Non-Communicable Diseases**

[THE BOOK OF ABSTRACT]

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FOREWORD

5th International Conference Health Polytechnic of Jambi (ICoHPJam) 2025
“Satu Sehat” – The Transformation of Indonesia Healthcare System: Opportunities,
Challenges, and Solutions for Improving the Management of Non-Communicable
Diseases
29–30 April 2025

It is with great pride and enthusiasm that we present the Book of Abstracts for the 5th International Conference of Health Polytechnic of Jambi (ICoHPJam) 2025. This year's conference brings together researchers, practitioners, educators, and policymakers from around the globe to exchange knowledge and share innovations under the unifying theme: “Satu Sehat” – The Transformation of Indonesia Healthcare System: Opportunities, Challenges, and Solutions for Improving the Management of Non-Communicable Diseases.

Indonesia, like many nations, is undergoing a significant transformation in its healthcare system, driven by the urgent need to address the growing burden of non-communicable diseases (NCDs). This conference serves as a crucial platform to explore multidisciplinary strategies, harness technological innovations, and strengthen health system resilience in response to the NCD epidemic.

The contributions compiled in this book reflect a wide spectrum of perspectives and research findings—from community-based interventions and health technology applications to policy frameworks and educational innovations. Each abstract represents a step forward in our collective journey toward a healthier, more equitable healthcare future.

We extend our deepest gratitude to all authors, presenters, reviewers, and organizing committee members who have made this event possible. Your dedication to advancing health sciences and commitment to improving the well-being of our communities are the cornerstones of this conference's success.

May this collection of abstracts inspire further collaboration, research, and action as we navigate the challenges and opportunities of healthcare transformation in Indonesia and beyond.

Warm regards,

Egy Sunanda Putra, M.Gz

Chairperson

5th International Conference Health Polytechnic of Jambi (ICoHPJam) 2025

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5th ICoHPJam

International Conference Health Polytechnic of Jambi
Jambi, Indonesia, 29-30 April 2025

"Satu Sehat"

The Transformation of Indonesia Healthcare System:
Opportunities, Challenges, and Solutions for Improving
the Management of Non-Communicable Diseases



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5th International Conference Health Polytechnic of Jambi (ICoHPJam) 2025

**“Satu Sehat” The Transformation of Indonesia Healthcare System:
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Management of Non-Communicable Diseases**

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KEYNOTE SPEECH

HEALTH SYSTEM AND POLICY RESEARCH (HSPR) FOR GLOBAL HEALTH IN INDONESIA: AN OVERVIEW OF PRIORITIES, CHALLENGES, AND OPPORTUNITIES

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ABSTRACT

Health System and Policy Research (HSPR) is a multidisciplinary field that examines how health systems function and how health policies are designed, implemented, and evaluated. As Indonesia faces a complex health landscape—marked by a dual burden of communicable and non-communicable diseases, health inequities, and a decentralized governance structure—HSPR offers critical insights for driving sustainable improvements and supporting global health goals, including SDG 3.

This presentation highlights the significance of HSPR in informing evidence-based reforms, strengthening health system resilience, and elevating Indonesia's global health diplomacy. It outlines key focus areas for research, including health financing through Jaminan Kesehatan Nasional (JKN), human resources for health, service delivery via primary care centers (Puskesmas), health governance under decentralization, national health information systems like Satu Data Kesehatan, and policy development cycles.

The methodologies employed in HSPR are diverse, ranging from quantitative cost-effectiveness analyses to qualitative stakeholder engagement, often using frameworks such as the WHO Health System Building Blocks. Key stakeholders include the Ministry of Health, BPJS Kesehatan, academic institutions, NGOs, and global partners such as WHO and the World Bank.

Prof. Syafiq emphasizes that HSPR provides a strategic foundation for addressing inefficiencies, improving service equity and quality, enhancing workforce distribution, and supporting health policy innovation. Ultimately, advancing HSPR in Indonesia presents both an opportunity and a necessity for achieving equitable and effective health system transformation in the face of current and emerging challenges.

* Prof. Ir. Ahmad Syafiq, MSc, PhD, is a distinguished professor at the Faculty of Public Health, Universitas Indonesia, with expertise in nutrition and public health policy. He earned his PhD from the University of Queensland and has led numerous national and international research initiatives on stunting, food security, and health system reforms. As Director of Career Development and Alumni Affairs at UI, and Head of the Center for Nutrition and Health Studies, he is a prolific scholar, patent holder, and key contributor to public health development in Indonesia.

KEYNOTE SPEECH

PRE-- DIAGNOSTIC: GENOMIC DETECTION PREVENTION FOR NON COMMUNICABLE DISEASES

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ABSTRACT

Non-communicable diseases (NCDs) such as cardiovascular diseases, cancer, diabetes, and chronic respiratory conditions remain the leading causes of death globally, including in Malaysia. In his keynote presentation, Prof. Dr. Mohd Nazil Salleh emphasizes the critical role of early detection and genomic-based prevention strategies in mitigating the burden of NCDs. The integration of genomic technologies with artificial intelligence (AI) and precision medicine enables more accurate risk prediction, early diagnosis, and personalized interventions.

He highlights the potential of point-of-care (POC) testing devices in transforming healthcare accessibility, especially in resource-limited settings. These devices, leveraging biomolecular markers, have advanced rapidly with new platforms and designs, offering practical solutions for real-time disease monitoring.

Prof. Nazil also explores the emerging intersection between heart failure and cancer through shared cardiovascular risk pathways, underlining the need for interdisciplinary approaches in diagnosis and treatment. Furthermore, he discusses the ethical considerations of machine learning in translational medicine, particularly in predicting chronic disease progression.

As President of the ASEAN Association of Medical Schools of Medical Technology, Prof. Nazil calls for regional collaboration to strengthen NCD screening and genomic innovation. His presentation serves as a forward-looking vision for leveraging biomedical advances to create more effective, equitable, and preventive healthcare systems.

* Prof. Dr. Mohd Nazil Salleh, PhD, CSci, FRSB, is a renowned expert in Biomedical Science with over 30 years of academic, research, and leadership experience. He currently serves as Acting Deputy Vice-Chancellor at University College of MAIWP International and is President of the Malaysian Confederation of Allied Health Professionals. A pioneer in molecular diagnostics and medical laboratory science, he has authored over 40 publications, holds international fellowships, and is the first Malaysian recognized as a Chartered Scientist by the UK Science Council. He is also a frequent keynote speaker across Asia.

KEYNOTE SPEECH

MICRO ARRAY PATCHES AS A VERSATILE TECHNOLOGY FOR TRANSDERMAL DRUG DELIVERY

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ABSTRACT

In her presentation, Dr. Qonita Kurnia Anjani highlighted microneedle (microarray patch) technology as a transformative approach for drug and vaccine delivery, particularly for non-invasive, transdermal applications. She introduced the four primary types of microneedles—solid, coated, hollow, and dissolving—each with distinct delivery mechanisms such as “poke and patch,” “coat and poke,” “poke and flow,” and “poke and release.”

Dr. Anjani shared recent findings on dissolving microneedles made from Soluplus® polymers loaded with colchicine for minimally invasive gout treatment. These systems achieved sustained drug release over 7 days and showed high efficacy with reduced parasitemia in animal studies. She also presented hydrogel-forming microneedles for delivering higher-dose compounds using compressed drug reservoirs, demonstrating enhanced drug permeation and tissue targeting.

The talk emphasized the ability of microneedles to enhance drug bioavailability, improve patient compliance, and offer precise, localized or systemic administration. However, Dr. Anjani noted critical challenges remain in translating this technology from lab to clinical settings—including regulatory approval, large-scale manufacturing, and bridging pharmacokinetic differences between animal models and humans.

Her work underlines microneedles as a promising platform for the future of personalized medicine, vaccine delivery, and chronic disease management.

* Dr. Qonita Kurnia Anjani is a Postdoctoral Research Fellow at Queen's University Belfast, UK, and an Adjunct Professor at Airlangga University. Her expertise lies in pharmaceutical formulation and microneedle-based drug delivery systems for diseases such as tuberculosis, HIV, and malaria. A prolific researcher, she has co-authored over 80 peer-reviewed publications and has delivered invited talks internationally. Dr. Anjani is also active in academic supervision, conference organizing, and international collaboration in pharmaceutical sciences.

KEYNOTE SPEECH

EVIDENCE-BASED COMMUNITY HEALTH PROGRAMS AND HEALTH WORKFORCE STRATEGY IN MANAGING NONCOMMUNICABLE DISEASES

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ABSTRACT

Noncommunicable diseases (NCDs), particularly cardiovascular diseases (CVDs), are a leading cause of premature death globally, disproportionately affecting low- and middle-income countries. This presentation highlights the urgent need for integrated strategies that combine evidence-based community health interventions with robust health workforce planning to address the growing NCD burden.

The Chronic Disease Self-Management Program (CDSMP), a six-week intervention originally developed at Stanford University, has shown significant benefits in improving symptom management, nutrition, exercise, and self-efficacy among patients with chronic conditions, including CVD. Community-based approaches that empower stakeholders, leverage digital health, and promote system connectivity have proven effective in enhancing patient outcomes and reducing health inequities.

However, health workforce challenges—such as geographic disparities, insufficient training, and retention issues—persist, especially in underserved areas. Solutions include enhancing recruitment strategies, promoting advanced practice roles for nurses, telemedicine support for rural practitioners, and policy reforms for continuous professional development.

The presentation emphasizes the need for systemic, bundled interventions aligned with universal health coverage (UHC) goals. Ultimately, addressing NCDs requires not only empowering patients through self-management but also ensuring a well-distributed, competent, and motivated health workforce..

* Dr. Klein R. Fernandez is an Assistant Professor of Human Ecology, Sustainability Science, and Health Sociology at the University of the Philippines Los Baños. With a PhD in Global Health Ethics from Linköping University and experience as a Global Health Corps Fellow in the U.S., he specializes in health workforce policy, chronic disease management, and bioethics. He has worked across Asia, Europe, and Africa, and actively contributes to research, teaching, and public health ethics, particularly in low- and middle-income contexts.

KEYNOTE SPEECH

INNOVATIVE APPROACHES TO DIABETES MANAGEMENT AND EDUCATION IN INDONESIA: TRANSFORMING HEALTHCARE FOR THE FUTURE

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ABSTRACT

Indonesia faces a growing diabetes crisis marked by rising prevalence, significant economic burden, and gaps in care and education, particularly in rural and low-resource areas. This presentation highlights innovative strategies to transform diabetes management and education in the country. It emphasizes the integration of digital health tools such as SMS interventions, mobile applications, and telemedicine to improve clinical outcomes like HbA1c levels. Community-based support programs, culturally adapted educational materials, and peer-led initiatives further enhance engagement and self-management.

The Diabetes Self-Management Education and Support (DSMES) model is strongly advocated, as evidence shows it significantly improves glycemic control, blood pressure, and patient empowerment. Emphasis is placed on transitioning from traditional one-way education to interactive, empathetic, and culturally responsive approaches. Future strategies include scaling successful pilot programs nationally, incorporating innovation into primary care (Puskesmas), and developing national guidelines for tech-based diabetes education.

The presentation calls for multi-sectoral collaboration involving government, academia, NGOs, and private tech sectors to ensure sustainable impact. By empowering patients and strengthening community participation, these approaches aim to create a more inclusive, efficient, and future-ready healthcare system for diabetes care in Indonesia.

* Dr. Debby Syahrul Romadlon, PhD, IDF Fellow, is an international lecturer at the Faculty of Nursing, Chulalongkorn University, Thailand. A specialist in diabetes education and symptom management, he holds multiple advanced degrees in health sciences and nursing from institutions in Indonesia and Taiwan. With a Scopus h-index of 9 and numerous Q1 publications, Dr. Romadlon is a recognized expert in diabetes self-management, digital interventions, and fatigue in chronic illness. He is actively involved in global research collaborations and serves as a reviewer for leading journals in nursing and diabetes care.

KEYNOTE SPEECH

EXPLORING THE ORAL HEALTH IMPACTS OF ASTHMA MANAGEMENT IN PAEDIATRIC PATIENTS

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ABSTRACT

Asthma is a prevalent chronic condition in children, and while pharmacotherapy—particularly inhaled corticosteroids (ICS)—is essential for long-term asthma control, it may adversely affect oral health. This presentation investigates the impact of asthma medications on pediatric periodontal health.

Common asthma treatments such as β 2-agonists and ICS, often delivered via inhalers or nebulizers, can lead to side effects including xerostomia, reduced salivary flow, and shifts in oral microbial flora. These changes contribute to increased plaque accumulation, gingival inflammation, and higher caries risk. Periodontal conditions like gingivitis are frequently observed in asthmatic children, especially with poor hygiene and prolonged medication use. Additional risk factors include mouth breathing, sugary medications, and inadequate brushing.

Clinical evidence, supported by meta-analyses, confirms the correlation between asthma management and periodontal issues. Preventive strategies such as rinsing after inhaler use, using spacers, and applying fluoride mouth rinses are emphasized. Dental professionals play a vital role through early detection, parental education, and collaboration with pediatricians. A case study highlights the effectiveness of improved hygiene and rinsing techniques in managing drug-induced gingivitis. The presentation concludes with a call for integrated care to mitigate oral health risks in pediatric asthma patients..

* Assoc. Prof. Dr. Yunita Dewi Ardini is a pediatric dentist and senior lecturer at the Kulliyyah of Dentistry, International Islamic University Malaysia (IIUM). She earned her dental degrees from Universitas Airlangga, Indonesia. With expertise in pediatric dentistry and dental public health, she has supervised numerous research projects, published widely in indexed journals, and contributed to innovative research in oral health. Active in academic leadership and community service, she is dedicated to improving children's oral health, particularly among those with special needs and chronic conditions like asthma and diabetes.

KEYNOTE SPEECH

DEVELOPMENT OF "ANEM SIP" EDUCATION MODEL FOR ANEMIA PREVENTION IN ADOLESCENT GIRLS

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ABSTRACT

Anemia remains a significant public health issue, particularly among adolescent girls, affecting physical development, cognitive function, and future reproductive health. This study aimed to develop and evaluate an educational model, "Anem SIP," for the prevention of anemia in adolescent girls in Jambi Province, Indonesia. Using a Research and Development (R&D) approach with the ADDIE model, the study combined qualitative and quantitative methods. The model development included stakeholder interviews, expert validation, small group testing, and field trials.

The "Anem SIP" model incorporates promotive, preventive, diagnostic, and monitoring features to enhance knowledge, attitudes, and behaviors related to anemia prevention. The intervention was tested on 30 adolescent girls, revealing significant improvements in knowledge (mean increase from 5.6 to 9.8), attitudes (52.6 to 89.3), compliance with iron and folic acid (IFA) supplementation (0 to 30 participants), and hemoglobin levels (12.4 g/dL to 13.3 g/dL), all with p-values < 0.001.

These results demonstrate that the "Anem SIP" model is effective in promoting behavior change and improving hemoglobin levels among adolescent girls. The study supports the implementation of structured educational interventions as a strategic approach to achieving WHO's goal of reducing anemia prevalence by 50% by 2025.

* Dr. Sarinah Siregar, APP, M.Kes, is a lecturer at the Health Polytechnic of the Ministry of Health in Jambi, specializing in public and reproductive health. She holds a doctorate in Public Health from Universitas Jambi and has extensive teaching experience since 1992. Her research focuses on adolescent anemia, reproductive health, and disease prevention. She has authored several books, published nationally and internationally, and actively speaks at health conferences. Sarinah also serves as a developer of health education models like "Anem SIP" to promote better nutrition and anemia prevention among adolescent girls.

KEYNOTE SPEECH

EFFORT TO IMPROVE MATERNAL AND CHILD HEALTH SERVICES BY MIDWIVES AS A CHALLENGE TO THE TRANSFORMATION OF THE HEALTH CARE SYSTEM IN INDONESIA

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ABSTRACT

Improving maternal and child health (MCH) remains a national priority in line with the Sustainable Development Goals (SDGs). Midwives play a vital role in addressing maternal and neonatal mortality by providing comprehensive, safe, and quality health services. This study explores efforts to strengthen midwives' contributions to MCH as part of Indonesia's healthcare transformation.

A mixed-method approach was used, including a quantitative cross-sectional study and a scoping review of literature related to midwifery leadership in community health settings. The logistic regression analysis identified age, education level, and supervision as influential factors in midwife performance.

Specifically, midwives aged 31–40 and those with clinical supervision had significantly better performance, while higher educational qualifications (bachelor's degree) were also associated with improved outcomes. The scoping review, based on PRISMA-ScR guidelines, highlighted the need for leadership competence and evidence-based practice among midwives.

The findings underscore the importance of continuous professional development, supportive supervision, and structured training to enhance midwives' leadership and clinical roles. Strengthening midwives' capacity to lead and deliver MCH services is essential to meet public health goals and ensure the delivery of effective, community-based maternal care in Indonesia.

* Dr. Ruwayda, SST, BdN, M.Kes, M.Keb, is a senior lecturer at the Midwifery Department of Poltekkes Kemenkes Jambi. With over three decades of experience in maternal and child health, she has served as a midwife, public health officer, and academic leader. She holds multiple degrees, including a doctoral degree in maternal and reproductive health (KIA-Kespro) from Universitas Indonesia. Ruwayda is actively involved in midwifery organizations and serves as an assessor, trainer, and national facilitator for maternal health programs and accreditation efforts.

KEYNOTE SPEECH

PREVENTION OF NON-COMMUNICABLE DISEASES(NCDS)

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ABSTRACT

Non-Communicable Diseases (NCDs) such as cardiovascular diseases, diabetes, chronic kidney disease, cancer, and mental health disorders are major public health concerns in Indonesia. These conditions develop gradually and are influenced by a combination of genetic predispositions, unhealthy behaviors, environmental exposures, and socio-economic factors. This presentation explores the critical roles of families and communities in the prevention and control of NCDs. Key risk factors include poor diet, physical inactivity, smoking, alcohol consumption, and metabolic disorders such as hypertension and obesity. Effective prevention strategies include health promotion campaigns, implementation of smoke-free zones, proper nutritional labeling, and creating environments that support physical activity.

Families are essential in establishing healthy routines, providing education, maintaining hygiene, and supporting early disease detection and management. Community involvement—through religious organizations, local leaders, and advocacy groups—strengthens public awareness and promotes sustainable behavior change. Empowerment efforts at the community level, including health education, institutional capacity building, and improved access to health services, are vital for long-term impact. The synergy between individual, family, and societal efforts can significantly reduce the burden of NCDs. The presentation concludes that active participation from all sectors is necessary to foster healthier communities and achieve national and global health goals.

* Dr. Suryani, S.Pd, MPH, is a senior lecturer at Poltekkes Kemenkes Jambi with a strong background in public health and maternal health education. With decades of teaching and leadership experience, she has served as head of the midwifery department and held numerous roles in professional organizations like IBI. She has published extensively in national and international journals, contributed to health promotion, and often speaks at conferences on women's health, NCD prevention, and maternal care. Currently, she is pursuing her doctoral degree at Universitas Jambi..

THE RELATIONSHIP BETWEEN THE LEVEL OF DENTAL AND ORAL HEALTH KNOWLEDGE AND THE HEALTH STATUS OF PERIODONTAL TISSUE IN PATIENTS WITH DIABETES MELLITUS AT BAYUNG LENCIR HOSPITAL

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ABSTRACT

Background: Periodontitis is one of the most serious oral complications in diabetes mellitus (DM). Adequate knowledge of dental and oral health may promote behaviours that protect periodontal tissue. This study examined whether the level of oral-health knowledge is associated with periodontal-tissue status among DM patients at Bayung Lencir Hospital.

Methods: An analytical cross-sectional survey was carried out in 2024. Using Slovin's formula, 87 DM out-patients were recruited by simple random sampling. Oral-health knowledge was measured with a validated questionnaire and categorised as low, moderate, or high. Periodontal status was recorded with the Periodontal Disease Index (PDI) and classified as healthy, gingivitis, or periodontitis. Associations were tested with the chi-square test ($\alpha = 0.05$).

Results: Most participants displayed a moderate level of oral-health knowledge (59.8 %). Periodontal assessment showed that gingivitis predominated (64.4 %), while periodontitis and healthy gingivae accounted for 23.0 % and 12.6 %, respectively. Chi-square analysis revealed a significant relationship between knowledge level and periodontal status ($\chi^2 = 8.66$, $p = 0.013$). Patients with higher knowledge scores were more likely to present with healthier periodontal tissue.

Conclusion: At Bayung Lencir Hospital, better dental-oral health knowledge is linked to improved periodontal-tissue status in DM patients. Enhancing patient education on oral hygiene and diabetes-specific periodontal care could reduce periodontal complications in this high-risk group.

Keywords: diabetes mellitus; periodontal disease; oral-health knowledge; periodontal disease index; patient education

GADGET ADDICTION AND ADOLESCENT BEHAVIOR: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: The use of gadgets among Indonesian teenagers has rapidly increased with the development of global information technology. Although it is a matter of pride, the negative impacts of gadget use are starting to be felt, especially by parents who have difficulty controlling their children. Therefore, this study aimed to determine the relationship between gadget use and changes in adolescent behaviour.

Methods: This study used a cross-sectional design. The sampling technique used was quota sampling on 186 adolescents. Gadget addiction was measured using the Smartphone Addiction Index—Short Version (SAS-SV) questionnaire, and Behaviour in this study was calculated using the Strengths and Difficulties Questionnaire (SDQ). Data were analyzed using chi-square.

Results: The study showed that almost all teenagers (97%) were in the medium and high category of gadget users and experienced negative behavioural changes. Based on the results of the analysis test, there was a significant relationship between gadget use and behavioural changes in teenagers ($p = 0.001$)

Conclusion: Gadget addiction in adolescents is related to behavioural changes in adolescents.

Keywords: teenagers; gadget addiction; behaviour change

FORMS OF SOCIAL SUPPORT FOR HEMODIALYSIS PATIENTS IN IMPROVING FLUID RESTRICTION ADHERENCE: A Scoping Review

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ABSTRACT

Background: Hemodialysis is a renal replacement therapy that requires patient compliance with fluid restrictions to prevent complications and improve quality of life. Hemodialysis patients often experience difficulties complying with fluid restrictions, which can lead to fluid overload and affect the effectiveness of therapy. Social support from various parties, such as family, medical personnel, and fellow patients, is vital in increasing patient motivation and ability to comply with fluid restrictions. This research aimed to explore the forms of social support for hemodialysis patients in improving fluid restriction compliance.

Methods: This scoping review design uses the Arksey and O'Malley model to analyze the scoping review. Literature sources used were through online databases, namely PubMed, Science Direct, Garuda, Proquest, Global Index Medicus, Wiley, and Cochrane from 2014 to 2024. Identification and analysis using Preferred Reporting Items for Systematic Reviews and Meta Analysis for Scoping Review (PRISMA-SR)

Results: With 13 articles analyzed, this article summarizes the effect of social support on fluid restriction compliance in the sense that it is effective for improving fluid restriction compliance with hemodialysis.

Conclusion: Social support is efficacious in improving compliance with fluid assurance in hemodialysis patients.

Keywords: social support; hemodialysis; fluid restriction

NON-PHARMACOLOGICAL MANAGEMENT OF CONSTIPATION IN POST-STROKE PATIENTS: A SCOPING REVIEW

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ABSTRACT

Background: Managing constipation in post-stroke patients presents a significant challenge in healthcare. Unresolved constipation can worsen patients' quality of life and prolong recovery. This study aimed to explore various non-pharmacological approaches in managing constipation among post-stroke patients and to identify factors influencing treatment success

Methods: This study used the Arksey and O'Malley framework to conduct a scoping review. Literature published between 2013 and 2024 was reviewed from five databases: PubMed, ScienceDirect, ProQuest, Garuda, and the Global Index Medicus. A total of 11 articles were selected and analyzed thematically.

Results: Constipation management in post-stroke patients requires a multidimensional approach, where non-pharmacological therapies such as dietary modification, physical exercise, and therapeutic stimulation have proven effective, taking into account individual factors such as stroke severity, medical history, and family support.

Conclusion: These findings may contribute to developing more effective and comprehensive clinical guidelines for managing post-stroke constipation.

Keywords: constipation; non-pharmacological; post-stroke

ANALYSIS OF BEHAVIOURAL FACTORS CONTRIBUTING TO CHRONIC ENERGY DEFICIENCY (CED) AMONG PREGNANT WOMEN IN DEVELOPING COUNTRIES: A SYSTEMATIC REVIEW

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ABSTRACT

Background: The nutritional condition of pregnant women is still a problem that needs serious attention in developing countries. In Indonesia, many pregnant women still experience nutritional problems, especially Chronic Energy Deficiency (CED). This achievement shows that efforts to reduce the number of CEDs have not reached the expected target, indicating the importance of increasing nutritional interventions for pregnant women. This systematic literature review aims to identify and analyze various behavioral risk factors of malnourished pregnant women through an article review.

Methods: Inclusion criteria in this study were community-based studies in developing countries with analytical observational research designs such as cross-sectional, case-control, and cohort. Exclusion criteria were literature review studies and studies that did not report relevant results.

Results: Behavioural risk factors contributing to undernutrition or CED in pregnant women consist of knowledge, attitudes, and actions such as ANC utilization, diet, and food aversion. Pregnant women's knowledge can influence their attitudes toward efforts to prevent or overcome malnutrition or chronic energy deficiency. Pregnant women who have positive behavioral risk factors are less likely to experience malnutrition or chronic energy deficiency than pregnant women who have negative behavioral risk factors.

Conclusion : Behavioral risk factors such as knowledge, attitudes, and actions related to ANC, diet, and food aversion contribute to malnutrition in pregnant women with CED, so community empowerment through health workers is needed to overcome this.

Keywords: behavioural risk factors; undernutrition; chronic energy deficiency; pregnant women

TRANSFORMING ANTENATAL EDUCATION IN THE DIGITAL ERA: THE IMPACT OF A HYBRID INTERVENTION ON PREGNANT WOMEN'S KNOWLEDGE, ATTITUDES, AND PRACTICES

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ABSTRACT

Background: Antenatal education is essential to reducing maternal mortality. However, limited access and time constraints reduce participation in conventional pregnancy classes. A hybrid approach—combining face-to-face sessions and digital content—offers a promising alternative in the digital era. This study to evaluate the effectiveness of a hybrid antenatal education model in improving pregnant women's knowledge, attitudes, and practices (KAP) regarding maternal care.

Methods: A quasi-experimental study with a pretest-posttest control group design was conducted among 60 pregnant women in Magelang, Indonesia. Participants were randomly assigned to either a hybrid intervention group or a conventional care group. Data were collected at three time points and analyzed using Paired T-Tests, Independent T-Tests, and GLM-Repeated Measures.

Results: The intervention group showed significant improvements in knowledge, attitudes, and practices (all $p=0.001$). The effect size was strongest for knowledge (Partial Eta Squared $\eta^2=0.783$). Age was identified as a confounding factor affecting practice ($p=0.008$).

Conclusion: The hybrid antenatal education model significantly enhances maternal health behaviors, particularly knowledge, and provides a sustainable educational strategy. It is recommended for broader implementation in urban healthcare settings to improve antenatal care engagement and outcomes.

Keywords: antenatal education; hybrid model; maternal health behavior; knowledge; attitude; practice.

PREVALENCE OF DIABETES MELLITUS AND PROPORTION OF TYPE OF DIABETES MELLITUS CONTROL IN INDONESIA : 2023 IHS DATA ANALYSIS

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ABSTRACT

Background: Diabetes mellitus is the mother of all diseases in Indonesia, and if left untreated, it can cause various other diseases such as heart disease, stroke, and kidney disease. Based on IHS data in 2023, the types of diabetes mellitus control available in Indonesia include dietary control, exercise, and herbal choices. Based on the analysis of IHS data in 2023, this study aimed to examine the relationship between the prevalence of diabetes mellitus based on a doctor's diagnosis and the types of diabetes mellitus control available in Indonesia.

Methods: This research is quantitative and cross-sectional, using aggregate data from the 2023 Indonesian Health Survey report covering 38 provinces divided into seven regions. After the normality test was met, analysis was carried out using the Pearson correlation test.

Results: The results showed that the proportion of DM control type (diet management) was not related to the incidence of diabetes mellitus ($p = 0.07$), and the proportion of DM control type (exercise) ($p = 0.36$), but was related to the proportion of DM control type (herbal alternatives) ($p = 0.00$).

Conclusion: This study concludes that the type of DM control (eating and exercise management) is not related to the incidence of diabetes mellitus based on a doctor's diagnosis in Indonesia. In contrast, the type of DM control (herbal alternatives) is associated with the incidence of diabetes mellitus based on a doctor's diagnosis in Indonesia.

Keywords: diabetes mellitus; eating management; exercise; herbal alternatives; indonesian health survey (IHS)

THE RELATIONSHIP BETWEEN THE DURATION OF TREATMENT WITH THE RATIO OF PLATELETS TO LYMPHOCYTES AND THE RATIO OF NEUTROPHILS TO LYMPHOCYTES IN PULMONARY TUBERCULOSIS

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ABSTRACT

Background: Mycobacterium tuberculosis infection triggers a systemic inflammatory response, reflected by hematological changes such as increased Platelet-to-Lymphocyte Ratio (PLR) and Neutrophil-to-Lymphocyte Ratio (NLR). This study aims to determine the relationship between the duration of treatment and PLR and NLR values in pulmonary TB patients

Methods: The type of research used was descriptive research with a cross-sectional study. Data was collected to determine the Relationship between Duration of Treatment with PLR and NLR in TB Patients in Jambi City in 2025.

Results: This study found that the mean values of PLR and NLR tend to increase during the early phase of tuberculosis treatment and decrease in the advanced phase. These results are consistent with our initial hypothesis regarding the relationship between treatment phases and changes in inflammatory parameters. Laboratory analysis data, including descriptive data and PLR and NLR values based on treatment duration, were analyzed using statistical tests. Although the analysis revealed no significant association between treatment duration and PLR or NLR values in pulmonary tuberculosis patients

Conclusion: The duration of treatment does not directly influence changes in PLR and NLR levels. Several studies have also demonstrated that inflammatory parameters such as PLR and NLR can be affected by individual factors, particularly the body's immune response, which are not necessarily dependent on the length of treatment. Therefore, individual factors and other clinical conditions may substantially influence PLR and NLR parameters.

Keywords: pulmonary tuberculosis; duration of treatment; systemic inflammatory response; platelet-to-lymphocyte

THE IMPORTANCE OF SOCIAL SUPPORT ON SUBSTANCE ABUSE RECOVERY

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ABSTRACT

Background: Having a strong social support system is an essential aspect of successful recovery from alcohol or drug addiction. Although social support is commonly studied in the context of substance use prevention, there is little literature on substance recovery. This article aims to describe social support in recovery.

Methods: A cross-sectional descriptive study was used in this study, involving 60 recovering substance abusers in the NNA Jambi outpatient clinic who were investigated using a 40-item social support scale.

Results: The results showed that recovering substance abusers had a mean age of 30 years; 96.7% were male, 91.7% were employed, 70% were married, and 51.7% had high social support.

Conclusion: These findings have implications for future research, and substance use interventions targeting social support are discussed.

Keywords: substance abuse; recovery; social support

PREVENTION OF DIABETIC NEUROPATHY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: A SCOPING REVIEW

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ABSTRACT

Background: Type 2 diabetes mellitus (T2DM) is a major global health challenge with an increasing prevalence worldwide. Diabetic neuropathy (DN) is among the most common complications of T2DM; this condition significantly impairs quality of life due to pain, numbness, muscle weakness, and foot ulcers. Effective preventive strategies are crucial to reducing the incidence of DN and improving patient outcomes. Aims the study to explore various preventive strategies for diabetic neuropathy in patients with type 2 diabetes mellitus, including pharmacological and non-pharmacological approaches.

Methods: The study follows the Scoping Review Framework developed by Arksey and O'Malley. Using relevant keywords, a systematic search was conducted across multiple databases, including PubMed, ScienceDirect, ProQuest, Garuda, Global Index Medicus, Cochrane Library, and EBSCO. Studies published between 2019 and 2024 focused on DN prevention in T2DM patients were included. Data extraction and analysis were performed using the Population, Concept, and Context (PCC) framework.

Results: Seven studies were selected based on the inclusion criteria. The findings indicate that effective DN prevention involves glycemic control, physical activity, dietary management, and patient education. Strict glycemic control through HbA1c regulation significantly reduces the risk of DN progression. Additionally, non-pharmacological interventions, such as diabetic foot exercises, have been shown to enhance blood circulation, strengthen lower limb muscles, and alleviate neuropathic symptoms. Patient education and medication adherence were also critical factors in DN prevention.

Conclusion: Preventing diabetic neuropathy in type 2 diabetes requires early detection, good blood sugar control, lifestyle changes, and patient education to improve outcomes, while future research should focus on enhancing prevention and overcoming implementation barriers.

Keywords: type 2 diabetes mellitus; diabetic neuropathy; prevention; self-care

IMPLEMENTATION OF PEDIATRIC EARLY WARNING SCORE ON RESPONSE TIME IN HANDLING PEDIATRIC EMERGENCIES IN THE EMERGENCY DEPARTMENT: A SCOPING REVIEW

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ABSTRACT

Background: Changes in a child's condition may indicate an emergency that requires prompt intervention to prevent death or organ failure. The Pediatric Early Warning Score (PEWS) is designed to detect early deterioration of a child's condition. However, challenges in its implementation often arise, particularly in developing countries such as Indonesia. Aims this study to evaluate the effectiveness of implementing PEWS in accelerating the response time to pediatric emergencies in the Emergency Department (ED).

Methods: A scoping review approach was used to analyze literature related to the implementation of PEWS in the ED. Searches were conducted through several databases, including PubMed and ScienceDirect, to identify relevant studies discussing the use of PEWS and response times in pediatric emergencies.

Results: Implementing PEWS has been shown to accelerate response times to pediatric emergencies, especially with the use of electronic-based PEWS, which is more efficient than the manual method. Adequate training has been proven to improve medical responses, although challenges in training and understanding the system still exist.

Conclusion: PEWS, especially electronic-based PEWS, improves the speed of handling pediatric emergencies in the ED. Ongoing training and integration of PEWS into medical routines are essential to maximize the effectiveness of this system.

Keywords: pediatric early warning score (PEWS); response time; pediatric emergencies; emergency department

NURSING SUPPORT FOR IMPROVING SELF-CARE IN CHF PATIENTS AT HOME: A SCOPING REVIEW

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ABSTRACT

Background: Cardiovascular diseases, including congestive heart failure (CHF), are a leading cause of global mortality and morbidity. Effective self-care is crucial for CHF patients to improve their quality of life, reduce complications, and decrease hospital readmissions. This scoping review explores the role of nurse-led interventions in enhancing self-care among CHF patients at home. Aims the study to identify and synthesize evidence on effective nurse-led interventions for promoting self-care in patients with CHF in the home setting.

Methods: A scoping review was conducted following the PRISMA-ScR guidelines. Five databases were searched to identify relevant studies published between 2019 and 2024. Data extraction and synthesis focused on the types of nurse-led interventions and their impact on patient self-care.

Results: The review identified various nurse-led interventions, including self-care (NLSCI), educational interventions, home visits, telehealth support, and case management. These interventions positively affected self-care behaviors, quality of life, and reduced hospital readmissions.

Conclusion: Nurse-led interventions are vital in improving self-care among CHF patients at home. Personalized, active, and sustained support from nurses can significantly enhance patient outcomes and reduce healthcare utilization. Further research is needed to standardize interventions and evaluate their cost-effectiveness.

Keywords: nurse, self-care; home; CHF (congestive heart failure); nurse-led intervention; self-management; community

THE EFFECTIVENESS OF PLAY THERAPY IN REDUCING ANXIETY AMONG HOSPITALIZED CHILDREN: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Hospitalization can be a traumatic experience for children, who are separated from their families and daily routines while being exposed to unfamiliar and sometimes painful medical procedures. This situation often triggers anxiety, insecurity, fear, and stress. One approach that has been proven effective in reducing anxiety among hospitalized children is play therapy. This study aims to evaluate the effectiveness of play therapy in reducing anxiety among hospitalized pediatric patients.

Methods: This research is a systematic literature review using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines.

Results: 573 research articles were identified across five databases: PubMed, ScienceDirect, DOAJ, ProQuest, and Wiley. After a screening process using the RAYYAN application, 10 articles that met the inclusion criteria were included in this study.

Conclusion: Play therapy has been proven to positively impact the reduction of anxiety in hospitalized children positively and is recommended for implementation in pediatric units across healthcare facilities.

Keywords: hospitalization; children; anxiety; play therapy; pediatric patients; systematic literature review; PRISMA; non-pharmacological intervention

COMPLEMENTARY THERAPIES FOR THE MANAGEMENT OF ORAL MUCOSITIS IN CHILDREN UNDERGOING CHEMOTHERAPY: A SCOPING REVIEW

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ABSTRACT

Background: Oral mucositis in children is defined as inflammation of the oral mucosa triggered by cancer treatments, particularly chemotherapy. In addition to pharmacological therapy, patients commonly request non-pharmacological approaches to support treatment. Complementary therapies, a subset of non-pharmacological interventions, are increasingly popular but require scientific validation regarding their efficacy and side effects. This review aims to identify evidence-based complementary therapies used to manage oral mucositis.

Methods: This study conducted a scoping review using Arksey and O'Malley's framework. The literature search included studies published from 2014 to 2024 in databases such as PubMed, Wiley Online Library, ProQuest, Cochrane, Global Index Medicus, Garuda, and additional sources. The inclusion criteria encompassed both qualitative and quantitative primary and secondary data, focusing on pediatric patients with oral mucositis undergoing chemotherapy.

Results: Of 561 articles, 12 met the inclusion criteria. Despite the limited volume of relevant literature, this review identified several complementary therapies, including honey, aloe vera, oral hygiene, photobiomodulation, chewing gum, cryotherapy, and olive oil. These interventions have been shown to prevent or reduce the severity of mucositis in children receiving chemotherapy.

Conclusion: Patients and caregivers can effectively select evidence-based approaches to manage oral mucositis by identifying available complementary therapies.

Keywords: children; chemotherapy; oral mucositis; complementary therapy

ANALYSIS OF RISK FACTORS FOR ANEMIA AMONG ADOLESCENT GIRLS IN SEMARANG CITY, CENTRAL JAVA, INDONESIA

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ABSTRACT

Background: Anemia remains a significant public health concern with detrimental effects on adolescent health. It is strongly influenced by both overall health status and dietary patterns. Adolescent girls are particularly vulnerable to anemia due to the rapid physical growth during puberty, which increase the need for nutritional intake. The aim of this study is to determine the risk factors associated with anemia among adolescent girls in Semarang City, Central Java, Indonesia.

Method: This study used an observational analytic approach using a cross-sectional design. The research was conducted at Islamic Boarding School X in Semarang City in December 2024. The sample consisted of 55 adolescent girls selected through simple random sampling. Primary data were collected through laboratory examinations, interviews and physical examinations. Descriptive analysis was used to present frequency distributions, and bivariate analysis was performed to determine associations between variables.

Result: The results of this study from 55 respondents showed a relationship between BMI and the incidence of anemia among adolescent girls ($p=0.05$). However, there was no relationship between Z-Score, CED, energy intake, protein intake, fat intake, and carbohydrate intake with the incidence of anemia among adolescent girls ($p=0.24$; 0.29 ; 0.30 ; 0.73 ; 0.60 ; and 0.49 , respectively).

Conclusion: Adolescent girls with anemia are advised to maintain a healthy body weight by monitoring their nutritional status and ensuring adequate nutrient intake. A balanced and nutritious diet is essential to meet daily nutritional requirements and reduce the risk of anemia.

Keywords: risk factors; anemia; adolescent girls; nutritional status; nutritional intake

ANALYSIS OF KNOWLEDGE AND BEHAVIOR OF DENTAL AND ORAL HEALTH MAINTENANCE IN STUDENTS OF SDN 050/XI KUMUN HILIR KOTA SUNGAI PENUH IN 2024

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ABSTRACT

Background: Oral health is important for general health and quality of life. Oral health means being free from throat cancer, oral infections and sores, gum disease, tooth loss and other diseases, resulting in disorders that limit biting, chewing, smiling and speaking. This study aims to analyze the relationship between the level of knowledge and the behavior of maintaining oral health of students at SDN 050/XI Kumun Hilir, Sungai Penuh City in 2024.

Method: This study is a cross-sectional study. This study was conducted at SDN 050/XI Kumun Hilir, Sungai Penuh City on March 18, 2024. The population was 30 students of grade II of SDN 050/XI Kumun Hilir, Sungai Penuh City, with a sample size of 30 students taken using total sampling. Data were collected by distributing questionnaires about knowledge and behavior of maintaining dental and oral health. This questionnaire has been tested for validity and reliability. Data were analyzed univariately and bivariately using the Chi Square test.

Result: The results of the study found that most (63.3%) of second-grade students of SDN 050/IX Kumun Hilir, Sungai Penuh City in 2024 had a high level of knowledge and good dental and oral health maintenance behavior of 66.7%. Good dental and oral health maintenance behavior was found more in samples with a high level of knowledge of 50.0% compared to moderate knowledge levels (13.3%) and low knowledge levels (3.3%). The results of the statistical test found a relationship between the level of knowledge and dental and oral health maintenance behavior in second-grade students of SDN 050/XI Kumun Hilir, Sungai Penuh City in 2024.

Conclusion: Students are advised to improve their tooth brushing habits in the morning after breakfast and at night before going to bed and maintain a diet that includes watery and high-fiber foods such as fruits and vegetables and reduce sweet and sticky foods.

Keywords: knowledge; behavior; dental health; students

VITAMIN A COVERAGE AND PREVALENCE OF STUNTING, UNDERWEIGHT, AND WASTING IN CHILDREN 6-59 MONTHS OF AGE (ANALYSIS OF IHS 2023 DATA)

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ABSTRACT

Background: Nutritional problems, such as stunting, wasting, and being underweight, are significant contributors to the global burden of disease in children, including in Indonesia. Indonesia has been identified as having low levels of Vitamin A sufficiency among under-fives. Vitamin A deficiency can inhibit protein synthesis, which is critical for cell development. As a result, Vitamin A-deficient children are at high risk of growth impairment. This study aims to analyze the association between Vitamin A supplementation and the prevalence of stunting, wasting, and underweight among children under five years of age in Indonesia using the 2023 IHS data.

Method: This study used a cross-sectional design using secondary aggregate data from the 2023 IHS covering 38 provinces in seven regions in Indonesia. The independent variable in this study is the proportion of Vitamin A supplementation, while the dependent variable is the prevalence rate of stunting, wasting, and underweight. The analysis will be conducted using the Pearson correlation test, after previously testing the normality of the data.

Result: The results showed that vitamin A coverage was significantly associated with the prevalence of stunting, underweight, and wasting. The higher the vitamin A coverage, the lower the prevalence of stunting, underweight, and wasting.

Conclusion: The conclusion of this study is that vitamin A supplementation plays an important role in reducing the prevalence of stunting and wasting. This study provides a basis for more effective policies and interventions aimed at addressing child malnutrition in Indonesia.

Keywords: *vitamin A; stunting; underweight; wasting; IHS 2023*

EFFECTIVENESS OF ETHANOL EXTRACT OF BIDARA UPAS (*Decalobanthus mammosus* (Lour.) A.R.Simões & Staples) AGAINST LUNG AND LIVER MACROPHAGE of *Mycobacterium* tuberculosis INDUCED MICE

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ABSTRACT

Background: Tuberculosis (TB) cases in Indonesia rank third in the highest number of cases. Incomplete treatment of TB causes drug resistance. *Decalobanthus mammosus* (Lour.) ethanol extract A.R.Simões & Staples, has the potential to be an immunomodulator and antibacterial. This study aims to determine the Effectiveness of Ethanol Extract of Bidara upas (*Decalobanthus mammosus* (Lour.) A.R.Simões & Staples.) against *Mycobacterium tuberculosis*-induced lung and liver macrophage cells
Method: Laboratory experimental research with posttest-only control group design. The study sample using *Mus mucus* mice was divided into control and experimental groups, with the administration of extract doses of 50 mg/kg, 100 mg/kg and 150 mg/kg, and injection of *Mycobacterium tuberculosis* bacteria.

Results: The results showed that necrosis cells in the lungs were lowest at a dose of 150 mg/kg while necrosis cells in the liver were at a dose of 50 mg/kg. Various doses of the extract in the lungs have an effect on overcoming *Mycobacterium tuberculosis* infection compared to the liver.

Conclusion: Administration of *Decalobanthus mammosus* (Lour.) Extract on the lungs more effectively than on the liver.

Keywords: tuberculosis; bidara upas; lung; liver

STUNTING IN CHILDREN UNDER TWO YEARS OLD IN RURAL AREAS WONOSOBO REGENCY, CENTRAL JAVA, INDONESIA: DOES ANEMIA MATTER?

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ABSTRACT

Background: Stunting is a serious problem if it is not treated better. Several factors are known to influence stunting, what about anemia in children under two old? This study aims to know the factors that influence stunting, especially anemia in children under two old in rural regions. **Method:** Cross sectional research in rural regions in Wonosobo Regency involving 285 respondents. This study analyzed five independent variables (gender, age, Hb status, maternal education, and maternal occupation). Meanwhile, the dependent variable is stunting. The author uses a logistic regression test at the final stage.

Results: This research shows that there is no relationship between gender, age, maternal education, maternal employment, and stunting $p \Rightarrow 0.05$. Meanwhile, what had a significant relationship was the anemia status of children under two old with p-value of < 0.05 . Logistic regression analysis proves that anemia in children under two years old has a risk of 2,105 times stunting compared to those who are not anemic (95% CI: 1.168 – 3.795).

Conclusion: This research shows that anemia in children under two old influences the incidence of stunting in rural regions in Wonosobo Regency Central Java Indonesia.

Keywords: stunting; anemia; children; rural.

RELATIONSHIP OF PROPORTIONS MINIMUM ACCEPTABLE DIET (MAD) WITH THE PREVALENCE OF STUNTING, WASTING, AND UNDERWEIGHT IN CHILDREN 0-23 MONTHS

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ABSTRACT

Background: Stunting, wasting, and underweight in children under two years of age are serious health problems in many countries, including Indonesia. Adequate nutrition in the first two years of life is essential to prevent growth and development disorders. A minimum acceptable diet (MAD) can reduce the prevalence of nutritional problems in children, but the provision of MAD in Indonesia is often not in accordance with recommendations. This study aims to analyze the relationship between the proportion of MAD with the prevalence of stunting, wasting, and underweight in children aged 0-23 months in Indonesia.

Method: The study used a cross-sectional design with aggregate data from 38 provinces from the 2023 Indonesian Health Survey (IHS).

Results: The independent variables analyzed included five MAD indicators, namely food diversity, meal frequency, milk provision, minimal diet accepted, and animal protein consumption. The dependent variables were the prevalence of stunting, wasting, and underweight, which were measured using anthropometric indicators (BAZ, HAZ, and WAZ).

Conclusion: The results of this study can be the basis for formulating health policies to improve child feeding patterns and reduce the prevalence of stunting, wasting, and underweight in Indonesia.

Keywords: Minimum Acceptable Diet (MAD), Nutritional Status

RELATIONSHIP BETWEEN STATUS AND FREQUENCY OF WEIGHING WITH PREVALENCE OF SEVERELY WASTING AND WASTING IN TODDLERS IN INDONESIA

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ABSTRACT

Background: Wasting is a health problem that affects children's growth and development. This study aims to analyze the relationship between weighing frequency and the prevalence of nutritional status (severely wasting and wasting) in children aged 0-23 months in Indonesia.

Methods: This study used a descriptive correlation method with a cross-sectional approach. The study sample consisted of toddlers aged 12-18 months who met the inclusion criteria. Data were collected through the Healthy Menu Card (KMS) and analyzed using a correlation statistical test.

Result: The results showed that the Papua region had the highest proportion of toddlers who were not weighed (67.6%), while Java and Bali had the highest proportion of toddlers who were weighed more than 8 times (73.8%). The highest wasting prevalence was found in Papua (14.2%) and the lowest in Java and Bali (3.2%). The results of the analysis showed a significant relationship between weighing frequency and the prevalence of wasting ($p = 0.011$) and severe wasting ($p = 0.001$).

Conclusion: Therefore, increasing the frequency of weighing and nutritional interventions are needed to address the problem of wasting in toddlers.

Keywords: weight measurement; nutritional status; toddler

ANTI-BACTERIAL POTENTIAL OF BIDARAUPAS EXTRACT AGAINST LIVER MACROPHAGE CELLS INDICATED BY TUBERCULOSIS

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ABSTRACT

Background: Tuberculosis (TB) is a serious infection caused by *Mycobacterium tuberculosis*, mainly affecting the lungs and spreading through the air. Every year, around 10 million new TB cases are reported worldwide, with Indonesia ranking third in the highest number of TB cases. TB treatment faces challenges due to drug resistance, such as MDR-TB and XDR-TB, which is driving research on alternative therapies, one of which is *Merremia mammosa* extract, which is known for its antibacterial and immunomodulatory potential. This study aimed to evaluate the potential of *Merremia mammosa* extract in enhancing the immune response, especially through liver macrophages, in mice infected with *Mycobacterium tuberculosis*.

Method: Mice were divided into treatment and control groups, receiving the extract at varying doses after TB bacterial injection.

Results: The results showed that most of the groups with lower necrotic cell counts came from the group with low doses, such as P11, P12, P13, P14, and P15. However, groups such as P45, which exhibit a high number of necrotic cells, may suggest that higher doses of *Merremia mammosa* extract may trigger an excessive inflammatory response.

Conclusion: Low-dose administration of *Merremia mammosa* extract is effective in reducing liver cell necrosis due to *Mycobacterium tuberculosis* infection. The low-dose group showed better tissue protection than high-doses, which in turn has the potential to trigger excessive inflammation.

Keywords: tuberculosis; *merremia mammosa*; liver macrophages

THE RELATIONSHIP BETWEEN KNOWLEDGE AND TOOTH BRUSHING BEHAVIOR IN CHILDREN WITH MILD IMPAIRMENT IN SLBN SUNGAI PENUH CITY YEAR 2024

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ABSTRACT

Background: Mental retardation is a child who has below average intellectual abilities and tends to be intellectually, physically, emotionally and socially retarded. The causes of dental and oral disease are influenced by various factors including knowledge, behavior and dental and oral health services. Dental and oral diseases that many Indonesian people suffer from are generally related to dental and oral hygiene. One way to maintain oral hygiene is by brushing your teeth properly and correctly. The aim of this research was to determine the relationship between knowledge and tooth brushing behavior in mentally retarded children at SLBN Sungai Penuh City.

Method: This research design used a cross sectional method, the sample used was purposive sampling, a total of 32 students. The data collection method is by distributing questionnaires to be filled in by students and using the data analysis technique uses Chi-Square.

Result: The results of research on the level of knowledge of SLB N students in Sungai Penuh City had high criteria of 31.3%, medium 43.8%, and low 25.0%. Based on tooth brushing behavior, the criteria are 34.4% good, 37.5% moderate, and bad 28.1%. The results of statistical tests showed that there was a significant relationship between knowledge and toothbrushing behavior in children with intellectual disabilities at SLB N Sungai Penuh City.

Keywords: mental retarded; knowledge; behavior; brushing teeth

ASSOCIATION THE PROPORTION OF CARBONATED BEVERAGE CONSUMPTION AND THE PREVALENCE OF HYPERTENSION AND DIABETES IN INDONESIA (INDONESIA HEALTH SURVEY ANALYSIS 2023)

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ABSTRACT

Background: Hypertension and diabetes mellitus are non-communicable diseases with increasing prevalence in Indonesia. High consumption of carbonated beverages is suspected to be a major risk factor due to their high sugar and sodium content, which can affect blood pressure and glucose levels.

Method: This cross-sectional study used aggregate data from IHS 2023. The sample consisted of regional data from 38 provinces in Indonesia. Data analysis was conducted using Pearson and Spearman correlation tests to assess the relationship between carbonated beverage consumption and the prevalence of hypertension and diabetes.

Result: Summarize the key findings of the study. The results showed that consuming carbonated beverages ≥ 1 time/day had a significant relationship with the prevalence of hypertension ($r=0.612$; $p=0.001$) and diabetes ($r=0.629$; $p=0.001$). Consumption of 1-6 times/week was also associated with hypertension ($r=0.343$; $p=0.035$) and diabetes ($r=0.362$; $p=0.026$). However, consumption ≤ 3 Times/month showed only a weak relationship with the prevalence of hypertension and diabetes.

Conclusion: High consumption of carbonated beverages is significantly associated with increased prevalence of hypertension and diabetes among individuals aged ≥ 15 years in Indonesia. Health policies are needed to reduce carbonated beverage consumption, such as health education and the implementation of taxes on sugary drinks.

Keywords: carbonated drinks; hypertension; diabetes; consumption patterns

EDUCATIONAL GAMES AS AN INNOVATIVE HEALTH EDUCATION STRATEGY FOR STUNTING PREVENTION: A LITERATURE REVIEW

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ABSTRACT

Background: Stunting is a significant public health issue in Indonesia, with a prevalence of 21.6% in 2022. It is primarily caused by chronic nutritional deficiencies, recurrent infections, and lack of psychosocial stimulation. One innovative and effective approach in stunting prevention education is the use of educational games as interactive and engaging learning tools. However, comprehensive studies on the effectiveness of educational games in the context of stunting prevention are still limited.

Methods: This study employed a literature review approach using the PCC framework (Population, Concept, Context). The population included mothers. The concept was the use of educational games, and the context was stunting prevention. Articles were sourced from databases such as PubMed, ScienceDirect, Google Scholar, and manual searching. Inclusion criteria included original research published in the last five years, open access, and relevance to educational games in health education.

Results: Eight articles were reviewed, revealing a variety of games used, including snakes and ladders, puzzles, simulation games, board games, and mobile educational apps. Most studies reported significant improvements in participants' knowledge and engagement after game-based interventions. Educational games were found to be more effective than conventional educational methods. Implementation challenges included limited technological access, low digital literacy, scarce resources, and the need for cultural adaptation.

Conclusion: Educational games have the potential to be effective, enjoyable, and sustainable tools for health education in stunting prevention. To maximize effectiveness, local adaptation, facilitator training, and the development of context-specific media are essential. Games not only increase knowledge but also foster active participation and interest among communities, especially mothers and adolescents, in stunting prevention efforts.

Keywords: educational games; stunting; health education

THE RELATIONSHIP BETWEEN THE AGE OF INTRODUCING COMPLEMENTARY FOODS AND THE PREVALENCE OF STUNTING, WASTING, UNDERWEIGHT IN TODDLERS IN INDONESIA

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ABSTRACT

Background: The toddler stage is a crucial phase in a child's growth that requires optimal nutritional intake. Nutritional issues such as stunting, wasting, and underweight continue to be health concerns in Indonesia. The provision of complementary foods at the right time is important to meet the nutritional needs of children.

Method: This study uses a cross-sectional design with secondary data from the 2023 Indonesian Health Survey covering all provinces, grouped by region areas. The independent variable is the age of introduction to complementary feeding, categorized into less than six months, six months, and more than six months. Meanwhile, the dependent variables are the prevalence of stunting, wasting, and underweight. The analysis was conducted using the Pearson correlation test after the normality test was fulfilled.

Result: Research results show that the introduction of complementary feeding at the age of six months is associated with a decrease in the prevalence of stunting and wasting. On the other hand, the introduction of complementary feeding after six months is associated with an increase in nutritional problems, and the introduction before six months does not show a significant relationship.

Conclusion: Six months of age is the ideal time for introducing complementary feeding to reduce the risk of stunting and wasting, as well as to support nutritional intervention efforts and health policies to reduce malnutrition among toddlers in Indonesia.

Keywords: complementary feeding; stunting; wasting; underweight; toddlers

TREND OF OVERWEIGHT AND OBESITY PREVALENCE IN ADULT MALES IN INDONESIA 2010-2023

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ABSTRACT

Introduction: Overweight and obesity in adult males are increasing nutritional problems in Indonesia and pose a risk of various chronic diseases. Imbalance in nutritional intake and lifestyle changes are the main factors influencing the prevalence of this condition. This study aim to analyze the prevalence and distribution of nutritional status of overweight and obesity in adult males in Indonesia based on data from Basic Health Research 2010, 2018, and the Indonesian Health Survey (IHS) 2023.

Methods: This study is an analytical survey with a cross-sectional approach and quantitative descriptive methods. The study population was adult males >18 years in 38 provinces in Indonesia, grouped into 7 regional areas. Data were obtained from Basic Health Research 2010, 2018, and IHS 2023. Overweight status was determined based on BMI ≥ 25.0 kg/m² to < 27.0 kg/m² and obesity ≥ 27.0 kg/m². Data analysis was performed using SPSS version 22.

Results: The prevalence of overweight nationally increased from 8.9% (2010) to 13.5% (2023), while obesity increased from 8.5% (2010) to 15.6% (2023). The Papua region showed the highest prevalence for both categories, increasing from 10.6% (2010) to 15.2% (2023), while the Nusa Tenggara region had the lowest prevalence for both categories, increasing from 6.2% (2010) to 9.8% (2023).

Conclusion: The prevalence of overweight and obesity in adult males in Indonesia has increased significantly between 2010 and 2023. Public health interventions that focus on promoting healthy eating patterns, increasing physical activity, and education regarding the importance of maintaining an ideal body weight to reduce the risk of chronic diseases are needed.

Keywords: prevalence; overweight; obesity; adult males

THE RELATIONSHIP BETWEEN CARBOHYDRATE INTAKE AND NUTRITIONAL STATUS IN PHYSICAL FITNESS AMONG STUDENTS OF THE 2023 CLASS OF PHYSICAL EDUCATION, HEALTH, AND RECREATION AT UNIVERSITAS MUHAMMADIYAH MUARA BUNGO

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ABSTRACT

Background: University students are in the transitional age group towards adulthood and require sufficient carbohydrate and energy intake to support physical activity and fitness. One way to monitor nutritional status is by measuring body mass index (BMI). Food sources that supply adequate energy are crucial for daily consumption to positively impact physical fitness.

Methods: This study employed an observational approach with a cross-sectional design to analyze the relationship between the independent variables, namely carbohydrate intake and nutritional status. The study population consisted of 75 students, with a sample of 42 students. Inclusion criteria included students who participated, were at least 19 years old, and in good health. Primary data collected included respondent identity, carbohydrate intake, nutritional status, and physical fitness, obtained through interviews using a quantitative research questionnaire.

Results: The study found that 61.9% of students had inadequate carbohydrate intake, while 59.5% had normal nutritional status. Statistical analysis using the Spearman Rank test showed no significant relationship between carbohydrate intake and nutritional status with physical fitness, with a p-value of -0.189 for carbohydrate intake and 0.096 for nutritional status.

Conclusion: These findings indicate that adequate carbohydrate intake and good nutritional status do not significantly contribute to improving the physical fitness of students in the 2023 class of Physical Education, Health, and Recreation at Universitas Muhammadiyah Muara Bungo.

Keywords: physical fitness; nutritional status; carbohydrate intake

THE EFFECT OF E-BOOKLET EDUCATION (ELECTRONIC BOOKLET ON DIABETES) ON KNOWLEDGE ABOUT DIABETES MELLITUS PREVENTION EFFORTS AT SMA N 5 JAMBI CITY

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ABSTRACT

Background: Diabetes mellitus is a non-communicable disease with a continuously increasing prevalence. According to WHO data in 2024, there are 422 million cases of diabetes worldwide, with 877,531 cases recorded in Indonesia, including an increase among adolescents. In Jambi City, diabetes is a major health issue with 21,127 cases reported in 2022. This study aims to determine the effect of education using the E-BOODIE media on knowledge about diabetes mellitus prevention efforts.

Methods: This research employs a quantitative method with a Pre-Experimental design, specifically the One Group Pre-test Post-test Design, involving 40 students from SMA Negeri 5 Jambi who were selected through Random Sampling. Data were collected using questionnaires and analyzed using the Paired T-Test..

Results: The results showed a significant increase in students' knowledge scores after receiving education through the E-BOODIE media, with a p-value of 0.000. The average knowledge score increased from 5.65 to 8.48.

Conclusion health education through the E-BOODIE media is effective in improving students' knowledge about diabetes mellitus prevention.

Keywords: E-BOODIE; diabetes mellitus; knowledge, health education, adolescent

THE EFFECTIVENESS OF USING INTERACTIVE QUIZ CENTING (CEGAH STUNTING) ON THE KNOWLEDGE OF MOTHERS OF TODDLERS ABOUT STUNTING PREVENTION IN BUKIT PERENTAK VILLAGE, MERANGIN DISTRICT

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ABSTRACT

Background: Stunting is one of the most troubling global health problems, occurring in many countries in both developing and developed countries. The prevalence of stunting tends to be high in countries with poverty and limited access to adequate health, education and sanitation services. One of the efforts to reduce the prevalence of stunting is health promotion using interactive quiz CENTING (Prevent Stunting). This study aims to determine the effectiveness of using the CENTING interactive quiz (prevent stunting) in increasing the knowledge of mothers of toddlers about stunting prevention in Bukit Perentak Village, Merangin Regency.

Methods: This type of research is quantitative research with a pre-experimental research design, with a one group pretest-posttest research design. Sampling in this study used total sampling technique with a total sample size of 34 people. Data analysis using the Wilcoxon test. The average score of stunting prevention knowledge is pre-test (6.85), post-test (9.53).

Results: There is a difference in increasing the score of knowledge of preventing stunting in mothers of toddlers in Bukit Perentak village, Merangin Regency who are given health promotion through interactive quiz CENTING (Prevent Stunting) with a p value of 0.000 ($p < 0.05$). Health promotion with CENTING interactive quiz (Prevent Stunting) is effective in increasing knowledge of preventing stunting in mothers of toddlers in Bukit Perentak village, Merangin Regency

Keywords: knowledge; stunting prevention; CENTING (prevent stunting) interactive quiz

TRANSFORMATION OF HEALTH EDUCATION THROUGH AUDIOVISUAL MEDIA: ITS IMPACT ON FAMILY KNOWLEDGE IN SUPPORTING EXCLUSIVE BREASTFEEDING

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ABSTRACT

Background: Exclusive breastfeeding is essential in supporting the growth and health of infants. However, the coverage of exclusive breastfeeding remains low both globally and nationally. According to WHO data in 2023, the global coverage of exclusive breastfeeding is only 38%, while in Indonesia it is 55.5%, and in Jambi Province, it is 72.68%. In the working area of Puskesmas Aur Duri, the coverage of exclusive breastfeeding in 2024 was recorded at only 51%, which is still far from the national target of 80%.

Methods: This study aims to assess the effectiveness of health education through educational video media in improving family knowledge in supporting exclusive breastfeeding. The research used a quantitative approach with a quasi-experiment pretest-posttest two-group design, involving 62 respondents selected through purposive sampling. Data analysis was conducted using the Wilcoxon and Mann-Whitney tests.

Results: The results showed a significant increase in family knowledge scores after receiving video education, with a p-value of 0.000. The average post-test knowledge score in the intervention group (8.61) was higher than the control group (7.16).

Conclusion health education through video media is effective in increasing family knowledge in supporting exclusive breastfeeding in the working area of Puskesmas Aur Duri.

Keywords: exclusive breastfeeding; health education; video media; knowledge

THE IMPACT OF EDUMISEKI VIDEO MEDIA ON THE KNOWLEDGE AND SKILLS OF DIABETES MELLITUS PATIENTS IN THE WORKING AREA OF THE SIMPANG IV SIPIN PRIMARY HEALTH CENTER

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ABSTRACT

Background: Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia that occurs due to abnormalities in insulin secretion, insulin function, or both. Indonesia is the fifth country with the highest number of diabetes mellitus sufferers. In 2021, there were 19.5 million people with diabetes and this number is expected to continue to increase to 28.6 million in 2045. Specifically, in 2022, Jambi City ranked first in Jambi Province with the largest number of diabetes sufferers, namely 21,127 people. Foot exercises are an activity or exercise carried out by people with diabetes mellitus to prevent injury and help improve blood circulation in the feet. The purpose of this study was to increase the knowledge of diabetes mellitus sufferers regarding diabetes and foot exercises through EDUMISEKI video media.

Methods: The method used in this activity is a combination of lecture, discussion and practice methods. The media used is EDUMISEKI video media. The activity begins with preparation, implementation and evaluation. This evaluation is to measure the level of success of the activity using pre-test and post-test questionnaires. This activity was carried out at Simpang IV Sipin Health Center.

Result: The results of this study are an increase in the knowledge of diabetes mellitus patients regarding diabetes and foot exercises. The average pre-test value was 8.76% and the average post-test value was 13.89, there was an increase in knowledge in diabetes patients.

Conclusion: The results of health education activities using EDUMISEKI video media can be seen from the enthusiasm of the participants and at the end of the activity the participants were able to answer the questions given well and correctly.

Keywords: diabetes mellitus, knowledge; foot exercises

DEVELOPMENT OF A SAFETY RISK MODEL FOR OFFSHORE HELICOPTER OPERATIONS IN CRITICAL PHASES THROUGH A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Background: Offshore helicopter operations are essential for the oil and gas industry, particularly for transporting personnel and supplies to offshore platforms. However, the critical phases of flight—approach, landing, and take-off—contribute to over 60% of helicopter-related aviation accidents worldwide. In Indonesia, these risks are amplified by extreme weather conditions, poor helideck infrastructure, pilot fatigue, and inconsistent regulatory enforcement. An effective, context-specific risk management model is therefore urgently needed.

Method: This study applies a Systematic Literature Review (SLR) approach to examine current research on risk management in offshore helicopter operations. A total of 38 relevant articles were selected from databases including Scopus, Web of Science, and Google Scholar. Thematic synthesis was used to extract insights related to risk factors, mitigation strategies, and modeling approaches.

Result: The review identified four major risk factors: adverse weather, helideck design flaws, human error, and pilot fatigue. Effective mitigation strategies include simulation-based pilot training, predictive technologies, UAV-based inspections, and compliance with international safety standards. Despite these advancements, challenges such as limited infrastructure, lack of standardization, and enforcement gaps remain, particularly in Indonesia. Modeling in this context refers to the use of analytical frameworks such as STPA, Bayesian Networks, SWARA-CoCoSo, and FMEA-BWM to represent, simulate, and prioritize safety risks.

Conclusion: This study proposes a predictive, data-driven risk model that combines international best practices with Indonesia's operational realities. The model aims to improve offshore aviation safety by enabling proactive decision-making, supporting policy development, and strengthening flight safety standards across critical phases.

Keywords: offshore helicopter operations; aviation safety; critical phases of flight; risk management model; systematic literature review; predictive modeling; Indonesia; helideck safety; pilot training; weather-related risks.

DETERMINANTS OF ANEMIA OCCURRENCE IN FEMALE ADOLESCENTS IN HIGH SCHOOL IN MUARO JAMBI DISTRICT IN 2024

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ABSTRACT

Background: Anemia in adolescent girls aged 15-24 years in Indonesia is one of the nutritional problems that need attention. The purpose of this study was to determine the factors associated with the incidence of anemia in adolescent girls

Method: This study used a cross-sectional design. It was conducted in September 2024 at Titian Teras High School, Muaro Jambi Regency, Jambi Province. The sample was 79 students in grades 10 and 11 aged 14-18 years. Sampling was carried out using the proportional sampling method, with the criteria, not menstruating when becoming a sample, not sick. This study used primary data through questionnaires, anemia status was measured using a portable Nessco Hb measuring instrument. Data was processed using a computer program. Data analysis was carried out using univariate and bivariate analysis with the chi-square test. to determine the significant relationship between the dependent variable (anemia status of adolescent girls) with the criteria of Hb levels <12 gr/dl) and the independent variables, namely knowledge, attitudes, and behavior of preventing anemia

Result: The results of the study showed that there was a significant relationship between knowledge, attitudes and behavior with the incidence of anemia with a p value = 0.000 (p < 0.05).

Conclusion: From the results of the study, there is a significant relationship between knowledge, attitudes and behavior towards the occurrence of anemia. It is expected that female adolescent students will always increase their knowledge about the causes of anemia, signs and symptoms and their impact on health and the need to increase iron intake and iron supplements to prevent anemia.

Keywords: knowledge; attitude; behavior; anemia

THE EFFECT OF NUTRITIONAL INTAKE, DIET AND EXERCISE PATTERNS TO WORKERS' FITNESS IN OIL AND GAS COMPANY: A CASE STUDY

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ABSTRACT

Background: Poor health and fitness condition of field workers are suspected to be a triggering factor for fatalities caused by various noncommunicable diseases (NCDs) such as sudden heart attacks that have occurred several times in various oil companies in Indonesia. **Method:** The purpose of this quantitative study is to determine the influence of nutritional intake, dietary patterns, and exercise habits on the health and fitness of workers. Data collection was conducted using 1 to 5 Likert scale questionnaires to 246 employees of PT. XYZ, an oil and gas company in Indonesia.

This study used 22 manifest variables, 3 independent variables, and 1 dependent variable. Using the SEM AMOS version 22 and SPSS version 24, data processed resulted in 18 out of 22 manifests reflecting the latent variable, while 4 manifest variables did not reflect the latent variable, hence their exclusion.

Conclusion of this study indicated that diet, exercise patterns, and nutritional intake were mediating variables that had a statistically significant positive effect to the fitness of PT. XYZ employees. The implications of this research are to be a future reference for many researchers, as well as a quantitative basis for PT. XYZ to take corrective actions to improve their wellness program.

Keywords: dietary; exercise; nutritional intake; structural equation modelling (SEM); workers health

THE INFLUENCE OF THE SNAKES AND LADDERS GAME ON PREGNANT WOMEN'S KNOWLEDGE ABOUT STUNTING PREVENTION IN BETUNG ISLAND VILLAGE

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ABSTRACT

Bckground: The World Health Organization (WHO) reports that the largest proportion of stunted toddlers comes from Asia, namely 58.7%. The results of the 2022 Indonesian Nutrition Status Survey (SSGI) show that 21.6% of toddlers are stunted in Indonesia. Stunting can cause stunted physical growth, mental development and health status in children. The impact of stunting can occur due to malnutrition during the first 1000 days of life (HPK). This research aims to determine the effect of playing snakes and ladders on pregnant women's knowledge about stunting prevention in Pulau Betung Village.

Method: Pre-experimental research method with one group pre test post test design. The population of pregnant women in Pulau Betung Village is 30 people. The sampling technique used was total sampling. The research was conducted from November to April 2023 using the Wilcoxon analysis test.

Result: The research results showed that all respondents experienced an increase in knowledge after playing snakes and ladders with a mean ranking of 15 and a p value of 0.000. The average knowledge of respondents before playing was 13.9. After playing snakes and ladders it increased to 17.7.

Conclusion: Statistically, it can be interpreted that stunting snakes and ladders influence pregnant women's knowledge about stunting prevention in Pulau Betung Village.

Keywords: knowledge; pregnant women; snakes and ladders game; stunting

FAMILY EMPOWERMENT MODEL IN HANDLING STUNTING AND WASTING CHILD: A LITERATURE REVIEW

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ABSTRACT

Background: Both stunting and wasting case, when occur in children leads into greater risk of morbidity and even mortality. Attempt to handle those case with empowerment in family setting were numerous and shows hindrance in several aspect. This study aimed to figure out which effort has the biggest impact with most effective way to address stunting and wasting in golden period..

Method: A literature search was conducted on electronic databases such as Scopus, ScienceDirect, ProQuest, and Google Scholar to identify relevant published articles from 2015, to 2025. Additional articles were identified from the reference lists and grey literature

Result: This review summarizes 4 empowerment domains with the greatest influence in handling stunting and wasting at the family level. Inherent socio-economic conditions and other family characteristics are indeed significant factors, but family empowerment in terms of increasing knowledge and skills, community support, complementary food availability and agricultural support are highlighted in most studies. Long-term and sustainable interventions were emphasized in determining the most appropriate approach.

Conclusion: Family empowerment is an important strategy in dealing with stunting and wasting in children. Optimizable functions of family in those features should be dealt with concern in family characteristics. High quality empowerment was significantly associated with a lower likelihood of childhood stunting and wasting. The findings suggest a need to incorporate targeted strategies for empowering family into child nutrition programs.

Keywords: family empowerment; stunting; wasting

CORRELATION OF NEUTROPHIL LYMPHOCYTE RATIO (NLR) AND PLATELET LYMPHOCYTE RATIO (PLR) IN CHILDREN WITH DENGUE HEMORRHAGIC FEVER (DHF) INFECTION IN NORTHERN KALIMANTAN

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ABSTRACT

Background: Dengue fever is a viral infection transmitted to humans through the bite of an infected mosquito. This inflammation causes active immune cells such as neutrophils, lymphocytes, and platelets. When inflammation occurs, there will be a physiological response in the form of a decrease in the number of lymphocytes and an increase in the number of neutrophils. The ratio of neutrophils and lymphocytes is also called the Neutrophil Lymphocyte Ratio (NLR). This infection also causes a decrease in platelets and lymphocytes simultaneously. This can be worsen the patient's condition. The ratio of platelets and lymphocytes is also called Platelet lymphocyte ratio (PLR). NLR and PLR are important biomarkers of inflammation in supporting the diagnosis of DHF, allowing clinicians to immediately treat DHF cases, especially in children..

Method: This study used a retrospective observational study design with a cross sectional approach. The sampling technique used in this study was total sampling. The data collection technique in this study was observation of medical record data of DHF pediatric patients. To analyze the correlation between NLR and PLR in children with DHF infection, a correlation statistical test was used

Result: The results showed that the average value of NLR is 1,187 and PLR is 1536,74. And the results of this study also show a significant correlation between NLR and PLR with the correlation coefficient showing a strong positive correlation ($r > 0.70$, $p\text{-value} < 0.001$).

Conclusion: There is a significant correlation between NLR and PLR in children with dengue infection.

Keywords: DHF; NLR; PLR

THE EFFECT OF MOBILE TRIGGERING METHOD ON MOSQUITO NEST ERADICATION BEHAVIOR

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ABSTRACT

Background: Dengue hemorrhagic fever (DHF) occurs every year and takes its toll. People are not motivated and have not made PSN a culture. The problems encountered are how the process of developing, the feasibility, the stages, and the impact of the mosquito nest eradication educational model have on the knowledge, attitudes, and behaviors of the community. The purpose of this development is to produce an educational model "Triggering PSN Mobile," while the specific objectives are to describe the development process, determine feasibility, describe the stages, and find out the effect of the educational model for eradicating mosquito nests on the knowledge, attitudes, and behavior of the community..

Method: This research method is quantitative research with a research and development (R&D) design. This research uses a one-group pretest and posttest design. The focus of this study is to test the effectiveness of the educational model with the PSN reminder application in increasing the culture of eradicating mosquito nests in the city of Jambi. The variables studied include knowledge, attitudes, and behavior

Result: The results of this study resulted in the PSN Mobile Triggering educational model, which is a field triggering model followed by Android-based triggering, which has been declared feasible after going through the validation stages of 100% health promotion experts, 94.55% IT experts, 92% educational technology experts, and 80 practitioners. % and 93.85% one-on-one trials, 95% small group trials, and 96% large group trials. The PSN Mobile Triggering Product is effective in increasing the knowledge, attitude, and behavior of the jumantik rumah to 100% in the implementation of mosquito nest eradication

Conclusion: The conclusion obtained is that the educational model is feasible and effective to use to increase the knowledge, attitude, and behavior of Jumantik Rumah in carrying out the eradication of mosquito nests..

Keywords: android-based application; dengue hemorrhagic fever (DHF); eradication of mosquito breeding grounds; triggering education

STUDY ON SCABIES AMONG STUDENTS OF THE AL-HIDAYAH JAMBI DEVELOPMENT SCHOOL

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ABSTRACT

Background: Scabies is a contagious skin disease that spreads rapidly in densely populated environments such as Islamic boarding schools, especially when personal hygiene is poor and living spaces are overcrowded. In 2022, Pondok Karya Pembangunan Al-Hidayah in Jambi City reported the highest number of scabies cases among 11 pesantren, indicating the need for further investigation.

Method: This quantitative study employed an observational survey approach, conducted from February to April 2024. A total of 56 respondents were selected from 130 scabies-infected students using Slovin's formula. Data were collected through structured questionnaires and direct measurements of room dimensions. Variables included personal hygiene behavior, contact history, and room occupancy density. Data analysis used univariate descriptive statistics.

Result: The study found that 67.9% of respondents had poor personal hygiene, 64.3% had a history of direct or indirect contact with scabies sufferers, and 63.3% of the rooms were categorized as overcrowded. These findings indicate a strong correlation between the prevalence of scabies and the three examined factors.

Conclusion: Poor personal hygiene, a history of contact with infected individuals, and high room occupancy density were significant contributors to the spread of scabies in the studied pesantren. It is essential to implement hygiene education, regular health monitoring, and structural dormitory improvements to reduce scabies transmission among students.

Keywords: boarding school; contact history; personal hygiene; room occupancy; scabies

EFFECTIVENESS OF STUNTING EDUCATION TO PEERS: A SCOPING REVIEW

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ABSTRACT

Background: Stunting is a public health problem that has a long-term impact on the quality of future generations. In this case, adolescent girls as future mothers play a strategic role in prevention efforts. The low knowledge and awareness of adolescent girls about nutrition can increase the risk of stunting in children in the future. Peer-based stunting education is considered effective because communication between friends is easier to accept and can create positive behavior change. The purpose of this scoping review is to analyze the effectiveness of stunting education to peers.

Methods: The method used in this study is a scoping review by determining keywords using the PICO format, namely P (adolescents), I (peer education), C (zero), O (knowledge of stunting) which captures articles from national and international journals in English and Indonesian, using the PRISMA-ScR method. The databases used were PubMed and Google Scholar with the search limit of research study category and publication year 2015-2025. Found in the initial search as many as 1,598 articles and filtered so that 7 articles were synthesized.

Results: Of the 7 studies identified, peer education was shown to increase knowledge about stunting by 34-65% and promote behavior change such as increased consumption of nutritious foods. Effective mechanisms include the use of digital media and participatory approaches. Key challenges include limited peer capacity in technical materials and infrastructure access gaps in remote areas.

Conclusion: Stunting education conducted through a peer approach significantly improves adolescent knowledge.

IRON AND FOLIC ACID SUPPLEMENTATION (IFAS) PROGRAM MODEL AS A SPECIFIC INTERVENTION TO PREVENT ANEMIA IN JAMBI CITY

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ABSTRACT

Background: Anemia among adolescent girls is a major global health concern. One of the key preventive strategies is the supplementation of iron and folic acid tablets (IFAS). The success of IFAS programs depends on strict monitoring and high levels of adherence, supported by effective methods that ensure consistent consumption—even in the absence of direct supervision—and are integrated within both the health and education systems. This study aims to provide targeted intervention recommendations to enhance adherence to IFA consumption as a means of preventing anemia among adolescent girls.

Methods: "This study employed a quasi-experimental design with a pretest-posttest control group approach, using measurements of hemoglobin (Hb), erythrocyte, and hematocrit levels as indicators of adherence to Iron and Folic Acid Supplementation (IFAS). The study population consisted of female students aged 15–18 years from two senior high schools in Jambi City. Data were analyzed using the Mann-Whitney test due to the non-normal distribution of the data

Results: The statistical test results indicated significant differences between the intervention and control groups across all variables: adherence ($p=0.03$), hemoglobin levels ($p=0.001$), erythrocyte count ($p=0.004$), and hematocrit levels ($p=0.002$).

Conclusion: The developed IFAS program model was effective in improving adherence to IFA supplementation and enhancing hematological indicators among adolescent girls. These findings suggest potential long-term benefits for reproductive health.

Keywords: adolescent girls; anemia; iron and folic acid; reproductive health; stunting; supplementation

EFFECTIVENESS OF COUNSELING WITH ANIMATED VIDEO MEDIA ON INCREASING KNOWLEDGE OF DENTAL AND

ORAL HEALTH MAINTENANCE IN GRADE V CHILDREN OF SDN 003/V KUALA TUNGKAL

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ABSTRACT

Background: Dental and oral health is a crucial part of general well-being that enables individuals to perform essential functions such as eating, breathing, and speaking. However, lack of knowledge and awareness, especially among children, can lead to dental problems. One effective way to increase this awareness is through educational interventions using audiovisual media. This study investigates the effectiveness of counseling with animated video media in increasing the knowledge of dental and oral health maintenance among fifth-grade students at SDN 003/V Kuala Tungkal.

Methods: This research used a quasi-experimental design with a two-group pre-test and post-test method. The sampling technique employed was simple random sampling with 32 students divided equally into treatment and control groups. The data collection instrument used was a validated knowledge questionnaire. Bivariate analysis was performed using the Paired T-Test and Independent T-Test statistical methods

Results: The average knowledge score in the treatment group increased from 6.56 before the intervention to 13.00 after being given animated video education. Meanwhile, in the control group (which received counseling through lectures), the score changed only slightly from 5.75 to 5.81. The statistical test showed a significant difference in knowledge improvement in the treatment group ($p = 0.000$), proving that animated video media is more effective than traditional lecture methods.

Conclusion: The use of animated video media in health education was found to be more effective in increasing knowledge of dental and oral health maintenance compared to lecture methods among fifth-grade students of SDN 003/V Kuala Tungkal.

Keywords: animated video; dental health education; oral health knowledge

IREGULAR MENSTRUAL CYCLE IN PT X WORKERS IN TASIKMALAYA CITY

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ABSTRACT

Background: Women workers have their own challenges in the workplace because in addition to being workers, women have great responsibilities in the family. Many reproductive health problems may occur in female workers, one of which is menstrual cycle disorders. The purpose of this study was to determine the prevalence and factors that influence menstrual cycle disorders in garment workers of PT X Tasikmalaya City.

Methods: Quantitative research with a cross sectional approach on 134 female workers at PT X, sampling technique using simple random sampling, data collected using questionnaires, analyzed using univariate and bivariate with chi square.

Results: The results showed that the prevalence of amenorrhea 76 (56.7%), oligomenorrhea 3 (2.2%) and polymenorrhea 3 (2.2%). Factors affecting menstrual cycle disorders are worker age (<0.001), parity (<0.001), nutritional status (0.308), work division (0.075), work stress (0.021) and birth control methods used (<0.001).

Conclusion: The most common menstrual cycle disorder in PT X Tasikmalaya City workers is amenorrhea, and the most influential factors are worker age, parity, work stress and birth control methods used.

Keywords: cycle; female; irregular; menstruation; worker

NUTRITION COMMUNICATION VIA TIKTOK AND IMPLICATIONS ON HEALTH PROBLEMS OF ADOLESCENT GIRLS IN MATARAM

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ABSTRACT

Background: Anemia is one of the five main nutritional problems in Indonesia. Adolescent girls are a group that is prone to anemia. Anemia is a condition where the number of red blood cells or hemoglobin concentration in them is lower than normal. This study aims to determine the differences between TikTok and Leaflet video media in nutrition education on knowledge, attitudes about anemia, iron intake and adherence to consuming iron tablets among young women at SMA Mataram City.

Methods: This research is a quasi-experimental research. The research subjects were 64 people consisting of 32 treatment groups and 32 control groups. The instruments used were questionnaire forms and record forms to determine knowledge, attitudes about anemia, iron intake and compliance with consuming iron tablets or blood supplement tablets.

Results: Data were tested using the Wilcoxon and Mann Whitney U tests. Fe intake was obtained using the method of recording food consumption once every 24 hours. There are differences between TikTok and Leaflet video media in nutrition education on knowledge, attitudes with a p value of 0.000 ($\alpha = 0.05$) and compliance with iron tablet consumption with a p value of 0.027 ($\alpha = 0.05$) and there is no significant difference in iron intake (p value 0.707).

Conclusion: There are significant differences before and after treatment in the variables of knowledge, attitude and compliance with the consumption of iron tablets in both groups. And there were no significant differences before and after treatment using Tiktok and Leaflet media on the subjects' iron intake variables.

Keywords: anemia; teenagers; tiktok

THE IMPACT OF HEALTH EDUCATION ON IMPROVING SELF-CARE IN TYPE 2 DIABETES MELLITUS PATIENTS: A SCOPING REVIEW

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ABSTRACT

Background: Type 2 Diabetes Mellitus (T2DM) is a chronic disease that requires long-term management, including behavioral changes in self-care to prevent complications. Health education is an essential strategy for improving self-care among T2DM patients. However, there remains variability in the educational approaches used and their effectiveness in enhancing patient adherence to self-care practices. This study aims to explore and analyze various forms of health education that influence improving self-care behaviors in T2DM patients.

Methods: This study employs a scoping review approach with five main stages: (1) formulating research questions, (2) searching for relevant studies, (3) screening and selecting suitable research, (4) mapping the data, and (5) thematic analysis and summarizing the findings. The process follows the PRISMA-P protocol and evaluation using the PRISMA checklist. The literature analyzed comes from international journals in the PubMed, ProQuest, and Scopus databases. The criteria include full-text articles, English language, and publication dates between 2015 and 2024, focusing on diabetes-related subjects. Inclusion and exclusion criteria follow the PCC model. A total of 26 articles were analyzed in this study.

Results: This scoping review identifies various forms of health education that influence improving self-care behaviors in T2DM patients. From the 26 studies analyzed, it was found that digital technology-based interventions, such as mobile applications, telehealth, and video-based education, demonstrated significant improvements in self-care behaviors. Additionally, personalized, face-to-face education enhances patient understanding and adherence in the short term but requires reinforcement through follow-up interventions to sustain its benefits. Although these interventions were adequate, the main challenges identified were the heterogeneity of study designs, the relatively short duration of interventions, and sample size limitations, which may affect the generalizability of the research findings. Overall, technology-based health education shows excellent potential for supporting long-term disease management.

Conclusion: Technology-based health education approaches effectively improve self-care behaviors in T2DM patients. These findings can serve as a foundation for developing more optimal health education strategies.

Keywords: health education; self-care; type 2 diabetes mellitus

THE ROLE OF FAMILY IN NON-ADHERENCE WITH MEDICATION IN TYPE 2 DIABETES MELLITUS PATIENTS: A SCOPING REVIEW

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ABSTRACT

Background: Family support plays a crucial role in patient adherence to type 2 diabetes treatment. Research shows that families can enhance adherence by providing emotional support, reminding patients about medication schedules, and offering motivation. Conversely, non-adherence is often influenced by the family's lack of understanding about the importance of treatment.

Methods: This study utilized the Scoping Review Frameworks by Arksey and O'Malley, with steps such as defining research questions, selecting relevant studies, and analyzing data. The search was conducted across various databases (Pubmed, Cochrane, Scopus, Ebsco, Garuda, Proquest, Sciencedirect) using inclusion and exclusion criteria, with a time frame of 2014–2024.

Results: From 1,905 articles retrieved, 8 relevant articles were selected, featuring varied study designs: cross-sectional, qualitative, clinical trial, and cohort. Findings indicate that strong family support correlates with higher medication adherence, while the lack of family support leads to non-adherence.

Conclusion: Families play an essential role in supporting type 2 diabetes treatment adherence by providing emotional support, motivation, and reminders. A lack of support or understanding can result in non-adherence.

Keywords: family role; medication; non-adherence; type 2 diabetes patients

NON-PHARMACOLOGICAL PAIN MANAGEMENT IN NEWBORNS IN HOSPITAL SETTINGS: A SCOPING REVIEW

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ABSTRACT

Background: Newborns, defined as individuals within the first 28 days of life, are highly vulnerable to various medical conditions, including pain frequently resulting from invasive medical procedures in hospital settings. In addition to pharmacological approaches, non-pharmacological pain management is considered the safest, most comfortable, and effective method, with minimal to no side effects. Non-pharmacological interventions are particularly favored for newborns, especially preterm infants; however, their effectiveness and potential side effects require scientific validation. This review aims to identify evidence-based non-pharmacological pain management strategies for newborns in hospital settings.

Methods: This study conducted a scoping review of the literature published between 2014 and 2024, following the methodological framework developed by Arksey and O'Malley. Research articles were retrieved from six electronic databases: PubMed, ScienceDirect, DOAJ, ProQuest, Cochrane, and Garuda. Inclusion criteria comprised both primary and secondary studies, employing qualitative and quantitative designs, that focused on non-pharmacological pain management in newborns within hospital settings.

Results: Of the 1,242 research articles analyzed, 30 met the inclusion criteria and were included in this study. The review identified various non-pharmacological pain management interventions for newborns in hospital settings, including kangaroo care (KC), maternal voice, white noise, minimuffs, oral melatonin, 24% oral sucrose, the "Calmer" robot, facilitated tucking position, visual stimulation reduction, Yakson touch, maternal heartbeat sounds, gentle human touch, swaddling, vibration, non-nutritive sucking, the aroma of breast milk, expressed breast milk, and foot reflexology. The findings also indicate that these non-pharmacological interventions, particularly for preterm infants, can be combined and applied to a wide range of painful procedures in hospital settings, especially in Neonatal Intensive Care Units (NICUs).

Conclusion: Understanding the various types of non-pharmacological pain management for newborns enables nurses and other healthcare professionals in neonatal care units to apply appropriate methods during painful procedures, tailored to the individual needs of each infant.

Keywords: hospital settings; newborns; non-pharmacological pain management

THE EFFECT OF BOOKLET MEDIA ON GENITALIA PERSONAL HYGIENE KNOWLEDGE IN ADOLESCENTS AT PANTI ASUHAN PUTRI AISIYIAH YOGYAKARTA

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ABSTRACT

Background: Personal hygiene genitalia is a person's knowledge, attitudes, and behaviors that improve health, maintain the cleanliness of the reproductive organs, and prevent the onset of diseases. Common reproductive health disorders include urinary tract infections, vaginal discharge, pelvic inflammatory diseases, and cervical cancer. Genetically modified personal hygiene behavior is fundamental because it is related to the prevention of negative impacts on reproductive health. The purpose of this study is to determine the influence of booklet media health education on genitalia personal hygiene knowledge in adolescents at Panti Asuhan Putri Aisiyiah Yogyakarta.

Methods: This study uses a quantitative method with a quasy experiment, one group pretest, and posttest design. The population and sample in this study were 39 young women at Panti Asuhan Putri Aisiyiah Yogyakarta. Data collection will be carried out in August 2024. The research instrument used a personal hygiene genitalia knowledge questionnaire and a personal hygiene genitalia booklet media in women. The results of the study were analyzed using the Wilcoxon test

Results: The results of the study showed that genetic personal hygiene knowledge before being given health education was in the sufficient category (69.2%). Then, after being given health education, knowledge increased to the good category (97.4%). The results of the Wilcoxon test strengthened the data obtained with a value of $p=0.000$.

Conclusion: The booklet on media health education influences genitalia and personal hygiene knowledge in adolescents at Panti Asuhan Putri Aisiyiah Yogyakarta.

Keywords: adolescents; knowledge; media booklet; personal hygiene genitalia

COMPARATIVE EFFECTIVENESS OF PUMPKIN CREAM SOUP AND MORINGA LEAF JUICE IN REDUCING BLOOD GLUCOSE LEVELS

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ABSTRACT

Background: Blood glucose management is crucial for preventing complications related to diabetes. Nutritional interventions such as Moringa leaf juice and pumpkin cream soup have been proposed as functional foods to assist in glycemic control. This study aimed to evaluate the effectiveness of Moringa leaf juice and pumpkin cream soup compared to a control group in reducing blood glucose levels among adult participants.

Methods: A quasi-experimental study was conducted involving three groups: Moringa leaf juice intervention (n=20), pumpkin cream soup intervention (n=20), and a control group (n=20). Blood glucose reduction was measured pre- and post-intervention. Data were analyzed using the Kruskal-Wallis test followed by post-hoc pairwise comparisons using the Mann-Whitney U test with Bonferroni correction. Effect sizes between groups were assessed using Cohen's d.

Results: The Kruskal-Wallis test revealed significant differences in blood glucose reduction among the groups ($p = 0.027$). Post-hoc analyses indicated that both intervention groups (Moringa leaf juice and pumpkin cream soup) showed greater reductions compared to the control group; however, these differences were not statistically significant after Bonferroni correction. The comparison between Moringa leaf juice and pumpkin cream soup was not statistically significant ($p = 0.950$). Effect size analysis demonstrated small to moderate effects between the intervention groups and the control group, suggesting a clinically meaningful, though statistically non-significant, improvement in glucose control.

Conclusion:

Both Moringa leaf juice and pumpkin cream soup interventions exhibited potential benefits in lowering blood glucose levels compared to no intervention. The observed effect sizes highlight their potential as complementary dietary strategies for blood glucose management. Further studies with larger sample sizes and longer intervention periods are recommended.

Keywords: blood glucose reduction; functional foods; moringa leaf juice; pumpkin cream soup

EFFECTIVENESS OF HEALTH COACHING ON THE MANAGEMENT OF TYPE 2 DIABETES MELLITUS IN THE 45-64 YEARS AGE GROUP: A SCOPING REVIEW

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ABSTRACT

Background: Diabetes mellitus type 2 is one of the most common metabolic disorders, caused by two primary factors: suboptimal insulin production by pancreatic β -cells and the inability of insulin-sensitive tissues to respond appropriately to insulin. Health coaching has proven effective in assisting individuals, particularly those in the age group of 45 to 64 years, in managing type 2 diabetes. This article aims to explore the effectiveness of health coaching in managing type 2 diabetes mellitus in the age group of 45-64 years.

Method: This scoping review utilizes the Arksey and O'Malley model for analysis. Literature sources were obtained from online databases, Pubmed and Scopus, from 2015 to 2024. Identification and analysis were conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis for Scoping Review (PRISMA-SR).

Result: Based on the analysis of 12 articles, this review summarizes the effectiveness of health coaching in managing type 2 diabetes mellitus in individuals aged 45-64 years.

Conclusion: Health coaching can have a positive impact on the management of Type 2 Diabetes Mellitus, with an emphasis on lifestyle changes such as healthy eating patterns, increased physical activity, and stress management. This personalized approach helps patients better understand their condition, improves adherence to therapy, and provides motivation in maintaining stable blood sugar levels. Several studies have shown that health coaching can improve patients' quality of life and reduce the likelihood of complications related to diabetes. However, its success is highly dependent on the active participation of the patient and ongoing support from the health coach.

Keywords: age 45-64 years; health coaching; type 2 diabetes mellitus

THE IMPACT OF OHSMS CERTIFICATION ON SAFETY CLIMATE IN INDONESIAN COMPANIES

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ABSTRACT

Background: Occupational Safety and Health Management System is a framework used to manage occupational safety and health to create a work environment free from injury. However, the increase in SMK3 is not accompanied by a decrease in work accidents, this can be seen from the increase in the number of work accidents in Indonesia every year. There are factors that influence the effectiveness of SMK3 implementation such as management commitment, K3 training, worker participation, K3 communication, K3 procedures, K3 promotion and worker behavior. For that, researchers want to investigate how the description of Occupational Safety and Health factors and compare them between certified companies and non-certified companies

ethod: The study in this research is an observational, cross-sectional study. The study was conducted in 7 companies, where 2 companies are companies that do not have SMK3 certification, 2 companies are companies that have SMK3 certification PP no. 50 of 2012 and 3 companies are companies that have SMK3 certification ISO 45001: 2018. The questionnaire is based on the safety climate questionnaire and the questionnaire developed by Vindokumar & Bhasi, 2011 and given to the company's employees.

Results: Average occupational safety and health climate in non-certified companies has a good value. Average occupational health and safety climate in companies certified by PP no. 50 of 2012 has a good value. no difference in all safety factors in non-certified companies and companies certified by PP No. 50 of 2012. No differences in factors between companies that are not certified and companies that are ISO 45001:2018 certified. a significant difference between the safe behavior of companies certified under PP no. 50 of 2012 and companies certified under ISO 45001:201.

Conclusion: There is no difference in safety factors (safety climate) between companies that are not certified and companies that are certified to ISO 45001:2018 or PP no. 50 of 2012. There is a difference in safe behavior between companies that are certified to ISO 45001:2018 and PP no. 50 of 2012.

Keywords: impact of certification; safety climate; safety management system

RELATIONSHIP BETWEEN GLYCIZED HEMOGLOBIN (HbA1c) AND SERUM GLUTAMIC OXALOACETIC TRANSAMINASE (SGOT) ENZYME ACTIVITY IN PATIENTS TYPE 2 DIABETES MELLITUS

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ABSTRACT

Background: Diabetes Mellitus (DM) is a complex metabolic disorder marked by persistent hyperglycemia an elevation of blood glucose levels that surpasses normal limits. One effective method to monitor the long-term glycemic control in individuals with DM is through the assessment of Glycated Hemoglobin (HbA1c). This study seeks to explore the intriguing relationship between HbA1c values and Serum Glutamic Oxaloacetic Transaminase (SGOT) enzyme activity in patients with type 2 DM. Notably, SGOT serves as a crucial marker for liver cell damage.

Method: This study conducted a cross-sectional exploration focused on a diverse population of patients with type 2 DM aged 18 and older, who met specific inclusion criteria. Data collection was carried out in 2024, with data analysis using the Pearson and Spearman correlation tests

Result: The results reveal an average HbA1c value of 7.8% alongside an average SGOT enzyme activity of 19.9 U/L. Data analysis yielded a significance value of 0.626 ($p > 0.05$), indicating no meaningful relationship between HbA1c levels and SGOT enzyme activity in patients with type 2 diabetes mellitus. This intriguing finding suggests that an elevation in HbA1c levels does not automatically lead to heightened SGOT enzyme activity, implying that not all individuals with type 2 diabetes suffer from liver dysfunction.

Conclusion: This finding implies that an increase in HbA1c levels does not necessarily correspond to an increase in SGOT enzyme activity, meaning that not all patients with type 2 diabetes experience impaired liver function. Given these insights, it is crucial for patients with type 2 diabetes to monitor their blood glucose and HbA1c levels regularly.

Keywords: HbA1c; SGOT; type 2 diabetes mellitus

EVALUATION OF THE IMPLEMENTATION OF TUBERCULOSIS CONTACT INVESTIGATION IN MUARO JAMBI DISTRICT, JAMBI PROVINCE, INDONESIA

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ABSTRACT

Background: Tuberculosis (TB) contact investigation is a critical strategy for early case detection and prevention, especially in high-burden countries like Indonesia. However, its implementation at the district level often faces operational challenges. This study aimed to evaluate the implementation of TB contact investigation in Muaro Jambi District, focusing on screening coverage, tuberculosis preventive therapy (TPT) uptake, and the association between screening efforts and TB case detection.

Method: A cross-sectional study using secondary data was conducted across 23 primary health centers and 2 public regional hospitals in Muaro Jambi from 2022 to 2024. Variables analyzed included the number of index cases, household contacts, referral eligibility and completion, screening results, TB case detection, and TPT coverage. Descriptive statistics were used, followed by Pearson correlation analysis to examine the relationship between the number of contacts screened and the number diagnosed with TB.

Result: Of 2,523 household contacts identified from 786 index cases, 537 were eligible for referral, with a referral completion rate of 100%. However, only 18.4% of contacts were screened, and 17.9% of eligible individuals received TPT. A significant positive correlation was found between the number of contacts screened and TB cases detected ($r = 0.765$, $p < 0.001$), suggesting increased screening enhances TB case detection.

Conclusion: Despite strong referral practices, the low coverage of screening and TPT highlights gaps in program continuity. Improving TB contact investigation outcomes requires strengthening workforce capacity, enhancing data systems, and engaging communities to ensure early detection and prevention. These findings support the need for integrated and sustained efforts to meet national TB elimination targets.

Keywords: contact investigation; public health program evaluation; TB prevention; TPT; tuberculosis

GOOD PRACTICES OF SPECIFIC NUTRITION INTERVENTIONS IN REDUCING STUNTING PREVALENCE IN BENGKULU CITY

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ABSTRACT

Background. The prevalence of stunting in Indonesia is third in Asia and has not met the target nationally. The decrease in the prevalence of stunting in Bengkulu City is very significant. It is necessary to examine the good practices that have been done in reducing the prevalence of stunting. This study aims to analyze the good practices of specific nutrition interventions in reducing stunting prevalence in Bengkulu City.

Method. The study used research on policy design in Bengkulu City from August to November 2023. Data collection uses Focus Group Discussion (FGD), in-depth interviews, and document review. The informants were selected by purposive sampling, with analysis using the SWOT analysis and content analysis methods.

Result. Good practice in reducing stunting in Bengkulu City is a strong commitment of the local government by including this program in the Regional Government Work Plan. Cross-sector collaboration between governments, non-governmental agencies, and local communities strengthens stunting efforts. Regular training for Nutrition Implementers and health cadres increases their knowledge in dealing with nutrition issues. In addition, counseling on nutrition at posyandu and schools, as well as adequate access to health services, supports monitoring children's growth. Stunting case audits are also applied for quick handling, while special interventions target vulnerable groups such as toddlers and pregnant women.

Conclusion: Strengthening cross-sector coordination and providing periodic training for health workers are essential. Increased budget allocations for monitoring and evaluation, enhanced public education on balanced nutrition, and improved health facilities are vital to sustaining progress in reducing stunting.

Keywords: implementation; research of policy; strategic policy study; stunting

THE RELATIONSHIP BETWEEN PEANUT CONSUMPTION PATTERNS AND THE PREVALENCE OF HYPERTENSION AND DIABETES MELLITUS (INDONESIAN HEALTH SURVEY 2023 ANALYSIS)

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ABSTRACT

Background: Hypertension and diabetes mellitus are major non-communicable diseases with a globally increasing prevalence, often influenced by dietary patterns. Nuts are known as a high-nutrient food source that can support the prevention and management of degenerative diseases such as hypertension and diabetes mellitus. This study aims to analyze the relationship between peanut consumption patterns and the prevalence of hypertension and diabetes mellitus.

Method: The study used a cross-sectional design with data aggregated on the results of the Indonesian Health Survey (IHS) 2023 by involving 38 provinces in Indonesia. Independent variables are the proportion consumption patterns of nuts. Dependent variables are prevalent hypertension and diabetes mellitus.

Result: The results obtained the consumption of nuts ≥ 1 time per day with the prevalence of hypertension based on diagnosis (p-value 0.02), the prevalence of hypertension based on measurement results (p-value 0.01), and the prevalence of diabetes mellitus based on diagnosis (p-value 0.00). There is no significant relationship between the proportion consumption of nuts 1-6 times per week with the prevalence of hypertension and diabetes mellitus. The proportion of bean consumption ≤ 3 per month significant relationship with the prevalence of hypertension based on diagnosis (p-value 0.00), the prevalence of hypertension based on measurement (0.03), and the prevalence of diabetes mellitus (p-value 0.00).

Conclusion: the results of the study show that increasing the frequency of consumption of legumes, especially in amounts that are more than three times per month, has the potential to reduce the prevalence of both diseases.

Keywords: diabetes mellitus; hypertension; peanuts

THE PROPORTION OF STARCH TUBER CONSUMPTION PATTERNS AND PREVALENCE OF HYPERTENSION AND DIABETES MELLITUS

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ABSTRACT

Background: Hypertension and diabetes mellitus are major health problems in Indonesia. Consumption of starch tubers, such as cassava and sweet potatoes, has the potential to affect blood sugar levels and blood pressure. This study aims to analyze the relationship between the proportion of starch tuber consumption and the prevalence of hypertension and diabetes mellitus based on data from the 2023 Indonesian Health Survey (IHS).

Method: This study used a cross-sectional design with aggregate data from 38 provinces in Indonesia. Bivariate analysis used the Spearman correlation test.

Result: The results showed that consumption of starch tubers > 1 time per day and < 3 times per month had a significant relationship with the prevalence of hypertension ($p = 0.00$; $p = 0.00$) and diabetes mellitus ($p = 0.00$; $p = 0.00$). On the other hand, consumption of 1–6 times per week did not show a significant relationship with both diseases. The higher the proportion of starch tuber consumption, the lower the prevalence of hypertension and diabetes mellitus.

Conclusion: This study concluded that the overall consumption of starch tubers in Indonesia is low. Especially consumption of starch tubers in weekly periods in urban areas on the incidence of hypertension and diabetes mellitus. A nutritional education program policy is needed to reduce the risk of non-communicable diseases.

Keywords: diabetes mellitus; hypertension; starch tubers

YELLOW SWEET POTATO (YSP) ENHANCES INSULIN SENSITIVITY AND REDUCES TYPE 2 DIABETES RISK IN OBESE RATS

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ABSTRACT

Background: Ipomoea batatas shows potential as a rice substitute due to its lower glycemic index, higher fiber content, and reduced caloric density. This study aimed to evaluate the effects of a YSP-based diet on biomarkers of insulin resistance in obese rats.

Method: A randomized controlled trial was conducted using 28 rats, all rendered obese through a high-fat diet for 3 weeks, resulting in a Lee index greater than 310 g. The rats were then divided into four dietary groups and treated for an additional 3 weeks. The control group (K-) received standard AIN-93M feed. The positive control group (K+) received a modified standard feed in which 100% of the corn starch was replaced with rice. Group K1 was given 100% steamed YSP, while group K2 received 100% twice-steamed YSP. Blood samples were analyzed using SPSS software version 25.0. \

Result: The K2 group demonstrated the most significant improvements across all measured parameters. Total antioxidant levels increased by 5.11 U/mL, while HOMA-IR and glycated albumin decreased by 5.67 and 3.83 pmol/mL, respectively. Post-prandial glucose levels also dropped significantly by 184 mg/dL. Furthermore, the K2 group exhibited the highest concentrations of GLUT4 (25.12 ng/mL), acetic acid (150.31 mmol/L), propionic acid (53.20 mmol/L), and butyric acid (27.18 mmol/L). Levels of PPAR- α and PPAR- γ were also highest in the K2 group at 1.94 ng/mL and 0.78 ng/mL, respectively. In contrast, glucose-6-phosphatase (G6P) reached its highest level in the K- group at 9.91 mIU/mL.

Conclusion: A twice-steamed YSP diet significantly improved insulin sensitivity in obese rats. These findings suggest that YSP may serve as a functional food promoting metabolic health.

Keywords: antioxidant; GLUT4; SCFA; YSP

SOCIODEMOGRAPHIC AND FATHER'S ROLE DETERMINANTS OF STUNTING INCIDENCE IN SOUTH CENTRAL TIMOR DISTRICT

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ABSTRACT

Background: Stunting is a chronic nutritional problem that has a serious impact. The determinants of stunting incidence in each region are different, including sociodemographics and parenting patterns.

Objectives: This study aims to determine the risk factors for stunting according to sociodemographics and the role of fathers in South Central Timor district.

Methods: This study a Cross-Sectional Design. The number of samples used was 280 people with purposive sampling technique based on the researcher's criteria. The research instrument used questionnaires and anthropometric measurements. The data collected included sociodemographic variables, data on child characteristics and the role of fathers in preventing stunting. Data obtained from secondary data interviews, observations and anthropometric measurements to measure the nutritional status of toddlers. Data analysis was carried out in stages, the results of bivariate analysis with a p-value below 0.25 were included in the multivariate analysis modeling of logistic regression tests.

Results: The results of the bivariate analysis showed a significant relationship between a history of infectious diseases, low birth weight <2500 grams, low exclusive breastfeeding, nutritional status of pregnant women with KEK and the role of. This is indicated by a p value <0.05, while the results of the multivariate analysis showed that the nutritional status of pregnant women and exclusive breastfeeding had the greatest influence on the incidence of stunting.

Conclusion: this study specific variables need to be added in further studies including complete basic immunization, smoking behavior and nutritional intake.

Keywords: father's role; sociodemographic; stunting

DIFFERENCES IN NUTRITION EDUCATION "SEMAIZIBANG" (SOWING BALANCED NUTRITION) AND LECTURES ON KNOWLEDGE, ATTITUDES AND DIETS OF JUNIOR HIGH SCHOOL STUDENTS IN EAST LOMBOK REGENCY

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ABSTRACT

Background: Based on the results of basic health research in 2018, it shows that nationally the prevalence of short children aged 13-15 years is 25.7%, the overweight is 16% and underweight is 8.7%. One of the effective ways to increase knowledge and attitude to maintain diet so that it can prevent nutritional problems is to provide nutrition education using the card game SEMAIZIBANG (Sowing Balanced Nutrition).

Method: Quasi experimental research using pretest and posttest design. The research subjects are 96 research objectives. The instruments used are questionnaires and Food Frequency Questionnaire (FFQ) forms. The data was tested by paired sample t test and independent sample t test.

Result: There was a significant difference in the provision of SEMAIZIBANG media (Sowing Balanced Nutrition) on increasing knowledge and attitudes but no difference in diet ($p=0.077$) in the difference test showed there was a difference in knowledge and attitude and there was no difference in diet ($p=0.379$) either using SEMAIZIBANG game media or lectures.

Conclusion: Nutrition education through the card game media SEMAIZIBANG (Sowing Nutrition Balanced) can be used as a nutrition education medium to increase knowledge and attitudes in junior high school students.

Keywords: adolescent; nutrition education; SEMAIZIBANG

EFFECTIVENESS OF INTEGRATED HEALTH SERVICE APPLICATION FOR PREGNANT WOMEN (PETA BUMIL) RELATED TO MOTHERS' ABILITY FOR SCREENING EMERGENCY SIGNS OF PREGNANCY

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ABSTRACT

Background: 830 mothers in the world die every day due to complications of pregnancy and childbirth. 75% of maternal deaths are caused by bleeding, 24% by high blood pressure during pregnancy (preeclampsia), infection, prolonged or obstructed labor. The cause of maternal death is the delay in recognizing emergency signs during pregnancy. Late decisions making, caused mother late in reaching a health facility and the impact was being late for further health intervention. The Government relied on KIA book which is revised in 2024 but still provides one way communication, easily damaged and very impractical.

Method: The aim of this research is to determine the effectiveness of the Peta Bumil Application on the knowledge and attitude of pregnant women in screening emergency signs of pregnancy. This research used a quasi-experimental design, The sample for quasi-test (35) and quasi-control (35) groups. Data from the questionnaire was used to compare the differences in using KIA book and mothers using Peta Bumil application.

Results: The quasi-control group showed lower improvement of knowledge compared to the quasi-test group with p value 0.001 and the quasi-control group showed lower improvement of maternal attitude for screening emergency signs of pregnancy compared to the quasi-test group with p value 0.001.

Conclusion: Peta Bumil application proven to be very effective to increasing attitude score (>70) and medium effective to knowledge, while KIA book proven to be less effective.

Keywords: application; attitude; emergency signs

FROM INDUSTRY TO HEALTHCARE: APPLYING SAFETY CULTURE MATURITY MODELS TO IMPROVE HEALTH SYSTEM MANAGEMENT

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ABSTRACT

Background: Indonesia's healthcare system transformation, particularly under the Satu Sehat initiative, requires a strong foundation in risk management and safety culture to enhance the management of non-communicable diseases (NCDs). Lessons from high-risk industries, such as the petrochemical sector, provide valuable insights into improving safety culture maturity in healthcare settings. However, variations in safety culture maturity levels remain, necessitating a structured approach to assessment and improvement. This study aims to develop a safety culture maturity model applicable to both industrial and healthcare risk management.

Method: A mixed-method approach with an exploratory sequential design was applied. The first phase involved in-depth interviews in several petrochemical industries, followed by data triangulation to develop the framework and assessment instrument. The second phase included focus group discussions and questionnaire distribution to safety managers, testing content validity and model applicability through statistical analysis.

Result: The qualitative phase identified key indicators and specific criteria for each maturity level based on Hudson's five-stage model: Pathological, Reactive, Bureaucratic, Proactive, and Sustainable. The quantitative phase confirmed that the model is both valid and reliable. The findings indicate that Organizational Learning (90.1%) and Commitment (89.3%) were the strongest dimensions, while Employee Participation (77.5%) scored the lowest, suggesting the need for greater workforce engagement.

Conclusion: A validated safety culture maturity model can serve as a framework for improving risk management and patient safety in NCD management. Implementing proven safety strategies from high-risk industries can strengthen stakeholder engagement, policy effectiveness, and long-term system resilience in healthcare transformation.

Keywords: culture maturity; healthcare; risk management

ENVIRONMENTAL HEALTH FACTORS AS PREDICTORS OF STUNTING IN FAMILIES AT RISK OF STUNTING IN INDONESIA

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ABSTRACT

Background: Stunting is a chronic nutritional problem that affects children's physical and cognitive development, especially in children aged 6-23 months who come from families at risk of stunting. In Indonesia, the prevalence of stunting in 2023 reached 21.5%, which is still far from the 14% target set by the government. Stunting can affect children's long-term health and increase susceptibility to non-communicable diseases in adulthood.

Objectives: This study aims to analyze factors that act as predictors of stunting incidence in families at risk of stunting in Indonesia, using data from the 2023 Indonesian Health Survey (IHS).

Methods: The research design was an analytic study with a cross-sectional approach. This study used total sampling involving 4,766 mothers with children aged 6-23 months. The variables analyzed included maternal factors (birth spacing, number of births, maternal age, family planning participation) and environmental factors (latrine ownership).

Results: The analysis showed that too close birth spacing (OR 1.422), too many births (OR 1.323), and improper latrine ownership (OR 1.327) significantly affected the incidence of stunting in families at risk of stunting.

Conclusion: This study shows that birth spacing, number of births, and latrine ownership are predictors of stunting in families at risk of stunting. Maternal and environmental factors play an important role in the incidence of stunting in families at risk of stunting in Indonesia. These findings suggest that the need for a holistic approach that includes good family planning and improved sanitation and maternal nutrition should be the main focus of stunting prevention efforts in Indonesia.

Keywords: families at risk of stunting; maternal factors; sanitation; stunting

OPTIMIZING INDONESIA'S HEALTHCARE RESPONSE TO PREDIABETES: A LONGITUDINAL PERSPECTIVE

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ABSTRACT

Background: Prediabetes is an intermediate stage between normal blood glucose levels and Type 2 diabetes mellitus (T2DM), characterized by elevated blood glucose that does not yet meet the criteria for diabetes. It significantly increases the risk of progressing to T2DM, highlighting the importance of early intervention. In Indonesia, addressing modifiable risk factors is crucial to reducing the prevalence of prediabetes.

Methods: Longitudinal data from 3548 respondents who met the study criteria were taken from the Bogor Cohort Study on NCD Risk Factors. In six observations, Generalized Estimating Equations (GEE) were used to analyze the factors influencing the transition from normoglycemia to prediabetes.

Results: The analysis identified several factors significantly associated with prediabetes risk. Protective factors included maintaining a BMI <25, waist circumference <80 cm (women) or 90 cm (men), regular physical activity (≥ 10 minutes daily walking/cycling), optimal lipid levels (total cholesterol ≤ 200 mg/dL; triglycerides ≤ 150 mg/dL; HDL ≥ 40 mg/dL [men] or > 50 mg/dL [women]), non-sedentary behaviour, and systolic blood pressure <140 mmHg. Conversely, factors like a family history of diabetes and age >40 years significantly increased prediabetes risk.

Conclusion: While non-modifiable factors like age and family history of diabetes increase susceptibility, the study highlights the importance of modifiable lifestyle factors like maintaining BMI and waist circumferences, maintaining optimal lipid levels, controlling blood pressure, and participating in regular physical activity and an active lifestyle in lowering the risk of prediabetes.

Keywords: central obesity; GEE; lifestyle

ANALYSIS OF PREVALENCE TRENDS OF STUNTING, WASTING, AND UNDERWEIGHT IN TODDLERS IN INDONESIA 2021-2023

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ABSTRACT

Background: Malnutrition in toddlers, especially stunting, wasting, and underweight, is still a public health challenge in Indonesia. Although various interventions have been implemented, the trend of growth disorders still shows regional differences. This study aims to analyze the trend of changes in the prevalence of stunting, wasting, and underweight in toddlers in regional Indonesia from 2021-2023.

Method: This study used a descriptive design with a trend analysis approach. Data were obtained from the 2021-2022 Indonesian Nutrition Status Study (INSS) and the 2023 Indonesian Health Survey (IHS). The sample included toddlers aged 0-59 months who had complete anthropometric data. The analysis was conducted based on seven regional areas in Indonesia using descriptive statistical methods to identify patterns of changes in prevalence.

Result: The study showed that the prevalence of stunting decreased from 24.4% in 2021 to 21.5% in 2023. Wasting increased from 7.1% to 8.5% in 2023. Underweight showed a downward trend from 17% to 15.9%.

Conclusion: The highest prevalence of Stunting, Wasting, and Underweight during 2021-2023 was in the Eastern Indonesia Region, namely Nusa Tenggara and Maluku. Community-based interventions contributed to the reduction of stunting and underweight, but wasting remains a challenge that requires special attention. Policies that are more focused on improving food security and access to health services are needed to address nutritional disparities between regions.

Keywords: malnutrition; prevalence; trend analysis

RELATIONSHIP BETWEEN THE CONSUMPTION OF MILK, FAT, AND OIL WITH HYPERTENSION AND DIABETES MELLITUS IN ADOLESCENTS

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ABSTRACT

Background: The prevalence and hypertension of diabetes mellitus (DM) in Indonesia continue to increase, mainly due to unhealthy lifestyles, including uncontrolled consumption of milk, fat, and oil. Teenagers, as the next generation, are at high risk if their diet is unbalanced. This research explores the influence of milk, fat, and oil consumption on the risk of hypertension and DM in adolescents, to provide new insights into prevention efforts. The aim is to analyze the relationship between the proportion of milk, fat, and oil consumption on hypertension and diabetes mellitus in adolescents based on doctor's diagnosis by province

Method: This type of research is quantitative research with a cross-sectional approach based on secondary data. The research sample was teenagers selected through a stratified random sampling method, to ensure a more accurate representation according to the characteristics of the population.

Result: This study revealed that milk consumption did not have a significant relationship with hypertension and diabetes mellitus, while fat and oil consumption was shown to be significantly related to an increased risk of these two diseases in various provinces

Conclusion: Milk consumption does not show a significant relationship with hypertension and Diabetes Mellitus (DM). In contrast, the consumption of fats and oils was significantly associated with an increased risk of both diseases. These results highlight the need for education and nutritional interventions to reduce the control of fat and oil consumption in adolescents to prevent hypertension and DM in various provinces.

Keywords: adolescents; diabetes mellitus; diet; hypertension

STUNTING IN CHILDREN IN KENDAL REGENCY: EVALUATION OF BREASTFEEDING AND COMPLEMENTARY FOOD PROVISION PATTERNS AS THE MAIN FACTOR

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ABSTRACT

Background: Kendal Regency is one of the regions in Indonesia registered as a stunting handling locus in the National Development Planning since 2021. The Stunting Reduction Acceleration Team was formed by Regent Regulation Number 42 of 2021, but the prevalence is still high at 22.4%. This study aims to analyze the factors influencing stunting, especially the pattern of exclusive breastfeeding and the pattern of complementary feeding given by mothers in the first 1000 days of a child's life.

Method: The cross-sectional study analytical survey research method in the Cepiring Health Center work area, Kendal Regency, Central Java was conducted in March 2025. Data analysis was conducted univariately, bivariately, and multivariately using the Chi-square test (χ^2) with a 95% confidence level ($\alpha = 0.05$) and odds ratio.

Result: Children who do not receive exclusive breastfeeding have a 1.5 times greater risk of experiencing stunting with a p value of 0.003; OR 1.500 (CI 0.945 - 2.381), indicating a significant relationship between exclusive breastfeeding and stunting. Although children who are exclusively breastfed can still experience stunting, other factors, such as inappropriate patterns of complementary feeding (complementary feeding), contribute significantly to stunting. Children who receive inappropriate complementary feeding (late, with low nutritional quality) have a higher risk of stunting with a p value of 0.039 and OR 10.400 (CI 0.785 - 137.832).

Conclusion: To reduce the risk of stunting, it is important to educate parents about exclusive breastfeeding, the right complementary feeding pattern, and ensuring adequate nutrition for children from an early age.

Keywords: complementary feeding; exclusive breastfeeding

ANALYSIS OF FACTORS ASSOCIATED WITH THE INCIDENCE OF STUNTING AMONG TODDLERS IN MARO SEBO DISTRICT: PRELIMINARY STUDY STUNTING PREVENTION USING THE HOPE

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ABSTRACT

Background: Stunting is a condition of impaired growth resulting from chronic malnutrition and recurrent infections, which can hinder children's physical development and increase their risk of disease. This study aims to identify the factors contributing to stunting among toddlers at the Jambi Kecil Health Center, Muaro Jambi Regency.

Methods: This research is a quantitative analytical study with a case-control design, conducted in Maro Sebo District to analyze the factors influencing stunting among toddlers. The sample consisted of 136 toddlers, comprising 68 cases and 68 controls, selected through purposive sampling. Data were analyzed using the Chi-square test, or Fisher's exact test when the assumptions of the Chi-square test were not met.

Results and Discussion: The study found that stunting was more prevalent among toddlers who did not receive exclusive breastfeeding (63.8%), were born with low birth weight (62.3%), frequently experienced illness (67.3%), were malnourished (91.7%), had parents with low educational attainment (58.0%), and came from families with low economic status (59.8%). All of these factors were significantly associated with the incidence of stunting in the service area of the Jambi Kecil Health Center.

Conclusion: Stunting among toddlers in the Jambi Kecil Health Center area is influenced by the lack of exclusive breastfeeding, low birth weight, frequent illness, inadequate nutritional intake, low parental education, and poor socio-economic conditions. These findings are expected to serve as a reference for the Health Center in developing strategies to address stunting and to strengthen cross-sector collaboration.

Keywords: factors; stunting; toddlers

WORKERS' AWARENESS LEVEL OF MINING SAFETY RISKS IN COAL MINING COMPANIES IN INDONESIA: THE FIRST NATIONAL STUDY

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ABSTRACT

Background: Every year, millions of people are estimated to die due to occupational diseases and work-related accidents. Various efforts have been made to prevent accidents, including in Indonesia's coal mining sector. However, the number of accidents, particularly fatalities, remains high. This study, therefore, was conducted as the first national-level investigation to understand workers' awareness of mining safety risks within coal mining companies in Indonesia.

Method: This is a quantitative study employing a cross-sectional design. The study uses secondary data obtained from the Directorate General of Mineral and Coal, Ministry of Energy and Mineral Resources, Republic of Indonesia. The data were screened and evaluated to ensure there were no duplicates, originated from coal mining companies, that assessments were conducted following the Technical Guidelines issued by the Director General of Mineral and Coal, and that they included data on workers' awareness levels concerning mining safety risks in 2023. The data were then analysed to depict the overall level of workers' safety awareness in coal mining companies across Indonesia.

Result: The study found that compliance among coal mining companies in Indonesia, particularly regarding the implementation and reporting of the Safety Performance Achievement Assessment, as mandated by Director General of Mineral and Coal Decree No. 10.K/MB.01/DJB.T/2023, remains inadequate. Companies holding Special Mining Business Licenses (IUPK) demonstrated higher compliance than those with Coal Contract of Work (PKP2B) and Mining Business Licenses (IUP). Most companies exhibited worker awareness levels categorized as "reactive" toward mining safety risks. Most IUPK holders showed higher awareness levels than PKP2B and IUP holders. Several IUPs were still at the "basic" level of awareness. IUPK holders also had higher percentages of implementing safety campaigns than PKP2B and IUP holders. Nevertheless, the safety campaigns conducted were still limited in their ability to motivate workers to work safely and to participate actively in safety management.

Conclusion: In addition to increasing the frequency of safety campaigns, efforts must be made to enhance their effectiveness, particularly since few campaigns currently succeed in motivating workers to engage in safe work practices and to participate meaningfully in safety management efforts.

Keywords: coal mining; mining safety; worker awareness

IDENTIFICATION OF COMPLEMENTARY AND ALTERNATIVE MEDICINE IN LOWERING BLOOD SUGAR LEVELS IN TYPE 2 DIABETES MELLITUS PATIENTS: A SCOPING REVIEW

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ABSTRACT

Background: Diabetes mellitus cases are increasing rapidly, often leading to serious metabolic disorders and severe complications. The use of Complementary and Alternative Medicine (CAM) among individuals with type 2 diabetes mellitus continues to rise globally. This article explores the identification of complementary and alternative medicine in lowering blood sugar levels in patients with type 2 diabetes mellitus.

Method: The design of this scoping review follows the Arksey and O'Malley framework for conducting scoping reviews. Literature sources were obtained from online databases including PubMed, Science Direct, Garuda, Wiley, and Cochrane, covering the period from 2015 to 2025. Identification and analysis were conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-SR).

Result: Based on the analysis of seven articles, this review summarizes the types of complementary and alternative medicine used to lower blood sugar levels in patients with type 2 diabetes mellitus.

Conclusion: The results of this study indicate that various complementary and alternative therapies can be utilized to help control blood glucose levels in patients with type 2 diabetes mellitus.

Keywords: blood sugar; complementary and alternative medicine; diabetes mellitus

CORRELATION OF HS-CRP LEVELS AND TOTAL CHOLESTEROL IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AT DR. BRATANATA HOSPITAL JAMBI CITY

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ABSTRACT

Background: Type 2 Diabetes Mellitus (T2DM) is associated with disturbances in glucose and lipid metabolism that can trigger systemic inflammation. High-sensitivity C-reactive protein (hs-CRP) is a biomarker commonly used to predict cardiovascular risk, especially when assessed alongside total cholesterol levels. This study aims to investigate the relationship between high-sensitivity C-reactive protein (hs-CRP) levels and total cholesterol in individuals with type 2 diabetes mellitus.

Method: This descriptive-analytic study used a cross-sectional design and was conducted at Dr. Bratanata Hospital, Jambi City. The sample consisted of T2DM patients selected through purposive sampling based on inclusion and exclusion criteria. hs-CRP levels were measured using a Wondfo Meter, and total cholesterol was analyzed using an Autolysers BT 3500. Statistical tests were conducted to determine the relationship between the variables.

Result: The average hs-CRP level was 4.25 mg/L, and the average total cholesterol was 218 mg/dL. There was no significant correlation between hs-CRP and total cholesterol levels ($p > 0.05$). Although the regression plot suggested a possible negative trend, the correlation was weak and not statistically significant.

Conclusion: There is no significant correlation between hs-CRP and total cholesterol levels in T2DM patients at Dr. Bratanata Hospital, Jambi City.

Keywords: diabetes mellitus; hs-CRP; inflammation; total cholesterol

THE REPORTING SYSTEM FOR OCCUPATIONAL DISEASES AND WORK-RELATED ILLNESSES IN INDONESIA: A LITERATURE REVIEW

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ABSTRACT

Background: Data on occupational diseases are essential for providing information about prevalent illnesses among workers and their associated factors and impact on work productivity. This information is crucial for prioritizing prevention and control efforts, thereby maintaining the health status of workers across industry sectors at a national level. This literature review aimed to map the evidence regarding Indonesia's national occupational disease reporting systems.

Method: The review encompassed articles from various sources, including journal articles, relevant regulations, and reports on occupational disease reporting systems implemented in other countries. This literature review followed the framework by Arksey and O'Malley, involving identifying research questions, searching for relevant evidence, selecting pertinent studies, data charting, and synthesizing and reporting the results. The PRISMA-ScR flowchart was utilized to illustrate the evidence search process.

Result: A total of five articles and five reports were included in this literature review. The review findings indicate minimal data coverage across reporting systems, typically including worker demographics, job details, worker health examination results, and workplace environment assessment outcomes. The review also revealed that occupational disease data reporting in Indonesia predominantly employs conventional methods through written reports submitted via bureaucratic channels.

Conclusion: Further research is warranted to update variables and integrate digital systems within Indonesia's occupational disease reporting framework.

Keywords: occupational disease reporting system; occupational diseases; occupational health

RELATIONSHIP BETWEEN PROPORTION OF VEGETABLE AND FRUIT UNDER CONSUMPTION AND PROPORTION OF DIABETES MELLITUS TYPES IN INDONESIA

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ABSTRACT

Background: Diabetes Mellitus (DM) is a global health problem with an increasing proportion in Indonesia. This study will analyze the relationship between average fruit and vegetable consumption and the proportion of Type 1, Type 2, and Gestational Diabetes Mellitus (GDM) in Indonesia based on data from the 2023 Indonesian Health Survey (IHS). This study aims to determine the relationship between the proportion of less consumed vegetables and fruits and the Proportion of types of Diabetes Mellitus (Type 1, Type 2, and GDM).

Method: This study uses a correlation design with secondary data aggregate from IHS2023 which covers all provinces in Indonesia. The independent variable is the proportion of people who consume fruits and vegetables, while the dependent variable is the proportion of each type of DM.

Result: The results showed that the proportion of undereating vegetables and fruits in Indonesia is very high (96.1%), highest in the Sumatra Region (97.1%) and lowest in the Papua Region (93.4%). Type 2 diabetes in Indonesia is dominated by type 2 (46.7%) followed by type I (21,6%), GDM (2,8%), and the rest are unknown DM types. The results of the analysis showed that there was a relationship between the proportion of eating less vegetables and fruits and the proportion of Type II Diabetes Mellitus (p-value 0.003, $r=0.475$), but it is not significantly related to Type I DM and GDM.

Conclusion: There is a significant relationship between the proportion of eating less vegetables and fruits and the proportion of Type II Diabetes Mellitus. The higher the proportion of eating less vegetables and fruits, the higher the proportion of type II DM.

Keywords: 2023 Indonesian Health Survey (IHS); consumption of vegetables and fruits; gestational diabetes mellitus; type 1 diabetes mellitus; type 2 diabetes mellitus

INTEGRATED EDUCATIONAL MODEL OF CLINICAL NURSING SUPERVISION IN HOSPITALS

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ABSTRACT

Backgrounds: Nursing supervision is one of the managerial functions within the actuating phase, aimed at directing nurses to work effectively, measurably, efficiently, and in accordance with established standards. The implementation of supervision still requires improvement and enhancement. Therefore, a strategic effort is needed through the development of an integrated educational model for clinical nursing supervision using Android-based electronic media to improve supervisory practices in hospitals.

Methods: This study employed a research and development (R&D) design with a mixed methods approach. The aim of the study was to develop an integrated educational model for clinical nursing supervision in hospitals. The design process followed the ADDIE framework, consisting of Analysis, Design, Development, Implementation, and Evaluation. The theoretical constructs underpinning the study were based on the Theory of Planned Behavior and Social Cognitive Theory, encompassing seven key indicators: (1) Attitude, (2) Subjective Norms, (3) Perceived Behavioral Control, (4) Self-Efficacy, (5) Observational Learning/Modeling, (6) Outcome Expectations, and (7) Cognitive Processes.

Results: The development produced a multimedia learning application named **INSPECSI** (Integrated Supervision Education for Clinical Nursing). Expert validation by media specialists and nursing practitioners indicated that the model is easy to understand, engaging, systematic, and beneficial for clinical supervision. The application was considered feasible for pilot testing in hospital settings.

Conclusion: The INSPECSI application presents an innovative and practical approach to improving clinical nursing supervision. Its theoretical foundation and positive validation outcomes support its use in nursing education and hospital-based supervisory training. Further testing is recommended to assess its impact on supervisory effectiveness and scalability.

Keywords: clinical nursing supervision; education; integrated model; INSPECSI; nursing management

IRON FOLIC ACID (IFA) SUPPLEMENTATION IN SCHOOLS FOR ADOLESCENTS: BARRIERS AND SUPPORT FACTORS SCOOPING REVIEW

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ABSTRACT

Background: Weekly iron and folic acid supplementation in schools is considered an effective measure to increase hemoglobin levels and has been adopted as one of the national health policies. In addition, the school-based weekly iron and folic acid supplementation program aims to improve compliance and reduce the possibility of side effects without reducing effectiveness. Increasing the WIFAS (weekly iron folic acid supplementation) program to reach larger populations are a challenge in some developing countries. This study aims to analyse Weekly IFA Supplementation program (WIFAS) in schools for adolescents has been proven to reduce the prevalence of anemia.

Method: Preferred Reporting Items for Review Systematic Review and Meta-Analysis (PRISMA) was used to review articles not earlier than 2019 for scientific reports in English. The navigation terms used are supplementation Iron Folic Acid; adolescents, ten criteria of the paper meet the criteria for assessment.

Result: By identifying the barriers in the weekly IFA (iron folic acid) tablet supplementation program, supporting factors will be found to reduce the barriers of the WIFAS program appropriately. Low knowledge and compliance of adolescents, lack of teacher participation in health education and supervision of IFA consumption are the barriers found.

Conclusion: Providing health education by combining several media and methods accompanied by supervision by peers or teachers during IFA consumption has succeeded in increasing the knowledge, attitudes, intentions, motivations, and behavior of adolescents in taking IFA tablets, ultimately reducing anemia. It is hoped that the results of this review can be used as a way to increase the coverage of weekly supplementation programs in schools.

Keywords: adolescents; iron folic acid; supplementation

THE USE OF INNOVATIVE PRODUCTS IN DIABETIC WOUND CARE: A SCOPING REVIEW

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ABSTRACT

Background: Diabetes mellitus (DM) is a global health challenge with high prevalence and complications such as diabetic foot ulcer (DFU). These wounds are the leading cause of non-traumatic amputations and require effective treatment to prevent complications. This scoping review aims to explore the use of innovative products in diabetic wound care and their impact on patient healing and quality of life.

Method: Following Arksey and O'Malley's framework, this study screened 12 articles from 7 databases.

Result: Demonstrated that innovative products such as dehydrated chorion amniotic membrane (NuShield), topical oxygen therapy (NATROX® O₂), and fish skin grafts (Intact Fish-Skin Grafts, IFSG) provided significant improvements in wound healing compared to standard of care. NuShield increased the likelihood of wound closure by 48%, while NATROX® O₂ accelerated healing by 71%. IFSG showed an increase in wound closure of up to 44% at 16 weeks. In addition, extracellular matrix products such as InnovaMatrix® AC support the regeneration of hard-to-heal wound tissue.

Conclusion: Innovative products such as NuShield, Intact Fish-Skin Grafts, and NATROX® O₂ were shown to accelerate diabetic wound healing and improve patient quality of life, although further research is needed to support wider clinical application.

Keywords: diabetic foot ulcer (DFU); diabetic wound care; diabetes management; innovative product; modern therapy; wound healing

THE PROPORTION OF ANIMAL PROTEIN CONSUMPTION WITH A PREVALENCE OF STUNTING, WASTING, AND UNDERWEIGHT IN TODDLERS IN INDONESIA

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ABSTRACT

Background: Stunting, wasting, and underweight are the main indicators of malnutrition that have a significant impact on children's growth and health. In Indonesia, the prevalence of these conditions is still high, especially in children under the age of two. One of the factors causing this nutritional problem is low consumption of animal protein. This study aims to analyze the relationship between the proportion of animal protein consumption and the prevalence of stunting, wasting, and underweight in children under the age of two in Indonesia using data from the 2023 Indonesian Health Survey (IHS).

Method: This study used a cross-sectional design with aggregate data from 38 provinces in Indonesia. Bivariate analysis used the Spearman correlation test.

Result: The results showed that the proportion of animal protein consumption was significantly associated with the prevalence of stunting (p-value 0.000), underweight (p-value 0.001), and wasting (p-value 0.003). The data showed that areas with higher animal protein consumption, such as Java and Bali, had a lower prevalence of nutritional problems compared to areas such as Nusa Tenggara and Papua.

Conclusion: This study concluded that there was a significant relationship between the proportion of animal protein consumption and the prevalence of stunting, wasting, and underweight in children under the age of two in Indonesia. Increasing access to animal protein consumption is an important step in reducing the prevalence of malnutrition among children. This study is expected to provide recommendations for more effective interventions in addressing nutritional problems in Indonesia.

Keywords: animal protein; stunting; underweight; wasting

THE IMPACT OF VAPING ON PATIENTS UNDERGOING GENERAL ANESTHESIA: A LITERATURE REVIEW

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ABSTRACT

Background: Particularly among adolescents and young adults vaping or electronic cigarettes has become more popular in recent years. In Indonesia, e-cigarette use increased significantly from 0.3% in 2011 to 3% in 2021. General anesthesia requires maintaining hemodynamic stability to avoid complications. Vaping has been linked to pulmonary and cardiovascular issues, which may complicate anesthesia management and increase risks during anesthesia. This study aims to assess patients' vaping history during preoperative evaluations.

Method: This research used a literature review method with the PICO framework to analyze secondary data from databases like Google Scholar, PubMed, and ScienceDirect. The search strategy involved adjusting keywords to match Medical Subject Headings (MeSH) and using Boolean operators (AND, OR) and quotation marks for precision. Keywords selected for the study were "Vaping," "Undergoing," and "General Anesthesia." Articles published between 2020 and 2025 in English or Indonesian, from reputable journals, and classified as original research, were included. Relevant studies were identified, critically appraised using the JBI tools, and synthesized into PICO tables for presentation.

Result: From a total of 1,965,989 articles identified through database searches, three studies met the inclusion criteria and were included in the review. The findings from these studies demonstrated that vaping is associated with several respiratory complications during general anesthesia, such as increased airway reactivity, bronchospasm, and impaired gas exchange. One case series highlighted the occurrence of hypoxia and increased oxygen requirements in patients with vaping-associated lung injury (EVALI). Another large-scale retrospective cohort study reported a slightly higher incidence of pulmonary complications among vapers compared to non-vapers; however, the difference was not statistically significant.

Conclusion: Vaping may increase the risk of perioperative and intraoperative respiratory complications, particularly in patients undergoing general anesthesia. The presence of harmful chemicals in e-cigarette aerosols, such as nicotine and volatile organic compounds, can exacerbate pre-existing respiratory conditions or contribute to new ones. These risks highlight the importance of including vaping history in preoperative assessments. Anesthesia providers should be vigilant in monitoring and managing airway function in patients with a history of vaping to ensure safe and effective anesthetic care.

Keywords: general anesthesia; undergoing; vaping

FACTORS INFLUENCING READMISSION AMONG PATIENTS WITH CHRONIC HEART FAILURE (CHF) IN SOUTHEAST ASIA: A SCOPING REVIEW

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ABSTRACT

Background: Chronic Heart Failure (CHF) is one of the leading causes of morbidity, mortality, and high hospital readmission rates globally, including in Southeast Asia. Elevated readmission rates among CHF patients not only reflect poor disease management but also indicate existing gaps in healthcare systems, particularly in the post-discharge care transition phase.

Methods: This study employed a scoping review approach to identify and evaluate factors influencing hospital readmissions among CHF patients in Southeast Asia. The review process followed the framework proposed by Arksey and O'Malley and adhered to the PRISMA-SCR guidelines.

Results: A comprehensive literature search was conducted across eight major databases (PubMed, Science Direct, EBSCOhost, ProQuest, Garuda, Cochrane Library, and Global Index Medicus), limited to publications from 2014 to 2024. Of the 987 articles retrieved, 14 met the inclusion criteria and were analyzed further.

Conclusion: Findings indicate that key contributing factors to readmission include low socioeconomic status, medical comorbidities such as diabetes, hypertension, and renal impairment, and non-adherence to treatment. Additional contributing factors involve poor self-care behaviors, suboptimal care transitions, limited access to healthcare services, and psychosocial issues such as depression and anxiety. Clinical indicators such as previous hospitalization history, NTproBNP levels, and length of hospital stay also emerged as significant predictors of readmission risk. This review underscores the necessity of a multidisciplinary and patient-centered approach, incorporating health education, social support, continuous monitoring, and the utilization of health technologies, to reduce readmission rates and improve the quality of life for CHF patients in Southeast Asia.

Keywords: chronic heart failure; hospital readmission; risk factors; scoping review; southeast Asia

MAPPING THE USE OF CONTINUOUS GLUCOSE MONITORING (CGM) FOR DIABETES MELLITUS MANAGEMENT IN ASIA: A SCOPING REVIEW

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ABSTRACT

Background: Diabetes mellitus (DM) is a chronic disease with a rising global prevalence, particularly in Asia. Continuous Glucose Monitoring (CGM) is a real-time glucose monitoring technology that has shown potential in improving glycemic management. However, comprehensive information regarding its usage, benefits, and implementation challenges across Asian countries remains limited and scattered. This scoping review aims to map the use of CGM among patients with diabetes mellitus in Asia, highlighting trends, advantages, and barriers to its implementation.

Method: This review followed the Arksey and O'Malley framework and adhered to the PRISMA-ScR guidelines. A systematic literature search was conducted in PubMed and ProQuest databases, limited to full-text articles published in English from 2014 to 2024. Article selection and data extraction were performed using the Rayyan application.

Result: Out of 94 identified articles, 21 met the inclusion criteria. The included studies indicated that CGM contributes to improved glycemic control (via HbA1c, Time in Range [TIR], Time Above Range [TAR], and Time Below Range [TBR]), reduces hypoglycemia, and enhances patient education and quality of life. Nevertheless, challenges such as device accuracy, cost, limited access, and population specific variability hinder widespread implementation in the Asian context.

Conclusion: CGM shows great promise in enhancing diabetes management in Asia. However, its successful implementation requires context-specific strategies and policies. Further research is needed to assess the long-term effectiveness and sustainability of CGM across diverse clinical settings in the region.

Keywords: asia; continuous glucose monitoring; diabetes mellitus; glycemic management

FACTORS INFLUENCING CANCER PATIENTS' ADHERENCE TO RADIOTHERAPY: A SCOPING REVIEW

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ABSTRACT

Background: Cancer remains one of the leading causes of death worldwide. Radiotherapy is a common and essential treatment modality for cancer, yet patient adherence to radiotherapy regimens remains suboptimal, particularly in developing countries. Understanding the factors influencing adherence is crucial for improving treatment outcomes. This scoping review aims to identify and map the various factors influencing the adherence of cancer patients undergoing radiotherapy, including psychological, social, economic, environmental, and clinical aspects.

Method: Guided by the Arksey and O'Malley scoping review framework, a comprehensive search was conducted across five databases—PubMed, Science Direct, ProQuest, Google Scholar, and Garuda—for studies published between 2014 and 2024. Articles were selected based on inclusion criteria focusing on cancer patients undergoing radiotherapy and factors influencing adherence. Data were charted and thematically analyzed.

Result: Eighteen relevant studies were included in this review. Key influencing factors identified include psychological distress, lack of understanding of treatment, low health literacy, economic burden, limited social support, side effects of therapy, and poor access to healthcare facilities. Adherence rates were found to vary significantly, with common challenges being more prominent in developing countries.

Conclusion: Patient adherence to radiotherapy is influenced by multifactorial determinants. Addressing these through educational interventions, psychosocial support, and healthcare system improvements are essential for enhancing compliance. This review provides evidence based insights for designing effective strategies to support cancer patients, ultimately aiming to improve treatment outcomes and quality of life.

Keywords: Cancer; Radiotherapy; Treatment adherence; Influencing factors; Scoping review

PHARMACEUTICAL SERVICE MODEL: PRODUCT KNOWLEDGE, PATIENT INVOLVEMENT, AND PATIENT LOYALTY

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ABSTRACT

Background: This study aims to develop and test a pharmaceutical service model that focuses on the influence of product knowledge and patient involvement on patient satisfaction and brand loyalty. The research is motivated by the need to improve the quality of pharmaceutical services amidst the challenges posed by the implementation of Indonesia's National Health Insurance system (JKN), particularly concerning drug availability and the complexity of referral systems. This study proposes a conceptual model positioning product knowledge and patient involvement as intervening variables in the relationship between pharmaceutical service quality and brand loyalty.

Method: A quantitative approach was employed using Structural Equation Modeling (SEM) for data analysis.

Result: Product knowledge has a positive effect on patient satisfaction. Pharmacy service has a positive effect on patient satisfaction. Patient involvement has a positive effect on patient satisfaction. Patient satisfaction has a positive effect on brand loyalty. In addition, product knowledge has a positive effect on brand loyalty through patient satisfaction. Pharmacy service has a positive effect on brand loyalty through patient satisfaction. Patient involvement has a positive effect on brand loyalty through patient satisfaction.

Conclusion: Path analysis provides statistical evidence that product knowledge, pharmacy service, and patient involvement have an effect on brand loyalty through patient satisfaction.

Keywords: brand loyalty; patient involvement; patient satisfaction; pharmaceutical services; product knowledge

IMPROVING THE QUALITY OF TODDLER GROWTH AND DEVELOPMENT THROUGH EARLY STIMULATION INTERVENTION: SYSTEMATIC REVIEW

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ABSTRACT

Background: The toddler period is a critical phase for growth and development across motor, cognitive, language, and socio-emotional domains. Early structured stimulation can significantly impact these areas, yet a comprehensive synthesis of evidence from randomized controlled trials (RCTs) is needed. This systematic review aims to evaluate the effectiveness of stimulation interventions on the development of children under five, using the PICO framework (Population, Intervention, Comparison, Outcome).

Methods: A literature search was conducted across PubMed, Scopus, ScienceDirect, and the Cochrane Library for RCTs published between 2019 and 2024 in English or Indonesian. Eligible studies involved children aged 0–5 years who received motor, cognitive, social, or multi-domain stimulation, with developmental outcomes assessed. The PRISMA flow diagram guided article selection, and methodological quality was evaluated using the Cochrane Risk of Bias Tool.

Results: Out of 785 identified articles, 10 met the inclusion criteria. Motor stimulation was found to significantly enhance children's balance, coordination, and strength. Parent–child interaction interventions notably improved language development, while mobile app-based stimulation showed positive effects on cognitive and socio-emotional outcomes. Multi-domain interventions demonstrated the most comprehensive developmental benefits across all areas.

Conclusion: early stimulation interventions are effective in promoting holistic child development, with multi-domain approaches offering the greatest benefits. These findings highlight the importance of evidence-based strategies in early childhood development programs and inform future policy and practice.

Keywords: child growth; early childhood intervention; early stimulation; RCT; systematic review; toddler development.

CORRELATION OF HS-CRP LEVELS AND TOTAL PROTEIN IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AT DR. BRATANATA HOSPITAL JAMBI CITY

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ABSTRACT

Background: Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder marked by persistent hyperglycemia and low-grade systemic inflammation. High-sensitivity C-reactive protein (hs-CRP) serves as a sensitive biomarker for inflammation and is often elevated in T2DM. Meanwhile, total protein levels can reflect the overall nutritional and inflammatory status. Understanding the relationship between these two parameters may provide insights into the metabolic and inflammatory conditions of T2DM patients. This study aimed to determine the correlation between hs-CRP levels and total protein in patients with T2DM.

Methods: This descriptive-analytic study used a cross-sectional design and was conducted at Dr. Bratanata Hospital, Jambi City. The sample consisted of T2DM patients selected through purposive sampling based on inclusion and exclusion criteria. hs-CRP levels were measured using a Wondfo Meter, and total protein was analyzed using an Autolyser BT 3500. Statistical tests were conducted to determine the relationship between the variables.

Results: The average hs-CRP level was 4.25 mg/L, and the total protein level was 7.40 g/dL. A weak negative correlation was found between hs-CRP and total protein levels, which was statistically significant.

Conclusion: The findings suggest that as inflammatory markers such as hs-CRP increase, total protein levels may decrease, indicating a potential link between inflammation and nutritional status in T2DM patients. Further research is warranted to explore this relationship and its clinical implications.

Keywords: high-sensitivity C-reactive protein (hs-CRP); total protein; type 2 diabetes mellitus (DM)

KNOWLEDGE, ATTITUDE, AND EXPOSURE TO TIKTOK CONTENT TOWARDS STUDENTS' ELECTRIC SMOKING BEHAVIOR

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ABSTRACT

Background: E-cigarettes have become a popular trend among the younger generation. E-cigarette smoking behavior can be influenced by individual factors such as knowledge and attitudes, and the environment, such as exposure to TikTok. Several forms of advertising and promotion of electronic cigarette products appear on TikTok.

Method: The aim of this study was to examine the relationship between knowledge, attitudes, and exposure to social media TikTok on the behavior of e-cigarette smoking among UIN Syarif Hidayatullah Jakarta students in 2024, using a sample of 160 respondents. This is a quantitative study with a cross-sectional design, and the data were analyzed using the chi-square test.

Result: The study's findings showed that 21.9% of UIN Syarif Hidayatullah Jakarta students smoked e-cigarettes. The analysis showed a correlation between knowledge (p-value 0.02), attitudes (p-value 0.00), exposure to negative content about e-cigarettes on social media TikTok (p-value 0.01), and e-cigarette smoking behavior.

Conclusion: Students are required to be able to gain knowledge about the dangers of electronic cigarettes from credible sources and assist in avoiding electronic smoking behavior, such as running anti-smoking campaigns on TikTok.

Keywords: attitudes; e-cigarettes; knowledge; smoking behaviour; tik-tok

SUPPLEMENTARY FOOD AND CONSUMPTION OF IRON TABLETS WITH THE PREVALENCE OF CHRONIC ENERGY DEFICIENCY

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ABSTRACT

Background: The prevalence of pregnant and non-pregnant women experiencing chronic nutritional deficiency (CED) has become a societal issue. Chronic Energy Deficiency is characterized by chronic energy intake occurring in women of reproductive age. The provision of Supplementary Food based on local food with regional menus adjusted to local conditions, as well as the consumption of iron tablets (CIT), aims to meet nutritional needs, especially for those experiencing Chronic Energy Deficiency. The study aims to determine the relationship between the prevalence of the proportion of supplementary feeding and iron tablet distribution with the prevalence of chronic energy deficiency in Indonesia.

Method: This research uses aggregated data from the 2023 Indonesian Health Survey (IHS). The sample consists of 38 provinces in Indonesia divided into seven regions. The dependent variable is the prevalence of Chronic Energy Deficiency in pregnant and non-pregnant women. The independent variables are the proportion of women (pregnant and non-pregnant) who do not receive Supplementary Food and the proportion of mothers (pregnant and non-pregnant) who do not receive consumption of iron tablets. Data analysis used the Spearman test.

Result: The research findings indicate that there is no significant relationship between the proportion of non-receipt of Supplementary Food and the proportion of non-receipt of (CIT) with the prevalence of pregnant and non-pregnant women with chronic nutritional deficiency (CED) (p-value >0.05)

Conclusion: Further evaluation is needed on the effectiveness of the Supplementary Feeding and Iron Tablet programs, as well as a more comprehensive approach to reducing the prevalence of anemia in Indonesia

Keywords: consumption of iron tablets; supplementary food; chronic energy deficiency

THE RELATIONSHIP BETWEEN THE SEVERITY OF CHRONIC MYELOCYTIC LEUKEMIA (CML) PATIENTS AND THE MYELOID: ERYTHROID RATIO AT MOHAMMAD HOESIN HOSPITAL, PALEMBANG

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ABSTRACT

Background: Chronic Myelocytic Leukemia (CML) is a type of blood cancer caused by abnormalities in hematopoietic stem cells, often linked to the Philadelphia chromosome. It progresses through three phases: chronic, accelerated, and blastic. Diagnosis involves bone marrow puncture (BMP), which also measures the Myeloid: Erythroid (M: E) ratio to assess blood cell production. CML accounts for about 15% of adult leukemia cases, mostly in individuals aged 40–60. Mohammad Hoesin Hospital (RSMH) in Palembang serves as a cancer referral center with integrated oncology services.

Objective: This study investigates the relationship between CML severity and M:E ratio in patients at RSMH in 2024.

Method: The research method uses Descriptive Analytical with a Cross Sectional approach. The number of samples that will be used in this research is 40 Chronic Myelocytic Leukemia patients in the Internal Medicine Hematology Oncology Division of Mohammad Hoesin Hospital (RSMH). Bone marrow samples analyzed via BMP and stained with Wright stain. The Myeloid:Erythroid (M:E) ratio, measured from bone marrow examinations. This ratio indicates the balance of blood cell production and is essential for evaluating disease impact.

Result: The mean severity was in the chronic phase for 32 patients (76.2%). The average myeloid-to-erythroid (M: E) ratio was 22.69, with 40 patients (95.2%) showing a high ratio (>6:1). There was no statistically significant correlation between disease severity and the M: E ratio ($p>0,05$).

Conclusion: These findings suggest that most patients were in the chronic phase, indicating a lower severity. The chronic phase is characterized by a relatively stable condition with fewer blast cells in the blood and bone marrow, in contrast to the more aggressive accelerated and blastic phases. Implement a comprehensive early-detection program for leukemia across all age groups—from students to the general population to facilitate timely diagnosis and treatment.

Keywords: bone marrow; chronic myelocytic leukemia; myeloid; erythroid ratio

INTEGRATION OF DIGITAL HEALTH EDUCATION MODELS INTO PRIMARY HEALTHCARE SERVICES TO IMPROVE EARLY DETECTION AND TREATMENT ADHERENCE FOR TUBERCULOSIS: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Tuberculosis (TB) remains a major public health concern globally. In Indonesia, TB control is challenged by delayed case detection and poor treatment adherence. This review evaluates the effectiveness of digital health education interventions such as the KECAPI model in improving early detection and treatment adherence, and explores their integration into primary healthcare.

Methods: A systematic literature search was conducted across PubMed, Scopus, and Google Scholar for studies published between 2013-2023. A total of 27 studies were included.

Results: Digital interventions, including SMS, mobile apps, video DOT, and web-based tools, demonstrated significant improvements in TB knowledge, early detection, and adherence.

Conclusion: Digital education models can enhance TB control. Integrating such models into primary health services holds strong potential.

Keywords: adherence; detection; digital health; primary care; tuberculosis

THE INFLUENCE OF KNOWLEDGE, PEER SUPPORT, PARENTAL ROLE SUPPORT, AND INFORMATION SOURCES ON ADOLESCENT SEXUAL BEHAVIOR: META-ANALYSIS

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ABSTRACT

Background: The purpose of this study is to analyze the influence of adolescent knowledge, peer support, parental role support, and information sources on sexual behavior in adolescents.

Method: Systematic research reviews with meta-analysis of previous primary research results that met the inclusion criteria using PICO, the Database that Google Scholar uses, and Crossref. Keywords used in the literature search are "Sexual behavior in adolescents" and "Factors or determinants or risks", factors or causal factors" and "adolescent knowledge, peer support, parental role support, and sources of information" which meet the inclusion and exclusion criteria found 7 articles from the initial search of 4900 articles. Data analysis using the Rev. Man 5.4 application.

Result: Literature review of studies. This found that factors that influence sexual behavior sexuality in adolescents, among others, include knowledge, parental support, influence of friends and peers, and sources of information about sex.

Conclusion: There is an influence of knowledge, parental role support, and sources of information on adolescent sexual behavior, but there is no influence of peer support on adolescent sexual behavior. The results of this study also show that parental role support has the highest chance for adolescents not to engage in sexual behavior, which is 9.17 times to engage in sexual behavior compared to no parental role support. For this reason, early parental support is needed for adolescents about sexual behavior to prevent the occurrence of adolescent sexual behavior, so that it can create a healthy and high-achieving young generation.

Keywords: adolescent knowledge; parental role support; peer support

THE PROPORTION OF SEASONING CONSUMPTION HABITS AND THE PREVALENCE OF HYPERTENSION AND DIABETES MELLITUS (INDONESIAN HEALTH SURVEY 2023)

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ABSTRACT

Background: Non-communicable diseases such as hypertension and diabetes mellitus are increasing globally, including in Indonesia. One of the risk factors that is thought to contribute is the habit of consuming seasonings containing sodium and monosodium glutamate (MSG). This study aims to analyze the relationship between the proportion of seasoning consumption and the prevalence of hypertension and diabetes mellitus based on data from the 2023 Indonesian Health Survey (IHS).

Method: The research method used was a cross-sectional design with samples from households spread across 38 provinces in Indonesia. Data were collected through interviews, blood pressure measurements, and blood glucose level checks.

Result: The results of the analysis showed a significant relationship between daily seasoning consumption and an increase in the prevalence of hypertension based on a doctor's diagnosis ($r = 0.470$), while based on measurement results it was ($r = 0.511$), and for the prevalence of diabetes mellitus was ($r = 0.364$). Conversely, less frequent consumption tends to reduce the prevalence of both diseases.

Conclusion: The conclusion of this study confirms that high consumption of seasonings contributes to an increased risk of hypertension and diabetes mellitus, so education on balanced sodium consumption and control of seasoning use needs to be improved to prevent negative impacts on public health. These findings are expected to be the basis for consideration by policymakers in designing more effective nutrition interventions and health promotion programs.

Keywords: diabetes mellitus; hypertension; public health; seasonings

PROPORTION OF FRUIT AND VEGETABLE CONSUMPTION AND THE PREVALENCE OF HYPERTENSION AND DIABETES MELLITUS IN INDONESIA (SURVEI KESEHATAN INDONESIA ANALYSIS 2023)

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ABSTRACT

Background: Hypertension and diabetes mellitus (DM) are major global health issues due to their high prevalence and impact on morbidity and mortality. A key risk factor for both diseases is an unhealthy diet, particularly a low intake of fruits and vegetables. These foods provide essential nutrients that help reduce the risk of cardiovascular and metabolic diseases. **Objective:** This study aimed to examine the relationship between fruit and vegetable consumption and the incidence of hypertension and DM in Indonesia, using data from the 2023 Indonesian Health Survey (IHS).

Method: The study used a cross-sectional design from aggregate data from 38 provinces as a result of the 2023 Indonesian Health Survey. Bivariate analysis uses Pearson and Spearman correlation.

Result: The prevalence of hypertension based on blood pressure measurements was 26.5%. This study showed that infrequent consumption of vegetables and fruits (1-2 servings per day in a week) was significantly positively associated with the prevalence of hypertension ($r=0.443$) and DM ($r=0.405$), and the proportion of consumption of vegetables and fruits of more than 4 servings per day in a week was negatively related to the prevalence of hypertension ($r=-0.205$) and DM ($r=-0.256$). These results suggest that more frequent consumption of vegetables and fruits can reduce the prevalence of DM.

Conclusion: The study concludes that the overall consumption of fruits and vegetables in Indonesia is low, especially in urban areas, contributing to higher rates of hypertension and DM. Policies promoting better nutrition education and healthier food access are essential to reducing the risk of these non-communicable diseases.

Keywords: diabetes mellitus; fruits and vegetables consumption; hypertension

PERSONAL TWINS DAUGHTER'S EXPERIENCE WHEN MY FATHER LEFT ME TO CONTINUE NURSING STUDY IN ANOTHER CITY: A CASE STUDY

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ABSTRACT

Introduction: Father absence due to higher education can significantly impact child development, especially in a cultural context that values family values, such as Indonesia. This study explores our personal experiences as twin daughters of a father who studied for his undergraduate, master's, and doctoral degrees in another city, which resulted in his absence for seven years of our growing up.

Methods: This study used a qualitative case study approach with an open-ended interview technique. Interviews were conducted between participants with a jointly developed question guide. Data were analyzed using thematic analysis to identify patterns and key themes from the published narratives.

Results: Three main themes were found: (1) Emotional turmoil and abandonment, reflecting emotional instability due to the father's absence; (2) Challenges to self-esteem, indicating the need for a father figure in building children's self-confidence; and (3) Coping mechanisms and resilience, in the form of support from the mother, extended family, and positive activities that help foster coping.

Conclusion: The results show that the absence of the verse impacts the emotional, psychological, and social aspects of children, in line with previous literature findings. This study highlights the importance of supportive interventions and the active role of families in mitigating the impact of a father's absence.

Keywords: child-relationships; father absence; twins-experience

THE EFFECTIVENESS OF HEALTH PROMOTION IN STUNTING PREVENTION TO IMPROVE KNOWLEDGE OF MOTHERS OF TODDLERS USING BERDAZI MEDIA (SMART AND NUTRITIOUS BALLS) IN SUNGAI BAUNG VILLAGE, SAROLANGUN DISTRICT.

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ABSTRACT

Introduction: Stunting, a condition of growth failure in children due to chronic malnutrition, is a serious issue in Indonesia today, with a prevalence rate of 21.6%. This figure indicates that around two in ten children in the country experience growth and developmental delays that can negatively impact their overall health status. One effort to reduce the prevalence of stunting is through health promotion using BERDAZI (Smart and Nutritious Balls). study aims to determine the effectiveness of health promotion in stunting prevention to improve the knowledge of mothers of toddlers using the BERDAZI media (smart and nutritious balls) in Sungai Baung village, Sarolangun Regency.

Methods: This type of research is quantitative research with a pre-experimental research design, with a one-group pretest-posttest research design. Sampling in this study was conducted using a purposive sampling technique with a total sample of 32 people. Data analysis using the Wilcoxon test.

Result: The average score of stunting prevention knowledge is pre-test (6.28), post-test (9.59).

Conclusion: There is a difference in increasing the score of knowledge to prevent stunting in mothers of toddlers in Sungai Baung village, Sarolangun Regency, who are given health promotion through BERDAZI (Smart and Nutritious Balls), with a p-value of 0.000 ($p < 0.05$). Health Promotion with BERDAZI (Smart and Nutritious Balls) is effective in increasing knowledge to prevent stunting in mothers of toddlers in Sungai Baung village, Sarolangun Regency.

Keywords: BERDAZI (Smart and Nutritious Balls); knowledge; stunting prevention

VITAMIN D IS RICH IN BENEFITS THAT ARE A PRIORITY IN THE DISEASE: LITERATURE REVIEW

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ABSTRACT

Objectif: Research on literature studies that explain the importance of vitamin D as an important factor supporting prevention, control, and even maintenance to survive the Disease attack.

Methods: In this study, the authors conducted a literature review to gather various valid results regarding the importance of vitamin D in our lives, especially to prevent the major threats that occur with infection with the disease virus. In this study, the authors reviewed articles published from 2008 to 2021 through the electronic databases used to identify relevant research, namely Science Direct, PubMed, and Google Scholar, which were restricted to publications from 2008 to 2021. The electronic search database found 60 articles. while only 17 studies were used as articles for the research objectives.

Results: From this study, the authors collected research data regarding the benefits of vitamin D as a major supporting factor in the healing of diseaseinfection including avoid the occurrence of cytokine storms and not only that, the authors also revealed threat events that occur if the body is deficient in vitamin D which causes the threat to the cardiovascular system, lungs, kidneys, even heart, rheumatoid arthritis, and even excess Vitamin D causes effects including hypercalcemia.

Conclusion: The use of vitamin D as the main therapy to support prevention, healing, and health maintenance to protect against Disease infection is very feasible so that quality of life during and after the Disease can be maintained.

Keywords: disease; literature; therapy; Vitamin D

MORE THAN JUST FOOD: EXPLORING CULTURAL, EMOTIONAL, AND PRACTICAL REALITIES OF COMPLEMENTARY FEEDING IN WASTED CHILDREN

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ABSTRACT

Background: The prevalence of stunting in Indonesia has decreased, but there is an increase in wasting cases. Children who experience wasting have a 3 times higher risk of becoming stunted compared to children with normal nutritional status. Wasting is not only caused by a lack of food intake, but also influenced by various factors. **Objective:** This study aims to explore the practice of complementary feeding from various aspects from the perspective of mothers who have wasting children.

Method: In-depth interviews (IDI) were conducted with 16 parents of children aged 6-24 months with wasting nutritional status in 4 areas in Sleman Regency. The triangulation method was conducted by interviewing the family, including husband and grandmother, and health cadres.

Result: There were four main themes influencing complementary feeding practices, namely: 1) Cultural aspects including traditions, perceptions of food, and family roles; 2) Emotional and psychological aspects such as maternal rejection or acceptance of wasting; 3) Practical realities, including access to food ingredients and mother's time; and 4) Maternal nutrition understanding and experience with educational programs. Mothers who accepted their child's wasting condition were more open to education and tended to make changes to their complementary feeding practices.

Conclusion: Addressing wasting cannot be done solely with nutritional interventions, but requires an approach that considers the cultural, emotional, and practical context faced by mothers. Empathetic and contextualized nutrition education is key to saving children from wasting that progresses to stunting.

Keywords: complementary feeding; cultural; emosional; wasting

CORRELATION OF NEUTROPHIL-TO-LYMPHOCYTE RATIO (NLR) AND HIGH SENSITIVITY C-REACTIVE PROTEIN (HS-CRP) LEVELS IN PATIENTS WITH CORONARY HEART DISEASE (CHD) AT DR. BRATANATA HOSPITAL JAMBI CITY

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ABSTRACT

Introduction: Coronary Heart Disease (CHD) is a disorder of heart function caused by reduced blood supply to the heart muscle, resulting in blockage of the coronary arteries due to plaque formation that known as atherosclerosis, this condition is caused by hypercholesterolemia which can induce Granulocyte-Colony Stimulating Factor (G-CSF) so that neutrophil extravasation occurs, a condition of increased neutrophil levels in the body. Increased atherosclerosis leads to apoptosis, resulting in elevated neutrophil levels and reduced lymphocyte levels in the blood, thereby affecting the Neutrophil Lymphocyte Ratio (NLR), which reflects an individual's immune status. Blood cells adhere to form atherosclerotic cell aggregates, stimulating active inflammatory cells. Inflammation can be detected by the biomarker High Sensitivity C-Reactive Protein (Hs-CRP).

Methods: This descriptive-analytic study used a cross-sectional design and population comprised 30 CHD patients at Dr. Bratanata Hospital Jambi. The sample were selected by using purposive sampling, based on inclusion and exclusion criteria. Hs-CRP levels were measured using a Wondfo Meter and NLR was measured using the Mindray Hematology Analyzer. Statistical tests were conducted to determine the relationship between the variables.

Results: The average NLR was 7.82 and also the average Hs-CRP level was 4.94 mg/L. But there was no significant correlation between NLR and Hs-CRP levels in CHD patients. Although the regression plot suggested a possible positive trend but still not statistically significant.

Conclusion: There is no significant correlation between NLR and Hs-CRP levels in CHD patients at Dr. Bratanata Hospital Jambi.

Keywords: coronary heart disease; Hs-CRP; inflammation; NLR

THE EFFECT OF *Cananga odorata* AROMATHERAPY PATCH ON BLOOD PRESSURE IN GRADE I HYPERTENSION PATIENTS

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ABSTRACT

Background: Hypertension is a non-communicable disease that is the leading cause of death in the world. Prevention of hypertension with pharmacological and nonpharmacological therapies, namely by using local wisdom, one of which uses *Cananga* flower aromatherapy patches to seek blood pressure stability. The purpose of this study was to determine the effectiveness of *Cananga* flower aromatherapy patch (*Cananga odorata*) on blood pressure in grade I hypertension patients.

Methods: The type of research is quasy experiment research using pre-posttest design with control group. The sample in this study were 60 respondents consisting of 30 respondents in the control group and 30 respondents in the intervention group. The intervention group was given *Cananga* aromatherapy patch intervention at a dose of 5% for 15 minutes, the intervention was carried out for 14 days. Control group who participated in PROLANIS activities at the Suka Makmur health center in Aceh. The pre-test post-test difference test used the Paired t-test and Wilcoxon test. Test differences between groups used Independent t - test and Mann – Whitney test

Results: There is an effectiveness of *Cananga* aromatherapy patches on blood pressure of grade I hypertension patients with a significance of 0.001 (p value <0.05).

Conclusion: *Cananga* flower aromatherapy patch intervention has a significant effect on reducing blood pressure in grade I hypertension patients. It is recommended that grade I hypertension patients be given *Cananga* flower aromatherapy patch with a dose of 5% once for 14 days.

Keywords: aromatherapy patch; blood pressure; hypertension

COMPLEMENTARY THERAPY FOR HYPERTENSION PATIENTS IN THE COMMUNITY: A SCOPING REVIEW

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ABSTRACT

Background: Hypertension is a global health issue with increasing prevalence, leading to serious complications such as heart disease and stroke. In addition to pharmacological treatments, complementary therapies have the potential to help lower blood pressure. This study aims to identify various types of complementary therapies that are effective in reducing blood pressure in hypertensive patients within community settings.

Methods: The study employed a scoping review method based on the JBI 2020 guidelines and PRISMA-ScR. Relevant articles were sourced from the Pubmed, Scopus, and Proquest databases, with seven articles selected for further analysis.

Results: Lifestyle education reduced systolic blood pressure by -12.7 mmHg ($p < 0.001$), while the combination of Gamelan music with Progressive Muscle Relaxation (PMR) lowered blood pressure by up to -18.87 mmHg ($p = 0.000$). Yoga provided psychological benefits but was challenging to maintain regularly. The use of herbal remedies showed varied results, with some studies indicating a negative association with blood pressure control ($p = 0.143$).

Conclusion: Complementary therapies such as lifestyle education, yoga, and traditional music are effective in lowering blood pressure and improving the quality of life for hypertensive patients. Integrating these therapies into public health programs can support the holistic management of hypertension.

Keywords: community; complementary therapy; hypertension

PATIENT PERCEPTIONS OF THE PSYCHOSOCIAL AND SOCIAL IMPACTS OF MALODOROUS WOUNDS IN BREAST CANCER: A SCOPING REVIEW

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ABSTRACT

Background: Malodorous wounds in breast cancer patients, especially in advanced stages, cause significant psychosocial and social impacts. However, patient perceptions of these impacts have not been thoroughly explored. This scoping review aims to examine patients' perceptions of the psychosocial and social effects of malodorous wounds in breast cancer.

Methods: This study followed Arksey and O'Malley's framework for scoping reviews, which includes five main stages: defining the research question, searching and selecting relevant literature, extracting data, and synthesizing results. Literature searches were conducted in six major databases—PubMed, SAGE Journals, ScienceDirect, Emerald Insight, Google Scholar, and ProQuest—focusing on review articles published between 2018 and 2024 that addressed patient perceptions.

Results: Patients reported that malodorous wounds lead to anxiety, depression, feelings of shame, and social isolation, all of which reduce their quality of life. In addition, insufficient psychosocial support and lack of adequate information on wound management worsen these effects.

Conclusion: Understanding patients' perceptions of the psychosocial impacts of malodorous wounds is essential for developing effective psychosocial support and holistic care strategies. Managing malodorous wounds in breast cancer requires not only medical treatment but also comprehensive psychosocial support to improve patients' overall well-being.

Keywords: breast cancer; malodorous wounds; patient perceptions; psychosocial impacts; social impacts

SELF-CARE-BASED INTERVENTION PROGRAM FOR PARENTS OF MALNOURISHED TODDLERS IN UTILIZING LOCAL FOOD IN MOUNTAINOUS AREAS: A SCOPING REVIEW

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ABSTRACT

Background: Malnutrition among toddlers remains a significant public health issue, particularly in mountainous areas with limited access to nutritious food. A self-care-based intervention utilizing local food sources may serve as an effective solution to improve toddlers' nutritional status.

Objective: This study aims to analyze the effectiveness of a self-care-based intervention program for parents in utilizing local food to enhance the nutritional status of malnourished children.

Methods: A scoping review was conducted by searching three major databases—Google Scholar, ProQuest, and Scopus—using predefined inclusion and exclusion criteria. A total of 12 selected articles were analyzed based on the interventions implemented, types of local food used, and their impact on toddler nutritional status.

Results: Findings indicate that self-care-based interventions involving nutritional education, local food innovation, and supplementary feeding significantly contribute to improving toddlers' nutritional status. The program also enhances parental knowledge of balanced diets and optimal local food processing methods. However, key challenges in implementing this program include limited access to nutritious food, lack of community awareness, and inadequate infrastructure for food distribution and storage.

Conclusion: Self-care-based intervention programs utilizing local food have substantial potential to improve the nutritional status of malnourished toddlers. The sustainability of such programs requires policy support, adequate resources, and active community involvement in local food management.

Keywords: local food; malnourished toddlers; nutritional intervention; parental education; self-care

THE ROLE OF FAMILY SUPPORT IN MEDICATION ADHERENCE AMONG ELDERLY PATIENTS WITH HYPERTENSION: A SCOPING REVIEW

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ABSTRACT

Background: Hypertension is a significant health concern among older adults. Low levels of medication adherence pose a major challenge in its management. Family support is recognized as a critical factor in enhancing adherence. This study aims to explore the role of family support in improving medication adherence among older adults with hypertension through a scoping review approach.

Methods: The review was conducted using the framework developed by Arksey and O'Malley. Relevant literature was gathered from seven major databases within the publication range of 2019–2024. A total of 24 articles were selected and analyzed thematically.

Results: Emotional, instrumental, and educational support from family members was found to significantly enhance medication adherence among older adults. However, barriers such as limited family knowledge about hypertension and ineffective communication were identified as significant challenges. Educational and community-based interventions are recommended to enhance the effectiveness of family support.

Conclusion: Family support plays a vital role in the successful management of hypertension among older adults. To optimize this role, it is essential to design programs that actively involve family members in the care and management of the condition.

Keywords: family support; hypertension; medication adherence; older adults; scoping review

NURSING SUPPORT FOR IMPROVING SELF-CARE IN CHF PATIENTS AT HOME: A SCOPING REVIEW

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ABSTRACT

Background: Cardiovascular diseases, including congestive heart failure (CHF), are a leading cause of global mortality and morbidity. Effective self-care is crucial for CHF patients to improve their quality of life, reduce complications, and decrease hospital readmissions. This scoping review explores the role of nurse-led interventions in enhancing self-care among CHF patients at home. Objective of this study is to identify and synthesize evidence on effective nurse-led interventions for promoting self-care in patients with CHF in the home setting.

Methods: A scoping review was conducted following the PRISMA-ScR guidelines. Five data bases were searched to identify relevant studies published between 2019 and 2024. Data extraction and synthesis focused on the types of nurse-led interventions and their impact on patient self-care.

Results: The review identified various nurse-led interventions, including: self-care interventions (NLSCI), educational interventions, home visits, telehealth support, and case management. These interventions demonstrated positive effects on self-care behaviors, quality of life, and reduction in hospital readmissions.

Conclusion: Nurse-led interventions play a vital role in improving self-care among CHF patients at home. Personalized, active, and sustained support from nurses can significantly enhance patient outcomes and reduce healthcare utilization. Further research is needed to standardize interventions and evaluate their cost-effectiveness.

Keywords: CHF (Congestive Heart Failure); community; home; nurse; nurse-led intervention; self-care; self-management

COMPLEMENTARY THERAPY FOR HYPERTENSION PATIENTS IN THE COMMUNITY: A SCOPING REVIEW

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ABSTRACT

Background: ChatGPT (Generative Pre-trained Transformer), with its ability to produce human-like text, has revolutionized the way we interact with chatbot systems and automated communication technologies. Its natural language model, developed through deep learning techniques, has paved new pathways for the advancement of intelligent chatbot and communication systems. This study aims to introduce ChatGPT as a potential candidate for the role of a diabetes educator.

Methods: This study employed a scoping review approach based on the Arksey and O'Malley framework. Relevant literature was collected from six databases (PubMed, ScienceDirect, Emerald Insight, ProQuest, Garuda, and Google Scholar) within the time span of 2014 to 2024. A total of 180 articles were screened and analyzed using a thematic approach.

Results: The findings indicate the potential of ChatGPT in enhancing the efficiency of healthcare services. However, further research is necessary to improve the accuracy and contextual relevance of its responses, particularly in languages other than English.

Keywords: ChatGPT; diabetes educator

FACILITATORS AND BARRIERS FOR NURSES IN THE IMPLEMENTATION OF EVIDENCE-BASED PRACTICE IN HOSPITALS: A SCOPING REVIEW

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ABSTRACT

Background: Evidence-Based Practice (EBP) has become a cornerstone of nursing care, ensuring high-quality patient care grounded in the latest scientific evidence. Despite global recognition, the implementation of EBP remains suboptimal in practice.

Objective: This study aims to identify the facilitating and inhibiting factors influencing nurses in the implementation of EBP in hospital settings.

Methods: A scoping review was conducted following Arksey and O'Malley's framework. Relevant literature was retrieved from six databases (PubMed, ScienceDirect, Emerald Insight, ProQuest, Garuda, and Google Scholar), with publication dates ranging from 2019 to 2024. Following screening procedures, 15 articles were selected and analyzed thematically.

Results: Facilitating factors included positive attitudes and beliefs, knowledge and skills, leadership and organizational support, motivation, educational level, training, self-efficacy, and age. In contrast, major barriers encompassed difficulties in appraising article quality, limited training, time constraints, poor internet access at work, and heavy workloads. All reviewed articles highlighted the necessity of providing training and mentoring to enhance nurses' knowledge and skills in EBP implementation in hospitals.

Conclusion: A range of facilitating and inhibiting factors affecting nurses' adoption of EBP in hospitals was identified. Facilitators included individual nurse characteristics, leadership and organizational support, and hospital management. Conversely, barriers were predominantly technical, including limited time, high workloads, and demanding work environments. Furthermore, a reliance on tradition-based rather than evidence-based care hindered the transition to EBP.

Keywords: barriers; evidence-based practice; facilitators; hospital; nurses

FAMILY READINESS AS THE PRIMARY CAREGIVER IN CARING FOR POST-HOSPITALIZATION STROKE PATIENTS: A SCOPING REVIEW

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ABSTRACT

Background: Post-stroke patients often require support from family caregivers to continue their care after hospital discharge. The readiness of family caregivers to care for stroke patients is essential to improving the patients' quality of life. A lack of caregiver preparedness may negatively impact both caregiver and patient well-being, leading to increased stress, medical complications, and higher healthcare costs.

Objective: This review aims to identify the factors that influence family readiness to serve as the primary caregivers of post-hospitalization stroke patients and to provide an overview of interventions that may improve such readiness.

Methods: A scoping review approach was employed based on the framework by Arksey and O'Malley, which consists of five stages: identification of research questions, literature search, study selection, data mapping, and reporting of results. The search was conducted across six major databases, including articles published in both English and Indonesian within the last 10 years.

Results: Family preparedness is influenced by factors such as age, gender, level of knowledge, socioeconomic status, and previous caregiving experience. Dominant factors, such as gender, indicate that women are generally more prepared than men due to cultural roles and social norms. Interventions, such as health education and community support, have been shown to enhance family caregivers' preparedness.

Conclusion: Family preparedness in caring for stroke patients post-discharge significantly impacts the quality of care and patient rehabilitation outcomes. Evidence-based interventions are necessary to enhance family preparedness, including the development of effective transition care strategies and community-based education programs.

Keywords: family preparedness; post-discharge care; primary caregivers; stroke patients

FACTORS INFLUENCING FLUID RESTRICTION COMPLIANCE IN HEMODIALYSIS PATIENTS: A SCOPING REVIEW

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ABSTRACT

Background: Hemodialysis is the mainstay of therapy for patients with end-stage chronic kidney disease. Compliance with fluid restriction is a crucial aspect to prevent clinical complications. However, various factors are known to influence this level of compliance, so it is important to comprehensively understand the determinants that play a role in patient behavior.

Method: This scoping review refers to the Arksey and O'Malley framework, and is guided by the PRISMA-ScR guidelines. A literature search was conducted through five major databases (PubMed, ScienceDirect, ProQuest, Scopus, and Google Scholar) for studies published between 2018 and 2024. Inclusion criteria included both quantitative and qualitative studies examining factors associated with fluid restriction adherence in hemodialysis patients. Of the 1,379 articles identified, 11 articles met the criteria and were further analyzed.

Results: The factors found were grouped into three main categories: (1) Individual factors (knowledge, age, motivation, self-efficacy, self-confidence, and risk perception); (2) Social factors (family and health worker support); and (3) Clinical factors (duration of hemodialysis, comorbid status, and clinical symptoms). Self-efficacy and social support emerged as dominant determinants in supporting patient compliance.

Conclusion: These findings highlight the importance of interventions that focus on increasing self-efficacy and strengthening social support to improve patient adherence to fluid restrictions. Further research is needed to develop evidence-based strategies in nursing practice.

Keywords: compliance; fluid restriction; hemodialysis; influencing factors

IDENTIFICATION OF EDUCATIONAL MEDIA IN PRIMARY CARE FOR HYPERTENSIVE PATIENTS: A SCOPING REVIEW

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ABSTRACT

Background: Hypertension is when a patient's systolic blood pressure reaches ≥ 140 mmHg and diastolic blood pressure reaches ≥ 90 mmHg. Primary care refers to specific services, such as "family doctors," provided directly to individuals. This article explores the identification of educational media for primary care in hypertensive patients.

Methods: This scoping review design uses the Arksey and O'Malley framework to analyze the scoping review. The literature sources were obtained from online databases, including PubMed, ScienceDirect, Garuda, Wiley, and Cochrane, covering the period from 2015 to 2025. Identification and analysis were conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis for Scoping Review (PRISMA-SR).

Results: Based on an analysis of 8 selected articles, this study summarizes the identification of educational media for primary care in hypertensive patients.

Keywords: educational media; hypertension; primary care

EFFECTIVENESS OF BREADFRUIT (*Artocarpus altilis*) LEAF GARGLING ON SALIVARY PH AND PLAQUE SCORES IN OUTPATIENT POLYCLINIC STAFF AT KERINJING COMMUNITY HEALTH CENTER, OGAN ILIR DISTRICT, 2024

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ABSTRACT

Background: One of the main causes of dental caries is the accumulation of dental plaque, a soft, thin biofilm that adheres to tooth surfaces and the gingival margin. Plaque comprises a polysaccharide matrix, microorganisms, enzymes, inorganic substances, epithelial cells, leukocytes, and macrophages. Mechanical and chemical methods, such as using antiseptic mouthwash, can help reduce plaque. Breadfruit (*Artocarpus altilis*) leaves contain antibacterial properties and have potential as a natural mouthwash.

Method: This quasi-experimental study involved 30 participants selected through purposive sampling. Data were collected via direct clinical examinations, and statistical analysis was conducted using the Paired T-Test.

Result: The average salivary pH before gargling was 6.173, increasing to 6.487 after using boiled breadfruit leaf solution, showing a mean increase of 0.313. The mean dental plaque score before gargling was 2.957, which significantly decreased to 1.513 after the intervention—a reduction of 1.443. Statistical tests indicated significant differences between pre- and post-gargling salivary pH ($p = 0.027$) and plaque scores ($p = 0.000$).

Conclusion: Gargling with a boiled breadfruit leaf solution significantly reduced plaque scores and moderately increased salivary pH. The intervention proved more effective in lowering plaque levels than altering salivary pH, suggesting that breadfruit leaf mouthwash may be a promising natural alternative for oral hygiene maintenance, particularly among staff at the Kerinjing Health Center, Ogan Ilir Regency.

Keywords: breadfruit leaves; saliva Ph; plaque score

PERIODONTAL DISEASE IN CHILDREN WITH MENTAL RETARDATION: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Children with intellectual disabilities (IQ < 70 and impaired adaptive skills) struggle with daily oral hygiene, predisposing them to periodontal disease. This systematic review aims to synthesize current evidence on the prevalence and key determinants of gingivitis and periodontitis in this population.

Method: A systematic review was conducted by reviewing research through English data sources Pub Med, Proquest, Cochran, and Wiley. Four studies were included according to the inclusion criteria.

Result: Across these studies, most participants had periodontal disease, mainly gingivitis and periodontitis. Limited independent hygiene caused by cognitive and physical restrictions was the dominant risk factor. Children whose parents actively supervised brushing and dental visits displayed significantly healthier periodontal status.

Conclusion: Functional limitations expose intellectually disabled children to a high risk of periodontal disease; consistent parental involvement is essential for maintaining their oral health.

Keywords: mental retardation; periodontal disease

THE QUALITY OF ACACIA CARPA HONEY AS A POTENTIAL BASE MATERIAL FOR MOUTHWASH IN CHILDREN

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ABSTRACT

Background: Dental caries are the most common oral disease in children. Mouthrinses can lower the number of cariogenic bacteria, and honey from Jambi Province is a promising natural ingredient. This study assesses the physical and chemical quality of Acacia carpa (Acacia crassicarpa) honey from Danau Lamo, Jambi, to judge its suitability for a children's mouthwash.

Methods: Samples of both processed and raw Acacia carpa honey harvested from Apis mellifera colonies were analysed at the Jambi Provincial Department of Industry and Trade. Organoleptic, physical, and chemical tests followed the Indonesian National Standard (SNI) 8664 : 2018.

Results: The honey met SNI limits for water content, insoluble solids, ash, hydroxymethylfurfural, diastase activity, and showed a pH of 3.7. Viscosity, colour, aroma, and texture were also within acceptable ranges. Reducing-sugar and sucrose levels exceeded SNI requirements, indicating elevated sucrose that may promote crystallisation.

Conclusion: Acacia carpa honey from Danau Lamo satisfies most SNI 8664 : 2018 criteria and shows appropriate pH and physicochemical properties for formulating a paediatric mouthwash. The high sucrose content calls for further clinical testing to confirm safety and anti-caries effectiveness before routine use.

Keywords: acacia carpa honey; mouthwash base; children, physicochemical quality; SNI 8664 2018

THE INFLUENCE OF EXTENSION USING PHANTOM MEDIA ON BRUSHING SKILLS TEETH IN PEOPLE WITH MENTAL DISORDERS (ODGJ) AT MITRA MULIA FOUNDATION HUSADA PALEMBANG YEAR 2024

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ABSTRACT

Background: Dental and oral health education is greatly needed to change behavior patterns, which can include knowledge about how to maintain dental and oral health. Counseling using a dental model (which can also be used on a group of people with mental disorders (ODGJ) using a Phantom dental model). The purpose of this study is to determine the effect of counseling using phantom media on tooth brushing skills in people with mental disorders (ODGJ) at the Yayasan Mitra Mulia Husada Palembang in 2024.

Methods: The research design uses a quasi-experimental one group Pre-Test – Post-Test design method with 60 respondents, measuring skill levels before and after the counseling session. Before the data were analyzed, a normality test was conducted using the Kolmogorov-Smirnov Test because the sample size was more than 50 respondents. If the analysis shows normal data, a parametric test, the Dependent T-Test (Paired T-Test), will be used; if the data is not normal, a non-parametric test, the Wilcoxon Signed Ranks Test, will be used.

Results: The results of the study on the influence of counseling using phantom media on tooth brushing skills in people with mental disorders (ODGJ) at the Mitra Mulia Husada Foundation, Palembang, in 2024. Kolmogorov-Smirnov normality test Test 1.496 sig. value of 0.23. Wilcoxon Signed Ranks Test analysis of tooth brushing skills before the counseling showed a mean value of 1.48, standard deviation of 0.748. The results of tooth brushing skills after the counseling showed a mean of 10.17, standard deviation of 1.137. The correlation analysis yielded a p-value of 0.000. This means there is an influence of counseling using phantom media on tooth brushing skills.

Conclusion: Understanding patients' perceptions of the psychosocial impacts of malodorous wounds is essential for developing effective psychosocial support and holistic care strategies. Managing malodorous wounds in breast cancer requires not only medical treatment but also comprehensive psychosocial support to improve patients' overall well-being.

Keywords: people with mental disorders (ODGJ); counseling using phantom media; tooth brushing skills

THE CORRELATION BETWEEN TREATMENT DURATION WITH PLATELET LYMPHOCYTE RATIO (PLR) AND MONOCYTE LYMPHOCYTE RATIO (MLR) IN PULMONARY TUBERCULOSIS PATIENTS IN JAMBI CITY

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ABSTRACT

Background: Pulmonary tuberculosis (TB) is still a major health concern worldwide. The platelet-lymphocyte ratio and monocyte-lymphocyte ratio are simple blood-based markers of systemic inflammation that may track treatment response. This study examined whether a longer course of anti-TB therapy is linked to lower PLR and MLR values in patients from Jambi City.

Methods: A cross-sectional analysis involved 30 smear-positive pulmonary TB patients recruited from community health centres. Fifteen patients had received treatment for less than 2 months, and fifteen for more than 2 months. PLR and MLR were calculated from complete blood counts. Group differences were tested with the independent-samples t-test.

Results: The mean PLR was 142 in the < 2-month group and 137 in the > 2-month group. Mean MLR values were 0.36 and 0.34, respectively. Although both markers trended downward with longer therapy, neither difference reached statistical significance (PLR $p = 0.42$; MLR $p = 0.48$)

Conclusion: In this study, PLR and MLR did not differ significantly between early-phase and later-phase treatment groups, suggesting that these ratios may not be sufficiently sensitive to short-term changes during anti-TB therapy. Larger longitudinal studies are needed to clarify their utility as inflammatory biomarkers in pulmonary TB management.

Keywords: pulmonary tuberculosis; platelet lymphocyte ratio; monocyte lymphocyte ratio; treatment duration; inflammatory biomarkers

EVALUATING THE PLAQUE REMOVAL EFFICACY OF BASS AND COMBINATION BRUSHING TECHNIQUES IN 7TH GRADE STUDENTS AT SMPN 44 PALEMBANG, 2024

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ABSTRACT

Background: Effective plaque control is vital for oral and general health. While the Bass technique is widely recommended, a Combination technique that blends circular, vertical, and vibratory strokes may enhance plaque removal. This study compared plaque-score reductions produced by the Bass and Combination techniques in seventh-grade students.

Methods: A pre-test–post-test control-group experiment was conducted with 32 randomly selected students at SMPN 44 Palembang. Participants were allocated to the Bass group (n = 16) or the Combination group (n = 16). Plaque levels were recorded with the Personal Hygiene Performance index before and after supervised brushing. Mean plaque-score reductions were compared using an independent-samples t-test ($\alpha = 0.05$).

Results:

The Bass group showed a mean plaque reduction of 1,1, whereas the Combination group achieved a 2,2- reduction. The difference was statistically significant (p value= 0.001).

Conclusion:

Among seventh-grade students, the Combination brushing technique removed significantly more plaque than the Bass technique. Incorporating the Combination method into school-based oral-health education may improve plaque control in this age group.

Keywords: tooth-brushing technique; bass method; combination method; dental plaque; school children; oral-health education.

CORRELATION OF HbA1C LEVELS AND ERYTHROCYTE INDICES IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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ABSTRACT

Background: Hyperglycemia is a leading indicator of type 2 diabetes mellitus (T2DM). Long-lasting hyperglycemia has an effect on all body tissues. This effect is related to protein glycation namely HbA1C, and changes in structure and function of erythrocyte. The erythrocyte indices consists of MCV, MCH, and MCHC. This study aim to determine the correlation of HbA1C levels with erythrocyte indices in patients with T2DM.

Methods: This cross-sectional study was conducted on patients with T2DM visiting at the Multiwahana and Kampus Health Center Palembang from November to December 2024. After taking laboratory test of HbA1C, MCV, MCH, and MCHC, data were collected and computed by using Spearman correlation test.

Results: A total of 50 diabetic patients were eligible for this study with a mean HbA1C was $7.36 \pm 1.76\%$, MCV $83.69 \pm 6.70 \text{ fL}$, MCH $27.96 \pm 2.70 \text{ pg}$, MCHC $33.32 \pm 1.18\%$. Spearman's correlation analysis showed that HbA1C significantly correlated with MCHC, inversely correlated with MCV, but there was no significant correlation of HbA1C and MCH.

Conclusion: The study highlighted that MCHC significantly correlated with HbA1C, it's affordable and readily accessible test, it may be used as an indicator of glycemic status. It's important for diabetic patients to prevent long-lasting hyperglycemia by monitoring glycemic index and taking medication regularly.

Keywords: diabetes mellitus, HbA1C; erythrocyte indices; hyperglycemia.

THE RELATIONSHIP OF ORAL HYGIENE AND DENTAL CARIES IN PEOPLE WITH MENTAL DISORDERS AT YAYASAN MITRA MULIA HUSADA PALEMBANG 2024

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ABSTRACT

Background: Cognitive and behavioural disturbances in people with mental disorders (PWMD) often limit self-care, predisposing them to oral-health problems. This study examined the association between oral-hygiene status and dental-carries experience in PWMD residing at Yayasan Mitra Mulia Husada, Palembang.

Methods: An analytical cross-sectional survey was conducted among 60 residents selected by purposive sampling. Oral hygiene was assessed with the Simplified Oral Hygiene Index (OHI-S); dental caries were recorded with the Decayed–Missing–Filled Teeth (DMF-T) index. The correlation between OHI-S and DMF-T scores was tested using Pearson's r ($\alpha = 0.05$).

Results: OHI-S scores indicated poor hygiene in 61.7 % of participants, moderate in 38.3 %, and good in none. DMF-T scores showed very high caries experience in 46.7 %, high in 20 %, moderate in 10 %, low in 16.7 %, and very low in 6.7 %. Pearson analysis revealed a significant positive correlation between OHI-S and DMF-T values ($r = 0.64$, $p < 0.001$), demonstrating that poorer hygiene was associated with higher caries levels.

Conclusion: There was a relationship between oral hygiene and dental caries in people with mental disorders at the Mitra Mulia Husada Palembang Foundation. The worse the dental hygiene status, the higher the caries rate. This is due to their unstable mental condition resulting in neglect of dental and oral hygiene, plus a lack of knowledge and attitude in maintaining dental hygiene, low motivation and family support, minimal assistance from health workers and made worse by the side effects of taking antipsychotic drugs for a long period of time which can cause dry mouth due to reduced saliva flow.

Keywords: mental disorder, oral hygiene, dental caires

CORRELATION BETWEEN ESTIMATED GLOMERULAR FILTRATION RATE (EGFR) AND MICROALBUMINURIA AT THE KIMIA FARMA PALEMBANG MEDICAL LABORATORY IN 2024

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ABSTRACT

Background: Diabetic nephropathy, a microvascular complication of uncontrolled diabetes mellitus, is signalled early by albumin leakage into urine (microalbuminuria). Estimated glomerular filtration rate (eGFR) also reflects renal function. This study investigated whether eGFR correlates with microalbuminuria in diabetic patients tested at Kimia Farma Palembang Medical Laboratory in 2024.

Methods: Descriptive research with a cross sectional approach. The data were collected as secondary data from August to November 2024. The sampling technique used was purposive sampling, resulting in 191 patients with the inclusion and exclusion criteria. The data were analyzed in univariate and bivariate with the Spearman correlation test.

Results: From the research obtained, the average Microalbuminuria in DM patients is 117.40 mg/dL. The results of the Correlation Test showed p value of 0.296 which means a p value > 0.05, means that the correlation is not statistically significant at a confidence level of 95%.

Conclusion: There is no correlation between Estimated Glomerular Filtration Rate (eGFR) and Microalbuminuria at the Kimia Farma Palembang Medical Laboratory in 2024. DM patients can reduce the risk of complications leading to kidney failure with optimal glycemic control and perform eGFR and Microalbuminuria laboratory examinations regularly.

Keywords: diabetes mellitus; eGFR; microalbuminuria

EVALUATION OF FACTORS CONTRIBUTING TO DENTURE HYGIENE IN EDENTULOUS PATIENTS

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ABSTRACT

Background: Maintaining denture hygiene in edentulous patients is essential to prevent conditions such as denture stomatitis. At RS Khusus Gigi dan Mulut Sumatera Selatan, many patients reported gum swelling due to poor hygiene, emphasizing the need to evaluate contributing factors. This study aimed to assess the influence of demographic and behavioral variables on denture hygiene.

Methods: A cross-sectional study was conducted involving 40 edentulous patients. Data were collected through structured interviews and clinical examinations. Variables included age, gender, knowledge level, behavior, and type of denture. Knowledge was measured using a validated questionnaire, and denture hygiene was assessed clinically. Statistical analysis using the chi-square test was performed to determine significant associations ($p < 0.05$).

Results: There were statistically significant associations between denture hygiene and gender ($p = 0.018$), knowledge level ($p = 0.006$), hygiene behavior ($p = 0.012$), and the use of special denture cleaning agents ($p = 0.004$). No significant associations were found with age ($p = 0.317$) or denture type ($p = 0.228$). Female patients tended to have poorer denture hygiene due to psychosocial and lifestyle factors, while those with better knowledge and proper hygiene behaviors had improved outcomes.

Conclusion: Denture hygiene is significantly influenced by gender, knowledge, behavior, and use of cleaning agents. Educational interventions should focus on these areas to improve oral health outcomes.

Keywords: denture hygiene; edentulous patients; knowledge level; oral health behavior

EFFECT OF "PHYSICAL EXERCISE (AEROBICS)" ON "FATIGUE" AND "QUALITY OF LIFE" IN BREAST CANCER PATIENTS WITH CHEMOTHERAPY :A SCOPING REVIEW

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ABSTRACT

Background: Breast cancer is one of the most common types of cancer experienced by women worldwide. Breast cancer patients often experience cancer-related fatigue (CRF) that affects their quality of life, especially during and after undergoing chemotherapy. Physical exercise has been identified as a potential intervention to reduce fatigue and improve patients' quality of life.

Methods: Relevant articles were selected through systematic searches in various databases, including PubMed, ScienceDirect, Google Scholar, and Garuda. The analyzed studies included different types of research designs such as randomized controlled trials (RCTs), systematic reviews, and experimental studies. The physical exercises reviewed included aerobic exercise, yoga, relaxation breathing exercises, and a combination of resistance training with aerobics.

Results: Physical exercise has consistently shown effectiveness in reducing fatigue and improving quality of life in breast cancer patients. Aerobic exercise and the combination of aerobic exercise with yoga or resistance provides significant benefits in improving cardiovascular endurance, functional capacity, and mental health. Relaxation breathing exercises have also been found to help patients adapt physiologically, reduce stress, and improve their ability to perform daily activities.

Conclusion: Physical exercise is an effective intervention to manage cancer-related fatigue and improve the quality of life of breast cancer patients. Further research is needed to determine the most optimal exercise protocol and its applicability in different cultural contexts and healthcare systems, including in Indonesia.

Keywords: aerobic exercise; breast cancer; chemotherapy; fatigue; physical exercise; quality of life

THE EFFECTIVENESS OF THE HEALTH BELIEF MODEL IN EDUCATION FOR HYPOGLYCEMIA PREVENTION IN TYPE 2 DIABETES MELLITUS PATIENTS

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ABSTRACT

Background: Diabetes Mellitus is a chronic metabolic disorder characterized by high glucose levels in the blood due to impaired insulin use, insulin secretion. *The Health Belief Model* describes the factors that influence an individual's decision to maintain his or her health or both.

Methods: This study uses the One Group Pre Test Post Test design *pre-experimental approach*. Health Education uses pocket book media. The sample in this study amounted to 39 respondents. Knowledge of hypoglycemia prevention was measured using questionnaires. The validity test was carried out with $df = 10$ significance of 0.05 so that the value of r calculated $> r$ of the table (0.632) and the reliability value of *Cronchbach's alpha* $0.961 > 0.6$ so that it was reliably determined. Data analysis was carried out univariate and bivariate using the Wilcoxon test.

Result: The average *pretest* was 8.36 with a minimum score of 2 and a maximum score of 14 and the average during *the posttest* was 15.56 with a minimum score of 9 and a maximum score of 19. The results showed that the average difference in pretest-posttest *hypoglycemia prevention knowledge* was 7.20 and there was an influence of health education before and after being given health education ($p\text{-value} = 0.000$)

Conclusion: There is an effect of *Health Belief Model* health education on hypoglycemia prevention knowledge in type II diabetes mellitus patients at the Olak Kemang Health Center, Jambi City in 2024. The use of pocket books is a media choice that can be used to increase knowledge about hypoglycemia.

Keywords: diabetes mellitus; HBM; hypoglycemia; knowledge

SUGARY BEVERAGES AND PREDIABETES RISK: A CROSS-SECTIONAL STUDY AMONG ADOLESCENTS IN JAMBI CITY

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ABSTRACT

Background: The International Diabetes Federation estimated the global prevalence of prediabetes to be 280 million in 2011, with a projected increase to 389 million by 2030. Uncontrolled prediabetes over 3–5 years significantly increases the risk of progressing to type 2 diabetes mellitus, a global health concern with no known cure. Dietary behaviour is one of the key risk factors for the development of prediabetes. This study aimed to analyze the association between dietary consumption behaviour and the risk of prediabetes among adolescents in Jambi City.

Methods: This study employed an analytical observational design with a cross-sectional approach. The research was conducted at SMAN 2 Jambi City from August to September 2019, with a total sample of 140 participants. Samples were selected using purposive sampling based on the following criteria: (1) aged 15–18 years, (2) obtained parental or guardian consent and agreed to participate, and (3) willing to fast from 11:00 PM to 7:30 AM. The dependent variable was prediabetes, assessed via fasting blood glucose levels using a biosystem method with a biochemical analyzer AE-600N at a wavelength (λ) of 500 nm. The independent variable was dietary consumption behavior, assessed through 3-day (3x24-hour) food recall interviews. Data were analyzed using chi-square tests and multivariate logistic regression.

Results: Adolescents consuming carbohydrates >300–400 g/day ($p = 0.009$; OR = 4.058; 95% CI: 1.508–10.917) and sugary beverages >12 g/day ($p = 0.01$; OR = 4.333; 95% CI: 1.399–13.422) had a significantly higher risk of prediabetes. Multivariate logistic regression analysis identified sugary beverage consumption as the dominant risk factor for prediabetes among adolescents ($p = 0.018$; OR = 4.215).

Conclusion: Sugary beverage consumption is the most dominant dietary factor associated with an increased risk of prediabetes in adolescents.

Keywords: adolescents; prediabetes; sugary beverage consumption

BOOK OF ABSTRACT

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