2025

The 4th International Conference on

GHI

Global Health and Innovation

Strengthening Health Resilience in Tropical and Island Regions,
Bridgung Global Health and Local Contexts

ABSTRACT BOOK

Golden Palace Hotel, Lombok Indonesia
17-18 October 2025

ghicon2025 https://ghicon.com/

ABOUT US

The 4th International Conference on Global Health and Innovation (GHI 2025)

"Strengthening Health Resilience in Tropical and Island Regions: Bridging Global Health and Local Contexts"

BACKGROUND

Tropical and island regions are at the frontline of some of the world's most pressing public health challenges. The intersection of climate change, geographic isolation, limited health system capacity, recurring natural disasters, and socio-economic vulnerabilities creates a unique set of risks that disproportionately affect populations in these settings. Rising sea levels, vector-borne disease outbreaks, food and water insecurity, and limited access to healthcare are not hypothetical threats, for they are already undermining community well-being and health system resilience across many island nations and archipelagic regions.

As the largest archipelagic nation in the world, Indonesia embodies many of these challenges, particularly in its eastern provinces where health disparities remain stark. Remote island and coastal populations often experience delayed access to care, fragile referral networks, and under-resourced public health infrastructure. In these settings, public health strategies must move beyond standardized models and instead be grounded in approaches that are context-sensitive, culturally responsive, and driven by community needs and engagement.

At the same time, global health priorities such as pandemic preparedness, universal health coverage (UHC), and climate resilience demand inclusive solutions that reflect the realities of all geographies, including hard-to-reach and resource-limited island settings. Yet, tropical and island contexts are still underrepresented in global discourse, particularly in agenda-setting spaces that influence policy, funding, and innovation.

With the theme "Strengthening Health Resilience in Tropical and Island Regions: Bridging Global Health and Local Contexts," the 4th International Conference on Global Health and Innovation (GHI 2025) aims to respond to these gaps by creating a platform that connects practitioners, researchers, policymakers, and communities from diverse geographies. The conference seeks to catalyse interdisciplinary collaboration, foster innovation, and amplify local voices, especially those working on the frontlines of health service delivery in challenging environments.

The conference is designed to:

- Address the full spectrum of disease burdens: from communicable diseases (including emerging and re-emerging infections and neglected tropical diseases/NTDs) to non-communicable diseases (NCDs), including injury and drowning prevention.
- Respond to climate-driven health risks and environmental hazards, with a focus on disaster resilience, water safety, and adaptation in vulnerable island ecosystems.
- Support global health security frameworks, ensuring island and coastal communities are integrated into pandemic preparedness, disaster response, and cross-sector coordination efforts.
- Tackle border health challenges, especially in archipelagic regions, through strategies for disease surveillance, policy harmonization, and regional cooperation.

By showcasing practical, locally grounded solutions aligned with international health frameworks, GHI 2025 aims to contribute meaningfully to the development of stronger, more equitable, and resilient health systems in tropical and island contexts, while also elevating the voices of communities most affected by health disparities.

OBJECTIVES

1. To increase the visibility and capacity of emerging researches and early-career professionals in tropical health.

2. To provide opportunities for international publication for academic staff and students of the Faculty of Medicine and Health Sciences, University of Mataram, through proceedings in the partner journal.

3. To promote exchange of knowledge, innovations, and lessons learned from global, national, and local initiatives.

4. To support the development of contextually appropriate solutions to improve health resilience in island and tropical settings.

5. To strengthen cross-sector and international partnerships in global health, particularly between academia, government, and civil society.

THEME AND KEY ISSUES

Theme: "Strengthening Health Resilience in Tropical and Island Regions: Bridging Global Health and Local Contexts"

- Communicable diseases and neglected tropical diseases (NTDs)
- Non-communicable diseases and injury prevention (including drowning)
- Disaster preparedness and climate-driven health risks
- Global health security challenges, encompass antimicrobial resistance, pandemic preparedness, the adoption of the One Health approach, and the promotion of international collaboration to address transnational health threats.

ID: 1225

THE EFFECT OF ADMINISTERING CENTELLA ASIATICA, CINNAMON, AND SPIRULINA IN SPRAGUE DAWLEY RATS WITH TRAUMATIC BRAIN INJURY

Lale Maulin Prihatina[1], Rina Masadah[2], Jumraini Tammase[3]

[1]Patologi Anatomik, Fakultas Kedokteran dan Ilmu Kesehatan, Universitas Mataram, Mataram, Indonesia
Program Studi Doktor Ilmu Kedokteran, Fakultas Kedokteran Universitas Hasanuddin, Makasar. Indonesia
[2]Program Studi Doktor Ilmu Kedokteran Fakultas Kedokteran Universitas Hasanuddin, Makasar. Indonesia
[3]Program Studi Doktor Ilmu Kedokteran Fakultas Kedokteran Universitas Hasanuddin, Makasar. Indonesia
*Corresponding author: lalemaulin@unram.ac.id

ABSTRACT

Background: Traumatic brain injury (TBI) is a global health problem and a leading cause of mortality and disability. This injury is an injury obtained due to impact, blow, or intracranial trauma and results in disruption of normal brain function. The tendency of high prevalence of traumatic brain injury based on existing statistical data is a necessity in efficient therapy efforts so as to reduce post-traumatic morbidity and mortality rates. Centella asiatica, cinnamon, and spirulina have neurogenesis and neuroprotective effects, this combination of natural ingredients is a target for research into its benefits in preventing brain damage caused by trauma.
Methods: This research is an experimental study, completely randomized design and the research subjects were divided into 2 groups, the group given a combination of natural ingredients and the placebo group
Result: The bioactive components of centella asiatica can cross the blood-brain barrier when administered peripherally and can provide neuroprotective effects. Cinnamon's bioactive components can protect neurons through dopaminergic activity. Spirulina is useful for reducing oxidative stress in the hippocampus and protecting against damaging neurobehavioral effects. The severity of traumatic brain injury, the patient's clinical condition, and the neuroprotective processes that occur, are positively correlated with effective therapy, minimizing injury and reducing mortality.
Conclusion: The administration of natural ingredients such as centella asiatica, cinnamon, and spirulina will provide a neuroprotective effect on rat with traumatic brain injury. A relationship was found between the administration of a combination of natural ingredients and an increase in the neurogenesis.

Keywords: Traumatic brain injury (TBI), Centella asiatica, Cinnamon, Spirulina

ID: 1325

LATEST UPDATE IMPLEMENTATION OF HYPNOTHER APY IN CERVICAL CANCER: A SYSTEMATIC REVIEW

I Komang Tresna[1]

[1]Doctoral Study Program Of Medicine Faculty Of Medicine Hasanudin University Makasar
*Corresponding author: tresnakomang707@gmail.com

ABSTRACT

Background and Objectives: Women with cervical cancer tend to undergo psychological challenges, which require for interventions and support. Hypnotherapy, a therapeutic technique utilized of guided relaxation and focused attention to achieve a heightened state of awareness (trance), showed several benefit for addressing various psychological, emotional, and physiological aspects related to cancer treatment. While research into the use of hypnotherapy specifically for cervical cancer is limited, there is growing evidence supporting its use in cancer care in general.
Methods: a systematic search on major electronic databases was conducted up to april 2025 with inclusion criteria are randomized controlled trial (RCT), hipnosis as an intervention of cervical cancer, intervention procedures, intervention targeted improving quality of life, managing symptoms, alleviating treatment side effects, and addressing psychological distress.
Results: All studies reviewed this time, generally used a combination of hypnotherapy methods including
positive suggestions or self-affirmations using audio or face-to-face directly. Generally, given more than 4 weeks with resistance to effects up to 6 months after hypnotherapy intervention. The reported effects of hypnotherapy provide health benefits related to improvements in physical and psychological complaints, but none of the studies reported improvements or changes in cellular levels including the tumor micro-environment.
Conclusion: Hypnotherapy showed several benefit to support cervical cancer patients during diagnosis, treatment, and recovery. However, more research is needed to extended knowledge the potential of hypnotherapy in cancer treatment, and efforts should be made to increase awareness and integration of this technique into mainstream cancer care.

Keywords: cervical cancer, Hypnotherapy, disease management

ID: 1437

EVALUATION OF SKDR IMPLEMENTATION FOR SUSPECTED DENGUE AT BALI MANDARA HOSPITAL 2025

Dona Sri Pratiwiningtyas[1], Anak Agung Sagung Sawitri[2], Cokorde Istri Sri Dharma Astiti[3], Desak Maindrawati[4]

[1]Field Epidemiology Training Program, Udayana University, Indonesia, 80234
[2]Udayana University, Indonesia, 80234
[3]Bali Provincial Health Office, Indonesia, 80234
[4]Bali Mandara Hospital, Indonesia, 80227
*Corresponding author: donasripratiwiningtyas@gmail.com

ABSTRACT

Background and Objectives: Dengue Hemorrhagic Fever (DHF) remains a public health burden in Bali, causing 9 deaths in Denpasar with a Case Fatality Rate (CFR) of 0.16% and 519 hospitalizations at Bali Mandara Hospital in 2024. As a referral hospital, Bali Mandara plays a key role in SKDR implementation, which is not yet optimal. This evaluation aims to identify challenges and recommend improvements.
Methods: This study used a descriptive evaluative approach based on a logic model and nine surveillance system attributes. The evaluation covered inputs, processes, and outputs. Data collection in June 2025 involved indepth interviews with 17 participants, including surveillance officers, healthcare staff, and hospital managers, along with document and infrastructure reviews. Qualitative analysis was performed to evaluate the SKDR implementation against national surveillance standards.
Results: The evaluation revealed that limited human resources significantly constrained implementation, with every respondent managing more than one program. A majority of units (70.59%) lacked standardized reporting procedures and relied heavily on one officer. In addition, 76.48% of respondents were unfamiliar with data analysis, and 70.59% indicated an absence of information dissemination. Internal monitoring and evaluation were not carried out. Of the nine attributes reviewed, adequacy was only achieved in simplicity and acceptability.
Conclusion: The SKDR system for suspected dengue is operational but constrained by workload, lack of training, and absence of SOPs. Limited data analysis, weak information sharing, and no internal monitoring further reduce effectiveness. Strengthening capacity, formalizing procedures, and reinforcing oversight are essential to improve early detection and timely response.

Keywords: surveillance system, SKDR, dengue hemorrhagic fever, evaluation, hospital

ID: 1462

INNOVATIVE ENDOTRACHEAL TUBE HOLDER: DESIGN AND FEASIBILITY TESTING AS A NOVEL NON-TAPE FIXATION ALTERNATIVE

Rustiana Tasya Ariningpraja[1], Endah Panca Lydia Fatma[1], Setya Asih[1], Luis Figo Febriano[1]
[1]Faculty of Health Sciences, Universitas Brawijaya, Indonesia
*Corresponding author: rustiana.ta@ub.ac.id

ABSTRACT

Background: Endotracheal tube (ETT) fixation is essential to maintain airway stability in intubated patients. Adhesive tape remains widely used; however, it has limitations such as instability, difficulties in patients with excessive secretions, and risk of pressure injuries. ETT holders are generally applied in specific conditions, yet they have the potential to serve as a safer and more comfortable alternative. Therefore, an innovative ETT holder that ensures fixation while preventing biting and pressure injuries is needed.
Objective: This study aimed to develop an innovative ETT holder as a non-tape fixation alternative and to evaluate its feasibility.
Methods: This study employed a research and development (R&D) approach. The initial design was formulated through a literature review, followed by the creation of the first prototype and subsequent revisions based on expert feedback. Feasibility was assessed using the System Usability Scale (SUS) with 10 nurses, while content validity was evaluated by 3 experts using the Content Validity Index (CVI).
Results: The innovative ETT holder prototype was successfully developed with a structure that supports stable fixation, mucosal protection, and bite prevention. The SUS test showed a good mean score within the acceptable category, reflecting high user acceptance. The CVI test by three experts yielded a score of 0.86, indicating strong content validity.
Conclusion: The developed innovative ETT holder is considered feasible as a non-tape fixation alternative, with additional advantages in preventing biting and pressure injuries. Further studies are required to evaluate its clinical effectiveness in intubated patients.

Keywords: endotracheal tube, fixation, medical device innovation, SUS, CVI

ID: 1500

THE IMPACT OF PSYCHOSOCIAL RISKS ON MENTAL HEALTH AND DISEASE BURDEN IN LOW- AND MIDDLE-INCOME COUNTRIES: A LITERATURE REVIEW

Hidayaturrohman A.[1], Muthia Cenderadewi[1], Agriana Rosmalina Hidayati[1]
[1]Program Studi Farmasi, Fakultas Kedokteran dan Ilmu Kesehatan, Universitas Mataram, Mataram, Indonesia
*Corresponding author: ahmadhidayaturrohman671@gmail.com

ABSTRACT

Background and Objectives: Mental health disorders are a growing global concern that significantly contribute to the disease burden, particularly in low- and middle-income countries (LMICs). This review aims to explore the influence of psychosocial risk factors on mental health and to evaluate the effectiveness of interventions applied among vulnerable populations.
Methods: A literature search was conducted through PubMed, focusing on systematic reviews published within the last decade (2015–2025) that examined mental health and psychosocial aspects in LMICs. Out of 13 studies initially identified, five met the inclusion criteria and were further analyzed.
Results: Findings indicate that task-shifting psychosocial interventions effectively reduced depressive symptoms among individuals living with HIV/AIDS; antenatal depression in pregnant women was strongly associated with higher risks of preterm delivery and low birth weight; community-based programs for older adults were beneficial in alleviating depression and anxiety; family- and parenting-oriented approaches enhanced both family functioning and the mental health of children and adolescents; while a combination of pharmacological and psychosocial therapies improved treatment adherence among individuals with bipolar disorder.
Conclusion: However, most of the included studies were limited by methodological weaknesses, high risk of bias, and insufficient long-term follow-up. Strengthening the role of non-specialist health workers, integrating mental health services into primary care, and adapting interventions to local cultural contexts are essential strategies for reducing the mental health burden in LMICs.

Keywords: mental health, psychosocial, LMICs

ID: 1501

ONE HEALTH AND ANTIMICROBIAL RESISTANCE IN AQUACULTURE: A REVIEW OF PUBLIC HEALTH IMPLICATIONS

M. Syarif Hidayatullah [1], Muthia Cenderadewi [1], Rohani[1]

[1]Faculty of Medicine and Health Sciences, University of Mataram
*Corresponding author: sdayat844@gmail.com

ABSTRACT

Background and Objectives: Antimicrobial resistance (AMR) in aquaculture threatens public health through foodborne exposure, occupational risks, and environmental contamination. A One Health approach is essential to mitigate these impacts. This literature review examines evidence from peer-reviewed studies on the human and public health implications of AMR in aquaculture and evaluates how One Health has been applied to address them.
Methods: A systematic search of PubMed, Scopus, and BioMed Central (Public Health) databases was conducted to identify peer-reviewed, full-text articles published in English between 2010 and 2025 that explicitly linked One Health with AMR in aquaculture or coastal communities. Five studies met all inclusion criteria and were analyzed thematically.
Results: Across diverse contexts, four main pathways consistently emerged. First, seafood-borne transmission, where aquaculture products are contaminated with resistant bacteria, posing risks to consumers. Second, occupational exposures, in which aquaculture workers encounter resistant pathogens, with potential spillover to households and communities. Third, environmental dissemination, where antimicrobial residues in coastal waters drive resistance selection and facilitate gene transfer. Fourth, governance and surveillance gaps, in which institutional silos, limited capacity, and conflicting interests limit integrated monitoring across human, animal, and environmental health sectors, undermining effective One Health responses.
Conclusion: Evidence demonstrates that AMR in aquaculture extends beyond veterinary concerns to directly endanger human health and public health systems. Strengthening antimicrobial regulation, integrated cross-sectoral surveillance, worker protection, and food safety under a One Health framework is essential to safeguard coastal communities and global health.

Keywords: One Health, Antimicrobial Resistance, Aquaculture, Public Health

ID: 1503

A SYSTEMATIC REVIEW AND META-ANALYSIS OF RISK FACTORS FOR DEPRESSION IN CHILDREN AND ADULTS AFTER EARTHQUAKE

Al Hafiez Ariouso[1*], Ni Nyoman Viona Putri Wirani[1], Fataya Aulia Zakki[1], Ni Nyoman Widyani Puspita Putri[1], Khadijah Almuthii'ah[1]

[1]Faculty of Medicine, Mataram University, Mataram, Indonesia
*Corresponding author: hafizari2000@gmail.com

ABSTRACT

Background and Objectives: Exposure to traumatic events such as earthquakes can increase the severity of depression. The impact of earthquakes on mental health, especially the prevalence of depression, has been widely studied. However, the prevalence of post-earthquake depression which is influenced by many factors has never been studied by meta-analysis
Methods: This study followed the PRISMA 2020 guidelines. Studies were collected using databases from Science Direct, PubMed, and Scopus with a publication period from 2014 to 2024. All studies were assessed for bias using ROBINS-E. The analysis was performed using Review Manager 5.4.1. and VosViewer software
Results: In the adult population, being female, being over 55 years old, having completed primary education, having a history of previous physical illness, having an injury, having a death in the family, being lonely, and having a damaged house were associated with depression after the earthquake, with a combined Odds Ratio (OR) of 1.12 [95% CI 0.99, 1.27], 1.15 [95% CI 1.00, 1.33], 1.23 [95% CI 0.94, 1.62], 1.51 [95% CI 1.32, 1.74], 1.12 [95% CI 0.83, 1.52], 1.23 [95% CI 0.86, 1.75], 1.03 [95% CI 1.01, 1.05], 1.18 [95% CI 0.82, 1.71] respectively. In the pediatric population, being female, being older than 15 years, having a previous physical illness, having an injury, having a death in the family, and having lost a home were associated with post-earthquake depression, with pooled odds ratios (OR) of 1.13 [95% CI 0.95, 1.34], 1.17 [95% CI 1.10, 1.24], 1.52 [95% CI 0.57, 4.05], 1.15 [95% CI 0.96, 1.38], 1.14 [95% CI 1.01, 1.29], 1.17 [95% CI 1.04, 1.31].
Conclusion: These findings highlight that these exposures play a significant role as risk factors influencing post-earthquake trauma.

Keywords: Post-earthquake depression, Risk factors, Mental health impact

ID: 1504

THE TRACKING SEXUALLY TRANSMITTED DISEASE AND SYPHILIS INFECTION TRENDS IN WEST NUSA TENGGARA PROVINCE, PERIOD 2024: A GLOBAL HEALTH SECURITY INSIGHTS

Muhammad Freddy Candra Sitepu[1,2*], Rifana Cholidah[3], Astri Ferdiana[3], I Kadek Mulyawan[4] Anom Josafat[3], Nila Febriana[3]

[1]Master Program in Public Health, Faculty of Medicine and Health Sciences, Universitas Mataram, Mataram, Indonesia.
[2]Department of Obstetrics and Gynecology, Nusa Tenggara Barat Provincial Regional General Hospital/Faculty of Medicine and Health Sciences, Universitas Mataram, Indonesia.
[3]Department of Public Health, Faculty of Medicine and Health Sciences, Universitas Mataram, Mataram, Indonesia.
[4]Nusa Tenggara Barat Provincial Health Office, Mataram, Indonesia.
[*]Corresponding author: muhammadfreddycandrasitepu@staff.unram.ac.id

ABSTRACT

Background: Sexually transmitted diseases (STDs) and syphilis remain a significant global public health challenge. Syphilis, a sexually transmitted disease caused by Treponema pallidum, has become a concerning resurgence in recent years. In West Nusa Tenggara, no studies have described the profile of STDs, specifically syphilis.
Objective: This study aims to describe the profile of STDs and syphilis in West Nusa Tenggara (WNT) Province.
Methods: This is a retrospective descriptive study using infectious diseases surveillance data reported by all public health centers (PUSKESMAS) in WNT Province in 2024. Data collected based on the district in WNT and the key-risk population group. Data were analysed descriptively with SPSS version 25 and displayed in tables and charts.
Results: A total of 957 STD patients were reported, with the highest proportion found in Mataram (45.9%) and Sumbawa district (34.3%). The highest proportion was found in pregnant women (28,8%) followed by men who have sex with men (15,3%), prospective marriage partners (10,9%), multiple sexual partners (10,4%), clients of sex workers (9,5%), other STD co-infections (8,5%), general population (7,9%), female sex workers (6,9%), and other groups. Among these STDs, 475 cases were identified as syphilis and mostly found in Sumbawa (69,1%). Syphilis is dominated by pregnant women (53,9%).
Conclusion: Syphilis represents the most common STD in West Nusa Tenggara, with the highest burden in Sumbawa district and a significant proportion among pregnant women, highlighting the urgent need for prevention and screening among this group.

Keywords: STD, Syphilis, surveillance, GHS

ID: 1505

CHARACTERISTICS OF HIV/AIDS PATIENTS: A 2-YEAR RETROSPECTIVE REVIEW AT THE VCT CLINIC AT DR. R. SOEDJONO SELONG REGIONAL HOSPITAL 2025

Lalu Alfian Zartadi[1], Astri Ferdiana[1], Adnanto Wiweko[1], Nurul F. Paramaiswari[1]

[1]Master of Public Health Programme, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
* Corresponding author: alfian12alka@gmail.com

ABSTRACT

Background: Voluntary Counseling and Testing (VCT) clinics play a crucial role in HIV/AIDS control efforts by providing counseling, early detection, and treatment referrals. It is important to understand the characteristics of HIV/AIDS patients accessing VCT clinics to identify at-risk populations. This study aimed to determine the characteristics of HIV/AIDS patients at Dr. R. Soedjono Selong Regional General Hospital.
Methods: This is a retrospective descriptive study using medical records of all HIV/AIDS patients who visited the VCT clinic at Dr. R. Soedjono Selong Regional General Hospital from January 2023 to December 2024. Variables included age, gender, occupation, referral source, and risk factors. Descriptive data analysis was performed using Jamovi software.
Results: A total of 157 HIV/AIDS patients accessed VCT services during the 2023–2024 period with 75 patients in 2020 and 82 in 2024. The largest proportion were men (77%), aged 31–40 years (38%), unmarried (59%), self-employed (73%) and men who have sex with men (55%) and came from community health center referrals (69%). Between 2023 and 2024, the proportion of unmarried patients increased from 38.7% to 43.9%, MSM increased from 49% to 60%, hospital referrals from 21% to 3%, self-employed workers decreased from 81.3% to 65.9%. New categories, teachers (4%) and students (5%), will access VCT services in 2024.
Conclusion: The majority of HIV/AIDS patients at the VCT Clinic at Dr. R. Soedjono Selong Regional Hospital are men of productive age with risky behaviors. This finding underscores the need for increased early detection and education, especially for at-risk groups.

Keywords: Characteristics, HIV/AIDS, VCT Clinic at Dr. R. Soedjono Selong Regional Hospital

ID: 1506

PATIENT PROFILE OF LEPROSY AND ITS IMPLICATIONS FOR HEALTH SECURITY IN WEST NUSA TENGGARA, INDONESIA

Lillah Faizah[1], Lina Nurbaiti[2], Amelia Ramdani Hasby[3]

[1]Master of Public Health Program, Faculty of Medicine and Health Sciences, Universitas Mataram
*Corresponding author: faizahlillah@gmail.com

ABSTRACT

Background and Objectives: Leprosy is a chronic infectious disease caused by Mycobacterium leprae and remains a significant public health issue in Indonesia. National data in 2024 indicate that over 90% of new cases are multibacillary, 10% occur in children, and nearly 6% present with grade 2 disabilities. In West Nusa Tenggara Province, prevalence in 2025 remains above 1 per 10,000 population in several districts, indicating that elimination targets have not yet been achieved. Strengthening surveillance, early case detection, and complete treatment are crucial to achieve the 2030 leprosy elimination target. This study aims to describe the demographic and clinical profiles of leprosy patients treated at Universitas Mataram Hospital from 2020 to 2022.
Methods: A descriptive retrospective design was applied using medical records and patient registries from the Dermatology and Venereology Clinic of Universitas Mataram Hospital. All leprosy cases diagnosed between August 2020 and July 2022 (n = 85) were included. Variables analyzed included sex, age group, leprosy type, reaction status, disability grade, and relapse status. Data were presented as frequencies and percentages.
Results: During the study period, 1,912 patient visits were recorded, with 85 visits (4.44%) related to leprosy. Female patients accounted for 53.8% of cases. The adult age group represented the largest proportion (42.4%). Multibacillary type was predominant (84.6%). Leprosy reactions occurred in 61.5% of cases. Disabilities were observed in 50% of patients, and 11.5% of multibacillary cases experienced relapse 12 months after release from treatment.
Conclusion: The findings highlight the high proportion of multibacillary cases, frequent leprosy reactions, and substantial disability burden, reflecting delayed diagnosis and gaps in early detection. Strengthened surveillance systems, improved community awareness, and sustained multidrug therapy are essential strategies to support global health security efforts toward the “Zero Leprosy” target.

Keywords: leprosy, patient profile, health security, Indonesia, West Nusa Tenggara

ID: 1507

HEALTH SYSTEM RESILIENCE IN THE CONTEXT OF ACUTE RESPIRATORY INFECTIONS IN NTB: A NARRATIVE REVIEW

Baiq Siti Malikah A M[1], Metta Octora[1]

[1]Master of Public Health Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: atqiyalikha@gmail.com

ABSTRACT

Background and Objectives: Acute respiratory infections (ARI) remain a major health problem in Indonesia, particularly in West Nusa Tenggara (NTB). Local cultural and environmental factors such as post-harvest land burning, dry climate, housing density, and pollution exposure are key determinants. Ministry of Health data show ARI incidence in NTB reaches 25–35%, affecting vulnerable groups including children, the elderly, and rural populations. This review aims to analyze the limited resilience of the NTB health system against ARI.
Methods: This study employed a literature review approach.
Results: Local studies indicate that post-harvest land burning contributes 15–20% to ARI incidence in NTB. Multisectoral strategies that are environmentally friendly and economically beneficial include: (1) health sector initiatives such as community-based environmental education and clean living behavior campaigns, and ARI screening at integrated health posts; (2) agricultural cooperation through the promotion of eco-friendly biotechnology using organic waste for compost and biocompost, mulching techniques, and biochar to maintain soil moisture; and (3) implementation of simple early warning technologies for air pollution.
Conclusion: NTB's health resilience in addressing ARI due to agricultural pollution requires a multisectoral approach. Key efforts include enhancing public awareness through integrated education, providing sustainable biotechnology alternatives to strengthen food security, improving digital surveillance, and upgrading health worker capacity through continuous training. Such collaboration supports the achievement of the Sustainable Development Goals (SDGs) and positions NTB as a model of a resilient health system in high-risk and hard-to-reach areas

Keywords: acute respiratory infections, health resilience, agricultural pollution, multisectoral mitigation, surveillance

ID: 1509

EVALUATION OF ANTIBIOTIC UTILIZATION PATTERN AT PHARMACY X IN MATARAM CITY USING WHO AWARE CLASSIFICATION

Amira[1], Metta Octora[1]

[1]Magister Ilmu Kesehatan Masyarakat, Fakultas Kedokteran dan Ilmu Kesehatan, Universitas Mataram, Nusa Tenggara Barat, Indonesia
*Corresponding author: amirageys84@gmail.com

ABSTRACT

Background and Objectives: Antimicrobial resistance (AMR) is a global health threat mainly caused by irrational antibiotic use, such as unnecessary prescribing, wrong dosage or duration, and use without indication. In Indonesia, about 183,500 deaths in 2021 were linked to AMR, with West Nusa Tenggara (NTB) among provinces with high non-prescription antibiotic use. Community pharmacies play a key role in antibiotic distribution and are important for evaluating use patterns. To address irrational use, the World Health Organization (WHO) introduced the AWaRe (Access, Watch, and Reserve) classification to promote rational prescribing. This study aimed to describe antibiotic utilization in community pharmacies based on AWaRe and assess the proportion of Access antibiotics against WHO targets.
Methods: This observational retrospective study analyzed antibiotic prescriptions from selected community pharmacies between January and June 2025. Purposive sampling was used, and data were analyzed descriptively using Microsoft Excel. Antibiotics were then classified according to the WHO AWaRe framework into three categories: Access, Watch, and Reserve.
Results: A total of 11,565 antibiotic prescriptions were recorded from one community pharmacy, prescribed by doctors from several healthcare facilities in Mataram. Cefixime (Watch group) was most prescribed (38.2%), followed by Amoxicillin (Access group) at 20.9%. Access antibiotics accounted for 45.78%, below the WHO target of 60%.
Conclusion: Antibiotic use in Mataram is dominated by Watch group antibiotics, indicating imbalance and potential AMR risk.

Keywords: antimicrobial resistance, AWaRe classification, Access antibiotics, Watch antibiotics

ID: 1510

RISING BURDEN ACUTE KIDNEY INJURY IN INDONESIA: LESSONS FROM A DISTRICT-LEVEL REFERRAL HOSPITAL IN WEST LOMBOK

Ni Wayan Erviani[1], Muthia Cenderadewi[2], Rohani[3]

[1]Master Of Public Health Study Program, University Of Mataram
*Corresponding author: niwayanerviani3@gmail.com

ABSTRACT

Background and Objectives: Acute Kidney Injury (AKI) is a major global health concern, affecting over 850 million people and projected to become the fifth leading cause of death by 2040. Despite its high morbidity and mortality, AKI often remains underdiagnosed, particularly in low- and middle-income countries where access to diagnostics and treatment is limited. In Indonesia, regional hospitals frequently face challenges in early detection and effective management. This study aims to describe the trends, prevalence, and key determinants of AKI at Patut Patuh Patju Hospital, a district-level referral hospital in West Lombok, Indonesia.
Methods: This descriptive study analyzed secondary data from medical records of AKI patients treated between 2023 and 2025 across three inpatient units: the Intensive Care Unit (ICU), Kenanga Pavilion (surgical ward), and Nusa Indah Pavilion (general medical ward). The study also examined annual case trends, unit-specific prevalence, and contributing determinants.
Result: Total AKI cases rose sharply from 18 in 2023 to 125 in 2025. The most substantial year-on-year increase occurred in the Nusa Indah Pavilion, where cases rose from 5 in 2023 to 56 in 2024 (a 1,020% increase), followed by a further 57% increase to 88 cases in 2025, while ICU cases remained relatively stable. This shift indicates a growing burden in general inpatient wards particularly outside of ICU settings, likely reflecting delayed diagnosis and increasing incidence of hospital- or community-acquired AKI. Determinant factors included limited diagnostic capacity, late clinical recognition, and prevalent comorbidities such as hypertension and diabetes mellitus.
Conclusion: The rising AKI burden in this regional hospital underscores the need for earlier detection, improved service capacity, and better chronic disease management, critical for mitigating AKI impact.

Keywords: Acute Kidney Injury, Prevalence, Determinants, LMICs, Indonesia

ID: 1511

UNVEILING THE TRENDS: DR-TB INCIDENCE AND PATIENT CHARACTERISTICS IN CENTRAL LOMBOK REGENCY, 2020-2024

M. Sulhi Sukma Negara[1,2*], Nurhidayati[3], Deasy Irawati[4], Marisa Syavitri Dilaga[4]

[1]Master of Public Health Program, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[2]Department of Laboratorium, Public Health Center of ubung, Central Lombok, Indonesia
[3]Department of Pharmacology, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[4]Department of Public Health, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
*Corresponding author: sulhinegara1@gmail.com

ABSTRACT

Background: Despite ongoing progress in disease control, Tuberculosis (TB) remains a major global health problem, with 10.8 million cases and 1.3 million deaths annually. Indonesia ranks second in terms of TB burden. The emergence of drug-resistant TB (DR-TB) further complicates TB control efforts. In West Nusa Tenggara (NTB) Province, particularly in Central Lombok Regency, 1,492 TB cases were recorded, reflecting a high disease burden and the potential for an increasing trend in DR-TB cases. This study aims to analyze the incidence trend of DR-TB in Central Lombok during 2020–2024 and to identify patient characteristics.
Methods: This study employed a retrospective design using secondary data from the SITB application in Central Lombok Regency for the period 2020–2024. The sample included all DR-TB cases through total sampling. Descriptive analysis was applied to examine incidence trends, demographic profiles, and treatment history.
Results: The incidence of DR-TB fluctuated over the study period: 0.316 (2020), rising to 0.791 (2021), then decreasing in 2022–2023 (0.488 and 0.453, respectively), increasing again to 0.603 (2024). Cases were predominantly among the productive age group, with 54.5% male and 45.5% female patients. In terms of treatment history, most were new cases (57.6%), while 42.2% had a history of treatment failure.
Conclusion: DR-TB remains a significant public health concern in Central Lombok, with a tendency toward an increase in 2024. These findings highlight the urgent need to strengthen early detection, improve treatment adherence, and optimize healthcare services to support TB elimination targets.

Keywords: TB, DR-TB, Incidence, Central Lombok

ID: 1512

ASSOCIATION OF PLATELET COUNT AND HEMATOCRIT VALUE WITH LENGTH OF HOSPITAL STAY AMONG DENGUE PATIENTS IN HOSPITAL X, MATARAM: IMPLICATIONS FOR GLOBAL HEALTH SECURITY

Aulia Atira Himayana[1], Metta Octora[1]

[1]Master of Public Health Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: auliaatirahimayana@gmail.com

ABSTRACT

Background and Objectives: Dengue fever remains a global health concern with more than 100 million cases annually. In 2023, Indonesia reported 114,720 cases with 894 deaths, resulting in a case fatality rate (CFR) of 0.78%. Dengue detection can be supported through routine blood examinations, including platelet count and hematocrit value, which may serve as predictors of hospital length of stay. Such laboratory parameters play a crucial role in strengthening health facilities' capacity for early detection and response to dengue outbreaks, with significant implications for global health security. This study aimed to examine the association between platelet count and hematocrit value with the length of hospital stay among dengue patients in Hospital X, Mataram.
Methods: This was an observational analytic study using medical record data of 73 dengue patients hospitalized in Hospital X, Mataram, during 2024–2025. Data were analyzed using Spearman correlation test with a significance level of $p<0.005$.
Results: The analysis revealed a significant correlation between platelet count and length of hospital stay ($p<0.001$; $r=0.422$). However, no significant correlation was found between hematocrit value and length of stay ($p=0.620$; $r=0.059$).
Conclusion: Platelet count was significantly associated with hospital stay duration, although the positive correlation differs from most previous literature, which typically shows a negative association. This finding suggests that clinical context and disease phase at hospital admission may influence the relationship. The study highlights the importance of hematological parameters in early detection and patient management, reinforcing early warning systems within the framework of Global Health Security.

Keywords: Dengue fever, platelet count, hematocrit value, length of hospital stay

ID: 1513

MAPPING THE RISK FACTORS OF DENGUE FEVER WITHIN THE EPIDEMIOLOGIC TRIANGLE (AGENT-HOST-ENVIRONMENT): A LITERATURE REVIEW 2020-2025

Siti Rosidah[1], Anom Josafat[1]

[1]Faculty of Medicine and Health Sciences, University of Mataram
*Corresponding author: dr.rosyda@gmail.com

ABSTRACT

Background: Dengue fever is a global public health problem with rising incidence in both tropical and non-tropical regions. Over the last two decades, its distribution has widened, driven by globalization, rapid urbanization, cross-border mobility, and climate change. The epidemiology of dengue is influenced by risk factors within the epidemiologic triangle (*agent-host-environment*), including viral variation, host susceptibility, and environmental conditions that enable transmission.
Methods: A systematic search was conducted in PubMed, Scopus, and ProQuest to identify full-text English articles published between 2020-2025 that examined dengue risk factors. The search strategy applied a combination of MeSH terms, keywords, and Boolean operators. Twenty-one articles met the inclusion criteria and were analyzed.
Results: Determinants were identified across the three domains of the epidemiologic triangle. *Agent* factors included viral serotype variations (DENV-1 and DENV-2) and antibody-dependent enhancement (ADE), both associated with secondary infection and more severe outcomes. *Host* factors including extremes of age (children and elderly), chronic comorbidities (diabetes, hypertension, chronic kidney disease, cirrhosis), and pediatric conditions such as obesity, hepatomegaly, and thrombocytopenia, which increased the risk of dengue shock syndrome. *Environmental* factors including maximum temperature, rainfall, puddle, houseing density, and resident behavior. Most studies showed consistent positive associations, though effect sizes varied across regions.
Conclusion: Dengue is a multifactorial disease shaped by the interaction of *agent*, *host*, and *environment*. This review highlights the need for integrative and evidence-based approaches grounded in the epidemiologic triangle to enhance prevention, optimize clinical management, and guide adaptive public health policies responsive to the evolving dynamics of dengue transmission.

Keywords: Dengue fever, risk factors, epidemiologic triangle, agent-host-environment, literature review

ID: 1514

IMPACT OF A DENGUE CONTROL PROGRAM IN A RURAL AREA IN INDONESIA: A CASE STUDY

Annisa Ayu Zulfia[1], Nurul Paramaiswari[1], Adnanto Wiweko[1], Astri Ferdiana[1]

[1]Master of Public Health Program, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
*Corresponding author: annisaayuzulfia@gmail.com

ABSTRACT

Introduction: Dengue Hemorrhagic Fever (DHF) is a major public health problem in tropical countries such as Indonesia. Previous research on the evaluation of larvae monitoring and DHF, particularly in rural areas, remains limited. The purpose of this study is to analyze the achievements of the DHF control program in one rural village in West Nusa Tenggara Province in Indonesia.
Methods: This is a case study using secondary data obtained from the primary health center (PHC) surveillance reports between 2023-2024, data analyzed included DHF case trends, House Index, and Larva-Free Index (LFI) from Periodic Larval Monitoring (PLM) results, as well as program reports.
Results: Out of a total of 65 houses inspected, mosquito larvae were found in seven houses, resulting in an LFI of 89% in 2023, which was still below the national target. After re-inspection in May 2024, the LFI increased to 97%, meeting the national target. Key supporting factors included the involvement of two cadres who routinely conducted PJB every three months, as well as DHF education at the hamlet level conducted four times with a total of 50 participants, supported by the village government and cross-sectoral collaboration. Although the 2023 LFI was still below target, DHF case trends decreased significantly, with only two cases recorded by the end of 2024.
Conclusion: The implementation of PJB and PSN has contributed to the reduction of DHF cases. in the village. Strengthening surveillance, participation cadres, and community education is necessary to support the achievement of LFI ≥95% and prevent outbreaks.

Keywords: Dengue Hemorrhagic Fever, Periodic Larva Monitoring, Mosquito Larval Source Management, Larva-Free Index, Case Study

ID: 1515

EARLY DETECTION OF TUBERCULOSIS IN PRIMARY HEALTH CENTERS OF WEST LOMBOK (2023-2024): A MIXED-METHODS STUDY

Khoviya Yuwina Selinada Harmi[1,2], Nurhidayati[3], Deasy Irawati[4], Marisa Syavitri Dilaga[4]

[1]Master of Public Health Program, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[2]General Practitioner, Patut Patuh Patju Hospital, West Lombok, West Nusa Tenggara, Indonesia
[3]Department of Pharmacology, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[4]Department of Public Health, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
*Corresponding author: viya27ixl@gmail.com

ABSTRACT

Background and Objectives: Tuberculosis (TB) remains a major global health challenge, with Indonesia among the countries with the highest TB burden. Early detection is essential to interrupt transmission and reduce morbidity. West Lombok has a high TB prevalence, but case detection is still suboptimal. This study explored early TB detection practices using a mixed-methods approach.
Methods: A convergent parallel mixed-methods design was applied. Quantitative data from the TB Information System (SITB) covering case detection, diagnostic methods, and contact investigation were collected from four health centers (Kediri, Sekotong, Narmada, and Labuapi) in 2023–2024. Data were analyzed descriptively. Qualitative data were obtained through semi-structured interviews with TB program managers, thematically analyzed, and integrated at the interpretation stage.
Results: Sekotong and Kediri consistently reported the highest TB cases, while Narmada had the lowest. Contact investigation coverage varied: Narmada and Labuapi consistently achieved >90%, Sekotong improved from 42.7% to 70.5%, whereas Kediri declined to 49.5% despite rising cases. Qualitative findings highlighted barriers such as low community willingness, lack of identity documentation, and limited field resources.
Conclusion: Early TB detection in West Lombok shows regional disparities. Narmada and Labuapi demonstrate good practices, while Kediri requires stronger interventions. Strengthening community-based strategies, improving health education, and enhancing administrative support are critical to achieving more effective and equitable TB control.

Keywords: Tuberculosis, Early Detection, Contact Investigation, Primary Health Care, West Lombok

ID: 1516

SOCIOECONOMIC STATUS AND TUBERCULOSIS INCIDENCE IN INDIA AND INDONESIA: A NARRATIVE REVIEW OF TWO HIGH-BURDEN COUNTRIES

Fitri Rahmawati[1], Muthia Cenderadewi[1]

[1] Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
*Corresponding author: v3.rahmawati88@gmail.com

ABSTRACT

Background: Tuberculosis remains a leading global cause of death, with India and Indonesia bearing the highest burdens. This review examines how socioeconomic status influences TB incidence in these two countries, where TB-related mortality is among the world's highest.
Methods: A narrative review of peer-reviewed articles published between 2015 and 2025 was conducted using Google Scholar, selected for its broader coverage of regional studies often missed by PubMed or Scopus. The search string applied was: *allintitle: ("socioeconomic" OR "income" OR "poverty") AND ("tuberculosis" OR "TB") ("India" OR "Indonesia")*. Ten eligible studies were analysed thematically.
Results: Low socioeconomic status was consistently associated with higher TB incidence. In India, multidimensional poverty nearly doubled TB prevalence among the poor compared with the non-poor (480 vs. 250 per 100,000; OR 1.82). In Indonesia, households with low income had more than twice the odds of TB, with per capita income and housing density showing strong associations. Education beyond secondary school was protective, while children from households with lower parental education (aOR 1.377–1.871) and lower economic status (aOR 1.277–1.832) faced significantly higher risk. Occupations such as farming and manual labor further increased risk. Overcrowding, poor housing, and inadequate sanitation amplified transmission, while smoking compounded vulnerability. Spatial analyses demonstrated clustering of TB in low-income, densely populated neighbourhoods.
Conclusions: Socioeconomic deprivation is a major driver of TB incidence in India and Indonesia. Achieving the WHO End TB Strategy and SDGs requires integrating social protection, poverty reduction, education, and housing with biomedical interventions.

Keywords: Tuberculosis; Socioeconomic Status; Poverty; Education

ID: 1517

METAL NANOPARTICLES (AuNPs) AN INNOVATIVE SOLUTION TO CONTROL THE ANTIMICROBIAL(RA) RESISTANCE OF THE PENICILLIN GROUP TO *E-COLI AND S-AUREUS BACTERIA*

Selvy Hubayya[1], Anom Josafat[1], Rifana Cholidah[1], Nila Febriana Iswara[1]
[1]Magister of Public Health, Medical and Health Science Faculty, Universitas of Mataram, Mataram, Indonesia
*Corresponding author: selvyhubayya434@gmail.com

ABSTRACT

Background: Antimicrobials have proven to be beneficial to human life, but irrational use can lead to antimicrobial resistance (AR). According to the WHO, Southeast Asia has the highest number of AR cases in the world, with Indonesia ranking 78th out of 204 countries. AMR increases the risk of bacterial sepsis, which is often caused by S. aureus and E. coli. The incidence of sepsis at Praya Central Lombok Regional General Hospital was 79 out of 219 neonates. One way to control AMR is by using metal nanoparticles. This study was conducted to determine the most effective type of nanoparticle for sepsis-causing bacteria that are resistant to penicillin.
Methods: data collection was carried out by reviewing literature collected from Google Scholar with the keywords "antimicrobial resistance, Metal nanotechnology, Penicillin antibiotics.
Results: Of the 10 articles reviewed, it was mentioned that (Ag) had an inhibition zone of 8.55 mm against S. aureus and an inhibition zone of 7.82 mm against E. coli. The inhibition zone for S. aureus was 16.56 mm and for E. coli was 12.2 mm. It was mentioned that AuNPs had antibacterial activity against E. coli of 69.53 and Amox-AuNPs of 82.39, while ZnO had an inhibition zone of 16.60 mm against E. coli.
Conclusion: The metal nanoparticles that are best used to improve the effectiveness of antibiotics are the types of nanoparticles (AuNPs) with the highest antibacterial effectiveness capabilities compared to nanoparticles (Ag) and (ZnO).

Keywords: Antimicrobial Resistance, Metal Nanoparticles, Penicillin Antibiotics

ID: 1518

STRENGTHENING HOSPITAL COMPETENCE AGAINST EMERGING INFECTIOUS DISEASES: WEST NUSA TENGGARA'S PATH TO GLOBAL HEALTH SECURITY

Adi Wira Perdhana[1], Metta Octora[2]

[1] Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
*Corresponding author: klinikadiwira@yahoo.com

ABSTRACT

Background: West Nusa Tenggara (NTB) is an international tourist destination and departure point for umrah and hajj pilgrims, increasing the risk of emerging infectious diseases (EIDs). Preparedness of health facilities, one of the five pillars of global health security, is critical. This study aims to assess hospital competence in NTB in managing EIDs.
Methods: A mix descriptive and cross-sectional analytic studies using secondary data from the Indonesian Ministry of Health accessed on September 21, 2025. Competence was assessed across three service areas: infectious and parasitic diseases, pulmonary and respiratory diseases, and dermatology and venereal diseases.
Results: Among 46 hospitals in NTB, 6 (13.0%) were competent in all three services and 13 (28.3%) in one service only. By domain, 17.4% were competent in infectious and parasitic diseases, 17.4% in pulmonary and respiratory diseases, and 50% in dermatology and venereal diseases. Sumbawa had the highest proportion of competent hospitals (33.3%), while Dompu, North Lombok, and West Sumbawa had none. Competence correlated with hospital class: Class A (100%), Class B (75%), Class C/D (24%), Class D pratama (0%). Each increase in hospital class level raised the chance of full competence by approximately 19 times.
Conclusion: Hospital preparedness for EIDs in NTB is uneven. Sumbawa appears proportionally most prepared, while Dompu, North Lombok, and West Sumbawa are critically underprepared. Key strategies include strengthening Class C–D hospitals to reach intermediate standards and positioning larger hospitals as regional and national referral champions.

Keywords: Emerging Infectious Disease, preparedness, hospital competence, West Nusa Tenggara, Indonesia

ID: 1519

HIV SCREENING MODALITIES IN THE CONTEXT OF GLOBAL HEALTH SECURITY IN WEST LOMBOK DISTRICT

Baiq Maulida Amani[1], Metta Octora[1]

[1]Master of Public Health Program, Faculty of Medicine and Science, University of Mataram, Mataram, Indonesia
*Corresponding author: baiqmaulidaamani@gmail.com

ABSTRACT

Background and Objectives: Human Immunodeficiency Virus (HIV) remains a major concern in the context of *Global Health Security* (GHS), particularly in early detection and disease control. HIV screening is an important indicator for case detection, transmission assessment, and health system resilience. West Lombok District has implemented HIV screening programs with progressively increasing annual targets; therefore, an evaluation of achievements is necessary as part of efforts to strengthen GHS.
Methods: This study have a descriptive observational design using secondary data from the HIV screening *Minimum Service Standards* (SPM) achievement reports of the West Lombok District Health Office for the periods of January–December 2023 and January–December 2024. The analysis was conducted by comparing targets and absolute achievements, as well as percentages, between years and across primary health centers (*puskesmas*).
Results: In 2023, the HIV screening target was 26,673 with an achievement of 23,231 (87.10%), with variations among health centers ranging from 16.69% to 114.17%. In 2024, the target increased to 31,295, and the achievement rose to 37,257 (117.24%). Nearly all health centers reached more than 90% of their targets, and most exceeded 100%. There was a substantial increase in both targets and absolute achievements compared to the previous year.
Conclusion: The HIV screening coverage and absolute targets in West Lombok District in 2024 increased compared to the previous year. This indicates a strengthening of early detection capacity in line with GHS principles, particularly in the prevention of infectious diseases.

Keywords: HIV, Screening, Global Health Security

ID: 1520

CLIMATE-RELATED FACTORS AND DENGUE HEMORRHAGIC FEVER: AN ECOLOGICAL STUDY IN MATARAM MUNICIPALITY

Erika Widiastuti[1], Lina Nurbaiti[1], Amelia Ramdani Hasby[1]

[1]Master of Public Health Program, Medicine and Health Science Department, Mataram University
*Corresponding author: widiastutierika@gmail.com

ABSTRACT

Background and Objectives: The number of dengue hemorrhagic fever (DHF) cases has increased 30-fold during the past 50 years, globally. In Indonesia, dengue hemorrhagic fever remains a public health problem. Mataram Municipality was classified as endemic area of dengue, experienced a decline in incidence, from 86,92 in 2022 to 63,45 in 2023. Climate variations have been identified as significant predictors in dynamic dengue expansion. This study analyzed the monthly incidence of dengue in Mataram Municipality over 24 months from 2022-2023 in relation to climate-related factors.
Methods: This ecological study analyzed the correlation between climate-based factors comprises precipitation, rainfall duration, humidity, temperatures, wind speed, and monthly dengue incidence using the Spearman correlation test. Dengue surveillance data for 2022-2023 were obtained from Mataram Municipal Health Department. Climate data were retrieved from Statistic Indonesia-Mataram Municipal Office.
Results: Mataram Municipality recorded the highest incidence of dengue hemorrhagic fever in January 2022 (20.9) and the lowest (1.14) in September 2023. The highest precipitation was observed in February 2023 at 454 mm while the lowest (0 mm) occurred in August 2023. The longest rainfall duration was recorded in November 2023 lasting 26 days. The highest average temperature (28°C) was also observed in November 2023 whereas the highest humidity (88%) was recorded in February 2023.
Conclusions: It can be concluded that precipitation, rainfall duration, and humidity showed a moderately strong correlation with the dengue incidence rate. In contrast, temperatures and wind speed showed no significant correlation. These findings could serve as the basis for developing a predictive model of dengue incidence based on climate factors.

Keywords: dengue hemmorhagic fever, incidence rate, climate, rainfall, humidity.

ID: 1521

TRACING CLIMATE'S FOOTPRINTS IN DENGUE EPIDEMIOLOGY: DECODING A DECADE OF DENGUE TRENDS, A SECONDARY DATA ANALYSIS FROM WEST NUSA TENGGARA (2015–2024)

Eva Hikmatul Damayanti[1,2*], Nurhidayati[3], Deasy Irawati[4], Marisa Syavitri Dilaga[4]

[1]Master of Public Health Program, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[2]Department of Emergency, Risa Sentra Medika Hospital, Mataram, Indonesia
[3]Department of Pharmacology, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[4]Department of Public Health, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
*Corresponding author: ehdamayanti@gmail.com

ABSTRACT

Background: Dengue remains a pressing public health issue in tropical regions, yet the influence of climate varies across local contexts. This study aimed to describe a decade of dengue epidemiology in West Nusa Tenggara (NTB), Indonesia, and to examine its association with climatic variability.
Methods: Secondary annual data from 2015–2024 were analyzed, covering dengue incidence, mortality, and case fatality rates alongside meteorological indicators (average and maximum temperature, relative humidity, rainfall, rainy days, sunshine duration). Descriptive statistics were performed, followed by simple linear regression to explore associations. Time series modeling was applied to assess predictive potential.
Results: Dengue incidence ranged between 10.7 and 88.9 per 100,000 population (mean 51.7/100,000), with case fatality rates consistently below 2%. Year-to-year fluctuations coincided with anomalous events such as the 2018 earthquake and COVID-19 pandemic. Linear regression revealed consistent trends: relative humidity positively correlated with incidence (B ≈ +9.8, R^2 up to 0.45, p = 0.071 when pandemic years excluded), while average temperature and sunshine duration were inversely correlated. Rainfall and rainy days contributed weak, inconsistent associations. Time series analysis (Holt exponential smoothing) captured short-term variability (Stationary R^2 = 0.82) but showed high prediction error (MAPE 44%).
Conclusion: In NTB, dengue incidence fluctuated each year, shaped by climate variation as well as extraordinary events like earthquakes and the COVID-19 outbreak. Humidity showed the most consistent link with incidence. Time series modeling reflected short-term patterns but lacked precision, highlighting the importance of localized surveillance systems.

Keywords: dengue, climate change, epidemiology, humidity, west nusa Tenggara

ID: 1522

INFLUENZA A IN SOUTHEAST ASIA: TEN-YEAR TRENDS IN INCIDENCE, DISTRIBUTION, AND RISK FACTORS

Sulhiani Anggraini[1], Anom Josafat[1], Rifana Cholidah[1], Nila Febriana Iswara[1]

[1]Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: sulhianianggraini75@gmail.com

ABSTRACT

Background and Objectives: Influenza A is an emerging and re-emerging disease with pandemic potential, significantly contributing to global morbidity and mortality. Southeast Asia is a hotspot due to high population density, cross-border mobility, live poultry markets, human–animal interactions, and tropical–subtropical climates. Global Health Security (GHS) and the International Health Regulations (IHR 2005) emphasize the importance of surveillance, laboratory capacity, cross-border response, and compliance. Although the 2009 H1N1 pandemic demonstrated Influenza A's pandemic potential, no comprehensive synthesis has yet examined its incidence, distribution, and risk factors in Southeast Asia over the past decade (2015–2025).
Methods: A narrative review was conducted using PubMed, Scopus, Google Scholar, and official reports from WHO FluNet/GISRS, Ministries of Health, and ASEAN. Eligible sources comprised peer-reviewed articles and official surveillance reports in English or Indonesian focusing on Influenza A in Southeast Asia. Editorials, opinion papers, and studies outside the region were excluded.
Results: Indonesia and Myanmar typically reported one annual Influenza peak, while Thailand, Vietnam, and the Philippines experienced two peaks influenced by climate. Subtype dominance alternated annually between A(H1N1) pdm09 and H3N2. FluNet reported Southeast Asia's positivity rate (18.5%) above the global average (16.2%). A sharp decline occurred in 2020 during COVID-19, followed by resurgence in 2022–2023, notably in Indonesia, Thailand, and Vietnam. Key risk determinants included human–poultry contact, cross-border mobility (Thailand–Myanmar, Malaysia–Singapore), urban density (Jakarta, Manila, Bangkok), and low vaccination rates.
Conclusion: Influenza A remains a major public health concern in Southeast Asia. Strengthening sentinel surveillance, genomic capacity, timely GISRS reporting, and inter-country coordination under IHR is essential to strengthen regional health security.

Keywords: Influenza A, Southeast Asia, Global Health Security, Surveillance, Risk Factors

ID: 1523

HIV/AIDS CASE TRENDS IN INDONESIA IN 2023-2024: RISK FACTORS FOR TRANSMISSION AND IMPLICATIONS FOR THE SDGs

Desak Ayu Puspentarini[1,2]*, Nurhidayati[3], Marisa Syavitri Dilaga[4], Deasy Irawati[4]

[1]Master of Public Health Program, Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
[2]Quantum Laboratory Mataram, Indonesia
[3]Departement of Pharmacology, Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
[4]Departement of Public Health, Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
*Corresponding author: desakayu042@gmail.com

ABSTRACT

Background: HIV remains a public health challenge in Indonesia, with case numbers continuing to rise. The Sustainable Development Goals (SDGs) aim to end the HIV/AIDS epidemic by 2030. Analysis of age distribution and risk factors is important for formulating prevention policies. This study aims to analyze HIV case trends in Indonesia for the 2023-2024 period based on the number of cases, age groups, risk factors, and their relevance to the achievement of SDG 3.3.
Methods: A descriptive study using secondary data from the Indonesian Ministry of Health's 2023-2024 reports. The analysis focused on the number of new cases, age distribution, risk factors for transmission, and their relevance to the HIV/AIDS elimination target.
Results: The number of HIV cases increased from 57,299 (2023) to 63,707 (2024), mostly found in the 25-49 age group. The main risk factors were sexual behavior, namely homosexual/MSM at 31% (2023) and 33% (2024), and heterosexual at 14% (2023) and 26.9% (2024). Transmission through needle sharing was recorded as very low, <1% annually.
Conclusion: The trend of people living with HIV continues to increase and is still far from the SDG 3.3 target. The dominance among people of productive age and risky sexual behavior emphasizes the importance of key population-based prevention strategies, expansion of HIV testing, and optimization of the 95-95-95 program. These efforts need to be strengthened with a focus on equality (SDG 10) and cross-sector collaboration (SDG 17) to accelerate HIV elimination in Indonesia.

Keywords: HIV, risk factors, age, SDG, Indonesia

ID: 1524

DINI DETECTION: INCREASING TREND OF MEASLES CASES IN MATARAM CITY, NTB THROUGH IMMUNIZATION AND SURVEILLANCE IN THE CONTEXT OF GLOBAL HEALTH SECURITY

Fatmi[1,2*], Nurhidayati[3], Deasy Irawati[4], Marisa Syavitri Dilaga[4]

[1]Master of Public Health Program, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[2]Ampenan Community Health Center, Mataram City Health Department, Mataram, Indonesia
[3]Department of Pharmacology, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[4]Department of Public Health, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
*Corresponding author: fatmi0722@gmail.com

ABSTRACT

Background and Objectives: Measles remains a global health challenge and has resurged in Mataram City over the past two years (2023-2024) due to suboptimal immunization coverage (<= 95%) and weak surveillance. Within the framework of Global Health Security (GHS), strengthening immunization and early detection through surveillance are key strategies for prevention. This study aims to examine measles trends, the role of immunization, and the effectiveness of surveillance in building health resilience.
Methods: A descriptive–analytic design was applied using secondary data from the Mataram City Health Office (SKDR), WHO, and the Ministry of Health. Reported measles cases (2023–2024), immunization coverage, and population density were analyzed descriptively and Spearman correlation.
Results: Measles cases declined from 98 in 2023 to 50 in 2024, in line with increased basic immunization coverage. Booster coverage (53.8% in 2023; 62.1% in 2024). However, Spearman correlation analysis showed no significant association between booster coverage and measles cases ($r = -0.133$; $p = 0.556$), nor with population density ($r = -0.253$; $p = 0.257$).
Conclusion: Improving immunization coverage to ≥95% and strengthening health center–based surveillance are key strategies for measles control within the GHS framework.

Keywords: Measles, Immunization, Surveillance, Early Detection, Global Health Security

ID: 1525

ACUTE RESPIRATORY INFECTIONS IN UNDER-FIVE CHILDREN AND HOUSEHOLD SECONDHAND SMOKE EXPOSURE: EVIDENCE FROM CENTRAL LOMBOK

Makiyatunnisa [1], Muthia Cenderadewi [1], Rohani[1]

[1]Faculty of Medicine and Health Sciences, University of Mataram
*Corresponding author: makiyatunnisaa@gmail.com

ABSTRACT

Background and objectives: Acute respiratory infections (ARI) remain a leading cause of childhood morbidity and mortality globally, accounting for about 15% of child deaths. Household exposure to secondhand smoke is a preventable but often overlooked risk factor. In Indonesia, smoking prevalence among men exceeds 65%, with most smoking occurring indoors, placing children at particularly high risk. This study aimed to describe weekly trends of ARI cases among under-five children and to assess paternal smoking-related household exposure at Darek Primary Health Center, Central Lombok, in 2024.
Methods: A descriptive observational study was conducted at Darek Primary Health Center, Central Lombok District, using medical records of children <5 years with a clinical diagnosis of ARI (January–December 2024). Inclusion criteria: children <5 years diagnosed with ARI and fathers available for interview; exclusion criteria: children whose fathers were not available for interview and ARI cases from outside the PHC catchment area. A total of 988 ARI cases were documented and analyzed for weekly trend patterns. In addition, a subsample of 120 fathers was purposively selected and interviewed using a structured questionnaire assessing smoking history and household risk factors, including ventilation, crowding, sanitation, cooking fuel, and exclusive breastfeeding.
Results: Over the 12-month study period, 988 ARI cases were recorded (mean: 19 cases per week), with a mid-year peak followed by persistently high case numbers. Among 120 fathers surveyed, 71.7% were active smokers, of whom 74.4% smoked indoors. Average cigarette consumption was 8 sticks/day, with 40% smoking ≥10/day. Children were exposed ≥3 times/week in 65% of families and nearly daily in 20.8%. Despite 58.3% of fathers reporting receipt of health information from PHC health workers, 60% of them continued smoking indoors. Poor ventilation, household crowding, and solid fuel use further compounded the cumulative risk.
Conclusion: Secondhand smoke exposure in households with ARI cases remained high, mirroring the sustained ARI burden. Low-cost, high-impact interventions such as smoke-free home policies, improved ventilation, cleaner fuel use, routine screening, and counseling should be prioritized to reduce preventable cases and strengthen primary healthcare.

Keywords: Acute Respiratory Infections; Secondhand Smoke Exposure; Smoking; Child Health; Disease Prevention

ID: 1526

CASE DETECTION OF TUBERCULOSIS AT SITI HAJAR ISLAMIC HOSPITAL MATARAM IN 2022–2024: IMPLICATIONS FOR THE DETECTION PILLAR OF GLOBAL HEALTH SECURITY

Dedi Arba'in Rahmadi [1], Lina Nurbaiti [1], Amelia Ramdani Hasby [1]

[1]Master of Public Health Study Program, Faculty of Medicine and Health Sciences, University of Mataram, West Nusa Tenggara
*Corresponding author: arbaindedi4@gmail.com

ABSTRACT

Background and Objectives: Tuberculosis (TB) caused by the bacterium *Mycobacterium tuberculosis*. TB is a global health problem and Indonesia is one of the countries with quite high cases in the world. Accurate early detection is an essential foundation in efforts to control this disease. This report presents a retrospective analysis of TB case detection data at the Siti Hajar Mataram Islamic Hospital (RSI) from 2022 to 2024, with the aim of evaluating existing trends and linking them to the Detection Pillar within the framework of Global Health Security (GHS).
Methods: Using descriptive case studies and secondary data from hospital registers.
Results: It was found that there was a consistent trend of increasing cases, namely 135 cases in 2022, 139 cases in 2023, and 142 cases in 2024. This increase is interpreted as a positive indication of strengthening detection capacity at the institutional level. Further analysis shows that the performance of RSI Siti Hajar Mataram directly contributes to the three main components of the GHS Detection Pillar: strengthening the surveillance system through accurate data reporting, increasing laboratory capacity with the use of modern diagnostic technology, and empowering health workers on the front line.
Conclusion: The report concludes that case detection efforts at local health facilities, such as RSI Siti Hajar Mataram, are not only important for disease control at the community level, but are also a vital element that builds better global health security governance.

Keywords: Case Detection, Global Health, Tuberculosis in Indonesia, Siti Hajar Islamic Hospital Mataram, Security.

ID: 1527

VIRTUAL REALITY FOR PAIN AND ANXIETY MANAGEMENT IN THE FIRST STAGE OF LABOR: A SYSTEMATIC REVIEW AND META-ANALYSIS OF ITS POTENTIAL AS A NON-PHARMACOLOGICAL INTERVENTION IN RANDOMIZED CONTROLLED TRIALS

Dewa Ngakan Nyoman Karyana[1*], I Putu Reza Wedangga[1], Komang Dewi Savitri[1], Rifqi Nurfadillah[1], I Wayan Putra Kesumantara Wiguna[1], Farhan Aqil Putra Hermawan[1]

[1]Medical Education Program, Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
*Corresponding author: dewakariyana22@gmail.com

ABSTRACT

Background and Objectives: Childbirth is one of the most painful physiological experiences, with over 85% of primiparas and 60% of multiparas rating labor pain as intolerable. Excessive pain and anxiety can trigger sympathetic overactivity, impair contractions, and increase complications. Although epidural analgesia is effective, its risks highlight the need for safe alternatives. Virtual reality (VR) provides immersive distraction that may reduce pain and anxiety, but evidence remains limited. Therefore, we conducted a systematic review and meta-analysis to evaluate the potential of VR in reducing pain and anxiety during the first stage of labor.
Methods: This study followed the Preferred Reporting Item for Systematic Review and Meta-Analysis (PRISMA), we systematically searched PubMed, Cochrane, Science Direct, and Wiley for relevant literature up to September 20th, 2025. Risk of bias was assessed using the Cochrane Risk of Bias (RoB) 2.0 tool. A random-effects model calculated pooled standardized mean differences (SMD) with 95% confidence intervals.
Results: Ten RCTs involving 807 participants assessed pain intensity. VR significantly reduced pain compared to controls (SMD = –1.19; 95% CI: –1.73 to –0.64; $p < 0.00001$), though heterogeneity was high ($I^2 = 92\%$). Seven RCTs with 598 participants evaluated anxiety, showing a significant reduction with VR (SMD = –1.06; 95% CI: –1.76 to –0.36; $p < 0.00001$; $I^2 = 93\%$).
Conclusion: This meta-analysis shows that VR effectively reduces labor pain and anxiety, with clinically meaningful benefits despite high heterogeneity. Further high-quality RCTs, standardized RCTs are needed to confirm these results and to explore factors contributing to heterogeneity.

Keywords: virtual reality, labor pain, maternal anxiety, meta-analysis.

ID: 1528

THE CHALLENGE OF LEPTOSPIROSIS FOR GLOBAL HEALTH SECURITY

Baiq Zafira Auliadiskanikitha[1], Metta Octora[2]

[1]Master of Public Health, Faculty of Medicine, University Of Mataram, Mataram, Indonesia
Corresponding author: nikithadiska@gmail.com

ABSTRACT

Background and Objectives: Leptospirosis remains a public health problem in tropical countries, including Indonesia. In 2021, there were 734 cases of leptospirosis with 84 deaths (CFR 11.44%). Several regions experienced outbreaks, including Yogyakarta, Semarang, and Kendari. Surveillance plays a role in the rapid and accurate detection and reporting of leptospirosis outbreaks, but its implementation in some areas has not been optimal. The causes include suboptimal cross-sector coordination, ineffective mitigation, weak laboratory capacity, uneven distribution of facilities, limited health personnel, and low diagnostic budgets.
Method: This study utilised a *literature review* method by analysing official reports from the Ministry of Health and scientific publications indexed by Google Scholar and PubMed between 2020 and 2025.
Results: Strengthening prevention and control strategies for leptospirosis through approach of surveillance involving cross-sectoral collaboration, increasing laboratory capacity through training of diagnostic facility distribution analysts, improving human resource qualifications, and integrated digital data. Leptospirosis surveillance has been implemented through an early warning system and sentinel surveillance, but it needs to be supported by multicentre research involving ongoing collaboration, the application of spatial data-based environmental early warning systems, the strengthening of mandatory national reporting through environmental programmes and public education using an Android-based integrated information system-GPS with National Identification Number as indicators, map the case location and store them on a server.
Conclusion: The implementation of leptospirosis programmes in Indonesia has not been optimal. Therefore, adopting a digital technology–driven strategy is essential to enable real-time case monitoring, early detection, and prevent transmission, for strengthening public health protection and global health security.

Keywords: Leptospirosis, Surveillance, Cross-Sectoral, Integrated Information System.

ID: 1529

PREVENTION AND CONTROL STRATEGIES OF MPOX THROUGH A ONE HEALTH APPROACH IN GLOBAL HEALTH: A NARRATIVE REVIEW

Dita Oktaviani[1]*, Nurhidayati[2], Marisa Syavitri Dilaga[3], Deasy Irawati[4]

[1]Master of Public Health Program, Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
[2]Departement of Pharmacology, Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
[3]Departement of Public Health, Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
[4]Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
*Corresponding author:
dhitaoktaviani16@gmail.com

ABSTRACT

Background and Objectives: Monkeypox (Mpox) regained global attention when the World Health Organization (WHO) declared it a Public Health Emergency of International Concern (PHEIC) in 2024. By August 2024, 106,310 cases had been reported globally, including 1,492 deaths in Africa (CFR 3.3%). In Indonesia, 88–213 cases were identified, mainly among men aged 20–40 years who have sex with men (MSM) and those with HIV, with low mortality. Mpox comprises Clade I with higher fatality and Clade II with wider spread but lower mortality. Globalization and human, animal, environment interactions heighten cross-border risks, making clinical responses alone insufficient. This review aims to assess One Health based strategies for Mpox prevention and control.
Methods: This study used a narrative review analyzing WHO and CDC reports, PubMed and Google Scholar indexed publications from 2023 to 2025.
Results: Globally, One Health strategies for Mpox prevention include surveillance, vaccination, education, and transport regulations. PCR remains the gold standard for diagnosis, the JYNNEOS vaccine is up to 86% effective, and tecovirimat shows therapeutic potential despite limited access. In Indonesia, preparedness at points of entry is limited, particularly in isolation facilities and cross-sectoral coordination. WHO, through the IHR 2005, emphasizes the implementation of proportional measures such as visual screening, risk communication, and rapid referral without imposing travel bans.
Conclusion: The One Health approach effectively prevents Mpox and globally strengthens diagnosis, vaccination, education, and regulations while implementation in Indonesia remains limited and requires improved coordination.

Keywords: Monkeypox, One Health, Prevention, Vaccination, Global Health

ID: 1530

RISK FACTORS OF EXTENDED-SPECTRUM BETA-LACTAMASE (ESBL) INFECTION AMONG NEONATES IN EAST LOMBOK, INDONESIA

Resna Hermawati[1]

[1]Master of Public Health Programme, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: resna.lombok@yahoo.com.au

ABSTRACT

Introduction: Extended-spectrum beta-lactamase (ESBL)-producing Klebsiella has been reported as a major cause of bloodstream infections in infants, with prevalence reaching over 40% in some regions. Due to their vulnerability, assessing risk factors of ESBL infections among neonates is crucial. This study aims to analyze the risk factors of ESBL infections among neonates in East Lombok Regency in Indonesia.
Methods: This was a retrospective study on neonatal patients admitted at East Lombok Regency Hospital between January 2023 and December 2024. Culture testing for ESBL bacteria was performed using automated microbiology techniques. Data collected included age, maturity, birth weight, and type of bacteria. Descriptive and bivariate analysis were performed using Jamovi software.
Results and discussion: A total of 105 neonates had culture-confirmed bacterial infections including those producing ESBL. Half of the neonates were early neonates (0–7 days old) (50.5%), premature infants (52.4%), and having low birth weight (54.3%). Out of 105 bacteria identified, 51 (48.6%) were ESBL positive and the most common were Serratia marcescens and Klebsiella pneumoniae (37.3% each). Among neonates with ESBL infection, most were early neonates (86.3%), half were premature infants (49%), and almost half had low birth weight (41.2%). There was a significant association between neonatal age and ESBL (p-value < 0.001, OR=0.03).
Conclusion: Age is a significant risk factor for ESBL infection in neonates. Infection control and prudent use of antibiotics are necessary to prevent the spread of ESBL infection resistance.

Keywords: Age, ESBL, Klebsiella pneumoniae, Serratia marcescens, Neonates

ID: 1538

ADOLESCENT MENTAL HEALTH RESILIENCE IN DISASTER CONTEXTS: A NARRATIVE REVIEW

Ramadhina Nailulmuna[1], Muthia Cenderadewi[1]

[1]Faculty of Medicine and Health Sciences, University of Mataram
*Corresponding author: rdhina29@gmail.com

ABSTRACT

Background: Adolescents are highly vulnerable to mental health problems during and after disasters, including anxiety, depression, and post-traumatic stress disorder (PTSD). Limited access to mental health services and unequal resources worsen these risks. Protective strategies are essential to strengthen resilience. This review synthesised global evidence on approaches to support adolescent mental health in disaster contexts.
Methods: A narrative review was conducted using Google Scholar to capture peer-reviewed articles published up to 2025, including regional and non-Western journals often excluded from PubMed or Scopus. The search used the operator *allintitle: "mental health" "adolescent" "disaster"*. Eligible studies focused on adolescents aged 10–18 years in natural or human-made disaster contexts. Articles were screened and thematically analysed to extract protective factors, coping mechanisms, and intervention strategies.
Results: Ten articles met inclusion criteria. Findings indicated adolescent quality of life declined to moderate levels after disasters, with PTSD symptoms and avoidance behaviours commonly reported. Interventions such as counselling and disaster preparedness psychoeducation, digital SEFT (Spiritual Emotional Freedom Technique) therapy, peer support, and the role of community volunteer health workers in preventing mental health problems emerged as key strategies to sustain adolescent mental health in disaster contexts.
Conclusion: Disasters significantly disrupt adolescent mental health. Counselling, psychoeducation, digital SEFT therapy, peer support, and community health volunteers can strengthen resilience and sustain adolescent well-being in disaster-prone settings.

Keywords: adolescent, mental health, disaster, resilience, psychoeducation, peer support

ID: 1539

OPTIMIZATION OF CARBOPOL 940 AND CARBOXYMETHYLCELLULOSE SODIUM (CMC-NA) IN THE FORMULATION OF PROPOLIS EXTRACT *NANOEMULGEL SPRAY* USING THE SLD METHOD

Early Windary Suhayatman[1], Sucilawaty Ridwan[2*], Nurul Wahyuni[3]

[1]Pharmacy Study Program, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
[2] Pharmacy Study Program, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
[3] Directorate of Laboratory Management, Research Facilities, and Science and Technology Area, Deputy For Infrastructure Research And Innovation, National Research and Innovation Agency, Indonesia
*Corresponding author: sucilr@unram.ac.id

ABSTRACT

Background and Objectives: Propolis extract has been reported to exhibit antifungal activity against *Candida albicans*, one of the main microorganisms causing oral thrush. To enhance usability, the extract was formulated into a *nanoemulgel spray*, which has the potential to improve delivery effectiveness and antifungal activity. Previous studies demonstrated that a 4% propolis *nanoemulgel spray* produced a very strong inhibition zone; however, the formulation still showed a limitation in spreadability and adhesiveness, which did not meet the required standards. To address this drawback, the present study aimed to optimize the concentration of *Carbopol* 940 and Na-CMC as gelling agents in the *nanoemulgel spray* formulation using the *Simplex Lattice Design* (SLD) method.
Methods: The evaluation included pH, spreadability and adhesiveness, viscosity, spray pattern, and percent transmittance tests. The optimum formulation was determined through *ANOVA* analysis of the physical characteristics of each formula, followed by particle size analysis using a *Particle Size Analyzer* (PSA) and polydispersity index measurement on the optimum formula.
Results: The optimum *nanoemulgel spray* was obtained with a composition of *Carbopol* 940 at 0.006% and Na-CMC at 0.194% (*p-value* > 0.05). The formulation exhibited yellow, clear characteristics with a viscosity of 47.22±1.87 cPs; pH 5.55±0.09; spreadability and adhesiveness of 2.58±0.12 cm; transmittance of 89.55±3.01%; particle size of 21.8±0.05 nm; and a polydispersity index of 0.266±0.01.
Conclusion: The optimized *nanoemulgel spray* of propolis extract demonstrated suitable physical characteristics and successfully overcame the limitation of previous formulations, indicating its potential as an effective antifungal preparation against *Candida albicans*.

Keywords: *Aphtous stomatitis*, gelling agent, *nanoemulgel spray*, propolis, SLD

ID: 1540

TRENDS AND DETERMINANTS OF MEASLES-RUBELLA IMMUNIZATION COVERAGE IN MATARAM, 2022–2025

Amedia Putri Lestari[1], Anom Josafat[2], Rifana Cholidah[3], Nila Febriana Iswara[4]

[1]Master Program in Public Health, Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
[2,3,4]Department of Public Health, Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
*Corresponding author: ameputrilestari21@gmail.com

ABSTRACT

Background and Objective: Measles-rubella (MR) remains a global health threat. WHO reported a decline in global measles immunization coverage from 86% (2019) to 83% (2023). In Indonesia, coverage dropped from 92% (2018) to 87.8% (2023), below the 95% WHO target, raising the risk of outbreaks and hindering MR elimination. This study aims to determine the coverage trends and determinants of MR1 immunization in a Primary Health Care in 2022–2025.
Methods: A descriptive case study with a mixed-methods approach. Quantitative data were derived from routine MR immunization reports (2022–2025), while qualitative data were obtained through in-depth interviews with program managers, officers, and community cadres. Quantitative data were analyzed descriptively, and qualitative data thematically.
Results: MR1 coverage fluctuated: 41% (2022), 81% (2023), 85% (2024), and decreased to 28% (August 2025). Coverage remained below the 95% national and global target. Determinants included parental refusal influenced by traditional beliefs and misinformation, shortage of health workers, delayed care-seeking, and vaccine logistics issues. Strategies implemented were home visits, cadre strengthening, social media promotion, and cross-sectoral collaboration, but sustaining achievements was challenging.
Conclusion: MR1 coverage increased in 2022–2024 but declined sharply in 2025, remaining below national and global targets. Optimizing community engagement, digital literacy, home visit strategies, and mobile reminders proved effective in building trust and preventing outbreaks. Achieving target coverage is vital for MR elimination and strengthening Global Health Security through compliance with IHR (2005) and cross-border surveillance.

Keywords: Measles-Rubella, Immunization Coverage, Measles, Rubella, Primary Health Care

ID: 1541

DESCRIPTIVE ANALYSIS OF RABIES VACCINATION IMPLEMENTATION WITHIN ONE HEALTH FRAMEWORK IN NTT

Laidy Nantiya Putri P[1,2]*, Nurhidayati[3], Marisa Syavitri Dilaga[4], Deasy Irawati[4]

[1]Master of Public Health Program, Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
[2]Faculty of Medicine, Bumigora University, Mataram, Indonesia
[3]Departement of Pharmacology, Faculty of Medicine and health Science, Mataram University, Mataram, Indonesia
[4]Departement of Public Health, Faculty of Medicine and health Science, Mataram University, Mataram, Indonesia
*Corresponding author: laidyputri17@gmail.com

ABSTRACT

Background and Objectives: A total of 14 regencies in East Nusa Tenggara (NTT) still remain declared as rabies outbreak areas. The main obstacle in rabies control in endemic areas is the limited resources, such as insufficient vaccine to reach the entire at risk animal population. The One Health concept emphasizes the importance of cross-sector integration between human, health, animal health, and the environment to comprehensively address zoonotic diseases. This study aims to describe the number of rabies transmitting animal bites, the number of deaths due to rabies, and the number of rabies vaccinations, wich is one of the One Health's strategies in NTT.
Methods: This study used a quantitative design with a descriptive analytical approach based on secondary data from BPBD 2024. The data is presented with graph for a clear visualization, to facilitate the interpretation of the research's results.
Results: Cases of rabies transmitting bites increased to 27,599 in 2024 and there was an increase in deaths from 35 cases in 2023 to 46 cases in 2024. In 2023, the number of vaccines administered was only 213,223 (33,8%) of the total vaccine stock of 629,925, while in 2024 only 239,859 (38%) were administered.
Conclusion: The increase in rabies bite cases and death in 2024 indicates that the implementation of rabies vaccination for animals in NTT is not optimalized yet. This highlights the need to strengthen rabies control strategies based on the One Health approach.

Keywords: rabies, vaccine, bite cases, mortality

ID: 1542

MALARIA IN SIGERONGAN COMMUNITY HEALTH CENTER, WEST LOMBOK, WEST NUSA TENGGARA IN 2024: AN EPIDEMIOLOGICAL STUDY

Ni Made Novi Purnami[1], Rifana Cholidah[1], Anom Josafat[1], Nila Febriana Iswara[1]

[1]Public Health Faculty of Medicine, Mataram University, Mataram, Indonesia
*Corresponding author: drnovipurnami@gmail.com

ABSTRACT

Background and Objectives: Malaria still remains a major health concern in Indonesia. Malaria control is a global commitment that must be achieved by the end of 2030. Sigerongan Community Health Centre (CHC) is the second-highest malaria case contributor in West Lombok. This study aims to describe the characteristics of malaria patients at Sigerongan CHC, providing a foundation for management and prevention improvement, as well as control strategies.
Methods: This is a descriptive study with retrospective case-control design looking at secondary data at Sigerongan CHC between January and December 2024. The study population includes all Sigerongan residents with a confirmed malaria diagnosis established through microscopic examination, identified through either active or passive case detection. Data collected included gender, age group, history of contact *Plasmodium* species, type of transmission and microscopic monitoring outcomes on the 3rd,14th, and 28th day following initiation of treatment. Results will be presented as proportions.
Results: 29 patients with confirmed malaria were included in the study. Males accounted for the majority of cases (55.17%), and most cases were observed in the productive age group (18–60 years, 58.6%). The most frequently identified was Plasmodium malariae (79.31%). More than half of the cases (68,96%) were detected through passive case detection. Local transmission cases (96.55%). Monitoring on the third day revealed that (6.89%) remained positive. By the 14th and 28th days, all patients had negative microscopic results (100%).
Conclusion: The malaria microscopic results which are still positive on the 3rd day after administering DHP therapy indicate that the treatment has not completely succeeded in eliminating the malaria parasites in the patient's body, indicating treatment failure or resistance to the drug.

Keywords: malaria, epidemiology, tropical infection, community health

ID: 1543

COMPLEX OCULAR AND MAXILLOFACIAL INJURIES FOLLOWING A SURFING WATERSPORTS ACCIDENT: A CASE REPORT

Vici Muhammad Akbar[1,2,3], Rifqi Kurniawan[2], Monalisa Nasrul[2], Alfian Muhajir[1,3], Ni Putu Sasmita Lestari[1,3], Eustachius Hagni Wardoyo[1,3,4]

[1]Maritime Medicine Specialty Programme, Faculty of Medicine and Health Sciences, Universitas Mataram
[2]NTB General Province Hospital
[3]Hyperbaric Center, Moh. Roeslan General Hopital Mataram
[4]Microbiology Department, Faculty of Medicine and Health Sciences, Universitas Mataram
*Corresponding author: abamvcmartadisastra@gmail.com

ABSTRACT

Background and Objectives: This case study aimed to explore the clinical presentation, diagnostic findings, and management of complex maxillofacial and ocular trauma resulting from a surfing accident in a young adult male. The objective was to document the treatment approach and outcomes to optimize care for similar injuries.
Methods: A 20-year-old male patient presenting with multiple maxillofacial injuries and left eye trauma was evaluated through clinical examination and head CT imaging. Diagnostic assessments identified fractures and ocular damage. The patient underwent open reduction and internal fixation (ORIF) with miniplate surgery for maxillary fractures and primary repair of the open globe injury. Post-operative management included intravenous fluids, antibiotics, analgesics, and ophthalmic medications.
Results: Clinical and imaging findings revealed a closed nasal fracture, closed fracture of the anterior corpus maxilla sinistra, panhematosinus, and left globe injury. Post-surgical outcomes showed progressive improvement with reduced pain (VAS 5-6 to lower levels), resolution of edema, and proper positioning of the miniplate and screws confirmed by follow-up imaging. The patient was subsequently referred for secondary repair of the globe injury to address complex ocular trauma.
Discussion: Therapy limitations include the complexity multidisciplinary care, highlighting the need for marine medicine integration and water sports injury prevention education to reduce future risks.
Conclusion: The combined surgical, early intervention and multidisciplinary care are critical to optimizing functional and visual outcomes. This case contributes valuable insights into effective treatment strategies for similar trauma cases.

Keywords: Surfing Accident, Maxillofacial Trauma, Eye Globe Injury, ORIF Miniplate Surgery, Ocular Repair

ID: 1544

ANTIMICROBIAL RESIDUE IMPACT ON HUMAN HEALTH: A NARRATIVE REVIEW

Eustachius Hagni Wardoyo[1]
[1]Microbiology Department/ Maritime Medicine Specialist, Faculty of Medicine and Health Sciences, Universitas Mataram
*Corresponding email: wardoyo.eh@unram.ac.id

ABSTRACT

Background: The massive use of antimicrobials in humans, livestock, and agriculture has led to the spill-over of antibiotic traces into the environment, known as antimicrobial residues. Antimicrobial residues are trace amounts of antimicrobial substances, including parent drug and/or its metabolites, that remain in food products, environment. The aim of the review was to understand the human health impact of antimicrobial residu.
Methods: A narrative review of primary research addressing antimicrobial residues impact on human health. Databases were searched Proquest and Pubmed.
Results: Research about antimicrobial residues found mostly in developing countries, where the antimicrobial animal use is unregulated or uncontrolled. Transmission route was food-borne where consumption of animal products were the prominent issue. Impact on human health reported are: hepatotoxicity, allergy, altered gut microbiota, genomic shifting (mutagenicity, teratogenicity and carcinogenicity) and antimicrobial resistance. Fluoroquinolone residues are the most persistent residues in the environment because of their high stability, resistance to biodegradation, and strong binding to soil and sediments.
Conclusion: Antimicrobial residue significantly impact human health. Indirect and long-term impact of antimicrobial residues on human health warrant the necessities of antimicrobial residues measurement regularly.

Keywords: Antibiotic residue, antimicrobial residue, antimicrobial residue stability, antimicrobial resistance, human health

ID: 1545

A RARE CASE OF CONCOMITANT STAGGERS DISEASE AND SINUS BAROTRAUMA: A CASE REPORT AND DIAGNOSTIC CHALLENGES

Ni Putu Sasmita Lestari[1,2], Nurul Ridha Muttaqiin[1], Satriyo Permadi[1,3], Alfian Muhajir[1,4], Vici Muhammad Akbar[1], Ida Ayu Eka Widiastuti[1,2], Eustachius Hagni Wardoyo[1,2,5,*]

[1]Maritime Medicine Specialty Program, Faculty of Medicine and Health Sciences, University of
Mataram, Mataram, Indonesia
[2]Hyperbaric Center. Moh. Ruslan General Hospital Mataram, Mataram, Indonesia
[3]Class I Quarantine Health Office of Banten, Serang, Indonesia
[4]Faculty of Medicine, University of Islam Al Azhar Mataram, Mataram, Indonesia
[5]Microbiology Dept, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: wardoyo.eh@unram.ac.id

ABSTRACT

Background: Scuba diving can cause injuries from pressure changes. Two of these are inner ear decompression sickness ("staggers") and sinus barotrauma. They can have similar symptoms, like dizziness. This report is about a rare case where a diver had both at the same time.
Case: A 20-year-old experienced diver went to the emergency room with a severe frontal headache, vertigo, nausea, and vomiting. This happened after he did four shallow dives (4-8 meters) in one day. He had symptoms of a common cold the day before diving. A head CT scan suggested a sinus infection. The initial diagnosis was inner ear DCS and sinus barotrauma. He was given high-flow oxygen and then hyperbaric oxygen therapy (HBOT). After the first HBOT session, he felt a little better. During a second HBOT session, he got a nosebleed, which helped confirm the sinus barotrauma diagnosis. After this, all his symptoms went away completely.
Discussion: This case demonstrates that staggers can occur even on shallow dives, exacerbated by a prior cold. A treatment-induced nosebleed confirmed the diagnosis, highlighting the need for a comprehensive approach when these injuries coincide.
Conclusion: Divers with respiratory infections are at high risk for multiple diving-related injuries. Doctors should suspect more than one cause in a symptomatic diver. A detailed dive history and health check before diving are crucial. This case reinforces the critical safety rule: divers must abstain from diving with any form of respiratory congestion.

Keywords: Diving Injury, Hyperbaric Oxygen Therapy, Sinus Barotrauma, Staggers Disease

ID: 1546

RISKS OF RECURRENT DECOMPRESSION ILLNESS AFTER RECOMPRESSION THERAPY IN AN DCI TYPE II PATIENT

Alfian Muhajir[1,2], Nurman Saputra[1], Nurul Ridha Muttaqin[1], Ni Putu Sasmita Lestari[1,3], Vici Muhammad Akbar[1], Ida Ayu Eka Widiastuti[1,3], Eustachius Hagni Wardoyo[1,3,4,*]

[1]Maritime Medicine Specialty Program, Faculty of Medicine and Health Sciences, Universitas Mataram
[2]Fakultas Kedokteran, Universitas Islam Al-Azhar, Mataram City
[3]Hyperbaric center. Moh. Ruslan General Hospital Mataram
[4]Microbiology Dept, Faculty of Medicine and Health Sciences, Universitas Mataram
*Corresponding author: wardoyo.eh@unram.ac.id

ABSTRACT

Background and Objectives: The recurrence of Decompression Illness in a diver after recompression therapy following prohibited activities are a concern, as the remaining bubbles had a potential risk to enlarge due to mechanical, chemical or immunological response. Prohibited activities/ risks were air travel, mountaineering, alcoholism/ drug abuse, hot water bath and massages. We presented a case showed risks are perpetuated reccurent DCI.
Case Illustration: A 55-year-old woman presented with facial, trunk, and right-sided numbness, headache, and blurred vision, commencing during a flight from Labuan Bajo to Lombok. Six days prior, she had completed three dives to 25 msw. The day after diving, she received recompression therapy (USNTT 5) for a post-dive headache with initial resolution. In the subsequent days, she consumed a cocktail, had spa massages, and hiked to 180 meters above sea level without issue. Her neurological symptoms emerged during the subsequent flight. Examination revealed moderate distress but stable vital signs and normal neurological motor function. A diagnosis of Type II Decompression Illness (DCI) was made. She was managed with 100% oxygen, intravenous fluids, and recompression therapy using USNTT 6, resulting in significant symptomatic improvement.
Conclusion: This case underscores the risk of recurrent DCI following initial recompression if post-treatment precautions are violated. Activities such as air travel, alcohol consumption, and massage may perpetuate gas bubbles, leading to neurological manifestations. Strict patient adherence to post-treatment guidelines is critical to prevent recurrence.

Keywords: DCI Type II, Recompression, Recurrent, Risk Factor

ID: 1547

FROM DEPTH TO ALTITUDE: CASE REPORT OF TYPE I DECOMPRESSION ILLNESS TRIGGERED BY AIR TRAVEL

I Dewa Ayu Risna Jayanthi[1], Nurul Ridha Muttaqiin[1], Anita Valencia[1], Putu Suwita Sari[1], Eustachius Hagni Wardoyo[1,2]*

[1]Maritime Medicine Specialty Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[2]Microbiology Department, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: wardoyo.eh@unram.ac.id

ABSTRACT

Background: Decompression Illness (DCI) is a disorder syndromes caused by inert gas bubble formation due to sudden reduction in ambient pressure. Flying after diving further increases the risk due to cabin altitude exposure, which acts as a "second decompression". Although pre-flight surface interval (PFSI) guidelines exist to mitigate risk, their protective effect is not absolute. This report highlights a case of recurrent Type I DCI despite adherence to guideline-conformant PFSI.
Case Illustration: A 48-year-old woman recreational diver performed a single no-decompression dive to 12 meters for 50 minutes. Approximately 18 hours later, she boarded a commercial flight and experienced worsening migratory arthralgia and paresthesia. On admission, she was diagnosed with Type I DCI with blood gas analysis revealing severe hypoxemia and electrolyte imbalance. She underwent hyperbaric oxygen therapy using U.S. Navy Treatment Table 6, followed by a second session with Table 9 for persistent symptoms. Clinical improvement was achieved, and she flew home 48 hours post-treatment. While asymptomatic during the flight, her original symptoms recurred two days after arrival, necessitating referral to a local hyperbaric facility. Adherence to PFSI guidelines does not always prevent recurrent DCI events. Mechanically, flying even 300 meters above sea level may induce the expansion of residual bubbles. A high bubble load can increase inflammation, trigger thrombotic reactions, and may be perpetuated by other metabolic conditions such as diabetes and thyroid disorders.
Conclusion: Air travel after diving may induce recurrent DCI. A prolonged PFSI interval is generally advantageous in reducing the risk of recurrence.

Keywords: Decompression illness, Flying after diving, Hyperbaric oxygen therapy, Pre-flight surface interval

ID: 1548

THE ROLE OF CLINICS AT THE COUNTRY'S ENTRANCE AS HEALTH RESILIENCE SENTINEL POSTS: AN EPIDEMIOLOGICAL ANALYSIS OF THE GATEWAY TO THE TROPICAL ISLANDS IN INDONESIA (2023-2025)

Edi Sahroji[1], Lina Nurbaiti[1], Amelia Ramdani Hasby[1]

[1] Faculty of Medicine and Health Sciences, University of Mataram
*Corresponding author: edisahroji80@gmail.com

ABSTRACT

Background and Objectives: Health resilience in the Tropical Islands region, which serves as an international gateway, relies heavily on robust surveillance at the country's entry points. The existence of this clinic represents the front line of defense against the import and spread of infectious diseases. This study aims to analyze epidemiological data from clinics at state entrances (BPU) in West Nusa Tenggara (NTB), Indonesia, to evaluate its role as a sentinel post in strengthening regional health resilience.
Methods: Descriptive analysis was carried out on secondary data from four official health office reports from the Mataram Class I Health Quarantine Center (BKK). The study period is from January 2023 to June 2025. Data include patient visit volume, demographic profile, and disease distribution based on clinical diagnosis.
Results: Patient visit data was recorded over a 30-month period of 6,364, with an annual trend increasing from 2,198 visits in 2023 to 2,769 in 2024. Patient profiles are consistently dominated by productive-age male employees (21-45 years), who account for about 60-70% of total visits. Although the main disease burden consists of respiratory tract infections and cardiovascular diseases, sentinel function is clearly confirmed. Cases of *Re-emerging Diseases*, including Dengue Hemorrhagic Fever (DHF), tuberculosis, and typhoid, were successfully detected in each reporting period.
Conclusion: The clinic at the country's entrance to the Tropical Islands gate effectively serves as a crucial epidemiological sentinel post by successfully identifying potential outbreak diseases. These findings underscore their vital dual role in supporting national health security mandates while addressing the routine health needs of communities at the country's entrances, thereby strengthening regional health resilience.

Keywords: Health Resilience, Sentinel Surveillance, State Entrance, Islands Health, Indonesia

ID: 1552

A REVIEW: NATURAL PRODUCTS TARGETING SKIN BIOPHYSICAL PARAMETERS IN THE MANAGEMENT OF ACNE VULGARIS

Adila Rizkika[1], Agriana Rosmalina Hidayati[1*], Dedianto Hidajat[1], Wahida Hajrin[1], Nisa Isneni Hanifa[1], Mahacita Andanalusia[1]

[1]Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: agriana.rh@unram.ac.id

ABSTRACT

Background and Objectives: Acne vulgaris is a prevalent chronic inflammatory skin disorder that often imposes psychosocial burdens. Conventional treatments are limited by issues such as antibiotic resistance, irritation, and systemic side effects. Natural products have gained attention as safer alternatives due to their ability to modulate key skin biophysical parameters, including sebum secretion, transepidermal water loss (TEWL), erythema, and hydration. This review aims to evaluate recent evidence on the potential of natural products in acne management through biophysical modulation.
Methods: A literature search was conducted through Google Scholar, PubMed, ScienceDirect and ResearchGate. Keywords included "natural products," "acne vulgaris," "biophysical parameters," "sebum," "TEWL," and "erythema." Eligible studies comprised in vivo and clinical investigations evaluating the effects of botanical extracts on skin biophysical outcomes.
Results: Emerging evidence demonstrates that natural products exert multifaceted benefits. Green tea, combined PAC extracts (Pinus densiflora, Artemisia annua, Citrus junos), and Cirsium eriophorum significantly reduced sebum output. Flavonoid-based formulations and watermelon extract enhanced skin hydration while lowering TEWL. Furthermore, aloe vera, mangosteen, and green tea combinations effectively alleviated erythema and pigmentation. Taken together, these botanicals contribute to barrier restoration while addressing central pathogenic factors of acne.
Conclusion: Natural products offer a promising therapeutic strategy by directly modulating skin biophysical parameters relevant to acne development. Their favorable safety, diverse mechanisms, and multifunctional actions underscore their potential as adjuvant therapies and dermocosmetic innovations, supporting a paradigm shift toward biophysical modulation-based acne management.

Keywords: natural products, acne vulgaris, biophysical parameters, TEWL, erythema

ID: 1554

DETERMINANT OF DECOMPRESSION SICKNESS IN INDONESIA: A SCOPING REVIEW OF CURRENT EVIDENCE AND KNOWLEDGE GAPS

Maxwell Landri Vers Malakauseya[1*], Ida Ayu Eka Widiastuti[1], E. Hagni Wardoyo[1], Yoga Pamungkas Susani[1]

[1]Department of Maritime Medicine, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: h5c02510003@student.unram.ac.id

ABSTRACT

Background and Objectives: Decompression sickness in Indonesia remains a serious concern, especially among divers and workers exposed to extreme changes in air pressure. Despite prevention and treatment efforts, cases of decompression sickness continue to occur due to a lack of awareness, adequate equipment, and knowledge about safe diving practices. This study aimed to describe the determinant of decompression sickness in Indonesia.
Methods: A scoping review was done on studies which were found through these data bases: Google Scholar, Pubmed, Ebsco, and Science Direct, published from January 2020 to August 2025. The PEOs (population, exposure, outcomes, and study design) methods approaches as a framework for this procedure. The keywords used were "risk factors", "decompression sickness", "DCS", "decompression illness", "DCI", "Caisson Disease", "the bends", and "Indonesia".
Results: There have been 15 publications describing factors contributing to decompression sickness in Indonesia, including risky diving behavior, a lack of awareness about decompression, and inadequate access to health facilities and safety training. The main risk factors included: diving duration of more than 30 minutes, depth >30 meters, diving frequency of more than twice a day, rapid ascent, and the use of unattended compressors or inadequate personal protective equipment (PPE).
Conclusion: The determinants of decompression sickness in Indonesia such as risky diving behavior, the lack of awareness, and poor access to health services. Based on that finding, the effective preventative measures must be comprehensive, cross-sectoral, and responsive to local realities, with the community actively involved in solution development, implementation, and evaluation.

Keywords: divers, risk factors, caisson diseases, knowledge, Indonesia

ID: 1557

THE ASSOCIATION BETWEEN CLIMATIC FACTORS AND DENGUE HEMORRHAGIC FEVER INCIDENCE IN MATARAM CITY, 2022–2024

Ni Wayan Diptaningsih[1], Metta Octora[1]

[1] Master of Public Health, FKIK, University of Mataram, Mataram, Indonesia
*Corresponding author: wayan.diptaningsih@gmail.com

ABSTRACT

Background and Objectives: As an environmentally driven disease, Dengue Hemorrhagic fever (DHF) occurs predominantly in tropical regions. Indonesia ranks among the countries with the highest dengue endemicity, posing a persistent public-health challenge. Climatic factors—particularly humidity, rainfall, and temperature—are thought to influence dengue incidence by affecting mosquito population dynamics and the virus transmission cycle. Mataram City, the capital of West Nusa Tenggara Province (NTB), almost consistently records the highest number of dengue cases in the province. Over the past three years, reported cases peaked in 2022 at 684, fell to 409 in 2023, and rose again to 543 in 2024, indicating that a sustained downward trend has not yet been achieved. This study aims to analyze the relationship between climatic factors—namely humidity, rainfall, and temperature—and the incidence of dengue fever in Mataram City.
Methods: Data were obtained from the Health Office and Central Bureau of Statistics Mataram City. The Spearman's rank correlation test was employed to examine the association between rainfall, air temperature, and humidity with the incidence of dengue fever.
Results: The findings showed a positive correlation between humidity and the incidence of DHF ($p = 0.000$, $r = 0.566$). In contrast, temperature and rainfall did not demonstrate a statistically significant association ($p > 0.05$) with dengue incidence in Mataram City.
Conclusion: Humidity have a measurable impact on dengue incidence in Mataram City. These findings provide evidence that can inform local prevention and control strategies aimed at reducing the burden of dengue fever.

Keywords: Dengue hemorrhagic fever, humidity, rainfall, temperature

ID: 1558

LITERATURE REVIEW: RUBELLA INFECTION IN PREGNANT WOMEN AND ITS IMPACT ON THE FETUS

Nadia Ropida[1], Astri Ferdiana[2], Adnanto Wiweko[3], Nurul Firdausi Paramaiswari[4]
[1]Magister of Public Health, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia.
[2,3,4] Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia.
Corresponding author: nadiaropida@gmail.com

ABSTRACT

Background and Objectives: Rubella infection during pregnancy can lead to Congenital Rubella Syndrome (CRS), which has severe consequences for fetal development. Although rubella vaccination is widely available, data regarding prevalence, clinical impacts on the fetus, and vaccination coverage, particularly in developing countries remain limited. This study aims to identify the prevalence of rubella infection during pregnancy, its effects on the fetus, and the coverage of rubella vaccination.
Methods: A literature review on the national and international research articles published between 2021 and 2025 was conducted. Articles were searched on PubMed, Google Scholar, and ScienceDirect using the following keywords: “rubella”, “pregnant women”, “fetus”, “CRS” and “vaccination”.
Results: Twenty articles met the inclusion criteria, consisting of case reports, observational studies, meta-analyses, and systematic reviews. The studies indicated that immunity prevalence among pregnant women in Asia and Africa remains low, ranging from 10-20%. Rubella infection during the first trimester carries a high risk for fetal complications, with 85-90% of cases resulting in CRS, 20-25% in spontaneous abortion, and 5-10% in stillbirth. Furthermore, approximately 25-50% of infants with CRS present with congenital cataracts, while 60-80% experience sensorineural hearing loss. Global data show that rubella vaccination coverage remains inconsistent, particularly in Asia and Africa, where rates are below 80%, and CRS incidence reaches 0.5-2 per 1,000 live births.
Conclusion: Rubella continues to pose a significant threat during pregnancy, especially in Asia and Africa. Strengthening vaccination programs, implementing antenatal screening, and conducting large-scale multicenter studies are essential strategies to reduce the incidence of CRS.

Keywords: Rubella, Pregnant women, Fetus, Congenital Rubella Syndrome (CRS), Vaccination

ID: 1559

A LITERATURE REVIEW OF ENVIRONMENTAL RISK FACTORS ASSOCIATED WITH DENGUE FEVER IN WEST NUSA TENGGARA

Hadwin Al Fatih Cansero Witono[1], Lina Nurbaiti[1], Amelia Ramdani Hasby[1]

[1]Magister of Public Health, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia.
*Corresponding author: hadwinalfatih22@gmail.com

ABSTRACT

Background: Dengue Hemorrhagic Fever (DHF) is an infectious disease caused by the dengue virus and transmitted through the bites of Aedes aegypti and Aedes albopictus mosquitoes. Environmental factors play a crucial role in global health security, as dengue transmission can extend across regions through human mobility. Globally, in 2024, a total of 14.1 million DHF cases were reported, while Indonesia recorded 244,409 cases. Specifically, in West Nusa Tenggara (NTB) Province —West Lombok, East Lombok, North Lombok, Central Lombok, Mataram City, Dompu, Bima, Bima City, Sumbawa, and West Sumbawa, there were 4,218 cases.
Objective: To identify environmental factors influencing the incidence of Dengue Hemorrhagic Fever (DHF) in West Nusa Tenggara (NTB).
Method: A literature review was conducted by searching for relevant articles through Google Scholar using predefined keywords. The inclusion criteria were: (1) publications published within the last five years (2020–2025); and (2) specifically addressing environmental factors influencing the incidence of Dengue Hemorrhagic Fever (DHF) in West Nusa Tenggara (NTB).
Results: Eight articles were reviewed, and the findings indicated that several environmental factors significantly influence the incidence of Dengue Hemorrhagic Fever (DHF) in West Nusa Tenggara (NTB). These factors include poor sanitation, high population density, heavy rainfall, humid living conditions, stagnant water, clogged drainage systems, warm temperatures, insufficient prevention programs, and high larval density.
Conclusion: Environmental factors are key determinants of Dengue Hemorrhagic Fever (DHF) incidence in West Nusa Tenggara (NTB Effective prevention requires cross-sectoral collaboration involving the health, environmental, education, and local government sectors to create healthier environments.

Keywords: Environmental risk factors, Dengue Hemorrhagic Fever (DHF), West Nusa Tenggara (NTB)

ID: 1561

ANALYSIS OF THE IMPLEMENTATION OF THE NUTRITION INTERVENTION PROGRAM BY THE PROVINCIAL HEALTH OFFICE IN REDUCING STUNTING IN NTB

Ni Luh Anita Yustitie Sari[1], Lina Nurbaiti[2], Amelia Ramdani Hasby[3]

[1]Magister of Public Health, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia.
*Corresponding author: niluhanitayustitiesari@gmail.com

ABSTRACT

Background: NTB is one of the provinces with the fourth-highest stunting prevalence in Indonesia, Although NTB once showed a significant decline in stunting prevalence from 32.7% in 2022 to 24.6% in 2023, the figure rose again to 29.8% in 2024. Various efforts to reduce stunting have been carried out through the implementation of specific and sensitive nutrition interventions. However, the stunting rate remains relatively high. Therefore, this study aims to analyze the implementation of nutrition intervention programs conducted by the Provincial Health Office in efforts to reduce the stunting rate.
Methods: This study employed a qualitative approach using secondary data to evaluate the implementation of programs
Results: the implementation of nutrition intervention programs in NTB has been carried out but has not yet achieved optimal results. Program organization has been well structured through the involvement of the Stunting Reduction Acceleration Team (TPPS) and various related Regional Government Agencies (OPDs). Provincial Health Office interprets its role as a coordinator and facilitator rather than a sole implementer, focusing on specific nutrition interventions such as the provision of supplementary food, iron and folic acid tablets, and vitamin A, as well as sensitive nutrition interventions including nutrition education and environmental sanitation improvement. Nevertheless, program implementation still faces several major challenges, including limited resources, logistical and distribution constraints, low public awareness, and suboptimal coordination and synergy among stakeholders.
Conclusion: Nutrition interventions aimed at reducing stunting have been implemented; however, their execution remains less integrated and faces several challenges, particularly limited resources and low public awareness.

Keywords: Program Implementation, Stunting, Nutrition Intervention, Health Office, West Nusa Tenggara

ID: 1562

IMPLEMENTATION OF AN INTEGRATED REFERRAL SYSTEM IN THE ARCHIPELAGIC AREA: A DESCRIPTIVE STUDY IN NORTH LOMBOK DISTRICT, WEST NUSA TENGGARA, 2024

Sri Utami Mulyaningrum[1,2], Adnanto Wiweko[2], Yusra Pintaningrum[3], Astri Ferdiana[2]

[1]West Nusa Tenggara Provincial Health Office, Mataram, Indonesia,
[2]Magister of Public Health, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[3]Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: ami.ningrum78@gmail.com , astriferdiana@unram.ac.id

ABSTRACT

Background: The integrated referral system (SISRUTE) is designed to coordinate the delegation of health care tasks and responsibilities across different levels of health facilities in an integrated and reciprocal manner—vertically, horizontally, and through back referrals. North Lombok District encompasses coastal, hilly, and island areas, which pose significant geographic challenges to referral processes. Although SISRUTE has been implemented in the province since 2017, the actual referral patterns have not yet been evaluated.
Objective: This study aims to describe the implementation of the SISRUTE application in North Lombok District in 2024.
Methods: This is a descriptive study using secondary data from the SISRUTE application managed by The North Lombok District Health Office. Variables included referring health facilities, receiving health facilities, diseases types, and disease groups. Descriptive analysis was performed using *Jamovi* software.
Results: A total of 173 incoming referral cases were recorded at the North Lombok District Hospital, with the highest number referred by Gangga Primary Health Center (54%). Of these, 5.2% cases were communicable diseases, and 94.8% cases were NCDs. The most frequent diagnoses were internal medicine cases (41.6%). For outgoing referral to other hospitals, 324 cases were recorded, with the majority referred to the provincial hospital (87.03%). Of these, 4.94% cases were communicable diseases, while 95.05% cases were NCDs. The most common diseases group referred to were neurological disorders (29.01%).
Conclusion: The majority of referral cases were NCDs. Strengthening promotive and preventive efforts for NCDs and optimizing SISRUTE utilization are necessary to improve referral efficiency dan NCDs management.

Keywords: referal system, SISRUTE, health services, non-communicable diseases, North Lombok District

ID: 1563

DEVELOPMENT, VALIDATION AND ACCEPTABILITY OF X-SIAGA FOR OUTBREAK PREPAREDNESS AMONG INDIGENOUS FAMILIES IN SELANGOR, MALAYSIA

Ameerah Su'ad Abdul Shakor[1*], Mariam Mohamad[1], Khalid Ibrahim[1], Izandis Mohamad Sayed[2]

[1]Department of Public Health Medicine, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh, Selangor, Malaysia
[2]Hospital Orang Asli, Gombak, Kuala Lumpur, Malaysia
*Corresponding author: ameerahsuad@moh.gov.my

ABSTRACT

Background and Objectives: The Indigenous people of peninsular Malaysia is called the Orang Asli. Outbreaks in this community often result in fatalities, and preparedness levels remain low. In Selangor, the Orang Asli are also at risk from emerging threats like Disease X due to living in deforested areas. Unfortunately, current preparedness initiatives are not culturally tailored and often fail to engage them. This study aimed to develop, validate, and assess the acceptability of X-SIAGA, an intervention tailored to improve household preparedness for outbreaks and Disease X among the Orang Asli.
Methods: X-SIAGA was developed using the six-step Intervention Mapping (IM) framework: needs assessment, setting goals, selecting methods, developing components, implementation planning, and evaluation. The final step involved validation with experts (n=5) and Orang Asli community members (n=14), followed by assessment of acceptability with Orang Asli families (n=42) using a self-administered questionnaire at the end of the program.
Results: X-SIAGA was developed as a half-day, household-level intervention for the Orang Asli with five components: lecture, video session, hands-on practice, role play, and Wabak X card game play. Validation showed strong content and face validity (indices ≥0.97). Acceptability was positive, with 88% finding it culturally appropriate, no ethical concerns reported, and 92.9% rating it generally acceptable.
Conclusion: X-SIAGA is the first household-level outbreak preparedness intervention tailored for the Orang Asli in Selangor, Malaysia. Developed with both expert and community input, it is evidence-based, validated, and well-received. These findings suggest that similar approaches can be adapted to design robust interventions for vulnerable groups.

Keywords: Indigenous people, outbreak, preparedness, health promotion, public health intervention

ID: 1565

DENGUE HEMORRHAGIC FEVER AS A GLOBAL HEALTH CHALLENGE: A DESCRIPTIVE STUDY OF PATIENTS AT BHAYANGKARA HOSPITAL MATARAM

Altharikh Syah Alam Sumarno[1], Astri Ferdiana[1], Adnanto Wiweko[1], Nurul Paramaiswari[1]

[1]Faculty of Medicine and Health Sciences, University of Mataram
Email: erikstrada40@gmail.com

ABSTRACT

Background and Objectives: Dengue Hemorrhagic Fever (DHF) is a tropical infectious disease prevalent in Indonesia and classified by the WHO as a global health threat. Describing the characteristics of DHF patients in hospitals is important to support effective prevention and treatment strategies. This study aims to describe the characteristics of DHF patients treated at Bhayangkara Hospital Mataram.
Methods: This study is a retrospective descriptive study using medical record data of inpatients diagnosed with DHF from January 2024 to August 2025. Variable included demographic characteristics, clinical parameters, diagnostic test results, length of hospital stay, and final outcomes.
Results: A total of 73 patients diagnosed with DHF were treated during the study period. The distribution between male and female patients was 59% and 41%, respectively. Most patients were age 1-30 years (65%) and 31-60 years (35%). All patients (100%) presented with high fever, thrombocytopenia (85%), muscle pain (70%), nausea (60%), rash (55%), and headache (65%). The length of hospital stay ranged from 2 to 4 days. Among all patients, 71 (97.3%) recovered, while 2 (2.7%) were reported to have died.
Conclusion: From January 2024 to August 2025, most DHF patients showed typical symptoms like high fever. The 3–4 day hospital stay and 97.3% recovery rate indicate effective treatment, though the 2.7% fatality rate calls for improved care and early complication detection.

Keywords: Dengue Hemorrhagic Fever, Global Health Security, Hospital

ID: 1566

CEREBRAL VASCULITIS IN NEUROPSYCHIATRIC SLE: A RARE CASE OF TUMOR-LIKE PRESENTATION

Mochammad Alfian Sulaksana[1], Hamsu Kadriyan[1]
[1]Indonesian Medical Association
*Corresponding author: dr.alfian.s@gmail.com

ABSTRACT

Background and Objectives: Vascular Endothelial Growth Factor A (VEGF-A) and Lactate Dehydrogenase (LDH) are known signaling mediators that affect nasopharyngeal cancer (NPC) progression and treatment response. The interaction between these two factors has been documented but not yet evaluated in Indonesia, as well as its impact on NPC outcome. In this study, we highlight the correlation between plasma VEGF-A and LDH in NPC in Mataram Hospital.
Methods: A cross-sectional study was conducted at Mataram Hospital from August 2024 to August 2025, enrolling stage III NPC patients who were on cisplatin treatment at the otolaryngology department. The blood samples were collected before patients underwent chemotherapy, while a questionnaire was used to collect patient demographic data. The plasma VEGF-A and LDH levels were assessed using ELISA according to the manufacturer's instructions.
Results: 66 patients were enrolled in this study, with mostly male patients and a mean age of 47.15±12.38 years. A large proportion of subjects came from West Lombok (31.8%), followed by Mataram (19.7%) and East Lombok (18.7%). Spearman's correlation showed that plasma VEGF-A was significantly correlated with LDH (r: 0.466; p: 0,000), which was also confirmed by linear regression (p: 0,000; 95%CI: 0.351 – 0.831; adjusted R2: 0.263).
Conclusion: This study reveals the interaction between VEGF-A with LDH in stage III NPC patients, which delineates potential interaction between hypoxia and metabolic aberration in cancer cells with continuous angiogenesis. This interaction potentially affects patients' outcomes, primarily the chemotherapeutic response and overall survival.

Keywords: Correlation, lactate dehydrogenase, nasopharyngeal cancer, vascular endothelial growth factor A

ID: 1583

MAPPING MEASLES-RUBELLA RISK IN INDONESIA: THE 2025 NATIONAL RISK ASSESSMENT

Lale Puspita[1], Muthia Cenderadewi[1], Rohani[1]
[1]Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
*Corresponding author: puspitalale@gmail.com

ABSTRACT

Background: Measles remains a major public health challenge in Indonesia. Although immunization has successfully reduced measles-related mortality, outbreaks continue to occur in areas with low coverage, creating persistent "pockets of susceptibility." This study aimed to describe the distribution of measles-rubella risk across provinces and districts/cities in Indonesia based on the 2025 national vaccine-preventable diseases (VPDs) risk assessment.
Methods: This descriptive study analyzed secondary data from the 2025 national situational report on vaccine-preventable diseases (VPDs) by the Indonesian Ministry of Health. Risk categories were defined as very high risk (VHR), high risk (HR), medium risk (MR), and low risk (LR).
Results: The national risk map shows that measles remains a significant threat. Overall, 66 provinces (25%) and 252 districts/cities (49%) were classified as VHR or HR. Nineteen provinces such as Aceh, West Sumatra, and East Nusa Tenggara were identified in the VHR category, while six provinces including West Nusa Tenggara, East Kalimantan, and North Sulawesi were mapped in the HR category. Importantly, all six Papuan provinces, Papua, Central Papua, Highlands Papua, South Papua, West Papua, and Southwest Papua, were classified as VHR, with 100% of districts/cities in this category.
Conclusion: Nearly half of Indonesia's districts/cities remain in the high or very high-risk categories for measles-rubella. Control measures must prioritize strengthening immunization coverage, improving surveillance, and enhancing preparedness for outbreak response.

Keywords: Measles, Rubella, Risk Assessment, Vaccine-Preventable Diseases, Outbreak Preparedness

ID: 1584

EARLY DETECTION OF DENGUE FEVER IN CHILDREN USING THE NS1 TEST AT PERMATA HATI WOMEN'S AND CHILDREN'S HOSPITAL IN MATARAM

Arien Nurlieha Itsna[1], Astri Ferdiana[2], Adnanto Wiweko[3], Nurul Paramaiswari[4]

[1]Magister of Public Health, Medical and Health Science Faculty, University of Mataram, Mataram, Indonesia
[2] Faculty of Medicine Lecturer, and Health Sciences Faculty, [1] University of Mataram, Mataram, Indonesia
*Corresponding author: sunartihadisaputra@gmail.com , astriferdiana@unram.ac.id

ABSTRACT

Background: Dengue Hemorrhagic Fever (DHF) is a significant health problem that requires early diagnosis to prevent serious complications. The NS1 Antigen test detects dengue virus infection earlier than the DL test, which can only be performed on the third day after symptoms appear.
Research Objective: With NS1 examination, dengue fever diagnosis can be established earlier so that dengue fever management can be implemented quickly and efficiently**.**
Methodology: This study used a retrospective descriptive study design. Data were taken from medical records from January 2024 to August 2025. 127 children aged 3-18 years presented with symptoms of fever above 38°C, abdominal pain accompanied by nausea and vomiting, joint pain, and reddish spots on the skin. Data were analyzed using descriptive statistics.
Results: showed that the infection rate confirmed by a positive NS1 test was quite high in all age groups. In patients aged 3–5 years, 54.05% showed positive NS1 results, with 32.43% experiencing a decrease in platelets, for ages 6–12 years, 52.94% of patients were NS1 positive and 36.76% experienced a decrease in platelets while for ages 13–18 years, 50% were NS1 positive and 31.82% experienced a decrease in platelets**.**
Conclusion: The high percentage of NS1 positive in all age groups of children indicates that the population studied is susceptible to dengue infection**. The implications** of the need for comprehensive monitoring and management of dengue fever across all age groups, especially in children**.**

Keywords: Dengue Fever, Early Diagnosis, NS1, Complete Blood Count, Children

ID: 1595

VALIDATION OF A MINDFULNESS INTERVENTION TOOLKIT FOR BUILDING PRIMARY CARE RESILIENCE AGAINST DEPRESSION IN MALAYSIA

Asma' Khalil[1*], Zahir Izuan Azhar[1], Chen Xin Wee[1], Norley Shuib[2]

[1]Department of Public Health Medicine, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh Campus, Selangor, Malaysia
[2]Department of Psychiatry, Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh Campus, Selangor, Malaysia
*Corresponding author: drasma@moh.gov.my

ABSTRACT

Background and Objectives: Depression is a leading contributor to disease burden worldwide, yet effective management in primary care remains limited by the lack of validated, context-specific tools. This study aimed to assess the validity of a mindfulness-based intervention toolkit designed for primary healthcare providers in Malaysia to support the management of mild to moderate depression.
Methods: The toolkit was developed through a three-round modified Delphi process involving a multidisciplinary panel of experts in psychiatry, family medicine, psychology, and public health. Validation was subsequently conducted with seventeen additional experts. Content validity was examined by six experts who rated each item for relevance, clarity, simplicity, and ambiguity using a four-point scale. Face validity was assessed by eleven experts who evaluated the clarity and overall comprehensibility of the toolkit. Quantitative indices were subsequently calculated, including the Item-Level and Scale-Level Content Validity Index (I-CVI, S-CVI/Ave) and Face Validity Index (I-FVI, S-FVI/Ave, S-FVI/UA),
Results: Expert feedback led to the refinement of certain modules, resulting in a more concise and practical toolkit. All retained components of the toolkit exceeded the acceptance threshold of 0.80 for both content and face validity. The content validity achieved high agreement among experts (S-CVI/Ave ranged from 0.99 to 1.00), while the face validity demonstrated strong average clarity (S-FVI/Ave = 0.92). However, universal agreement was moderate (S-FVI/UA = 0.43).
Conclusion: The validated toolkit demonstrates strong methodological rigour and cultural adaptability, offering a feasible resource to build mental health resilience within primary care in Malaysia.

Keywords: Mindfulness, Depression, Content Validation, Building Resilience, Primary Care

ID: 1596

TOWARDS MULTIMODAL RISK PREDICTION MODEL FOR DIABETIC NEPHROPATHY: INTEGRATING CLINICAL RISK SCORES, PROTEIN BIOMARKERS, AND MICRORNA SIGNATURES IN INDONESIAN PATIENTS WITH TYPE 2 DIABETES

Mamang Bagiansah[1]

[1]Department of Internal Medicine, Faculty of Medicine, Universitas Islam Alazhar, Mataram, Indonesia
*Corresponding author: mbagiansah@gmail.com

ABSTRACT

Background and Objectives: Diabetic nephropathy (DN) remains a leading cause of chronic kidney disease (CKD) and dialysis worldwide, including in Indonesia where the burden of diabetes mellitus (DM) continues to rise. Current screening relies mainly on albuminuria and estimated glomerular filtration rate (eGFR), which often detect kidney damage at advanced stages. This study aims to develop a multimodal risk prediction model for DN progression by combining clinical risk scores, protein biomarkers, and microRNA (miRNA) signatures to enable earlier identification of high-risk patients.
Methods: We propose a prospective cohort of type 2 DM patients with baseline data including demographics, HbA1c, blood pressure, eGFR, and urine albumin-creatinine ratio (UACR). Biosamples will be analysed for selected protein biomarkers (NGAL, KIM-1, cystatin-C) using ELISA, and targeted miRNA (miR-21, miR-192) using RT-qPCR. In parallel, clinical variables will be used to construct a baseline risk score. Cox regression and machine learning approaches will be applied to assess predictive performance.
Results: Based on existing evidence, we anticipate that the multimodal model will outperform clinical parameters alone, with higher discrimination (C-index) and improved net reclassification for early DN progression.
Conclusion: Integrating clinical scores with molecular biomarkers offers a promising approach to enhance early detection of DN. This concept could inform risk-stratified management and help reduce the future burden of dialysis-dependent CKD in Indonesia and similar setting.

Keywords: diabetes mellitus, diabetic nephropathy, risk prediciton, biomarkers, microRNA

ID: 1597

TAK-003 DENGUE VACCINE FOR SERONEGATIVE POPULATION IN ENDEMIC AREAS: A SYSTEMATIC REVIEW

Ardiansyah[1], Tantri Lukitaningrum[2], Rachmy Hamdiyati[3], Marcha Ferra Yulenda[4]

[1]Emergency Department, H Moh Ruslan General Hospital, Mataram, Indonesia
[2]Department of Medicine, Faculty of Medicine, Universitas Mataram, Mataram, Indonesia
[3]Aerospace Medicine Residency Program, Faculty of Medicine, Universitas Indonesia, Jakarta, Indonesia
[4]Department of Hemodialysis, Awet Muda Narmada Regional General Hospital, Lombok Barat, Indonesia
*Corresponding author: ardian.dompu@gmail.com

ABSTRACT

Background and Objectives: Dengue fever remains a major global health concern, with millions affected in 2025. Seronegative dengue cases are more common in children which may increase the risk of severe disease in subsequent infections. TAK-003 shows strong potential as a tetravalent vaccine, though its efficacy in seronegative populations remains uncertain. This systematic review evaluates TAK-003's efficacy, safety, and immunogenicity in this population in endemic areas.
Methods: A systematic review was conducted following PRISMA 2020 guidelines. PubMed, Scopus, ScienceDirect, and the Cochrane Library were searched for randomized controlled trials (RCTs) published between 2020 and 2025. After screening 261 records, 5 RCTs were included. Only peer-reviewed full-text articles in English were considered. Data on efficacy, safety, and immunogenicity were extracted and study quality was appraised using the Cochrane Risk of Bias 2 tool.
Results: TAK-003 consistently showed high efficacy against DENV-1, DENV-2, and DENV-3 in seronegative populations, although efficacy against DENV-4 remains inconclusive. Efficacy and immunogenicity persisted for up to 4.5 years, with the highest protection observed during the first two years. While waning began after three years post-vaccination, Geometric Mean Titers (GMT) remained higher than in the placebo group. The vaccine demonstrated a favorable safety profile, with no vaccine-related serious adverse events reported.
Conclusion: TAK-003 is safe, effective, and provides meaningful protection, although the effectiveness remains lower in seronegative populations. Our findings support its potential role in dengue prevention strategies for seronegative populations, though further studies across broader age groups and diverse geographic regions, particularly regarding DENV-4 are needed.

Keyword: Dengue vaccine, TAK-003, efficacy, immunogenicity, safety

ID: 1598

INTEGRATION OF ONE HEALTH IN INDONESIAN MEDICAL EDUCATION CURRICULA

Dian Puspita Sari[1*], Yoga Pamungkas Susani[2], Azizatul Adni[1], Lale Justin A. Elizar[1], Gandes Retno Rahayu[3]

[1]Undergraduate Medical Education Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[2]Maritime Medicine Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[3]Master of Medical and Health Profession Education Program, Faculty of Medicine, Nursing, and Public Health, Gadjah Mada University, Yogyakarta, Indonesia
*Corresponding author: dianps@unram.ac.id

ABSTRACT

Background and Objectives: Globally, the One Health approach has gained prominence as a framework to address health challenges at the human-animal-environment interface. In Indonesia, where rich biodiversity and close human-animal-environment interactions heighten risks such as zoonoses and antimicrobial resistance, integrating One Health into medical education is urgent but little explored. This study aimed to map the integration of One Health into medical curricula in Indonesia.
Methods: In this descriptive study, 50 of 120 faculties of medicine were selected using stratified random sampling. Participants were curriculum leaders for undergraduate medicine and medical doctor programs. Data on institutional characteristics, extent of One Health integration, and challenges were collected through an online questionnaire and analyzed descriptively.
Results: Fourteen institutions from all regional divisions responded (28%), of which 71.4% had integrated One Health. All did so in the pre-clinical stage, while half in the clinical stage. Most (80%) offered it as a mandatory component. One Health was delivered within existing courses, mainly through lectures and case discussions (90%). It was taught mostly in the context of emerging/ re-emerging infectious diseases, zoonoses, antimicrobial resistance, and pandemic preparedness. No interprofessional involvement was reported. Challenges spanned curriculum, faculty, institutional, and cultural levels, with curriculum overload being the most common (57.1%).
Conclusion: In the responding institutions, One Health integration remains limited in scope and depth. Strengthening integration will require innovative ways to embed One Health into existing courses within already crowded curricula, alignment of competency standards and policy to support interprofessional learning, and investment in faculty development.

Keywords: One Health, Medical Education, Curriculum, Indonesia

ID: 1612

ADJUVANT CORTICOSTEROID THERAPY IN THE MANAGEMENT OF PERITONEAL TUBERCULOSIS: EVIDENCE AND CONTROVERSIES

Ni Putu Ayu Sanchita Ardyani[1], Rafi Abdika 'Afwa[2], Dinni Anisa Ishabil[3], Adhwa Renata[4], Elyana Tabina Astariyati[5], Noor Hidayani Rezky Mulya[6], Al Thoriq Ranggabarani[7], Alfi Salma Q Rani[8], Esha Hawayani[9], Salman Fawwaz Wahid[10], Fayudilla Muslimah[11], Nabiel Rifqi Putra Taufik[12], Metta Octora[13]

[1-12]Medicine Department, Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
[13]Microbiology Department, Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
*Corresponding author: ayusanchitaardyani@gmail.com

ABSTRACT

Background and Objectives: Peritoneal tuberculosis is a rare but serious form of extrapulmonary tuberculosis, characterized by non-specific symptoms that often lead to delayed diagnosis and management, and corticosteroids have long been considered as adjuvant therapy to suppress inflammation and prevent complications. This study aims to evaluate the scientific evidence regarding the effectiveness, controversies, and recommendations for the use of corticosteroids as adjuvant therapy in peritoneal tuberculosis.
Methods: This study is a systematic literature review conducted through searches in PubMed, Scopus, and Google Scholar for publications from 2015 to 2025, including randomized controlled trials, meta-analyses, and clinical guidelines related to peritoneal tuberculosis and corticosteroid therapy. Selected articles were critically analyzed based on methodological quality and relevance.
Result: The review indicates that corticosteroids may accelerate clinical symptom improvement, reduce ascites, and decrease the risk of complications such as strictures and intestinal obstruction. However, the strength of the evidence remains limited, as most studies were small-scale and non-randomized, and corticosteroid use is also associated with adverse effects, including hyperglycemia, immunosuppression, and secondary infections.
Conclusion: Corticosteroids as adjuvant therapy in peritoneal tuberculosis may provide benefits in cases with severe inflammation or immunological complications, but are not recommended for routine use. Their administration should be considered selectively based on the patient's risk–benefit profile and supported by careful monitoring. Large-scale randomized controlled trials are still needed to strengthen the evidence base for clinical practice in the management of peritoneal tuberculosis.

Keywords: Peritoneal tuberculosis, adjuvant therapy, corticosteroids, inflammation

ID: 1614

SERUM LEVELS OF VITAMIN D, HEPCIDIN, IRON, FERRITIN AND INTERLEUKIN-6 BEFORE AND AFTER SUPPLEMENTATION OF VITAMIN D3 IN CHILDREN WITH CHRONIC KIDNEY DISEASE: A PROSPECTIVE COHORT STUDY

Jusli Aras[1], Hardiyanti[1], Andi Muldiana Dwi Rachmayani[1], Nicholas Readly[1]

[1]Division of Pediatric Nephrology, Department of Child Health, Faculty of Medicine, Hasanuddin University/Dr. Wahidin Sudirohusodo Hospital, Makassar, Indonesia
*Corresponding author: jusliaras11@yahoo.com

ABSTRACT

Background and Objectives: CKD in children is frequently associated with anemia & systemic inflammation, often driven by dysregulation of iron metabolism.Key markers involved in this dysregulation include hepcidin,iron,ferritin,& IL-6.VitaminD3 is known to have immunomodulatory and anti-inflammatory effects, & may play a role in modulating these parameters.This study aimed to present of serum levels of vitamin D, hepcidin, iron, ferritin and IL-6 before & after supplementation of VitaminD3 in children with CKD.
Methods: A prospective cohort study was conducted at Dr. Wahidin Sudirohusodo hospital from September to December 2024. Consecutive random sampling was done in this study. The population was children with CKD stage 1-5, age 2 – 18 years old. the exclusion criteria were no blood transfusion, vitamin D3 and iron supplementation within 3 months, and acute severe infection. participants received vitamin D3 at a dose of 2.000 iu daily for 6 weeks. Serum levels were measured before and after period using standard laboratory assays.
Results: A total of 43 children, underlying disease-causing CKD were lupus nephritis, SRNS, SSNS, Chronic Pyelonephritis, RPGN, and CAKUT. VitaminD3 supplementation before and after led to a statistically significant in serum levels of vitaminD (ng/mL) 21 ng/mL vs 30 p<0.001,hepcidin (ng/mL)1293.7vs835.3 p<0.001,Iron(ug/L)48.74vs96.37 p<0.001,& ferritin(ng/mL)832.57vs133.80 p0.05.
Conclusion: Vitamin D supplementation in children with CKD may contribute improved iron metabolism & reduced inflammatory activity, as evidenced by lower of hepcidin,ferritin, & improved serum iron.These findings suggest that vitamin D3 could be a beneficial adjunct therapy in managing anemia & inflammation in pediatric CKD patients.

Keywords: Vitamin D3, Hepcidin, Iron, Chronic Kidney Disease, Children.

ID: 1618

COMPARISON OF CONVENTIONAL STUDY METHOD AND PSYCHOGAME IN ENHANCING ADOLESCENTS' MENTAL HEALTH LITERACY

Devi Shanti Prameswari[1], Titi Pambudi Karuniawaty[2], Wayan Sulaksmana Sandhi Parwata[2]

[1]Medical Education Study Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[2]Department of Child Health, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: devysant@gmail.com

ABSTRACT

Background and Objectives: Mental health literacy, as one of the criteria for good mental health, refers to an individual's understanding of how to achieve and maintain positive mental well-being. One key factor supporting good mental health literacy is promoting mental health itself, which can be conducted through various methods. Therefore, this study aims to compare the effectiveness of conventional education methods (lecture) and Psychogame in enhancing adolescents' mental health literacy.
Methods: This research is a quantitative study with an experimental design, specifically a two-group pre-test post-test design. Comparisons between the two groups were conducted using the independent samples t-test. Participants were students of Mataram 5th Junior High School, aged 13–15 years. Mental health literacy was assessed using the Mental Health Literacy Questionnaire (MHLQ).
Results: The study results indicated no increase in scores in the lecture group, whereas the Psychogame group showed a 3,54% increase in MHLQ scores. Statistical comparison of the two groups using the Mann–Whitney U test yielded a p-value of 0,045, indicating a statistically significant difference between the two groups. A personal or family history of mental health issues was significantly associated with the effectiveness of Psychogame in improving mental health literacy.
Conclusion: The study concluded that Psychogame is more effective than conventional methods in enhancing adolescents' mental health literacy.

Keywords: lecture, psychogame, mental health literacy, adolescent

ID: 1619

SWIMMING LESSONS THROUGH A SYSTEMS APPROACH: PREVENTING CHILD DROWNING IN INDONESIA'S RESOURCE-LIMITED SETTINGS

Muthia Cenderadewi[1], Md Zabir Hasan[2,3], Susan G Devine[4], Richard C Franklin[4,5]

[1] Faculty of Medicine and Health Sciences, University of Mataram, West Nusa Tenggara, Indonesia.
[2] Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA
[3] BRAC James P. Grant School of Public Health, BRAC University, Dhaka, Bangladesh
[4] College of Medicine and Dentistry, James Cook University, Townsville, Australia
[5] Royal Life Saving Society – Australia, Sydney, Australia
*Corresponding author: muthia.cenderadewi@staff.unram.ac.id

ABSTRACT

Background: Drowning remains a preventable yet persistent cause of child mortality in Indonesia. Access to swimming lessons, a proven protective measure, is hindered by socioeconomic, geographic, and cultural barriers. This study applied a systems-thinking model to explore interdependencies shaping swimming lesson access and identify leverage points for sustainable change.
Methods: A case study approach was used, drawing on a causal loop diagram (CLD)-based systems model to explore socio-ecological determinants and interdependencies shaping swimming lesson participation. Data sources included a scoping review of peer-reviewed and grey literature, policy and government documents, and focus group discussions with parents, community leaders, and physical education (PE) teachers in Lombok, West Nusa Tenggara, a province with high drowning risk. Qualitative data were thematically coded and iteratively mapped to refine the CLD.
Results: The CLD revealed interacting dynamics that shape access to swimming lessons. In systems thinking, reinforcing loops amplify change (e.g., more facilities driving greater participation), while balancing loops counteract change (e.g., financial constraints limiting expansion). Three major reinforcing loops identified: (1) the Local Resources Loop, where increased facilities and trained instructors encouraged participation and investment; (2) the Education-Participation Loop, where embedding lessons in schools, supported by funding and technical assistance, broadened access; and (3) the Community Engagement Loop, where collective action shifted sociocultural attitudes and sustained support. Progress was constrained by limited financing, rural service gaps, and fatalistic beliefs about drowning.
Conclusion: Long-term, scalable drowning prevention in Indonesia will require integrating swimming into school curricula, providing technical and financial support, and promoting inclusive participation.

Keywords: Drowning prevention; Swimming lessons; Systems thinking; Causal loop diagram; Public health policy

ID: 1621

ENHANCING A HAND HYGIENE SURVEILLANCE SYSTEM BASED ON WHO STANDARDS USING FASTER R-CNN ALGORITHM

Hamsu Kadriyan[1], Mizanul Ridho Aohana[2], I Gede Pasek Suta Wijaya[2], Fitri Bimantoro[2], Didit Yudhanto[1], Eka Arie Yuliyani[1], Lalu Hizrian Zikri Hamdi[1]

[1]Department of Medical Education, University of Mataram, West Nusa Tenggara, Indonesia
[2]Department of Informatics Engineering, University of Mataram, West Nusa Tenggara, Indonesia
*Corresponding author: hamsu@unram.ac.id

ABSTRACT

Background: Adherence to proper handwashing procedures constitutes a pivotal component of maintaining personal hygiene and preventing the transmission of disease, as recommended by the WHO. The objective of this study is to make a comparison between two approaches to computer vision algorithms, namely temporal sequence modeling (which employs a combination of CNN and LSTM) and object detection (which uses Fast R-CNN), with the aim of detecting and evaluating handwashing steps automatically from video data. Four sequence-based model architectures were utilized: The MobileNet-V2, MobileNet-V3 Small, EfficientNet-B0, and ResNet-50 models were each combined with a long-short term memory (LSTM) network and subsequently compared with a Fast R-CNN model based on ResNet-50. All models were evaluated using a handwashing video dataset that had been modified to emulate real-world conditions, such as low lighting, blur, noise, and hand position changes.
Methods: The evaluation results demonstrate that Fast R-CNN attains the optimal performance with an accuracy of 99%, surpassing all sequence models with accuracies ranging from 82% to 87%. In addition to its superior accuracy, Fast R-CNN has been demonstrated to exhibit greater robustness against visual disturbances, as it directly focuses on significant objects in each frame. In contrast, LSTM-based models demonstrated deficiencies in differentiating between right and left hands movements and misclassified visually similar steps.
Conclusion: This research makes a substantial contribution to the selection of a more robust model architecture for video-based surveillance systems in the domain of hand hygiene. Furthermore, it opens up opportunities for the integration of computer vision technology in intelligent, real-time health monitoring systems.

Keywords: Temporal Sequence Modeling, Object Detection, Comparative Analysis, Hand-Wash Classification, Smart Surveillance System

ID: 1623

SPATIAL DISTRIBUTION OF TUBERCULOSIS CASES IN MATARAM CITY, 2024: A GEOSPATIAL APPROACH TO SUPPORT TB ELIMINATION

Putu Suwita Sari[1], Ida Ayu Eka Widiastuti[1], Nazry Gilbranshina Harindutta[2]
I Kadek Mulyawan[3], Eva Triani[4], Rohani[5]

[1]Maritime Medicine Specialist Program, Faculty of Medicine and Health Sciences, Universitas Mataram*
[2]Undergraduate Medical Study Program, Faculty of Medicine and Health Sciences, Universitas Mataram
[3]Provincial Health Office of West Nusa Tenggara
[4]Parasitology Department, Faculty of Medicine and Health Sciences, Universitas Mataram
[5]Public Health Department, Faculty of Medicine and Health Sciences, Universitas Mataram
*Corresponding author: suwitasari@unram.ac.id

ABSTRACT

Background and Objectives: Tuberculosis (TB) remains a major infectious disease, with Indonesia ranking second worldwide and recording approximately 969,000 cases in 2024. Despite the implementation of the National TB Elimination Program 2020–2024, key indicators such as case detection (71% of the 90% target) and treatment success (84% of the 90% target) remain below expectations. Mataram City, the capital of West Nusa Tenggara Province, still needs continued efforts to reach TB elimination targets. This study aimed to map and analyse the spatial distribution of TB cases in Mataram City in 2024.
Methods: This quantitative cross-sectional study used secondary data from the National TB Information System (SITB) obtained from the West Nusa Tenggara Provincial Health Office. TB distribution maps were created using ArcGIS Pro and analysed for global and local spatial autocorrelation (Moran's I and Anselin Local Moran's I) to identify clustering and hot spots.
Results: In 2024, 978 individuals were registered as confirmed TB cases residing in Mataram City. The Global Moran's I index was 0.100 (Z-score=1.35 and a p=0.18), indicating a random spatial distribution of TB cases across administrative villages (*kelurahan*). However, local analysis revealed two high–high clusters in Ampenan Selatan and Dayan Peken, showing areas with high incidence surrounded by similar neighbors.
Conclusion: Although no significant global clustering was found, local spatial analysis identified small-scale high-risk clusters. These findings show that spatial analysis can help identify areas with higher TB cases and guide more focused prevention and control efforts in Mataram City.

Keywords: tuberculosis, spatial analysis, TB clusters, TB hot spots

ID: 1624

BARRIERS TO DIABETIC RETINOPATHY SERVICES IN URBAN AND RURAL AREAS: A COMPREHENSIVE MIXED-METHODS STUDY

Monalisa Nasrul[1*], Isna K. Nintyastuti[1], Marie Y. Andari[1], Ni Nyoman Geriputri[1]

[1]Department of Ophthalmology/Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
*Corresponding author: monalisa@unram.ac.id

ABSTRACT

Background and Objectives: Diabetic retinopathy (DR) is a leading cause of blindness among the working-age population. Early detection is crucial for preventing vision loss. The success of DR screening reflects the knowledge, attitudes, and practices of healthcare professionals, medical education institutions, and diabetic patients. These factors may vary between urban and rural settings, influencing follow-up strategies. The objective is to identify barriers to DR screening among general practitioners, medical education institutions, and diabetic patients in both areas of West Nusa Tenggara.
Methods: A mixed-method cross-sectional study was conducted using questionnaires and focus group discussions involving general practitioners at primary healthcare facilities (including vision centers), medical school program directors, and diabetic patients. Data analysis is using the SPSS program.
Results: Forty-five GPs from Mataram City and North Lombok participated. Although all physicians demonstrated good knowledge and positive attitudes (100%), 81% reported poor DR screening practices. Only 19% performed visual acuity tests, 14.3% conducted fundus examinations in the last six months, and 14.3% had access to an ophthalmoscope. Two medical schools in West Nusa Tenggara lacked an integrated DR screening curriculum at both undergraduate and professional levels. Among diabetic patients, 54%, 46%, and 58% showed good knowledge, attitudes, and practices, respectively, with no significant difference between urban and rural groups.
Conclusion: Limited access to diagnostic tools and insufficient ophthalmic examination skills hinder DR screening by general practitioners. Integrating DR screening into medical curricula and increasing patient education are essential to improving screening coverage in West Nusa Tenggara.

Keywords: mixed-method study, barriers, diabetic retinopathy screening, primary eye care

ID: 1627

ASSOCIATION BETWEEN DAILY STEP COUNT AND CARDIOVASCULAR OR ALL-CAUSE MORTALITY: A META-ANALYSIS OF PROSPECTIVE COHORT STUDIES

Yusra Pintaningrum[1], Steven Christian[2]

[1]Department of Cardiology, Faculty of Medicine, Mataram University, Mataram, Indonesia
[2]Medical Student, Faculty of Medicine, Mataram University, Mataram, Indonesia
*Corresponding author: christianchang50@gmail.com

ABSTRACT

Background and Objectives: Step count is a simple and scalable metric for monitoring physical activity and promoting public health. While individual cohort studies suggest that higher daily step counts reduce mortality risk, the magnitude and consistency of this association—particularly for all-cause and cardiovascular mortality—remain unclear. This meta-analysis aimed to synthesize recent prospective cohort evidence on the relationship between daily step volume and mortality risk.
Methods: We conducted a systematic review and meta-analysis of prospective cohort studies (2015–2025) reporting hazard ratios (HRs) for all-cause or cardiovascular mortality by step count, measured objectively via wearable devices. Pooled estimates were calculated using fixed-effects models. Heterogeneity was assessed using the I^2 statistic.
Results: Seven studies (n ≈ 98,000) were included. Higher daily step counts were significantly associated with reduced risk of mortality. For all-cause mortality (six studies; n ≈ 93,000), the pooled HR was 0.88 (95% CI: 0.84–0.91; I^2 = 96%). For cardiovascular mortality (four studies; n ≈ 76,000), the pooled HR was 0.53 (95% CI: 0.45–0.62; I^2 = 23%). Narrative findings supported a consistent dose-response pattern. Mortality risk declined progressively from ~4,000 to 10,000 steps/day, with evidence of diminishing returns beyond that range.
Conclusion: Higher daily step counts are associated with significantly lower risks of all-cause and cardiovascular mortality. These findings support step-based activity as an effective, low-barrier public health strategy. Policy targets—such as increasing the proportion of adults reaching ≥7,000 steps/day and expanding pedestrian-friendly infrastructure—should be integrated into cardiovascular health promotion programs.

Keywords: step count, physical activity, mortality, cardiovascular disease

ID: 1628

NETWORK META-ANALYSIS: RANKING DIAGNOSTIC ACCURACY OF AUTOMATED ANKLE-BRACHIAL INDEX DEVICES

Yusra Pintaninrum[1], Ahmad Nur Rifa'i[2]

[1] Department of Cardiology and Vascular Medicine, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
[2] Clinical Clerkship Student, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
*Corresponding author: yusra@unram.ac.id

ABSTRACT

Background: Peripheral Arterial Disease (PAD) is a manifestation of systemic atherosclerosis and a predictor of cardiovascular morbidity and mortality. The Ankle-Brachial Index (ABI) is the standard non-invasive diagnostic tool, yet the manual Doppler method is operator-dependent and time-consuming, limiting use in primary care. Automated ABI devices offer practical alternatives, but their comparative accuracy remains unclear. This study synthesized evidence on the diagnostic accuracy of automated ABI devices versus manual Doppler.
Methods: A systematic review following PRISMA guidelines was conducted. PubMed and the Cochrane Library were searched for studies published between January 2014 and December 2024. Eligible studies compared automated ABI devices (oscillometric or plethysmographic) with manual Doppler in adults. Data from 11 studies were extracted to construct 2x2 contingency tables. Random-effects subgroup meta-analyses of logit-transformed sensitivity and specificity were performed by device technology. Heterogeneity was assessed using Cochran's Q and I^2 statistics.
Results: Eleven studies met the criteria. The pooled logit sensitivity was 1.65 (95% CI: 1.07–2.22), equivalent to 83.9%, while pooled logit specificity was 2.60 (95% CI: 2.31–2.89), equivalent to 93.1%. Substantial heterogeneity was observed for sensitivity (I^2 = 82.4%, $p < 0.001$) and moderate heterogeneity for specificity (I^2 = 43.3%, $p = 0.061$). Subgroup analyses showed plethysmographic devices had the highest sensitivity, whereas oscillometric devices exhibited variable performance.
Conclusion: Automated ABI devices demonstrate high specificity but variable sensitivity for PAD detection. Their accuracy depends on technology and device type, limiting interchangeability. Device choice should align with clinical context, and large-scale comparative studies are needed to guide adoption.

Keywords: Ankle-Brachial Index (ABI), Automated Diagnostic Devices, and Peripheral Arterial Disease (PAD)

ID: 1629

RECOVERY-PHASE CLBBB IN TREADMILL TESTING: IMPLICATIONS FOR EARLY CAD DETECTION

Yusra Pintaningrum[1]

[1]Department of Cardiology and Vascular Medicine, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
*Corresponding author: yusra@unram.ac.id

ABSTRACT

Background and Objectives: Cardiovascular disease (CVD) remains the leading cause of morbidity and mortality worldwide, accounting for over 17 million deaths annually, with nearly one-third due to coronary artery disease (CAD) (World Health Organization, 2025). In Indonesia and other low- and middle-income countries, the burden of CAD is rising in parallel with increasing prevalence of hypertension, diabetes, dyslipidemia, obesity, and sedentary lifestyle, posing both clinical and economic challenges (Adisasmio et al., 2020). Early detection through accessible non-invasive screening, such as treadmill stress testing, is therefore essential for reducing cardiovascular risk at the population level. While treadmill testing typically identifies ischemia through ST-segment changes, the appearance of new-onset conduction abnormalities such as complete left bundle branch block (CLBBB) is rare but clinically significant. This case describes the unusual occurrence of recovery-phase CLBBB as an important diagnostic clue of underlying CAD (Chung et al., 2024; Iglica et al., 2022). Recognition of this phenomenon is crucial, as it may indicate severe coronary obstruction even in the absence of classical ischemic changes.
Conclusion: This case underscores the clinical importance of recovery-phase CLBBB as a subtle yet meaningful marker of myocardial ischemia. Beyond the individual level, it reinforces the public health imperative of strengthening early detection strategies for CAD. Ensuring that health facilities are equipped with adequate non-invasive diagnostic tools, coupled with increasing physician awareness to carefully evaluate chest pain symptoms, can support earlier intervention and ultimately reduce the population burden of cardiovascular disease.

Keywords: Complete left bundle branch block, Coronary artery disease, Recovery-phase treadmill test, Public health screening

ID: 1630

COMBINED AEROBIC AND RESISTANCE TRAINING VS AEROBIC TRAINING ALONE IN CHRONIC HEART FAILURE

Yusra Pintaningrum[1], Lale Nandita Hulfifa[1]

[1]Departement of Cardiology, Faculty of Medicine, Mataram University
*Corresponding author: lalenanditha30@gmail.com

ABSTRACT

Background and Objectives: Chronic heart failure (CHF) is a major global health problem with high rehospitalization, morbidity, and mortality. Aerobic exercise is the primary recommendation in cardiac rehabilitation, yet muscle weakness and sarcopenia in CHF patients highlight the need for resistance training. Combining aerobic and resistance training may provide broader benefits, not only at the individual level but also in healthcare system efficiency. This study aims to evaluate the effects of combined aerobic resistance training compared with aerobic training alone on functional capacity in patients with CHF, and to assess implications for cardiac rehabilitation strategies at the healthcare system level.
Methods: Literature searches were conducted in PubMed, Cochrane, and Frontiers (2015–2025). Only RCT involving stable CHF patients (NYHA class I–III) who underwent combined aerobic resistance training versus aerobic training alone were included. Three RCT met the eligibility criteria and were analyzed using Review Manager 5.4 with a random-effects model.
Results: The meta-analysis showed no significant difference in VO_2peak between combined training and aerobic training alone (MD = 0.05; 95% CI: -3.09 to 3.19; p = 0.98), with moderate heterogeneity (I^2 = 58%).
Conclusion: Combined training was not significantly superior to aerobic training alone in improving VO_2peak. Nonetheless, both modalities are safe and effective. Integrating them into cardiac rehabilitation can reduce rehospitalization, improve quality of life, and decrease long-term healthcare costs. These findings support evidence-based policies to optimize cardiac rehabilitation from primary to tertiary care.

Keywords: CHF, VO_2peak, aerobic training, resistance training, public health, meta-analysis

ID: 1634

THE EFFECT OF MICRO RNA-675 (MIR-675) GENE EXPRESSION TOWARDS MICROPHTHALMIA TRANSCRIPTION FACTOR (MITF) ON MELASMA PATIENTS IN MAKASSAR

Zakiyah Salim[1], Khaeruddin Djawad[2], Nasruddin Massi [3], A.Alfian Zainuddin[4]

[1]Program Studi Doktor Ilmu Kedokteran, Fakultas Kedokteran Universitas Hasanuddin, Makasar. Indonesia
[2]Program Studi Doktor Ilmu Kedokteran, Fakultas Kedokteran Universitas Hasanuddin, Makasar. Indonesia
[3]Program Studi Doktor Ilmu Kedokteran, Fakultas Kedokteran Universitas Hasanuddin, Makasar. Indonesia
[4]Program Studi Doktor Ilmu Kedokteran, Fakultas Kedokteran Universitas Hasanuddin, Makasar. Indonesia
*Corresponding author: (zakiyahsalim73@gmail.com)

ABSTRACT

Background: Melasma is a common pigmentation disorder caused by excessive melanin production by melanocytes in the epidermis, often migrating to the dermis. Several studies indicate that the prevalence of melasma varies widely, ranging from 1% of the general population to 9–50% in at-risk populations. Human skin exhibits variations in color, with some appearing lighter in different demographics. These characteristics are primarily determined by the expression of genes controlling melanin quantity and quality, which can vary significantly due to small nucleotide polymorphisms affecting various stages of the melanogenesis process. A growing body of research indicates that gene expression is also influenced by several epigenetic events, including chromatin modification, DNA methylation, and classes of non-coding RNAs such as long non-coding RNA (lncRNA) and microRNA (miRNA). MiRNA-675 has been identified as a key molecule in the regulation of skin pigmentation, particularly in melasma. Recent studies have highlighted how miRNA-675, derived from the H19 non-coding RNA, influences the melanogenesis pathway through specific targets in skin cells.
Methods: This study used an exploratory case-control design, with subjects divided into a melasma group and a control group.
Results: Studies in melasma patients showed that miRNA-675 reduction was associated with increased pigmentation through the MITF pathway. In vivo studies in mice also supported these findings, where overexpression of miRNA-675 reduced the expression of melanogenesis genes. MiRNA-675 plays a role in suppressing the expression of MITF, a key factor in melanin production. Decreased miRNA-675, as found in melasma patients, leads to increased MITF and activation of pigmentation-related proteins (tyrosinase, Trp-1, Trp-2), thus enhancing the melanogenesis process. Furthermore, miRNA-675 can be released via exosomes from keratinocytes to surrounding cells, extending its regulatory effects.
Conclusion: MiRNA-675 plays a crucial role in regulating skin pigmentation in melasma, primarily through suppression of MITF. Decreased miRNA-675 expression in melasma patients contributes to hyperpigmentation, suggesting that miRNA-675 could potentially serve as a therapeutic target or novel biomarker for melasma.

Keywords: Melasma, MITF, MiRNA-675.

ID: 1636

RELATIONSHIP BETWEEN MEASLES IMMUNISATION COVERAGE AND MEASLES DISEASE INCIDENCE IN WEST NUSA TENGGARA PROVINCE 2024

Sutiana Supi[1], Lina Nurbaiti[1], Amelia Ramdani Hasby[1]

[1]Master of Public Health Study Programme, Faculty of Medicine and Health Sciences, University of Mataram, Mataram City, Indonesia
*Corresponding author: supisutiana@gmail.com

ABSTRACT

Background and Objectives: Measles is a highly contagious infectious disease that can cause outbreaks when immunisation coverage is insufficient. In the context of Global Health Security (GHS), measles immunisation coverage reflects the capacity of the health system to prevent disease transmission across regions. West Nusa Tenggara (NTB) Province experienced an increase in measles cases in 2024, indicating challenges in achieving herd immunity. This study aims to descriptively analyse the relationship between measles immunisation coverage and the number of suspected measles cases in NTB Province, contributing to the strengthening of regional immunisation systems and national health security.
Methods: This study employed a quantitative descriptive design with a cross-sectional approach. The independent variables were MR1 and MR2 immunisation coverage, while the dependent variable was the number of suspected measles cases. Data were analysed univariately and bivariately using frequency tabulation and proportion distribution. Secondary data were obtained from the 2024 Health Profile of West Nusa Tenggara Province.
Results: The average MR1 coverage was 83.1%, and MR2 was 71.7%, both below the national target of 95%. Districts with MR2 coverage below 60% showed a higher prevalence of measles cases. The total number of suspected measles cases in 2024 reached 485, an increase of 261.2% compared to the previous year.
Conclusion: There is an association between low measles immunisation coverage and high measles incidence in NTB. Equitable MR2 coverage is essential to prevent outbreaks and strengthen Global Health Security at the local level.

Keywords: measles, MR immunisation, vaccination coverage, NTB, Global Health Security

ID: 1665

DESCRIPTION OF MOTHERS' KNOWLEDGE OF TYPHOID FEVER IN CHILDREN IN THE BANTEN REGION

Rayhana Rayhana[1]*

[1]Medical Program, Universitas Muhammadiyah University, Jakarta
*Corresponding author: rayhanambiomed@gmail.com

ABSTRACT

Background: Typhoid fever remains high in Asia, including Indonesia, especially among children. Antibiotic resistance is increasing and sanitation is poor, so prevention through vaccination, environmental improvements, and surveillance remain crucial.
Objective: To determine mothers' knowledge about typhoid fever in children in a neighborhood in the Banten area.
Methods: This research design was a descriptive survey. Fifty-one respondents participated in the study.
Results: 35 respondents (68.6%) had poor knowledge about typhoid fever in children, 11 (21.6%) had sufficient knowledge, and 5 (9.8%) had good knowledge.
Conclusion: Based on the results of this study, it can be concluded that mothers' knowledge about typhoid fever in children is in the poor category. Support from healthcare workers and other relevant sectors is needed to increase mothers' knowledge about typhoid fever in children.

Keywords: Mother's Knowledge, Typhoid Fever, child health

ID: 1702

TYPOLOGIES OF HEALTH BEHAVIOR AND PSYCHOSOCIAL RISKS AND THEIR ASSOCIATION WITH QUALITY OF LIFE IN INDONESIA: A LATENT CLASS ANALYSIS

Ratri Kusuma Wardani[1*], Hanif Adinaya Pawestri[2], Edward Sutanto[3,4], Septi Kurnia Lestari[1]

[1] Sleman Health and Demographic Surveillance System (Sleman HDSS), Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia
[2] Department of Nutrition and Health, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Yogyakarta, Indonesia
[3] Oxford University Clinical Research Unit Indonesia, Faculty of Medicine Universitas Indonesia, Jakarta Pusat, Indonesia.
[4] Center for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford, United Kingdom
*Corresponding author: ratri.kusuma.w@mail.ugm.ac.id

ABSTRACT

Background and Objectives: Indonesia faces a growing non-communicable diseases burden, thus highlighting urgent prevention needs. This study identifies behavioral and psychosocial risk types, examines their associations with quality of life (QoL), and explores modification by sociodemographic factors.
Methods: This study used nationally representative data from the Indonesian Family Life Survey Wave 5 (n=16,196). Cross-sectional analysis was conducted using latent class analysis and survey-weighted logistic regression models. Health behaviors and psychosocial risks were assessed using six indicators: diet quality, physical activity, smoking, sleep disturbance, stress symptoms, and social connectedness. QoL was defined as a binary composite outcome based on 14 indicators covering physical functioning, perceived health, and life satisfaction.
Results: Five distinct patterns of co-occurring behavioral and psychosocial risk types were identified. The most prevalent was the Dietary–Social Disconnection Risk type, present in over half the population. The Clustered Behavioral–Psychosocial Risk (CBPR) type showed the strongest association with poor QoL (Nationally: AOR = 2.13, 95% CI: 1.96–2.31; Central region: AOR = 2.24, 95% CI: 1.78–2.83), especially among individuals with lower socioeconomic status. High-risk types were more prevalent among men, older adults, the employed, and those with lower education or socioeconomic status, with education and wealth acting as key mediators. Interaction analyses indicated that socioeconomic disadvantage intensified the negative impact of CBPR on QoL.
Conclusion: Behavioral and psychosocial risk types are strongly linked to QoL and influenced by socioeconomic conditions. These findings highlight the need for tailored public health strategies that address risk clustering and prioritize disadvantaged groups.

Keywords: Behavioral Risk, Factor Analysis, Non-communicable Disease, Psychological Stress, Quality of Life, Indonesia

ID: 1703

RISK FACTOR PROFILE OF PRETERM LABOR AT THE WEST NUSA TENGGARA PROVINCE HOSPITAL

Ario Dananto[1], Ika Primayanti[1], Ida Lestari Harahap[1], Ainun Karima[1]
[1]Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
*Corresponding author: ario.danianto@unram.ac.id

ABSTRACT

Background and Objectives: Preterm labor refers to labor that place between 20 and 37 weeks of gestation. It happens when contractions or excess pressure lead to the cervix dilating, resulting in the fetus being delivered from the uterus. The specific cause of preterm labor remains largely unclear. However, several factors can increase the risk of preterm labor, including: previous pregnancy history, the mother's health status during pregnancy, and others. Babies born prematurely are susceptible to health problems because their organs are not fully developed, which can increase infant morbidity and mortality. The rise in premature labors is a significant issue, especially given the growing initiatives for maternal health care being implemented, so it is essential to identify risk factors for preterm labor right from the outset of pregnancy.
Methods: This study is a descriptive, observational study with a cross-sectional design. Secondary data were obtained from the medical records of patients diagnosed with preterm labor at the NTB Provincial Hospital between 2022 and 2024. The data were analyzed and described to evaluate the proportion of each studied variable.
Results: The distribution of the most common risk factors for preterm birth was multigravida 420 (68.9%); anemia 244 (40%); history of abortion ≥1 time 138 (32.6%); oligohydramnios 96 (15.7%); and twin pregnancy 34 (5.6%).
Conclusion: Many risk factors associated with preterm labor can be identified early in antenatal care, leading to the hope that preterm labors may be prevented. This prevention could significantly reduce both morbidity and mortality, particularly in the perinatal period.

Keywords: risk factor, preterm labor, antenatal care

ID: 1704

ACCURACY OF FINGERPRINT PULSE OXIMETER COMPARED TO NEONATAL PULSE OXIMETRY IN EARLY DETECTION OF CRITICAL CONGENITAL HEART DISEASE IN NEWBORN INFANTS

Linda Silvana Sari[1*], Titi Pambudi Karuniawaty[1], Putu Aditya Wiguna[1], Wayan Sulaksamana Sandhi Parwata[1], Farhan Aqil Putra Hermawan[2]

[1] Department of Child Health, Mataram University Medical School/West Nusa Tenggara Provincial General Hospital of Mataram., Indonesia
[2]Faculty of Medicine, Mataram University Medical School, Indonesia
*Corresponding author: lindasilvanasari@gmail.com

ABSTRACT

Background and Objectives: Critical congenital heart disease (CHD) requires immediate intervention, yet its asymptomatic nature in newborns presents a significant detection challenge. Early screening is crucial. This study aimed to determine the suitability of a common fingertip pulse oximeter as a low-cost screening tool for critical CHD by comparing its performance against the standard neonatal pulse oximeter.
Methods: A cross-sectional study was conducted with 150 healthy newborns at a health center in Kediri. Preductal and postductal oxygen saturation levels were measured in each subject using both a standard neonatal pulse oximeter and a common fingertip pulse oximeter. The data were analyzed to compare saturation values, and a Bland-Altman analysis was performed to assess the agreement and reliability between the two instruments.
Results: While the neonatal pulse oximeter recorded measurements more quickly, there was no statistically significant difference in the preductal (p=0.053) or postductal (p=0.099) oxygen saturation values between the two devices. However, the Bland-Altman analysis revealed poor agreement and reliability. The average bias for preductal measurements was 0.93% (95% CI: -7.38 to 9.24), and for postductal measurements, it was 0.74% (95% CI: -8.49 to 9.24), indicating wide limits of agreement. No subjects were diagnosed with critical CHD during the study.
Conclusion: Despite the lack of a statistically significant difference in mean saturation readings, the poor agreement between the fingertip pulse oximeter and the neonatal pulse oximeter demonstrates that the former is not a sufficiently reliable substitute for screening newborns for critical CHD.

Keywords: Critical CHD, Fingertip saturation pulse, Neonatal saturation pulse

ID: 1705

PATIENT SATISFACTION LEVELS WITH OUTPATIENT PHARMACEUTICAL SERVICES AT THE PENUJAK COMMUNITY HEALTH CENTER IN CENTRAL LOMBOK FOR THE PERIOD OF FEBRUARY 2025

Baiq Khaeratinnisa Oktari[1], Siti Rahmatul Aini[2], Raisya Hasina[3]

[1]Pharmacy Study Program, Faculty of Medicine, University of Mataram, Indonesia
[2] Pharmacist Professional Program, Faculty of Medicine, University of Mataram, Indonesia
[3] Pharmacist Professional Program, Faculty of Medicine, University of Mataram, Indonesia
*Corresponding author: khaeratinnisabaiq132@gmail.com

ABSTRACT

Background and Objectives: The Community Satisfaction Survey is one of the mandatory standards for Puskesmas accreditation, which must be conducted periodically. Penujak Health Center is one of the main primary healthcare facilities in West Praya, with a higher average number of outpatient visits compared to inpatients. This study aims to determine the level of outpatient satisfaction with pharmaceutical services based on the five dimensions of satisfaction, tangibles, reliability, responsiveness, assurance, and empathy at UPTD Puskesmas Penujak, Central Lombok, in February 2025.
Methods: This research employs a quantitative approach with a cross-sectional design. Data were collected from 100 respondents in the pharmacy unit using a structured questionnaire adapted from previous studies. The questionnaire consisted of 20 items that had been tested for validity (0.724) and reliability (0.951), and thus declared valid and reliable. Data were analyzed using percentage scoring techniques, gap analysis between satisfaction and expectations, and further processed using the Importance Performance Analysis (IPA) method, which is illustrated through a Cartesian diagram.
Results: The satisfaction and expectation levels of outpatients toward pharmaceutical services were as follows: tangibles (88.87% and 86.93%), reliability (88.97% and 87.57%), responsiveness (89.47% and 87.53%), assurance (88.80% and 87.72%), and empathy (89.00% and 87.33%), with an overall mean score of 89.02% for satisfaction and 87.41% for expectations, both categorized as very satisfied. SERVQUAL analysis showed the largest gap values for each dimension: tangibles (0.15), reliability (0.12), responsiveness (0.14), assurance (0.17), and empathy (0.14).
Conclusion: Based on the gap analysis and IPA results, the service performance has met patient expectations, indicating that patients are satisfied with the pharmaceutical services provided.

Keywords: Satisfaction, pharmaceutical services, SERVQUAL, puskesmas

ID: 1706

ETHNOMEDICINE STUDY OF SKIN DISEASE REMEDIES IN SEGALA ANYAR VILLAGE, PUJUT DISTRICT, CENTRAL LOMBOK

Eti Agustiani[1], Siti Rahmatul Aini[2], Neneng Rachmalia Izzatul Mukhlishah[3]

[1]Pharmacy Study Program, Faculty of Medicine, University of Mataram, Indonesia
[2]Pharmacist Professional Program, Faculty of Medicine, University of Mataram, Indonesia
[3]Pharmacy Study Program, Faculty of Medicine, University of Mataram, Indonesia
*Corresponding author: etiagustiani1108@gmail.com

ABSTRACT

Background and Objectives: Traditional medicine remains widely practiced in rural communities, including in Central Lombok Regency. In Segala Anyar Village, Pujut District, people continue to trust alternative treatments through *belian* (traditional healers) and the use of medicinal plants. This study aimed to identify the characteristics of *belian*, the composition of medicinal ingredients, methods of preparation and application, as well as the cultural importance of plants used for treating skin diseases.
Methods: Informants were selected using the discriminative snowball sampling method, and data were collected through semi-structured interviews guided by a structured questionnaire. Quantitative ethnomedicine analysis was conducted using value calculations, the Index of Cultural Significance (ICS), and Fidelity Level (FL).
Results: Based on interviews with seven informants, 23 species from 17 plant families were identified as being used in remedies for skin diseases. Preparation methods included pounding, slicing, chewing, boiling, and grating, while the remedies were applied topically, taken orally, blown, or sprayed. The plant parts utilized were leaves, rhizomes, fruits, flowers, latex, and root bases. The highest ICS values were recorded for turmeric (*Curcuma longa* L.) with 96, followed by kencur (*Kaempferia galanga* L.) with 84. FL values ranged from 4.7% to 80%, with the highest observed in chili (*Capsicum frutescens* L.) for the treatment of boils
Conclusion: Traditional healers in Segala Anyar Village employ diverse plant species and preparation methods for treating skin diseases. Turmeric, kencur, and chili showed the highest cultural significance and fidelity levels, reflecting their central role in traditional dermatological treatments.

Keywords: Ethnomedicine, Segala Anyar Village, skin diseases, traditional medicinal herbs, plants

ID: 1707

HEALTH RISKS AND DIVING CHARACTERISTICS OF INDIGENOUS COMPRESSOR DIVERS IN GILI TAPAN ISLAND, WEST NUSA TENGGARA

Wahyu Sulistya Affarah[1], Yoga Pamungkas Susani[1], E. Hagni Wardoyo[1], Ida Ayu Eka Widiastuti[1], Bayu Tirta Dirja[1], Putu Suwita Sari[1], Anita Valencia[1], Nurul Ridha Muttaqien[1]

[1]Maritime Medicine Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: yoga.pamungkas.s@unram.ac.id

ABSTRACT

Background and Objectives: Traditional compressor diving is a common livelihood practice among small-scale fishermen in several coastal communities in Indonesia. This study aimed to describe the diving profiles, practices, and associated health risks among compressor fishermen in Gili Tapan Island, West Nusa Tenggara.
Methods: A descriptive cross-sectional study was conducted on Gili Tapan Island, West Nusa Tenggara, Indonesia. Eleven male divers were recruited by purposive sampling. Primary data were collected through guided face-to-face interviews using a structured questionnaire and complemented by field observations. Recorded variables included demographics, years of diving experience, type of equipment, diving depth and duration, frequency of repetitive dives, safety-stop practice, and self-reported health complaints. Descriptive statistics (counts and proportions) summarized the findings.
Results: All 11 participants were male, aged 29-48 years; ten reported >10 years of diving experience. Eight divers currently used compressors and three were breath-hold divers (some with prior compressor use). Reported diving depths ranged from 5 to 35 meters with an average bottom time of approximately 1.5 hours. Most divers performed 2–3 repetitive dives per day; 7 of 11 reported performing safety stops. Health complaints included joint pain (n=11), muscle pain (n=6), paresthesia (n=3), tinnitus (n=2), headache (n=1), epigastric pain (n=1), and hearing loss (n=1). Only three participants had sought primary healthcare for these symptoms.
Conclusion: Continuous, culturally appropriate education on compressor diving risks and promotion of safe diving practices are urgently needed. Limited access to primary healthcare in this remote community underscores the need for sustained health service support.

Keywords: compressor diving, indigenous fishermen, diving profile, occupational health, Indonesia

ID: 1769

SEVERE NEUROLOGICAL MANIFESTATION OF TYPE II DECOMPRESSION SICKNESS IN A TRADITIONAL DIVER: A CASE REPORT

Siti Nurhaliza[1], Ilsa Hunaifi[2]
[1]Medical Student, Faculty of Medicine, Mataram University, Mataram, Indonesia
[2]Department of Neurology, Faculty of Medicine, Mataram University, Mataram, Indonesia
*Corresponding author:stnrhaliza16@gmail.com

ABSTRACT

Background: Type II Decompression Sickness (DCS) is a serious condition resulting from nitrogen bubble formation due to rapid ascent after deep or prolonged dives. Traditional divers using compressors are at high risk because of inadequate decompression procedures. This report aims to describe the neurological complications of delayed management in a patient with Type II DCS
Case Presentation: A 32-year-old male traditional diver was admitted with bilateral lower limb weakness that developed approximately 20 minutes after surfacing from a 30-meter dive lasting one hour using a compressor. Clinical evaluation revealed paraplegia, sensory loss below the umbilicus, and urinary retention. MRI of the thoracic spine demonstrated an intramedullary lesion at T8–T11 suggestive of spinal cord edema. The patient underwent three sessions of Hyperbaric Oxygen Therapy (HBOT), but neurological improvement was minimal due to the delay of more than 24 hours before recompression.
Discussion: The patient's persistent neurological deficit underscores the importance of early recognition and prompt HBOT in preventing irreversible spinal cord injury. Delayed treatment allows prolonged ischemia and inflammatory damage within the spinal cord, leading to poor functional recovery. This case emphasizes the vulnerability of traditional divers who lack adequate safety knowledge and access to timely medical care
Conclusion: Type II DCS can cause profound and potentially permanent neurological damage if not promptly treated. Early diagnosis, immediate administration of HBOT, and education on safe diving practices are essential to reduce morbidity and prevent long-term disability among traditional divers

Keywords: decompression sickness, type II DCS, paraplegia, hyperbaric oxygen therapy, traditional diver

ID: 1773

FACTORS AFFECTING PULMONARY FUNCTION IN COMPRESSOR DIVERS IN THE COASTAL REGION OF WEST NUSA TENGGARA

I Putu Aryana Kusuma Putra[1], Ida Ayu Eka Widiastuti[2*], Putu Suwita Sari[3]

[1]Program Studi Kedokteran, Fakultas Kedokteran dan Ilmu Kesehatan, Universitas Mataram, Indonesia
[2,3] Program Studi Pendidikan Dokter Spesialis Kedokteran Kelautan, Fakultas Kedokteran dan Ilmu Kesehatan, Universitas Mataram, Indonesia
*Corresponding author: widiastutidayu@gmail.com

ABSTRACT

Traditional compressor diving in West Nusa Tenggara presents significant health risks, but the specific factors affecting divers' pulmonary function are not well understood. This study was conducted to examine the correlation between individual and occupational risk factors and the pulmonary health of compressor divers. A cross-sectional study was performed, analysing 35 divers in West Lombok who were selected using a consecutive sampling method. The evaluation focused on key pulmonary function measurements, including FVC, FEV1, and the FEV1/FVC ratio. Data on risk factors, including BMI, rest duration, ascent/descent speed, and diving frequency, were collected through a guided questionnaire. Pulmonary function was measured using a digital spirometer, and the relationships between variables were analysed with Pearson and Spearman correlation tests. The analysis revealed no significant correlation between the seven examined risk factors and the absolute values of FEV1 and FVC. However, a statistically significant correlation was found between the frequency of diving per week and the FEV1/FVC ratio ($p = 0.041$). Other factors, such as rest duration, dives per trip, dive duration, BMI, and ascent/descent speed, did not show a significant relationship with pulmonary parameters. The frequency of diving per week emerges as a key factor linked to changes in the FEV1/FVC ratio among traditional compressor divers, indicating a cumulative effect on airway function. Therefore, limiting the number of dives per week may be an essential consideration for reducing pulmonary health risks in this population.

Keywords: Pulmonary Function, Compressor Divers, Risk Factors, Spirometry, Occupational Health

ID: 1775

CEREBRAL VASCULITIS IN NEUROPSYCHIATRIC SLE: A RARE CASE OF TUMOR-LIKE PRESENTATION

I Gusti Lanang Krisna Wiracakra[1], Endah Irnanda Ulfah Gea[1], Setyawati Asih Putri[1], Herpan Syafii Harahap[1]

[1]Departemen Neurology, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: lanangkrisna46@gmail.com

ABSTRACT

Background: Systemic lupus erythematosus (SLE) is a chronic, relapsing, multisystem autoimmune disease. Approximately 30% of SLE patients may experience neurological and psychiatric manifestations, known as neuropsychiatric SLE (NPSLE). Although small-vessel vasculitis in the brain is common, tumor-like vasculitis of large vessels is extremely rare in SLE patients. We report the case of a 30-year-old woman diagnosed with SLE. The patient presented with sudden onset of headache, right-hand weakness, focal seizures, auditory hallucinations, and anxiety. Neurological examination revealed right-hand monoparesis. Brain imaging revealed a lesion resembling a brain mass, leading to the differential diagnosis of cerebral tumor and multiple cerebral artery stenosis, confirming the diagnosis of cerebral vasculitis. This case illustrates how NPSLE can present with complex clinical and radiological features, mimicking other conditions such as brain tumors.
Conclusion: This case highlights the importance of careful differential diagnosis in SLE patients with neuropsychiatric symptoms, especially when imaging findings resemble tumors. Early recognition and tailoring of treatment based on the underlying pathophysiology, as in this case, are crucial.

Keywords: Systemic Lupus Erythematosus (SLE), Neuropsychiatric SLE (NPSLE), Cerebral Vasculitis, Brain Tumor Mimic.

ID: 1776

EPILEPSY AND SLEEP DISORDERS: TWO INTERRELATED MEDICAL CONDITIONS

Herpan Syafii Harahap[1*], Ria Damayanti[2], Zamroni Afif [2], Raditya Rachman Landapa[3], I Gusti Lanang Krisna Wiracakra[3]

[1]Department of Neurology, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[2]Department of Neurology, Faculty of Medicine, Brawijaya University, Malang, Indonesia
[3]Neurology Resident, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: herpanharahap@unram.ac.id

ABSTRACT

Background and Objectives: Epilepsy is a neurological disease which currently remains as an important global health problem. Sleep disorder is a common consequence of epilepsy. Sleep disturbances increase the risk of triggering interictal epileptiform discharges and epileptic seizures in patients with epilepsy (PWE). Sleep disturbances can impact on poor seizure control in PWE, and poorly controlled epileptic seizures also potentially increase the risk of sleep disorders in epilepsy. Epilepsy and epilepsy-associated sleep disorders can form a vicious circle of both medical conditions. This review aims to explore the bidirectional relationship between sleep disorders and epilepsy through theoretical approaches and previous studies.
Methods: We searched the ScienceDirect, Google Scholar and Pubmed for articles suitable and relevant to the topic of our review, using the keywords “epilepsy”, “interictal epileptiform discharges”, “sleep disorders”, “sleep-wake cycle”, “epilepsy associated sleep disorder”. Total of 27 articles included in this review.
Results: Sleep disorder is one of the common consequences of epilepsy. Sleep disturbances increase the risk of triggering interictal epileptiform discharges and epileptic seizures in patients with epilepsy. Poorly controlled epileptic seizures also have the potential to increase the risk of occurrence and severity of sleep disorders in epilepsy.
Conclusion: Epilepsy and epilepsy-associated sleep disorders can form a vicious circle of both medical conditions in PWE. Future studies are needed to determine the pathophysiology of sleep disorders and appropriate pharmacological treatment for sleep disorders in patients with epilepsy.

Keywords: epilepsy, interictal epileptiform discharges, sleep disorders, sleep-wake cycle, epilepsy associated sleep disorder

ID: 1779

EXPLORING THE IMPACT OF *CHLORELLA VULGARIS* EXTRACT AS AN ANTIBACTERIAL FOR ACNE

Muhammad Dimas Arzy[1], Eskarani Tri Pratiwi[2], Windah Anugrah Subaidah[2], Neneng Rachmalia Izzatul M[3]

[1]Pharmacy Study Program, Faculty of Medicine in Health Sciences, Mataram University
[2] Pharmaceutical and Technology Pharmacy Department, Faculty of Medicine in Health Sciences, Mataram University
[3] Biology Pharmacy Department, Faculty of Medicine in Health Sciences, Mataram University
*Corresponding author: dimsss.arzy@gmail.com

ABSTRACT

Background: *Chlorella vulgaris* is a microalga containing phenolic and flavonoid compounds that act as antibacterials. Previous studies have shown that the n-hexane extract *of C. vulgaris* has antibacterial activity against acne-causing bacteria. However, because the n-hexane solvent is toxic, it is necessary to use safer alternative solvents such as 96% ethanol. This study aims to determine the antibacterial activity of the ethanol extract of *C. vulgaris* against acne-causing bacteria.
Methods: Simplisia of *C. vulgaris* was extracted using the maceration method with 96% ethanol solvent. Identification of phenolic and flavonoid secondary metabolites was done by the tube test method. The antibacterial activity of *C. vulgaris* ethanol extract was tested by the disc diffusion method. The test groups consisted of a positive control (doxycycline 0.1%), a negative control (DMSO 10%), and various concentrations of *C. vulgaris* ethanol extract (10%, 20%, and 40%). The yield of *C. vulgaris* extract was 23.63%.
Results: The results of phytochemical screening showed that the extract of *C. vulgaris* contained flavonoid and phenolic secondary metabolites, indicated by the color change to yellow and brownish green. Antibacterial test results of *C. vulgaris* extract at concentrations of 10%, 20%, and 40% and the positive control (doxycycline 0.1%) inhibited the growth of *Staphylococcus aureus* bacteria with inhibition zones of 6.84 mm (medium), 9.01 mm (medium), 11.57 mm (strong), and 28.73 mm (very strong) and *Staphylococcus epidermidis* with inhibition zones of 7.43 mm (medium), 8.79 mm (medium), 11.38 mm (strong), and 28.08 mm (very strong), respectively.
Conslusion: Based on this description, it can be concluded that the ethanol extract of *C. vulgaris* has the potential as a new antibacterial candidate derived from natural materials.

Keywords: Antibacterial, acne, *Chlorella vulgaris*, phenolic, flavonoid

ID: 1807

ENCAPSULATED PAPILLARY CARCINOMA MIMICKING A BENIGN LESION IN A 78-YEAR-OLD WOMAN: A RARE CASE REPORT FROM INDONESIA

I Made Putra Biantara[1], I Wayan Agus Yoga Prawira[1], I Gede Hendra Wijaya Putra[1], Made Agus Suanjaya[1]
[1]Medical Education Study Program, Faculty of Medicine, Al-Azhar Islamic University, Mataram.
*Corresponding author: madeputrabiantara01@gmail.com

ABSTRACT

Background: Encapsulated papillary carcinoma (EPC) is a rare subtype of breast cancer, accounting for <1% of all cases. It is defined as an epithelial papillary neoplasm within a cystic space, surrounded by a fibrous capsule and lacking a myoepithelial layer. Its well-circumscribed, non-infiltrative appearance often mimics benign lesions such as fibroadenoma or intraductal papilloma, causing diagnostic delays. In Indonesia, EPC reports remain scarce and mostly incidental postoperative findings.
Case: A 78-year-old woman presented with a painless lump in her left breast, first noticed six months earlier at 3 cm, slowly enlarging to 6 cm without alarming symptoms. Physical examination revealed a well-defined, mobile mass in the upper outer quadrant. Ultrasonography showed a smooth, oval, heterogeneous lesion suggestive of a benign process. Excisional biopsy revealed papillary proliferation of atypical epithelial cells within a fibrous-walled cyst lacking peripheral myoepithelial cells, consistent with EPC, supported by immunohistochemistry. She underwent lumpectomy with tumor-free margins; no lymph node metastasis was found. Immunohistochemistry showed ER/PR positivity and HER2 negativity. The patient received adjuvant hormonal therapy with an aromatase inhibitor. She recovered uneventfully and remained disease-free during 12 months of follow-up.
Conclusion: EPC is a rare breast tumor with a favorable prognosis but is often misdiagnosed as benign. Accurate histopathological and immunohistochemical evaluation is crucial to prevent mismanagement. Hormonal therapy can be effective in receptor-positive postmenopausal patients. This case highlights diagnostic challenges and the need for greater clinical awareness in Indonesia.

Keywords: breast cancer, encapsulated papillary carcinoma (EPC), histopathology, aromatase inhibitor, rare case

ID: 1817

OCCUPATIONAL HEALTH RISKS FROM MARINE ANIMALS AMONG TRADITIONAL DIVERS IN LOMBOK

Yoga Pamungkas Susani[1], Wahyu Sulistya Affarah[1], Eustachius Hagni Wardoyo[1], Putu Suwita Sari[1], Dian Puspita Sari[2], Basuki Rahmat[2], Alfian Muhajir[1,3], Ni Putu Sasmita Lestari[1], Nurman Saputra[1]

[1]Maritime Medicine Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[2]Undergraduate Medical Education Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[3] Undergraduate Medical Education Program, Universitas Islam Al-Azhar, Mataram, Indonesia
*Corresponding author: yoga.pamungkas.s@unram.ac.id

ABSTRACT

Background and Objectives: Traditional divers in the informal fisheries sector are exposed to occupational hazards from marine animals, such as stings and bites. This study aimed to explore perceptions and responses to marine animal hazards among traditional divers in Lombok, Indonesia.
Methods: A qualitative design was employed using focused group discussions (FGDs) with fishermen from North and West Lombok Regency. Fifteen traditional divers participated, consisting of spearfishing and compressor divers aged 20–56 years. Data were analyzed thematically to identify perceptions, experiences, and responses related to marine animal hazards.
Results: Divers consistently described encounters with hazardous marine animals as common in their daily work. They perceived these events as unavoidable occupational risks. For mild symptoms, divers relied on self-care and traditional remedies, while medical treatment was considered only for severe cases. Across both groups, the risks were accepted as part of their occupation rather than preventable health problems.
Conclusion: Marine animal hazards represent real occupational risks among traditional divers in Lombok, yet they are largely normalized within the community. Addressing these issues requires community-based health education, integration of traditional practices with medical approaches, and improved occupational health protection for informal divers.

Keywords: marine animal hazards, traditional divers, occupational health, health-seeking behavior, informal fisheries

ID: 1818

SCREENING FOR MENTAL HEALTH RISKS AMONG ADOLESCENTS IN GUNUNGSARI, WEST LOMBOK: A SCHOOL-BASED CROSS-SECTIONAL STUDY

Khaula Karima[1], Annisa Yumna Nabiilah[1], Daffa Aulia Faza Adhima[1], Dira Kurnia Rizki[1], Rifki Ahmad Eka Putra[1], Ika Primayanti[2], Wahyu Sulistya Affarah[2], Muthia Cenderadewi[2], Azillatin Ruhul Ma'ani[2]

[1]Medical Study Program, Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
[2]Public Health Department, Faculty of Medicine and Health Sciences, Mataram University, Mataram, Indonesia
*Corresponding author: Email: khaulakarima20@gmail.com

ABSTRACT

Background and Objectives: Adolescence is a vulnerable period for mental health risks, yet many cases remain undetected. This study aimed to assess the prevalence, symptom patterns, and major stressors of mental health risks among adolescents in Gunungsari, West Lombok.
Methods: A descriptive cross-sectional study was conducted in the Gunungsari Primary Health Care catchment area (West Lombok) in September 2025. A total of 200 twelfth-grade students (100 from a public senior high school and 100 from a religious-based private senior high school) were recruited using random sampling. Screening employed the Self-Reporting Questionnaire-20 (SRQ-20). Adolescents were considered at risk if they reported ≥6 "yes" responses or a positive response to item 17 (suicidal ideation).
Results: Of 200 students, 111 (55.5%) were classified as at risk for mental health problems. Risks were higher in females (36.5%) than males (19.0%). The most frequent stressors were academic pressure (36.5%) and high self-expectations (34.5%), followed by peer/romantic relationships (23.5%), family conflict (13.0%), and financial problems (12.0%). Symptom patterns were dominated by somatic complaints (40.6%), then cognitive–functional (30.9%), affective (27.8%), and severe symptoms (0.7%). Coping strategies included talking to friends/family (29.0%), worship (27.0%), and exercise (22.5%). Primary supports were family (46.5%) and close friends (34.0%). Despite 69.5% feeling comfortable disclosing, professional help-seeking was rare (5.0%).
Conclusion: More than half of adolescents screened were at risk, with somatic symptoms and academic stressors most prominent. Findings emphasize the need for regular school-based mental health risk screening integrated with primary care, supported by accessible counselling and clear referral pathways.

Keywords: Adolescents, SRQ-20, mental health risks, school health, primary health care, Indonesia

ID: 1819

A NARRATIVE REVIEW OF PHARMACIST EDUCATION: COMPARATIVE INSIGHTS FROM INDONESIA AND WORLDWIDE

Muhammad Syach Maulad Ichfa[1*], Siti Rahmatul Aini[1], Wahida Hajrin[1]

[1] Pharmacist Professional Study Program, Department of Health Sciences, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: syach.maulad@gmail.com

ABSTRACT

Background and Objectives: Pharmacist education plays a strategic role in producing professionals who are competent and responsive to the demands of the ever-evolving healthcare system. However, Indonesia faces challenges such as fragmented curriculum integration, lack of standardized internship programs, and competency assessment systems. This study aims to compare the pharmacist education system in Indonesia with selected countries on five continents to identify gaps and potential reforms
Methods: A narrative review method was used, analyzing 25 full-text articles published between 2008 and 2025. The key word is "Pharmaceutical Professional Education" in Indonesia, Asia, Europe, Africa, America, and Australia. The inclusion criteria focus on duration of study, admission requirements, curriculum, internships, CPD and certification.
Results: Indonesia implemented a two-stage model of Bachelor (Four years) + profession (one year) with UKAI as a registration requirement. Compared to Thailand, Finland, and the U.S. which have adopted an integrated PharmD model for six years, Indonesia's system is still fragmented, especially in the integration of clinical curriculum and competency-based internship supervision. CPD in Indonesia is administrative, not yet reflection or portfolio-based, in contrast to digital systems in developed countries.
Conclusion: Indonesia's pharmacist education system is regionally competitive, but still fragmented in academic-professional integration and sustainable development.
Recommendation: Education system reform needs to refer to the FIP framework with local adjustments, including the development of national PharmD pathways, curriculum and internship integration, and competency-based CPD digitization.

Keywords: Pharmacy professional Education, Pharmacist Internship, Continuing Professional Development (CPD), Indonesia, Narrative Review

ID: 1822

COST IMPLICATIONS OF HEALTHCARE FOR TOURISTS IN BALI: A STUDY OF OUTPATIENT AND EMERGENCY SERVICES

Made Indra Wijaya[1*], Luh Gede Pradnyawati[1], Dewa Ayu Putu Ratna Juwita[1], Anny Eka Pratiwi[1]

[1]Warmadewa University, Faculty of Medicine and Health Sciences, Department of Community Medicine –Preventive Medicine
*Corresponding author: indra.wijaya@warmadewa.ac.id

ABSTRACT

Introduction: Bali, a prominent global tourist destination, frequently accommodates international visitors requiring medical services. However, healthcare cost variability and lack of billing transparency pose challenges for tourists, particularly the uninsured. While neighboring countries like Malaysia and Thailand have implemented structured systems to manage such issues, similar measures are lacking in Bali. This study explores the cost implications of outpatient and emergency healthcare for tourists in Bali and proposes strategies for improvement.
Methods: This cross-sectional study utilized a mixed-methods approach conducted between January and December 2024. Quantitative data were collected from 31 private healthcare providers (22 clinics, 9 hospitals), focusing on pricing of outpatient consultations and emergency care. Qualitative data were gathered through semi-structured interviews with 50 international tourists, 15 administrative staff, and 10 policymakers to assess perceptions and practices surrounding cost transparency.
Results: Consultation costs varied widely, with general practitioner visits ranging from USD 12 to 150 and emergency services from USD 150 to 1000. Tourists reported mixed experiences regarding cost communication, especially those without insurance. Administrative staff identified the absence of regulatory pricing frameworks, while stakeholders emphasized the need for tiered pricing models and better integration between tourism and healthcare sectors.
Conclusion: Healthcare costs for tourists in Bali remain inconsistent and inadequately regulated, affecting tourists' satisfaction and financial well-being. Establishing standardized pricing, enhancing transparency, and promoting sectoral collaboration could improve Bali's position as a competitive and trustworthy medical tourism destination.

Keywords: Healthcare costs, outpatient care, emergency services, medical tourism, Bali

ID: 1824

IMMUNOLOGICAL STATUS, WHITE BLOOD CELL PROFILE, AND BEHAVIORAL SYMPTOMS IN PEOPLE WITH SCHIZOPHRENIA

Emmy Amalia[1*], Agustine Mahardika[1], Indah Sapta Wardani[1], Qomarul Islamiyati[2]

[1]Department of Psychiatry, Faculty of Medicine and Health Sciences University of Mataram, Mataram, Indonesia
[2]Department of Internal Medicine, Faculty of Medicine and Health Sciences University of Mataram, Mataram, Indonesia
[3]West Nusa Tenggara Province General Hospital, Mataram, Indonesia
*Corresponding author: emmy.amalia.ea@gmail.com

ABSTRACT

Background and Objectives: New evidence has emerged indicating inflammatory processes and immune system abnormalities in people with schizophrenia. There is also a trend toward increased white blood cell counts in schizophrenia patients. This study aims to analyze the correlation between immunological status and white blood cells profile with behavioral symptoms in people with schizophrenia.
Methods: This is an observational analytical study with a cross-sectional design. Seventy-one patients diagnosed with schizophrenia met the inclusion criteria became the subjects. Data included white blood cell counts to determine the patient's white blood cell profile and immunological status, and Positive and Negative Syndrome Scale (PANSS) scores to determine the patient's behavioral symptoms. Data were analyzed using the Spearman correlation test.
Results: The average level of white blood cells count were still within normal limits, although 16 people (22.53%) showed higher Leukocyte levels than normal (> 11,000 / µL) and the average Eosinophil level (4.63 + 4.13%) was higher than normal. Most of the subjects (67.61%) had dominant negative symptoms of Schizophrenia. There was no significant correlation (p> 0.05) between the level of Leukocytes, Lymphocytes, Monocytes, Neutrophils, Eosinophils, Basophils, The Neutrophil-Lymphocyte ratio (NLR), The Platelet-Lymphocyte ratio (PLR), The Monocyte-Lymphocyte ratio (MLR) with the PANSS scores.
Conclusion: There was no significant correlation between immunological status and white blood cells profile with behavioral symptoms in people with schizophrenia. The subjects condition undergoing treatment may influence the results. Further research is needed using more specific immune tools and considering treatment protocols.

Keywords: Immunological status, White blood cells, Schizophrenia, Behavioral symptoms

ID: 1829

ANALYSIS OF MALONDIALDEHYDE (MDA), SUPEROXIDE DISMUTASE (SOD), AND TRANSFORMING GROWTH FACTOR BETA-1 (TGF-B1) IN CYCLISTS

Ida Ayu Eka Widiastuti[1*], Ilhamjaya Patellongi[2], Irfan Idris[3*], Aryadi Arsyad[4]

[1]Department of Physiology, Medical Faculty and Health Sciences University of Mataram, Mataram, Indonesia
[2,3,4] Department of Physiology, Medical Faculty of Hasanuddin University, Makassar, Indonesia
*Corresponding author: ayueka@unram.ac.id

ABSTRACT

Background and Objectives: Cycling is a popular physical activity. Prolonged and continuous physical activity causes adaptation by increasing the capacity of antioxidant enzymes that reduce the formation of ROS, so that it can prevent the activation of TGF-β1. This study examined the relationship between cycling distance and the levels of MDA, SOD, and TGF-β1 in cyclists.
Methods: This study involved 34 cyclists from 5 bicycle communities in Mataram City. SOD levels were obtained using the colorimetric method, while MDA and TGF-β1 were assessed from the results of serum examination using the ELISA method. Physical activity responses to MDA and TGF-β1 were obtained after subjects performed treadmill exercise with the Bruce Protocol, along with recording $VO2_{max}$.
Results: Mileage was not significantly correlated with MDA, SOD, and TGF-β1 levels and changes in MDA and TGF-β1 levels after treadmill exercise, except for the correlation of mileage with changes in TGF-β1 levels in cyclists aged ≤40 years (r=-0.569; p =0.017). Additionally, mileage has a significant correlation with VO2 max. (r=0.471; p=0.005).
Conclusion: The increase in mileage did not show a significant correlation with the adaptation process, as measured by indicators of oxidative stress and internal antioxidant defense, based on physical exercise. Increasing mileage through regular cycling increases $VO2_{max}$.

Keywords: cycling, mileage, $VO2_{max}$., MDA, SOD, TGF-β1, adaptation, response

ID: 1830

DESIGN AND VALIDATION OF KALDU PKV (KALKULATOR DAN EDUKASI PENYAKIT KARDIOVASKULAR) MOBILE APPLICATION

Lale Budi Kusuma Dewi[1], Wahyu Sulistya Affarah[2], Yusra Pintaningrum[3], Ari Khusuma[1], Agrijanti[1], Lalu Habib Sasiwimba[1]

[1]Medical Laboratory Technology, Poltekkes Kemenkes Mataram, Mataram, Indonesia
[2]Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[3]Department of Cardiology and Vascular Medicine, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: wsaffarah@unram.ac.id

ABSTRACT

Background and Objectives: Cardiovascular disease (CVD) is the leading cause of morbidity and mortality worldwide and also a major health burden in Indonesia. In primary care settings, Puskesmas continue to utilise the WHO CVD risk chart for the purpose of screening. However, the chart is of considerable size and impractical in nature, whilst also lacking the capacity for data storage. To address these limitations, we developed and validated the KALDU PKV (Cardiovascular Disease Calculator and Education) application and evaluated user acceptance at community health centres in West Lombok Regency.
Methods: The application was developed using the waterfall method. The validation process entailed a comparison of the application's results with manual calculations derived from the WHO chart, encompassing a total of 100 test data sets. The acceptance test involved 30 respondents (NCD program managers and health cadres) from three community health centres. The assessment instrument was adapted from Gayatri with a scale of 1–4.
Results: The application demonstrated 100% accuracy when evaluated against the WHO chart. The mean average acceptance scores were as follows: display quality, 3.74; material presentation, 3.67; ease of use: 3.76.
Conclusion: The application was found to be intuitive, easy to use, and relevant for field screening by respondents. The Kaldu PKV application is both valid and well-accepted, and it has the potential to expand cardiovascular screening coverage and support the PANDU PTM programme in primary care.

Keywords: cardiovascular disease, risk prediction, health education, mobile application, primary care

ID: 1833

EVALUATING PULMONARY FUNCTION AND CRP LEVELS IN LUNG CANCER PATIENTS UNDERGOING ANTICANCER THERAPY

Moulid Hidayat[1], Muhammad Mirsa Nidzarsyah[1], Rina Lestari[1], Indana Eva Ajmala[1], Prima Belia Fathana[1], Lale Maulin Prihatina[2]

[1]Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, University of Mataram, Mataram, Indonesia
[2]Department of Anatomical Pathology, Faculty of Medicine, University of Mataram, Mataram, Indonesia
*Corresponding author: moulid.hidayat.md@unram.ac.id

ABSTRACT

Background and Objectives: Lung cancer is the leading cause of cancer-related deaths worldwide, making the assessment of lung function and inflammatory markers crucial for understanding disease progression and therapy response. This study aimed to evaluate the characteristics of lung cancer patients receiving conventional chemotherapy, with a focus on pulmonary function and C-reactive protein (CRP) levels.
Methods: An observational study was conducted at West Nusa Tenggara Regional General Hospital, collecting data from patient records, including demographic characteristics, smoking history, clinical staging, treatment regimens, CRP levels, and pulmonary function tests (PFTs) before chemotherapy. Descriptive statistics were applied to analyze the data.
Results: The results revealed that the mean age of the patients was 54.25 years, with an average BMI of 19.46 kg/m^2, and the average pack years was 23.75. Pre-chemotherapy CRP levels had a mean of 86.16 mg/dL. Pulmonary function tests before chemotherapy showed an average FVC of 53.25%, FEV1 of 51.25%, and FEV1/FVC ratio of 83.70%. The FEF 25%-75% pre-chemotherapy averaged 59.25%. Of the patients, 62.5% were male and 37.5% were female. Tumor types were distributed as follows: 42.85% had squamous cell carcinoma and 57.14% had adenocarcinoma, with all patients diagnosed at stage IV. The average performance status was 2.
Conclusion: The majority of patients were male, with adenocarcinoma and stage IV tumors, and had a performance status of 2. Pulmonary function was significantly impaired, and CRP levels were elevated.

Keywords: lung cancer, CRP, pulmonary function, conventional chemotherapy, pre-chemotherapy evaluation

ID: 1834

ANALYSIS OF THE ASSOCIATION OF ONCOGENIC VIRUS INFECTION WITH LUNG CANCER INCIDENCE IN WEST NUSA TENGGARA PROVINCE

Moulid Hidayat[1], Alfaa Fahmi Azizi[1], Joko Anggoro[2], Rina Lestari[1], Indana Eva Ajmala[1], Prima Belia Fathana[1]

[1]Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, University of Mataram, Mataram, Indonesia
[2]Department of Internal Medicine, Faculty of Medicine, University of Mataram, Mataram, Indonesia
*Corresponding author: moulid.hidayat.md@unram.ac.id

ABSTRACT

Background and Objectives: Lung cancer is the leading cause of cancer-related mortality worldwide, with high incidence and death rates. Beyond traditional risk factors such as smoking and environmental exposure, evidence suggests that oncogenic viral infections—particularly *Epstein-Barr Virus* (EBV), *Human Papillomavirus* (HPV), and *Cytomegalovirus* (CMV)—may contribute to pulmonary carcinogenesis. This study aims to analyze the prevalence, viral types, and potential oncogenic mechanisms in lung cancer patients in West Nusa Tenggara Province, Indonesia.
Methods: An analytical study with a cross-sectional design. Collecting data from patients diagnosed with lung cancer at the West Nusa Tenggara Provincial Hospital between March and October 2025. Including demographic characteristics, smoking history, clinical staging, treatment regimens, Antibody detections of EBV, HPV, and CMV. Descriptive statistics were applied to analyze the data.
Results: The results revealed, 77.8% of the patients were male and 22.2% were female. The mean age of the patients was 58.44 years, with an average BMI of 20.07 kg/m^2, and the average smoking history of 16.11 pack-years. Serological testing for EBV, HPV, and CMV antibodies is still in progress. All patients had a confirmed diagnosis of stage IV squamous cell carcinoma, with an average performance status of 1
Conclusion: The majority of patients were male with history of smoking. Ongoing viral serology testing is expected to provide further insights into the potential contribution of EBV, HPV, and CMV to lung carcinogenesis.

Keywords: Lung cancer, viral infection, Epstein-Barr virus, human papillomavirus, cytomegalovirus

ID: 1835

GASTROINTESTINAL AND OTHER ADVERSE EFFECTS OF CHEMOTHERAPY IN COLORECTAL CANCER: A CLINICAL EVALUATION OF MFOLFOX7

Arif Zuhan[1], Iqbal Muhammad[2], Ghaniyyah Atifah Radwa[3]

[1] Digestive Surgery Division, Surgery Department, Faculty of Medicine and Health Sciences, University of Mataram/ NTB Province General Hospital, Mataram, Indonesia.
[2]General Surgery Resident, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
[3] Medical Education Study Program, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia.
*Corresponding author: zuhan.arif@yahoo.co.id

ABSTRACT

Background: Colorectal cancer ranks as the third most common malignancy in Indonesia and is the leading case in the digestive surgery clinic of West Nusa Tenggara Provincial Hospital. Chemotherapy is one of the main treatment modalities, with the modified FOLFOX-7 (mFOLFOX-7) regimen frequently used.
Objective: This study aimed to describe the characteristics of colorectal cancer patients and the adverse effects following mFOLFOX-7 chemotherapy at West Nusa Tenggara Provincial Hospital. Differences in Body Surface Area (BSA), carcinoembryonic antigen (CEA) levels, cancer stage, tumor site, histopathological grading, and chemotherapy-related side effects may influence treatment response and long-term survival.
Methods: A descriptive study was conducted on colorectal cancer patients diagnosed with adenocarcinoma of the colon or rectum who received mFOLFOX-7 chemotherapy between July 2020 and July 2023. Samples were obtained using consecutive sampling from medical records and interviews regarding chemotherapy side effects. A total of 25 patients were included and analyzed using univariate methods.
Results: The study involved 25 patients, consisting of 14 males and 11 females, predominantly aged 45–59 years (14 patients). Tumor location was more frequent in the colon (17 cases) than in the rectum (8 cases). Most patients were diagnosed at stage III (14 cases). Histopathological grading showed 15 patients with moderate differentiation and 10 with well differentiation. Mean BSA values increased from 1.11–1.81 m^2 pre-chemotherapy to 1.14–1.74 m^2 post-chemotherapy. Thirteen patients received neoadjuvant, while 12 underwent adjuvant chemotherapy. The most common post-chemotherapy side effects were nausea (88%), anorexia (72%), venous hyperpigmentation (68%), alopecia (68%), vomiting (56%), headache (52%), and fever (52%). Less frequent effects included paresthesia (48%), constipation (36%), diarrhea (32%), itching (32%), palmar plantar erythrodysesthesia (24%), anemia (16%), rash (8%), throat pain (4%), and bruising (4%).
Conclusion: Nausea was the most prevalent post-chemotherapy side effect (88%), while throat pain and bruising were the least frequent (4%). Patients generally experienced an increase in BSA following chemotherapy. Side effects ≥70% included nausea and anorexia; 45–70% included venous hyperpigmentation, alopecia, vomiting, headache, fever, and paresthesia; while ≤45% included constipation, diarrhea, itching, palmar plantar erythrodysesthesia, anemia, rash, throat pain, and bruising.

Keywords: *Colorectal cancer, Chemotherapy adverse effect, mFOLFOX-7*

ID: 1840

THE RELATIONSHIP BETWEEN FACTORS DURING DIVING AND THE INCIDENCE OF ACUTE DYSBARIC DISORDER (ADD) IN FISHERMEN IN SEKOTONG AREA, WEST LOMBOK

Puji Widyastuti, Yoga Pamungkas Susani, Ida Ayu Eka Widiastuti

Faculty of Medicine, Mataram University
*Corresponding author: email@institution.ac.id

ABSTRACT

Background: Acute dysbaric disorder (ADD) consisting of type 1 and type 2 DCS, barotrauma, nitrogen narcosis, and CAGE occurs as a result of the body's failure to compensate for changes in environmental pressure during diving. The prevalence of ADD will increase as the number of divers increases, in coastal areas like the NTB. Diving frequency, diving duration, equalization maneuvering, dive depth and safety stops are risk factors that increase the occurrence of ADD.
Purpose: The study aims to identify the relationship between the factors during diving and the occurrence of acute dysbaric disorder (ADD) in fishermen in the area of Sekotong, West Lombok.
Method: Cross sectional study design with a population of diver fishermen in Buwun Mas Village and sample selection using concecutive sampling technique as many as 29 respondents.
Result: There were 29 respondents with 19 people (65.5%) aged ≥ 36 years, 29 people (100%) were male, and 18 people (62.1%) had normal BMI. Respondents with ADD were 28 people (96.6%), DCS type 1 were 21 people (72.4%), DCS type 2 were 27 people (93.1%), barotrauma were 3 people (10.3%), nitrogen narcosis were 10 people (34.5%), CAGE suspects were 3 people (10.3%). In chi-square analysis, the p-value of equalization maneuver with DCS type 1 (0.014) and safety stop with suspected CAGE (0.010) were obtained.
Conclusions: There was a significant relationship between equalization maneuvers with DCS type 1 and safety stop with suspected CAGE but there was no significant relationship between these two factors with other types of ADD and dive frequency, dive duration, and dive depth did not show a significant relationship with all types of ADD events. Further studies analyzing other risk factors using cohort method and multivariate analysis, as well as the use of dive comp in data collection are needed.

Keywords: Acute Dysbaric Disorders, dive frequency, dive duration, equalization maneuver, dive depth, safety stop.

ID 1841

MANAGEMENT OF DOG BITE INJURIES IN RURAL PRIMARY HEALTH CENTER: A CASE REPORT

Irfanuddin

Medical Doctor, Sanggar Primary Health Center, Bima Regency, Indonesia
email: aseelirfan@gmail.com

ABSTRACT

Background and Objectives: Dog bites are often associated with rabies. There is no treatment available once a patient is infected with rabies, but can be prevented by proper wound management and vaccination. This article aimed at presenting the management of dog bite injuries to prevent rabies infection, especially in rural primary health centers.
Methods: This research is qualitative, using a case study approach. Data sources include primary and secondary data. Primary data comes from examination results, while secondary data comes from medical records, books, and journals.
Results: A two-year-old female presented in the emergency with severe lacerations injury and active bleeding on the left side of the head and cheek after being bitten by a dog. The wound size in the head is 9 cm x 3 cm and 3.5 cm x 0.8 cm in cheek. The initial wound management is washed and flushed immediately with soap and running water for 15 minutes. This is the most effective first-aid wound treatment. The patient receives rabies vaccine to prevent the transmission of the rabies virus, tetanus vaccine, antimicrobial to prevent bacterial infection, and the wounds is sutured to control the bleeding. After daily wound care and home visit for 12 days, the wound heals well, and the patient can return to normal activities.
Conclusion: The dog bite injuries can be treated well with adequate management according to guideline. We hope this procedure can be applied in any rural primary health center.

Keywords : Dog Bite, Injuries, Rabies, Wound Management

ID: 1843

IDENTIFICATION OF SMALL AIRWAY OBSTRUCTION IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE(COPD) BASED ON FORCE EXPIRATORY FLOW(FEF)

I Bona Manik[1], Stevia Ariella[1], Nur Annisa[1], Alfaa Fahmi[1], Prima Belia Fathana[2], Komang Sri Rahayu Widiasari[3]

[1]Pulmonology and Respiratology Specialist Program, University of Mataram, NTB, Indonesia
[2]Department Pulmonology dan Respiratory University of Mataram, NTB, Indonesia
[3]Department Pulmonology dan Respiratory West Nusa Tenggara Province Hospital, NTB, Indonesia
* Corresponding author: jamesbonz10@gmail.com

ABSTRACT

Background and Objectives: Small airways, defined as non-cartilaginous airways with a diameter < 2 mm, extend from approximately the eighth generation to the terminal and respiratory bronchioles. In healthy lungs,they contribute minimally to total airway resistance, and obstruction of roughly 75% is required before abnormalities are detected on routine spirometry (e.g.,FEV_1). The aim of study is to evaluates the prevalence of small airway obstruction in COPD group using variables FEF 50%,FEF 75%,and FEF 25-75%. Furthermore the demographic and risk factors features will be analyzed.
Methods: This study was cross sectional study. The Subjects of the study were COPD outpatients whose controlled regularly at Respiratory clinic in West Nusa Tenggara Regional General Hospital. Data was collected from patient records, including demographic characteristics, smoking history, and pulmonary function tests (PFTs). Descriptive statistics were used to analyze the data.
Results: The number of subjects included in this study were 67. Based on demographic characteristics, the mean age of subjects was 60 years,dominating with male gender 88.1%(n=59). And 41.8% (n=28) patients are current smokers. Our study demonstrated that the prevalence of small airway obstruction was found at 92.5% (n=62),88.1% (n=59),94% (n=63) based on FEF 50%,FEF 75% and FEF 25–75% consecutively. The cut off for the lung function study was 80%.
Conclusion: In COPD patients, the small airway obstruction can be detected by the FEF variable (FEF 50%,FEF 75% and FEF 25–75% that could be performed in lung function examination. Therefore, this finding may influence both the treatment and prognosis of the disease.

Keywords: COPD, small airway, FEF 25-75, FEF 50, FEF 7

ID: 1844

Antibacterial Activity of Sumbawa Forest Honey *(Apis dorsata)* against *Klebsiella pneumoniae* ATCC BAA-1705

Lania Pradiva Untari[1*]

[1]Medical Education Study Program, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
*Corresponding author: pradiva301203@gmail.com

ABSTRACT

Background and Objectives: *Klebsiella pneumoniae* ATCC BAA-1705 is a carbapenem-resistant strain representing a critical global health threat due to its multidrug resistance. This study aimed to evaluate the antibacterial activity of Sumbawa forest honey (*Apis dorsata*) as a potential natural alternative against this pathogen.
Methods: Honey samples were tested at concentrations of 25%, 50%, 75%, and 100% (v/v). Antibacterial effects were assessed using the well diffusion method to measure inhibition zones and broth dilution assays to determine minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC). Tetracycline served as a positive control, while sterile distilled water was used as a negative control.
Results: No inhibition was observed at 25% and 50%. At 75%, honey produced inhibition zones averaging ≈10 mm, and at 100% ≈11 mm, compared with 26 mm for tetracycline. The MIC was observed at 100% (v/v). Colony counts in the MBC assay showed a ≈98% reduction at full concentration, demonstrating strong antibacterial activity though not reaching the ≥99.9% bactericidal threshold.
Conclusion: Sumbawa forest honey demonstrated significant inhibitory activity against carbapenem-resistant *K. pneumoniae* ATCC BAA-1705, especially at full concentration. This study provides preliminary evidence that Sumbawa forest honey (*Apis dorsata*) can inhibit carbapenem-resistant *K. pneumoniae*. As the first report on this local natural product against this resistant strain, the findings support further exploration of honey as a promising adjunct in the fight against antimicrobial resistance

Keywords: *Klebsiella pneumoniae* ATCC BAA-1705, *Apis dorsata*, Sumbawa honey, carbapenem resistance, natural antibacterial

ID: 1847

RISK FACTORS AND PREDICTORS OF DECOMPRESSION ILLNESS: A DESCRIPTIVE STUDY OF DIVER PATIENTS N H. MOH. RUSLAN HOSPITAL, MATARAM

Niko Citami[1], Eustachius Hagni Wardoyo[1], Maxwell Malakauseya[1], Nurman Saputra[1]

[1]Maritime Medicine Specialist Education Program, Faculty of Medicine and Health Science, Mataram University, Mataram City, Indonesia
*Corresponding author: h5c02410002@student.unram.ac.id

ABSTRACT

Background and Objectives: The aim of this study was to examine the association between diver characteristics, lifestyle, behaviors, medical history, and diving profiles with the occurrence of decompression illness (DCI). And to identify potential risk factors and predictors of DCI.
Methods: An observational descriptive design was employed. From October 2024 and September 2025, data were collected by anamnesis and physical examination at the Maritime Medicine Department in H. Moh. Ruslan Hospital. A total of 32 patients were included, all of the whom gave informed consent. To describe and investigate the connections between variables, statistical analysis was performed using SPPS software.
Results: Of the 32 patients, 78.1% were diagnosed with DCI. The majority of participants were male (56.3%) and aged between 18 and 30 years (50,0%). Lifestyle behaviors analysis showed 31.3% smoked and 12.5% consumed alcohol. A history of loss consciousness was reported by 6.3%, first time DCI 9.4% and comorbidities by 31.3%. Scuba diving was the most common activity (5.1%), with a depth of 11-30 meters in 56.3%, and a duration of 1-3 hours (62.5%). Safety stops were performed in 43.8% of dives. Clinically, most divers (71.9%) had normal motoric function and stable hemodynamics (BP <120/80 in 53.1%, HR 60-100/min in 81.3%). Outpatient management was provided in 59.4%, while 40.6% required hospitalization.
Conclusion: The study found a significant incidence of DCI, particularly among divers engaged in moderate depths, long duration dives without consistent safety stops. The finding emphasizes the importance of preventive strategies and adherence to safe diving practices.

Keywords: Decompression sickness, Nusa Tenggara Barat, Fisherman, Divers, Determinants

ID: 1849

PREDICTING THE PREVALENCE OF SMALL AIRWAY DISEASE IN NON-SMOKERS THROUGH SPIROMETRY

Zakiyuddin Abd. Azam[1*], Veronica Simanjuntak[1], Sulistiawati[1], Yusuf Wahyu Dwi Utomo[1], Prima Belia Fathana[2,3], Komang Sri Rahayu Widiasari[1,2], Rina Lestari[1,2], Indana Eva Ajmala[1,2], Moulid Hidayat[1-3]

[1]Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Mataram University, Mataram, Indonesia
[2]West Nusa Tenggara Province General Hospital, Mataram, Indonesia
[3]Mataram University Hospital, Mataram, Indonesia
*Corresponding author: zakiabdulazam@gmail.com

ABSTRACT

Background and Objectives: Small airway disease (SAD) represents an early, often silent airway abnormality that may precede chronic obstructive pulmonary disease (COPD). Although smoking is regarded as the main etiological factor, recent evidence indicates that non-smokers may also develop SAD due to environmental and physiological influences. This study aimed to determine the prevalence of SAD among non-smokers using spirometry and identify potential associated factors.
Methods: A cross-sectional study was conducted on 294 subjects who underwent spirometry between January 2024 and August 2025 at West Nusa Tenggara Provincial Hospital. Of these, 45 subjects showed normal spirometry results and were included in the analysis. Demographic, anthropometric, and smoking data were collected. SAD was defined as reduced both FEF_{50}%pred and FEF_{75}%pred (<65%). Descriptive analysis was performed to determine prevalence and explore potential associations with other variables.
Results: Of the 45 subjects with normal spirometry, five were identified with SAD and all of them were non-smokers, predominantly females and younger ages with normal or underweight nutritional status. Mean FEF50%pred and FEF75%pred were lower among females, non-smokers, and underweight subjects, while none of the smokers showed evidence of SAD.
Conclusion: SAD can occur even among non-smokers, highlighting that factors beyond smoking such as sex, age, and nutritional status may contribute to early small airway impairment. Routine spirometry testing including mid-expiratory flow analysis should be considered for early detection and prevention, particularly in tropical and island populations. Further longitudinal research is warranted to confirm risk factors and develop preventive strategies for early airway disease.

Keywords: small airway disease, smoking, spirometry

ID: 1854

CARBAPENEM RESISTANCE PATTERNS AT H. MOH. RUSLAN REGIONAL PUBLIC HOSPITAL, MATARAM CITY, 2023–2024

Rifky Arafahtul Huda[1], Muthia Cenderadewi[1], Rohani[2]

Program Studi Magister Kesehatan Masyarakat, Universitas Mataram, Nusa Tenggara Barat, Indonesia
*Corresponding author: rifkyarafahtulhuda@gmail.com

ABSTRACT

Background: Carbapenems are critical last-resort antibiotics for multidrug-resistant Gram-negative infections. Rising resistance threatens patient outcomes and health system resilience, particularly in low- and middle-income countries (LMICs) with limited surveillance and stewardship. This study assessed carbapenem resistance patterns at H. Moh. Ruslan Regional Public Hospital, Mataram, Indonesia.
Methods: A retrospective cross-sectional study analysed microbiology laboratory records from January 2023 to December 2024. Bacterial isolates from blood, urine, sputum, pus, and other specimens underwent disk diffusion susceptibility testing. Resistance rates were compared between years.
Results: A total of 2,478 isolates were analyzed (2023: n = 1,163; 2024: n = 1,315). Overall carbapenem resistance increased from 12.4% in 2023 to 14.1% in 2024. The highest resistance was observed in *Acinetobacter sp.* (25.7% to 34.3%), followed by *Pseudomonas aeruginosa* (17.4% to 18.4%), *Klebsiella pneumoniae* (8.4% to 9.3%), and *Escherichia coli* (4.7% to 6.0%). Resistance was most frequently detected in isolates from sputum and pus specimens, reflecting the clinical burden of respiratory and soft tissue infections. Although the year-to-year difference was not statistically significant, the upward trend highlights a worsening trajectory. Meropenem remained highly effective against *Enterobacterales* (*Klebsiella, E. Coli, Enterobacter*, with >85% susceptibility), but activity was markedly reduced in *Acinetobacter sp.* (56% in 2024), warranting urgent attention to targeted stewardship.
Conclusion: Increasing carbapenem resistance among key Gram-negative pathogens calls for urgent action to reinforce antimicrobial stewardship, guide empirical therapy, and strengthen infection prevention and control. Sustained local surveillance will be essential to preserve carbapenems as vital last-resort agents.

Keywords: Carbapenem resistance, antibiotic susceptibility, antimicrobial resistance, Indonesia

ID: 1856

EFFECTIVE REFRACTIVE ERROR COVERAGE (eREC) PROFILE AMONG ELEMENTARY AND MIDDLE SCHOOL STUDENTS IN COASTAL AND INLAND AREAS OF MATARAM

Isna Kusuma Nintyastuti*[1], Ni Nyoman Geriputri[1], Marie Yuni Andari[1], Monalisa Nasrul[1]

[1]Ophthalmology Department, Faculty of Medicine and Health Sciences, Universitas Mataram, Indonesia
*Corresponding author: isnasuninto@unram.ac.id

ABSTRACT

Background and Objectives: Refractive error (RE) is one of the leading causes of visual impairment among school-aged children and can affect learning performance, behavior, and quality of life. School vision screening and timely correction are essential for early detection and management. The effective refractive error coverage (eREC) indicator, introduced by WHO, measures how effectively the need for refractive correction is met in a population. This study aimed to describe the eREC profile among elementary and middle school students in two different geographic settings of Mataram, Indonesia.
Methods: A descriptive cross-sectional study was conducted in September–October 2024 among students from Tanjung Karang (coastal) and Dasan Agung (inland). Visual acuity, pinhole, and refraction assessments were performed to identify refractive and non-refractive causes of visual impairment. Participants with RE were categorized as having met, undermet, or unmet needs, and eREC was calculated based on the WHO framework.
Results: A total of 441 students were examined, consisting of 214 from the coastal and 227 from the inland area. Visual impairment due to RE occurred in 43 students (9.8%), while 4 students (0.9%) had non-refractive causes. Myopia was the most common RE, followed by astigmatism. The overall eREC was 55.81%, with higher coverage in the coastal area (70.83%) compared to the inland area (36.84%). The coastal group showed more effectively corrected refractive needs, whereas the inland group demonstrated higher unmet and undermet needs.
Conclusion: This study shows that the eREC profile of school children in Mataram differs between coastal and inland areas, with higher effective coverage among coastal students.

Keywords: refractive error, eREC, visual impairment, school children, coastal, Mataram, Indonesia

ID: 1857

SERUM FERRITIN LEVELS AS A SCREENING TOOL FOR IRON DEFICIENCY IN ADOLESCENT GIRLS: A CROSS-SECTIONAL STUDY AT SMA 3 MATARAM

Ima Arum Lestarini[1*], Rifana Cholidah[2], Deasy Irawati[3], Hendra Susana Putra[1], Wirdullutfi[4]

[1]Clinical Pathology Department, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
[2]Anatomy Department, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
[3]Public Health Department, Faculty of Medicine and Health Sciences, University of Mataram, Indonesia
[4]Biologi Department, Faculty of Education and Teacher Training, University of Mataram, Indonesia
*Corresponding author: imaarum@unram.ac.id

ABSTRACT

Background: Iron deficiency anaemia (IDA) is a nutritional problem that still frequently occurs in adolescent girls. Serum ferritin is a protein that can indicate iron stores in the body and has the potential for early detection of iron deficiency.
Purpose: To assess ferritin levels as a screening tool for iron deficiency and its relationship to the incidence of anaemia in adolescent girls in Mataram.
Methods: A cross-sectional, descriptive, analytical study was conducted at Senior High School 3, Mataram. Out of 99 respondents who filled out the questionnaire, 88 were willing to have their blood drawn for sampling. Haemoglobin testing was performed to assess anaemia (cut-off <12g/dL) and serum ferritin to assess iron deficiency with a cut-off <15ng/mL. Data were analysed descriptively and using a 2x2 matrix to compare ferritin and anaemia status.
Results: Mean haemoglobin level was 13.2 g/dL, with an anaemia prevalence of 6.8%, and Mean ferritin level was 71.56 ng/mL, with an iron deficiency prevalence of 9.1%. Of the 6 students with anaemia, 4 (66.7%) had ferritin deficiency; of the 8 students with ferritin deficiency, 4 (50%) were anaemic.
Conclusion: Ferritin testing can identify individuals with low iron stores, including cases that have not yet shown anaemia. Integrating ferritin testing into screening at primary care services or school programs is recommended as an early detection step for iron deficiency, as part of efforts to prevent anaemia.

Keywords: ferritin, haemoglobin, iron deficiency; anaemia, adolescent girls, screening

ID: 1858

ANTIDIABETIC POTENTIAL OF AUSTRALIAN TROPICAL MEDICINAL PLANTS AND THEIR PHYTOCHEMICALS

Handa Muliasari[1,2*], Michael Oelgemöller[3,4], Alex Loukas[5], Darren Crayn[6,7,8], Phurpa Wangchuk[1,5Ψ*]

[1] College of Science and Engineering (CSE), James Cook University, Building E4, McGregor Rd, Smithfield, Cairns, QLD 4878, Australia.
[2] Department of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram 83125, West Nusa Tenggara, Indonesia.
[3] College of Science and Engineering (CSE), James Cook University, Townsville, QLD 4811, Australia.
[4] Hochschule Fresenius gGmbH - University of Applied Science, Faculty of Chemistry and Biology, D-65510 Idstein, Germany.
[5] Australian Institute of Tropical Health and Medicine (AITHM), James Cook University, Building E5, McGregor Rd, Smithfield, Cairns, QLD 4878, Australia.
[6] Australian Tropical Herbarium (ATH), James Cook University, Nguma-bada Campus, McGregor Rd, Cairns, QLD 4878, Australia.
[7] Australian National Herbarium, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Clunies Ross Street, Canberra, ACT 2601, Australia
[8] Queensland Herbarium and Biodiversity Science, Department of the Environment, Tourism, Science and Innovation (DETSI), Brisbane Botanic Gardens, Mount Coot-tha, Mount Coot-tha Road, Toowong, QLD 4066, Australia.
* Correspondence: handa.muliasari@my.jcu.edu.au; phurpa.wangchuk@jcu.edu.au

ABSTRACT

Plant-derived natural products remain an important source of therapeutic leads for managing type 2 diabetes mellitus (T2DM). Australian native plants, rich in unique and diverse phytochemicals, are still underexplored for their antidiabetic properties. Through a comprehensive literature review, we identified 126 Australian tropical plant species from 49 families and 88 genera traditionally used to treat wounds and diabetes-related symptoms. Of these, 28 species were edible, with fruits being the most frequently consumed part. Experimental evidence showed that crude extracts from 29 species have been tested for antidiabetic activity, with *Syzygium cumini* and *Morinda citrifolia* being the most extensively studied. Some species (*Morinda citrifolia*, *Eleocharis dulcis*, *Brassica rapa*) have also undergone clinical evaluation in diabetic patients. Across 26 species, 374 pure compounds were isolated, of which 51 were screened for bioactivity, and 16 were identified as potential antidiabetic drug leads. From this pool, ten previously unstudied species were selected for further evaluation of antioxidant capacity (DPPH and FRAP assays), total phenolic content (TPC), total flavonoid content (TFC), and antidiabetic activity (α-glucosidase and α-amylase inhibition). Among these, Eugenia sp., Terminalia sp., and Buchanania sp. demonstrated the strongest activity based on a combined scoring system. These findings highlight the antidiabetic potential of underutilised Australian native plants and propose a bioactivity-guided prioritisation framework to accelerate natural product-based drug discovery.

Keywords: Australian native plants, phytochemicals, antidiabetic, antioxidant, α-glucosidase, α-amylase, LC-MS

ID: 1860

DEVELOPMENT OF MOLECULAR METHOD TO DETECT *M. LEPRAE* VIABILITY ON CLINICAL SAMPLES

Clara Imaniar[1], Ibnu Ariyanto[2], Yeva Rosana[3*]

[1] Master's Programme in Biomedical Science, Faculty of Medicine, Universitas Indonesia, Jakarta, Indonesia
[2] Department of Microbiology, Faculty of Medicine, Universitas Indonesia, Jakarta, Indonesia
*Corresponding author: imaniarclara@gmail.com

ABSTRACT

Background and Objectives: Leprosy, a persistent Neglected Tropical Disease, challenges treatment monitoring due to reliance on slow, subjective clinical assessments. To address this gap and support global elimination efforts, this study explores the feasibility of a quantitative molecular viability assay for *Mycobacterium leprae*.
Methods: The experimental study designed a molecular viability assay targeting the *hsp18* and *esxA* genes (viability markers) and the RLEP gene (control marker) using Real-Time PCR (RT-PCR). DNA purity from previous study was assessed by nanodrop prior to subsequent RT-PCR assay to generate standard curves for all three targets. DNA-RNA extraction on clinical samples was performed using Qiagen AllPrep DNA/RNA Mini Kit. Resulting DNA was amplified by the Quantinova-Probe RT-PCR Kit and compared to the standard curves.
Results: Standard curves for all three gene targets (RLEP, *hsp18*, and *esxA*) were successfully generated by RT-PCR, establishing the linearity and efficiency required for accurate quantification. DNA-RNA extraction was performed on slit-skin scrapings from leprosy patients and successfully amplified using Real-Time PCR, confirming the technical robustness of the protocol on clinical material.
Conclusion: RLEP, *hsp18*, and *esxA* are promising gene targets for detecting *M. leprae* viability. This study establishes the essential technical components on clinical samples, confirming the method's feasibility. This proof-of-concept offers a critical, objective tool to strengthen local capacity for treatment monitoring and advance leprosy elimination. Further experiments are needed to determine *hsp18* and *esxA* expressions as definitive viability indicators.

Keywords: Leprosy, Viability Assay, *hsp18*, *esxA*, RT-PCR

ID: 1862

MOLECULAR INTERACTIONS OF BEDAQUILINE WITH ASPARAGINE MUTATIONS IN Pks13-TE: A COMPUTATIONAL STUDY

Purnawan Pontana Putra*, Afiifah Nabiila, Rustini

Departement of Pharmaceutical Chemistry, Faculty of Pharmacy, Universitas Andalas, Padang, Indonesia
*Corresponding author: purnawanpp@phar.unand.ac.id

ABSTRACT

Background and Objectives: Tuberculosis (TB) remains one of the most lethal infectious diseases worldwide. Bedaquiline, approved by the FDA in 2012, is a critical drug for the treatment of multidrug-resistant TB (MDR-TB). The Pks13-TE protein (Polyketide Synthase 13-TE) is essential for mycolic acid biosynthesis in Mycobacterium tuberculosis, and mutations in specific amino acids, particularly asparagine residues, may alter its drug-binding properties. This study aimed to analyze the molecular interactions of bedaquiline with native and mutant forms of Pks13-TE, with a focus on asparagine substitutions, and to evaluate their pharmacokinetic and toxicity profiles (ADMET).
Methods: An in silico approach was applied, using ADMET prediction, combining molecular docking and molecular dynamics (MD) simulations. Docking analyses compared bedaquiline binding against the native ligand protein, while MD simulations were performed over 100 ns to assess stability.
Results: Docking revealed that the complex structure of Pks13-TE exhibited favorable binding affinity, showing the strongest similarity in amino acid interactions with the native ligand. Apo and mutant forms showed variable affinities, with mutations in asparagine residues significantly influencing the interaction strength between bedaquiline and Pks13-TE. MD simulations confirmed that bedaquiline formed more stable interactions with the complex structure compared to apo and mutant proteins.
Conclusion: This study demonstrates that asparagine mutations in Pks13-TE affect the molecular binding stability of bedaquiline, which may have implications for drug resistance mechanisms in M. tuberculosis. These findings highlight the importance of targeting specific amino acid residues in the design of improved therapeutic strategies against MDR-TB.

Keywords: tuberculosis; bedaquiline; Pks13-TE; molecular dynamics simulation

ID: 1864

DIGITAL MARKETING AND PATIENT FEEDBACK AS DRIVERS OF BRAND TRUST AND ENGAGEMENT: A CASE STUDY OF BPJS PATIENTS IN A PRIVATE TYPE D HOSPITAL, MATARAM

Adnanto Wiweko*
*Public Health Department, Faculty of Medicine and Health Sciences , Mataram University
*Corresponding author: awiweko@staff.unram.ac.id

ABSTRACT

The digital transformation of healthcare has reshaped how hospitals interact with patients. Digital marketing strategies and digital feedback have become critical instruments for building *brand trust* and enhancing *patient engagement*. In Indonesia's BPJS national health insurance context, these factors strongly influence hospital reputation and patient loyalty. This study aims to explore the role of digital marketing strategies and digital feedback in building brand trust and patient engagement among BPJS patients in a private Type D hospital in Mataram.

This research adopts a single embedded case study design using a qualitative descriptive approach, complemented by quantitative secondary data. Data sources include *Google Ratings* (increasing from 4.1 to 4.3), *KESSAN feedback submissions* (from fewer than 10 to over 250 per month), and in-depth interviews with hospital management, digital staff, and BPJS patients. Thematic analysis was guided by the *Brand Trust Model* (Chaudhuri & Holbrook, 2001) and *Patient Engagement Framework* (Carman et al., 2013).

Preliminary findings indicate that consistent digital marketing initiatives, active social media presence, and personalized post-service communication effectively strengthen patient trust. Increased digital interaction and responsive handling of online feedback also encourage patient participation in KESSAN surveys. In conclusion, integrating digital marketing and proactive management of digital feedback plays a vital role in building trust and engagement among BPJS patients in private Type D hospitals. The study highlights the importance of digital reputation management and patient involvement for quality improvement in healthcare.

Keywords: Digital marketing; digital feedback; brand trust; patient engagement; BPJS patients; hospital.

ID: 1865

NANOEMULGEL FORMULATION FOR TOPICAL ANTI-INFLAMMATORY FROM *Angelica keiskei* EXTRACT

Wahida Hajrin[1*], Kamelia Roiyan[1], Windah Anugrah Subaidah[2], Sucilawaty Ridwan[2], Eskarani Tri Pratiwi[2]

[1]Department of Apothecary Professional Education, Faculty of Medicine and Health Sciences, Universitas Mataram, Mataram, Indonesia
[2]Department of Pharmacy, Faculty of Medicine and Health Sciences, Universitas Mataram, Mataram, Indonesia
*Corresponding author: wh_wahida@unram.ac.id

ABSTRACT

Topical anti-inflammatory drugs are an alternative to reduce the side effects of oral anti-inflammatory agents; however, the low permeability of active compounds is a limitation of topical preparations. A nanoemulsion delivery system can enhance the permeation of active compounds, thereby increasing their bioavailability. *Angelica keiskei* was known to have anti-inflammatory activity in vitro. This study aims to form a nanoemulsion of *Angelica keiskei* ethanolic extract and optimize the gelling agent to produce a nanoemulgel for topical preparation. *Angelica keiskei* was extracted using the sonication method. The extract of *Angelica keiskei* was formulated into a nanoemulsion using olive oil, a mixture of polysorbate 80 and propylene glycol (Smix), and water. The optimization of gelling agent Carbomer 940 and Na-CMC was carried out using the Simplex Lattice Design method. The nanoemulgel was obtained by mixing nanoemulsion and gel base (1:1). Nanoemulsion and nanoemulgel were characterized to determine the results. Nanoemulsion was formulated using 0.083% olive oil, 0.683% Smix, and 0.234% water. The formulated nanoemulsion has an average globule size and polydispersity index (PdI) of 14.1 ± 0.4 nm and 0.37 ± 0.02, respectively. The optimum concentrations of Carbomer 940 and Na-CMC were 1.401% and 0.599%, respectively. The characterization of nanoemulgel of *Angelica keiskei* was obtained 19.8±0.3 nm average globule size with 0.602±0.039 PdI, pH 5.15±0.22, spreadability 3.54±0.02 cm, adhesiveness 44.47±0.94 seconds, and the FTIR spectra showed different interactions between components. The results showed that the extract of *Angelica keiskei* can be formulated into a nanoemulgel with good characteristics.

Keywords: *Angelica keiskei*, anti-inflammatory drug, nanoemulsion, nanoemulgel, topical preparation.

ID: 1866

RADIOTHERAPY OMISSION AFTER BREAST-CONSERVING SURGERY IN ELDERLY EARLY BREAST CANCER: A META-ANALYSIS

I Putu Gede Septiawan Saputra[1]*, I Gede Putu Supadmanaba[2], Putu Anda Tusta Adiputra[3]

[1]Faculty of Medicine, Udayana University, Bali, Indonesia
[2]Biochemistry Department, Faculty of Medicine, Udayana University, Bali, Indonesia
[3]Surgical Oncology Division, Surgery Department, Faculty of Medicine, Udayana University/Prof Ngoerah Hospital, Bali, Indonesia
*Corresponding author: septiawansaputra3@gmail.com

ABSTRACT

Background and Objectives: Breast cancer in elderly women is increasingly common due to aging and comorbidities. While breast-conserving surgery (BCS) with radiotherapy is standard, its benefit in older low-risk patients is uncertain. Radiotherapy reduces local recurrence but does not consistently improve survival, raising questions about its necessity in populations prone to treatment morbidity or with limited access. This meta-analysis evaluated the impact of omitting adjuvant radiotherapy after BCS in elderly with early breast cancer.
Methods: Following PRISMA 2020 guidelines, PubMed, Embase, and Cochrane were searched up to September 25, 2025. Eligible studies were randomized trials or prospective cohorts enrolling elderly patients with early-stage breast cancer treated with BCS with or without radiotherapy. Primary outcomes were 10-year local recurrence, breast cancer–specific mortality, and all-cause mortality. Pooled odds ratios (ORs) with 95% confidence intervals (CIs) were estimated using random-effects models, and heterogeneity was assessed with the I^2 statistic.
Results: Four trials including 5,812 patients met inclusion criteria. At 10 years, omission of radiotherapy did not significantly affect local recurrence (pooled OR 2.30, 95% CI 0.42–12.51, p = 0.34; I^2 = 88%). Breast cancer–specific mortality was similarly unaffected (pooled OR 1.52, 95% CI 0.51–4.54, p = 0.46; I^2 = 93%), as was all-cause mortality (pooled OR 1.32, 95% CI 0.77–2.26, p = 0.31; I^2 = 87%).
Conclusion: Omission of radiotherapy after BCS in carefully selected elderly women with early-stage breast cancer does not significantly increase long-term recurrence or mortality. These results support individualized treatment decisions, particularly in settings with limited access to radiotherapy.

Keywords: all-cause mortality, breast cancer, elderly, local recurrence, radiotherapy omission

ID: 1867

ANNONA LEAVES EXTRACT EFFECTIVELY INHIBIT CELL PROLIFERATION IN HELA CELL IN DOSE DEPENDENT MANNER

I Gede Putu Supadmanaba[1], I Nyoman Bayu Mahendra[2], Pande Adit Aditya Prayudi[2], I Gede Krisna Arim Sadeva[3]

[1]Biochemistry Department, Faculty of Medicine, Udayana University
[2]Obstetry and Gynecology Department, Faculty of Medicine, Udayana University
[3]Faculty of Medicine, Udayana University
*Corresponding author: supadmanaba@gmail.com

ABSTRACT

Introduction: Cervical cancer is still posed a significant mortality and morbidity risk to women, especially who are still in productive age. Despite of the presence of HPV vaccine, the prevalence of cervical cancer in developing countries, including Indonesia, are still high. It also tends to be diagnosed at advanced stages which make it prone to chemoresistance. Therefore, alternative chemotherapeutic agents are needed. Annona leave extract has been reported to have a substantial anticancer effect, but its effect against cervical cancer is still under reported.
Methods: An in vitro study was used to evaluate the anticancer effect of Annona leave extract. The HeLa cells were grown at Biomolecular Laboratory Warmadewa University using DMEM+10%FBS+1%Anti/Anti as growth medium. The cell was grown at 37°C and 5% CO_2 until it reached 80-90% confluence. The cell then seeded in 96-well plate at 10,000 cells per well and incubated for 24 hours. Then the drug was added with dose range between 20-0,625 mg/mL. The plate was incubated for 72 hours and then assessed using MTT assay.
Result: Annona extract significantly reduced HeLa cell proliferation in dose-dependent manner. At 20 mg/mL, 10 mg/mL, and 5 mg/mL, no living cell was observed under microscope and even the lowest dose still result in lower cell density compared to control. The IC50 was identified between 1.25mg/mL and 5 mg/mL.
Conclusion: It can be concluded that Annona leaves extract have a strong anti-cancer effect. However, further study is needed to confirm the anti-cancer pathway as well as to identify which active components contribute the most to its anti-cancer effect.

Keywords: cervical cancer, HeLa, Annona Leaves Extract, Anti-cancer

ID: 1868

RECURRENCE RISK AT 5 AND 10 YEARS AFTER MICROGRAPHIC VERSUS CONVENTIONAL SURGERY FOR BASAL CELL CARCINOMA: A SYSTEMATIC REVIEW AND META-ANALYSIS

Ida Ayu Widya Anjani[1], Pande Agung Mahariski[2], I Gede Putu Supadmanaba[3], Ketut Kwartantaya Winaya[2*]

[1]Medical Faculty, udayana University, Denpasar, Bali, Indonesia
[2]Dermatology and Venerology Department, Medical Faculty of Udayana University, Denpasar, Bali, Indonesia
[3]Biochemistry department, Medical Faculty, Udayana University, Denpasar, Bali, Indonesia
*Corresponding author: kkwartantaya@yahoo.com

ABSTRACT

Background and Objectives: Basal cell carcinoma (BCC) is the most common skin cancer, and surgical excision remains the standard of care. Micrographic surgery techniques, including Mohs, Munich, Tübingen, and Muffin procedures, are designed to achieve complete margin control and potentially reduce recurrence rates compared to conventional excision. This study aimed to compare long-term recurrence rates at 5 and 10 years between micrographic and conventional surgery in patients with BCC.
Methods: A systematic search of PubMed, Cochrane Library, ScienceDirect, and Google Scholar was conducted. Eligible studies included those reporting recurrence rates of micrographic versus conventional surgery for BCC with 5- and 10-year follow-up. Statistical analyses were performed using Review Manager 5.4 with Mantel–Haenszel models. Risk of bias was assessed with the Cochrane ROB2 and Newcastle–Ottawa Scale. Publication bias was evaluated using Egger's test, and heterogeneity was assessed with the Higgins I^2 statistic.
Results: These studies with patients predominantly older than 50 years were included. Micrographic surgery showed a trend toward lower recurrence rates compared with conventional surgery. However, no statistically significant differences were observed in the 5-year outcomes (OR: 0.62; 95% CI: 0.27–1.40; p=0.25) or the 10-year outcomes (OR: 0.59; 95% CI: 0.33–1.08; p=0.09).
Conclusion: Although micrographic surgery demonstrated a consistent trend of reduced recurrence compared to conventional excision, the differences did not reach statistical significance at 5 or 10 years. These findings highlight the need for larger, long-term prospective studies to clarify the potential advantages of micrographic approaches in BCC management.

Keywords: basal cell carcinoma, conventional surgery, micrographic surgery, recurrence rate

ID: 1869

ENDOSCOPIC NASOPHARYNGECTOMY VS IMRT IN RECURRENT NASOPHARYNGEAL CARCINOMA: META-ANALYSIS OF OUTCOMES

Luh Putu Happy Sandha[1], I Putu Gede Septiawan Saputra[2], Ida Ayu Widya Anjani[2], I Gede Putu Supadmanaba[3]

[1]ENT Department, Wisma Prashanti Hospital, Tabanan, Bali, Indonesia
[2]Faculty of Medicine, Udayana University, Bali, Indonesia
[3]Biochemistry Department, Faculty of Medicine, Udayana University, Bali, Indonesia
*Corresponding author: sauronichia@gmail.com

ABSTRACT

Background and Objectives: Nasopharyngeal carcinoma (NPC) remains a major clinical challenge, with locoregional recurrence occurring in up to 20% of cases. Salvage options include re-irradiation with intensity-modulated radiotherapy (IMRT) or surgical resection such as endoscopic nasopharyngectomy (ENPG). While ENPG may improve survival, evidence comparing quality of life (QoL) and late complications with IMRT is limited. This meta-analysis aimed to synthesize available data on these outcomes.
Methods: A systematic search of PubMed, Sciencedirect, and the Cochrane Library was performed up to September 2025 following PRISMA guidelines. Eligible studies included adults with recurrent NPC treated with ENPG or IMRT, reporting QoL with validated instruments and late complications. Data extraction was conducted independently by two reviewers, and risk of bias was assessed using the Newcastle–Ottawa Scale. Pooled analyses were performed using RevMan 5.4, with standardized mean differences (SMDs) for QoL and odds ratios (ORs) for complications.
Results: Three studies involving 493 patients (ENPG n = 101, IMRT n = 392) were included. ENPG was associated with better global health status (SMD 0.57, 95% CI 0.05–1.10, p = 0.03; I^2 = 74%), emotional functioning (SMD 6.65, 95% CI 0.87–12.44, p = 0.02; I^2 = 95%), and social functioning (SMD 0.65, 95% CI 0.30–1.00, p = 0.0003; I^2 = 42%). IMRT carried significantly higher risks of trismus (OR 3.56), xerostomia (OR 6.30), temporal bone necrosis (OR 2.96), and hearing loss (OR 4.54).
Conclusion: ENPG offers superior QoL and reduces late treatment-related complications compared with IMRT in recurrent NPC.

Keywords: complications, endoscopic nasopharyngectomy, intensity-modulated radiotherapy, nasopharyngeal carcinoma, quality of life

ID: 1871

TETHERED CORD SYNDROME IN A 3-YEAR-OLD WITH SPINA BIFIDA LIPOMYELOMENINGOCELE: A CASE REPORT

Baiq Ramdhani Amelia Negara[1], Bambang Priyanto[2]

[1]Faculty of Medicine, University of Mataram, Mataram, Indonesia
[2]Department of Neurosurgery, General Hospital of West Nusa Tenggara, Mataram, Indonesia
*Corresponding author: rararamdhani93@gmail.com

ABSTRACT

Background and Objectives: Tethered Cord Syndrome (TCS) is a neurological complication of spina bifida characterized by abnormal adhesion of the spinal cord. This condition may result neurological deficits, musculoskeletal deformities, and visceral dysfunction. This case report aims to describe the clinical presentation, radiological findings, and surgical outcome of a pediatric patient with spina bifida.
Methods: A 3-year-old female presented with a progressively lumbosacral mass since birth, associated with left lower limb deformity, delayed walking, and chronic constipation. Physical examination revealed 10×10 cm sacral mass and asymmetry of the lower limbs. Lumbosacral MRI showed a vertebral defect at L5–S2 with herniation of meninges, cerebrospinal fluid, and nerve roots forming a cystic lesion, with the conus medullaris located low at the S1 level. The patient underwent neurosurgical intervention with release of tethered cord.
Results: Postoperatively, the patient demonstrated significant improvement. However, persistent gait abnormality and left lower limb deformity remained. Interestingly, this case also revealed a strong association between maternal folate deficiency during pregnancy and the development of spina bifida, underscoring the importance of preventive strategies and indicating for requires further rehabilitation and orthopedic management.
Conclusion: This case emphasizes the significance of early recognition and multidisciplinary management of TCS associated with spina bifida. Surgical detethering is the gold standard treatment to halt neurological deterioration and improve quality of life. The case also highlights the critical role of maternal folic acid supplementation in preventing neural tube defects.

Keywords: *Tetherd Cord Syndrome, Spina Bifida, Folic Acid, Neurogenic Bowel Dysfunction, CTEV*

ID: 1873

ASSOCIATION BETWEEN VITAMIN D LEVELS AND HEMOGLOBIN IN PATIENTS WITH PULMONARY TUBERCULOSIS

Indana Eva Ajmala[1*], Rina Lestari[1], Prima Belia Fathana[1], Moulid Hidayat[1]

[1]Department of Pulmonology and Respiratory Medicine, Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
*Corresponding author: indanaeva@uram.ac.id

ABSTRACT

Background and Objectives: Pulmonary tuberculosis (TB) is a global health problem often associated with nutritional deficiencies and hematological disturbances. Vitamin D is known to play an important role in immune regulation, while hemoglobin levels reflect the hematologic status in TB patients. This study aimed to evaluate the association between serum vitamin D levels and hemoglobin concentrations in patients with pulmonary tuberculosis.
Methods: A cross-sectional study was conducted on 43 patients diagnosed with pulmonary tuberculosis at the Provincial General Hospital of West Nusa Tenggara. The study subjects included pulmonary TB patients admitted to the inpatient ward during the period 2023–2024 who met the inclusion and exclusion criteria. Serum vitamin D levels were measured using electrochemiluminescence immunoassay (ECLIA), while hemoglobin concentrations were determined using an automated hematology analyzer. Data were analyzed using Spearman correlation to assess the relationship between vitamin D and hemoglobin levels.
Results: The serum vitamin D levels of participants ranged from 3 to 38 ng/mL, with a median of 12.80 ng/mL. The mean hemoglobin concentration was 10.94 g/dL (SD 2.553). Statistical analysis revealed no significant correlation between vitamin D levels and hemoglobin concentrations (Spearman correlation, p 0.096).
Conclusion: This study found no significant association between vitamin D status and hemoglobin levels in patients with pulmonary tuberculosis. Although vitamin D deficiency and anemia were both prevalent in this population, the lack of correlation suggests that additional factors may influence hemoglobin status in TB patients

Keywords: vitamin D, hemoglobin, pulmonary tuberculosis

ID: 1874

EXTRAPULMONARY TB: RADIOLOGICAL FEATURES OF HEPATIC TB AND TUBERCULOUS SPONDYLITIS

Baiq Pelangi Juwita[1], Triana Dyah Cahyawati[2], Novia Andansari Putri Restuningdyah[3]

Faculty of Medicine and Health Sciences, Mataram University
Department of Radiology, Faculty of Medicine and Health Sciences, Mataram University
*Corresponding author: juwitabaiqpelangi@gmail.com

ABSTRACT

Introduction: Extrapulmonary Tuberculosis (EPTB) is a form of Mycobacterium tuberculosis infection outside the lungs that can attack various organs. EPTB accounts for 15–20% of all tuberculosis cases, with the highest prevalence in children and immunocompromised patients.
Case Report: Mr S, a 59-year-old male patient complained of back pain that worsened with movement with history of post-laparotomy liver drainage incision. Physical examination revealed normal vital signs and icteric sclerae. Supporting examinations showed a complex picture involving the hepatobiliary, pulmonary, and musculoskeletal systems. e was given therapy consisting of an anti-tuberculosis drug regimen, diclofenac sodium, and curcuma supplements, along with vitamins B1, B6, and B12.
Result: A chest X-ray revealed pulmonary edema and bilateral pleural effusion. An abdominal CT scan identified a thick-walled liver abscess in the right lobe, segment VIII, with peripheral calcification, suggesting possible hepatic tuberculosis. A spine MRI demonstrated destruction of the lumbar 1–2 vertebrae with bilateral paravertebral and psoas abscesses, consistent with tuberculous spondylitis
Conclusion: The case indicates the presence of disseminated extrapulmonary tuberculosis infection involving multiple organs. This case emphasizes the importance of clinical vigilance for disseminated EPTB, especially in patients with recurrent liver abscesses or suboptimal therapeutic response. A multidisciplinary approach with histopathological confirmation, culture, and specific therapy is crucial for reducing patient morbidity and mortality.

Keywords: Extrapulmonary TB, radiology, hepatic tuberculosis, tuberculous spondylitis.

ID: 1875

MANAGEMENT OF BLADDER AND BOWEL DYSFUNCTION IN PATIENTS WITH SPINAL CORD INJURY: A META-ANALYSIS

Baiq Ramdhani Amelia Negara[1], Bambang Priyanto[2]

[1]Faculty of Medicine, University of Mataram, Mataram, Indonesia
[2]Department of Neurosurgery, General Hospital of West Nusa Tenggara, Mataram, Indonesia
*Corresponding author: rararamdhani93@gmail.com

ABSTRACT

Background and Objectives: Spinal Cord Injury (SCI) often leads to urinary and bowel dysfunction, significantly affecting quality of life and long-term health outcomes. This meta-analysis aimed to evaluate therapeutic interventions for managing neurogenic bladder and bowel dysfunction in SCI patients, focusing on clinical outcomes, safety, adherence, and cost-effectiveness.
Methods: A systematic search was conducted in PubMed, Cochrane, and Science Direct databases up to September 2025, following PRISMA guidelines. Eligible studies included randomized controlled trials, systematic reviews, and meta-analyses published within the last 10 years, involving adults (>18 years) with chronic traumatic or non-traumatic SCI. Review Manager 5.0 was used for pooled analysis, with odds ratios (OR) and 95% confidence intervals (CI).
Results: Six studies involving with 3,513 patients in this study. The analysis demonstrated that non-pharmacological interventions, such as transanal irrigation, sacral nerve stimulation, dietary management, and physical activity, provided superior outcomes compared to pharmacological or surgical approaches. Non-pharmacological therapy was associated with significantly better effectiveness and safety profiles. Cost-effectiveness analysis further supported these approaches, with reduced long-term healthcare expenses and improved quality-adjusted life years (QALYs). Pooled data showed a significant advantage of non-pharmacological therapy (OR 0.23; HR 0.80; 95% CI 0.10–0.51; p = 0.004).
Conclusion: Non-pharmacological interventions are more effective, safer, and cost-efficient for managing urinary and bowel dysfunction in SCI patients and may prevent complications, reduce costs, and improve long-term quality of life.

Keywords: *Spinal Cord Injury, Neurogenic Bladder, Neurogenic Bowel, Non-Pharmacological Therapy, Meta-Analysis*

ID: 1877

SCREENING OF HEAVY METAL LEVELS IN ELEMENTARY SCHOOL STUDENTS' HAIR IN SMALL-SCALE GOLD MINING AREAS

Ardiana Ekawanti[1]*, Deasy Irawati[2], Fitriannisa Faradina Zubaidi[1], Rahmah Dara Ayunda[1], Wiwin Lastyana[2], Muhammad Abdurrosyid[3], I Nyoman Dwi Suputra Diarsa[3], Safira Najwa Febriana[3], Aisyah Adinda Kurniawan[3], Sanu Rismawati[3]

1 Department of Biochemistry, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
2 Department of Public Health, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
3 Students of the Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author email: ardiana.ekawanti@unram.ac.id

ABSTRACT

Background and Objectives: Inhabitants in artisanal and small-scale gold mining (ASGM) areas are at risk of exposure to heavy metals released from gold processing. The risk increases if the ASGM is located in a coastal area, as mercury from ASGM bioaccumulates in the sea and biomagnifies in fish. The purpose of this study was to determine heavy metal levels in the hair of elementary school students from a coastal ASGM area.
Methods: This was an observational study with a cross-sectional design. A total of 54 elementary school students participated. The levels of hair heavy metals were qualitatively measured using Energy Dispersive X-Ray Analysis (EDX).
Results: All elementary school students had mercury (Hg) with an average of 7.87±1.15% mass. Leads (Pb) was also found in all subjects with an average of 23.21±2.2% mass. Molybdenum (Mo) was also found in all subject with an average of 60.79±9.09% mass. Arsenic (As) was detected in 25.9% of students with an average of 1.24% mass. Cadmium (Cd) was found in 57.4% of students' hair with an average of 0.16% mass.
Conclusion: Heavy metal levels in the hair of all elementary school students in the coastal ASGM area indicated the presence of Hg, Pb, Mo, As and Cd. These findings highlight the need for further investigation and possible public health interventions to reduce exposure.

Keywords: small-scale gold mining, heavy metals, hair, elementary school students

ID: 1888

ENHANCING KETOCONAZOLE DISSOLUTION USING SEMI-SOLID EXTRUSION 3D PRINTING WITH PEG/SORBITOL AND PVA/SORBITOL MATRICES

Wildan Khairi Muhtadi[1,3], Fernando Couwandy[2], Christopher Dewa Wijaya[2], Risfah Yulianty[2], Andi Dian Permana[2], Eneko Larrañeta[1], Achmad Himawan[1,2*]

[1]School of Pharmacy, Queen's University Belfast, Belfast BT9 7AF, United Kingdom
[2]Department of Pharmaceutical Science and Technology, Faculty of Pharmacy, Universitas Hasanuddin, Makassar 90245, Indonesia
[3]Department of Pharmacy, Sekolah Tinggi Ilmu Farmasi Riau, Pekanbaru 28289, Indonesia
*Corresponding author: himawan@unhas.ac.id

ABSTRACT

Background and Objectives: Improving the bioavailability of poorly soluble drugs remains a major challenge in pharmaceutical formulation. Ketoconazole (KTZ), a BCS Class II antifungal drug, exhibits poor water solubility, limiting its therapeutic efficacy and increasing hepatotoxicity risk with higher doses. This study aimed to enhance the dissolution of KTZ through the development of semi solid extrusion (SSE) 3D-printed extrudates using polyethylene glycol (PEG)/sorbitol and polyvinyl alcohol (PVA)/sorbitol matrices.
Methods: KTZ extrudates were prepared via SSE 3D printing using PEG (6 and 8 kDa) and PVA (9–10 and 13–23 kDa) polymers combined with sorbitol as filler. The formulations were characterized for spreadability, printability, morphology, disintegration time, hardness, moisture content, FTIR spectra, assay, and in-vitro drug release in 0.1 N HCl and PBS pH 7.4 + 2% SLS media. Drug release kinetics were analyzed using Zero-order, First-order, Higuchi, and Korsmeyer–Peppas models.
Results: All formulations exhibited good printability and rapid disintegration (<6 min). SEM analysis showed distinct surface porosity influencing dissolution behavior. PEG and PVA-based extrudates demonstrated faster drug release compared to physical mixtures, achieving >80% release within 30 min. Kinetic modeling indicated a first-order mechanism for most formulations in acidic media and a Korsmeyer–Peppas model in PBS medium. FTIR confirmed no significant chemical interactions between KTZ and excipients.
Conclusion: SSE 3D printing successfully produced KTZ extrudates with enhanced dissolution performance and acceptable physical properties. PVA (9–10 kDa) demonstrated superior mechanical stability, highlighting the potential of SSE 3D printing for formulating poorly soluble drugs.

Keywords: Semi Solid Extrusion (SSE), 3D Printing, Ketoconazole, Dissolution Enhancement, Polymeric Extrudates

ID: 1910

FORMULATION AND EVALUATION OF THE PHYSICAL PROPERTIES OF ANTI-ACNE CREAM CONTAINING METHANOL EXTRACT OF ASHITABA HERB (*ANGELICA KEISKEI*)

Agriana Rosmalina Hidayati[1*], Dedianto Hidajat[2], Nisa Isneni Hanifa[3], Mahacita Andanalusia[4], Wahida Hajrin[5], Regina Tria Hidayati[6], Prianggawe[7]

[1]Departemen of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[2]Department of Dermatology and Venereology, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[3]Department of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[4]Departemen of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[5]Departemen of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[6]Departemen of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[7]Departemen of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[8]Departemen of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: agriana.rh@unram.ac.id

ABSTRACT

Background and Objectives: Ashitaba herb contains flavonoids, phenolics, tannins, alkaloids, and terpenoids, which are known to have antioxidant, antibacterial, and anti-inflammatory properties. Therefore, ashitaba has the potential to be developed into anti-acne preparations, one of which is cream. Creams have various advantages, namely the ability to deliver hydrophilic and hydrophobic compounds better, provide better moisture, and have emollient and occlusive properties by forming a protective layer on the skin and maintaining skin hydration longer. The purpose of this study was to determine the physical properties of methanol extract cream preparations of ashitaba herb.
Methods: The research method used was laboratory experimental. Ashitaba herb was extracted using the sonication method with 80% methanol solvent to produce a solid extract. The methanol extract of ashitaba herb was formulated into a cream preparation and evaluated for its physical properties, including organoleptic testing, homogeneity, pH, viscosity, spreadability, adhesion, and cream type.
Results: The resulting cream preparation was homogeneous with an oil-in-water (O/W) type, pH 6.29, viscosity 37.050 cp, spreadability 5.23 cm, and adhesion 4.59 seconds.
Conclusion: Therefore, it can be concluded that the methanol extract of ashitaba herb cream preparation has good physical properties and meets the requirements.

Keywords: Ashitaba herb, cream, physical properties test

ID: 1912

SKIN BIOPHYSICAL PARAMETERS FOR 3% EXTRACT SUSPENSION OF ANGELICA KEISKEI HERBS AS ANTI-ACNE CANDIDATE : PRELIMINARY STUDY

Dedianto Hidajat[1*], Agriana Rosmalina Hidayati[2], Mahacita Andanalusia[2], Nisa Isnaeni Hanifa[2], Wahida Hajrin[2], Alpa Alfi Rizki[2], Muhammad Rafi Bintang Ramadhan[2]

[1]Department Dermatology, Venereology and Aesthetic, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[2]Department of Pharmacy, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: dedianto@unram.ac.id

ABSTRACT

Background and Objectives: Recent studies have shown that acne vulgaris (AV) is more prevalent in individuals with elevated transepidermal water loss (TEWL) and low stratum corneum hydration. The use of natural ingredients as alternative therapies for AV has emerged as a promising solution; however, clinical evidence supporting their efficacy remains limited. Angelica keiskei (Ashitaba) herb extract contains various active metabolites with anti-inflammatory, antioxidant, and antibacterial properties, making it a potential therapeutic agent for various skin conditions, including AV. Therefore, this preliminary study aims to evaluate the differences in skin biophysical parameters—namely TEWL and erythema index—before (T0) and after (T120 and T240) topical application of a 3% A. keiskei extract suspension.
Methods: This study employed a pre- and post-test clinical observational design involving 15 participants. TEWL and erythema index were measured on the volar forearm using a Tewameter and Mexameter at baseline (T0), 120 minutes (T120), and 240 minutes (T240) after application of the 3% A. keiskei herb extract suspension.
Results: There was a statistically significant reduction in mean TEWL at T120 and T240 compared to baseline (T0) ($p < 0.05$). Regarding the erythema index, a decrease was observed at T120 compared to T0, followed by an increase at T240 compared to both T120 and T0; however, these changes were not statistically significant ($p > 0.05$).
Conclusion: Topical application of a 3% Angelica keiskei herb extract suspension significantly reduced TEWL on the volar forearm skin without causing significant changes in erythema index.

Keywords: *Angelica keiskei*, acne vulgaris, transepidermal water loss, erythema index

ID: 2000

BRIDGING POLICY AND PRACTICE: GLOBAL LESSONS AND FIELD CHALLENGES IN MEASLES OUTBREAK RESPONSE

Salman Faris, Anom Josafat, Rifana Cholidah, Nila Febriana

Magister of Public Health, Faculty of Medicine and Health Sciences, University of Mataram
*Corresponding author: salmanbiasa@gmail.com

ABSTRACT

Background: Measles remains a re-emerging global health challenge, with 10.3 million cases and over 107,000 deaths reported worldwide in 2023. In Indonesia, recurrent outbreaks—such as the 2024 surge in West Nusa Tenggara—reflect ongoing weaknesses in immunization coverage, coordination, and operational readiness. This study aims to synthesize global experiences and practical field responses to identify effective strategies and implementation barriers in measles outbreak management.
Method: A structured literature review was conducted on peer-reviewed articles published between 2014 and 2024, sourced from PubMed, ProQuest, and Google Scholar. Studies documenting empirical field experiences and outbreak interventions were included, while institutional and grey literature were excluded. Data were analyzed thematically to capture cross-country patterns, field innovations, and systemic challenges.
Result: Six priorities consistently emerged: strengthening immunization programs, integrating surveillance, enhancing risk communication, improving cross-sector collaboration, focusing on vulnerable groups, and leveraging innovation. Persistent barriers included logistical bottlenecks, vaccine hesitancy, limited human resources, and fragmented data systems.
Conclusion: This review highlights that successful measles outbreak control depends not only on technical capacity but also on operational execution and public trust. Strengthening field implementation and adopting adaptive, context-specific innovations are essential to achieving sustainable measles elimination and resilient health systems.

Keywords: Measles outbreak; Field implementation; Public health innovation; Vaccine hesitancy; Health systems resilience; Outbreak preparedness.

ID: 2017

TOXICOLOGICAL AND NEUROBEHAVIORAL ASSESSMENT OF RHIZOPHORA MUCRONATA LEAF EXTRACT IN RATS: IMPLICATIONS FOR SAFE HERBAL USE

Legis Ocktaviana Saputri[1], Lina Permatasari[2], Arina Windri Rivarti[3], Lale Maulin Prihatina[4], Rohadi[5], Al Hafiez Ariouso[6], Rafi Abdika[6], Ye Muhamad Aprizal[7], I Made Jawi[8], Herpan Syafii Harahap[9]

[1]Department of Pharmacology, Faculty of Medicine and Health Sciences, University of Mataram, 83125, Indonesia
[2]Department of Pharmaceutical Chemistry, Faculty of Medicine and Health Sciences, University of Mataram, 83125, Indonesia
[3]Department of Physiology, Faculty of Medicine and Health Sciences, University of Mataram, 83125, Indonesia
[4] Department of Anatomical Pathology, Faculty of Medicine and Health Sciences, University of Mataram, 83125, Indonesia
[5]Department of Neurosurgery Faculty of Medicine and Health Sciences, University of Mataram, 83125, Indonesia
[6]Medical Study Program, Faculty of Medicine and Health Sciences, University of Mataram, 83125, Indonesia
[7]Universiti Teknologi MARA, 40450, Malaysia
[8]Department of Pharmacology, Faculty of Medicine, Udayana University, 80234, Indonesia
[9]Department of Neurology, Faculty of Medicine and Health Sciences, University of Mataram, 83125, Indonesia
*Corresponding author: herpanharahap@unram.ac.id

ABSTRACT

Rhizophora mucronata leaves, an abundant mangrove species in Indonesia, are traditionally used in herbal medicine and show promise as a therapeutic candidate for Alzheimer's disease (AD). However, scientific evidence supporting its safety and efficacy, an essential prerequisite for health regulation and evidence-based herbal standardization, remains limited. This study evaluated the effects of R. mucronata ethanol extract on memory function and organ safety to establish a scientific basis for its therapeutic use. Male Sprague-Dawley rats (n = 5 per group) received either distilled water (control) or R. mucronata ethanol extract (400, 800, or 1000 mg/kg body weight) for 28 days. Memory function was assessed using the Y-maze test, while hepatic enzyme levels and histological examination of several organs, brain, liver, and kidneys were used to determine toxicity. Results showed significantly improved memory in the 800 mg/kg group. AST levels increased at 400 and 1000 mg/kg, but ALT remained unchanged, and histological analysis revealed no organ toxicity. The results provide scientific evidence to support the safe use of R. mucronata and its potential inclusion in regulatory frameworks for traditional and herbal medicine.

Keywords: Rhizophora mucronata, Toxicity, Neurobehavior, Safety, Herbal

ID: 2019

MEDICATION BELIEF, SATISFACTION, AND ADHERENCE OF DIABETES MELLITUS PATIENTS IN A HOSPITAL

Mahacita Andanalusia[1*], Virga Fathiya Dalila[2], Raisya Hasina[1]

[1]Department of Pharmacology, Clinical and Community Pharmacy, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
[2]Pharmacy Program, Faculty of Medicine and Health Science, University of Mataram, Mataram, Indonesia
*Corresponding author: mahacitaandanalusia@unram.ac.id

ABSTRACT

Background and Objectives: Diabetes mellitus is one of the non-communicable diseases with high prevalence in the world and requires long-term management. The non-adherence to long-term therapy mostly caused by internal factors. This study was aimed to describe the relationship belief and medication satisfactions towards adherence in diabetes mellitus patients in Bhayangkara Hospital at Mataram, Indonesia.
Methods: This cross-sectional study included adult patients with diabetes mellitus with minimum use of medication for 1 month. Patients with specific comorbid like gangrene, tuberculosis, and mental illness were excluded in the study. All patients completed questionnaire to assess their belief about medication (BMQ-Specific), medication satisfaction (DMSAT), and medication adherence (MARS-5). Spearman analysis was performed to identify the relationships of each variable.
Results: Majority of the patients were aged 56-65 years old, women, housewife, and had low level education. Among all participants, 77.01% had diabetes for 5 years or less. The use of combination between metformin and sulfonilurea (29.89%) were reported as the main therapy, with 21.84% frequency used of medication 5 times a day. Both medication belief and satisfaction were associated with adherence ($p = 0.000$; $r=0.648$ and $r=0.639$, respectively).
Conclusion: Both medication belief and satisfaction influenced medication adherence in patients with diabetes mellitus. Understanding these may help clinicians to identify the risk of non-adherence, and target the interventions accordingly.

Keywords: adherence, belief, diabetes mellitus, satisfaction

ID: 2020

ANTERIOR MEDIASTINAL TUMOR IN A 76-YEAR-OLD WOMAN: A CASE REPORT

Yusuf Wahyu Dwi Utomo[1], Moulid Hidayat[1], Rina Lestari[1], Komang Sri Rahayu Widiasari[1], Gemilang Khusnurrokhman[1], *Novia Andansari Putri Restuningdyah[2], Triana Dyah Cahyawati[2]*

[1]Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, University of Mataram, Mataram, Indonesia
[2]Department of Radiology, Faculty of Medicine, University of Mataram, Mataram, Indonesia
*Corresponding author: ywahyu966@gmail.com

ABSTRACT

Introduction: Anterior mediastinal tumors remain challenging to diagnose due to a wide range of possible differential diagnoses, the most common being lymphoma, thymoma, teratoma, and substernal thyroid masses. Large tumors may compress vital structures such as the superior vena cava, airways, or pleura, leading to diverse clinical manifestations.
Case Report: A 76-year-old woman presented with shortness of breath for one month prior to hospital admission, worsening with activity, accompanied by intermittent fever, weight loss, and epigastric pain. Physical examination revealed decreased breath sounds over the right apical and medial lung fields. Laboratory tests showed mild anemia and hyperthyroidism (decreased TSH and elevated FT3 and FT4). Chest X-ray and CT scan demonstrated a bilateral thyroid mass extending into the anterior mediastinum. Neck ultrasonography revealed bilateral thyroid masses with colli-submandibular lymphadenopathy; however, pleural fluid cytology, FNAB, and core biopsy showed no evidence of malignancy.
Discussion: The anterior mediastinal mass in this patient was most consistent with a teratoma, though differential diagnoses such as thyroid mass, lymphoma, and thymoma could not be excluded. Clinical presentation, laboratory findings, and imaging supported a neoplastic etiology, despite biopsy results showing no malignancy. This case highlights the diagnostic difficulty of mediastinal tumors, particularly in elderly patients with multiple comorbidities.
Conclusion: Anterior mediastinal tumors can cause life-threatening conditions such as superior vena cava syndrome and require a multimodal diagnostic approach. A definitive diagnosis depends on histopathological examination; however, clinical symptoms and imaging findings play crucial roles in guiding diagnosis and appropriate management.

Keywords: mediastinal tumor, teratoma, thyroid mass, pleural effusion, superior vena cava syndrome.

ID: 2022

STUDY OF CLINICAL EVALUATION, PULMONARY FUNCTION AND RADIOLOGICAL POST PULMONARY TUBERCULOSIS

Rina Lestari[1*], Indana Eva Ajmala[1], Prima Belia Fathana[1], Moulid Hidayat[1], Stevia Ariella Pasande[1], I Bona Marasi Malik[1], Nur Annisa Karnia[1]

[1]Department of Pulmonology and Respiratory Medicine, Faculty of Medicine and Health Science, Mataram University, Mataram, Indonesia
*Corresponding author: rinalestari@unram.ac.id

ABSTRACT

Background and objectives: Indonesia has limited data on clinical symptoms, pulmonary dysfunction, and radiological features in post-pulmonary tuberculosis (PTB) patients. Pulmonary function test and radiological examinations are not yet routinely performed after TB treatment, despite their importance in determining the presence of PTB sequelae. Early detection of PTB sequelae can lead to timely treatment and pulmonary rehabilitation, thus improving patients' quality of life. This study aimed to characterize the clinical condition, pulmonary function, and radiological features in in post-PTB patients.

Methods: A cross-sectional study was conducted on 42 post-PTB patients at the Provincial General Hospital of West Nusa Tenggara from May to October 2025. All participants met the established inclusion and exclusion criteria. Demographic and clinical data were collected, and post-PTB sequelae were assessed using imaging (chest X-ray and CT scans) and pulmonary function tests (spirometry). Descriptive analysis was performed using SPSS software.

Results: Of the 42 patients, 78.6% were men, with ages ranging from 20 to 86 years. All 42 patients (100%) experienced persistent respiratory symptoms, with the most common being cough (85.7%), expectoration (54.8%), and limited activity (54.7%). Radiological analysis showed that the most frequent findings were fibroinfiltrate (52.4%), followed by bronchiectasis (16.7%) and pleural thickening (14.2%). Pulmonary function impairment was also common, with a mixed pattern identified in the majority of cases (71.42%).

Conclusion: All post-PTB patients in this study presented with persistent respiratory symptoms and observable radiological sequelae. The majority also exhibited pulmonary function impairment, highlighting the need for routine post-treatment monitoring to improve patient outcomes.

Keywords: post-pulmonary tuberculosis (PTB), sequelae, clinical condition, radiological feature, pulmonary function

ID: 2023

ENHANCING SENSORY INTEGRATION IN CHILDREN WITH AUTISM THROUGH MULTI-SENSORY ENVIRONMENTS: INSIGHT FROM RECENT LITERATURE

Ni Putu Della Diarna[1], Titi Pambudi Karuniawaty[2]

[1]General Practitioner, Faculty of Medicine, Mataram University, Mataram, Indonesia
[2]Child Health Department, Faculty of Medicine, Mataram University, Mataram, Indonesia
*Corresponding author: niputudelladiarna@gmail.com

ABSTRACT

Background and Objectives: Autism in children commonly experiences sensory integration issues, also known as Sensory Processing Disorder (SPD), which can impact social interaction, communication, and stereotypical behavior. Therapeutic management for these cases involves occupational therapy with Sensory Integration Therapy (SIT). Over time, an environment-based method, called Multi-Sensory Environments (MSEs), has been developed. This literature review aims to identify the benefits of Multi-Sensory Environments (MSEs) for SPD in children with autism.
Methods: A literature search was carried out between 2010-2025 using four databases from PubMed, Science Direct, Google Scholar, and Cochrane. The keywords used are 'autism' OR 'autistic' AND 'children' AND 'multi-sensory environment' AND 'sensory problem'. Articles retrieved were those describing the benefits of MSEs for sensory issues in children (<17 years old) with autism.
Results: Three articles about the benefits of using MSEs on sensory problem in children with autism were found. All of the articles found positive effects on behavioral and cognitive changes after used MSEs. Consideration of structured stimulation with alternating methods is necessary to maximize outcomes after therapy. MSEs enhance the therapeutic effects of conventional therapy and provide an environment with controlled sensory stimulation.
Conclusion: Integrating conventional therapy with MSEs has benefits in advanced responses to sensory stimuli in children with autism, but not in social communication, anxiety, or arousal.

Keywords: Autism, Sensory problem, Sensory processing disorder, Multi-sensory environment, Children

ID: 2024

THE RELATIONSHIP BETWEEN SLEEP QUALITY AND LEARNING CONCENTRATION LEVEL OF STUDENTS OF THE FACULTY OF MEDICINE,

Yoga Prawira Wedha[1], I Ketut Artastra[2], Putu Suwita Sari[3]

[1]Undergraduate Medicine Study Program Faculty of medicine and Health Science , University of Mataram
[2]Public Health Medicine Study Program Faculty of Medicine and Health Science , University of Mataram
[3]Maritime Medicine Study Program Faculty of Medicine and Health Sciences , University of Mataram
*Corresponding author: prawirayoga05@gmail.com

ABSTRACT

Sleep is a basic human need. Adequate sleep at night provides energy for daily activities. Adequate sleep also helps the immune system function optimally, making the body healthier and more refreshed after sleep due to changes in physical activity during sleep, such as decreased blood pressure, a slower pulse rate, some muscle relaxation, and a 20% decrease in overall metabolism. On the other hand, if there is a lack of sleep in humans, it can cause daily activities to become slow and less enthusiastic. Sleep quality is a person's satisfaction with their sleep experience, starting from sleep initiation, sleep maintenance, sleep quantity and freshness when waking up. Concentration in learning is an effort to focus the mind or attention on an object being studied without dividing one's attention to other things and is done consciously by the individual. There are three aspects of quality sleep, namely continuity (sleep) continues continuously and does not wake up due to disturbances); duration (how long sleep lasts and sleep depth and satisfaction. The impacts of poor sleep quality include decreased daily activities, fatigue, weakness, decreased immunity, and psychological distress. Psychological distress is a psychological disorder that includes feelings of stress, anxiety, depression, and stress. Lack of sleep negatively impacts the body, both physically and psychologically. Lack of sleep also causes emotional instability and reduced ability to think and concentrate. Physiological impacts include decreased daily activities, fatigue, weakness, decreased immunity, and unstable vital signs. Psychological distress is an unstable condition that impacts

Keywords: Sleep Quality , Study Concentration , Sleep duration , Sleep disorders, Psychological

ID: 2025

BEYOND THE MAP: THE ROLE OF SPATIAL ANALYSIS IN DISEASE SURVEILLANCE ACROSS TROPICAL ISLANDS

Nazry Gilbranshina Harindutta[1], Hawwa Shakila Abida[1], Muhammad Gege Gusti Prana Baghibilaratha[1], Yudhistira Giartha Shuvarnabhumi[1], Putu Suwita Sari[2], Ida Ayu Eka Widiastuti[2]

[1]Faculty of Medicine and Health Sciences, Mataram University, West Nusa Tenggara, Indonesia
[2]Marritime Medicine Specialist Program, Faculty of Medicine and Health Sciences, Mataram University, West Nusa Tenggara, Indonesia
*Corresponding author: nazrygilbranshinna@gmail.com

ABSTRACT

Background and Objectives: Spatial analysis has evolved from simple mapping into an essential tool in modern public health, enabling better visualization and understanding of disease patterns, risks, and environmental factors. This review summarizes its applications in disease surveillance and epidemiological research, focusing on Indonesia and other tropical island regions.
Methods: A narrative literature review was conducted using PubMed, Scopus, and Google Scholar databases for articles published between 2015 and 2025. The search employed keywords such as “spatial analysis,” “disease surveillance,” “epidemiology,” “GIS,” and “Indonesia.” Data were synthesized descriptively to identify thematic patterns in methodological approaches and public health implications.
Results: Spatial analysis is broadly defined as the use of location-based data to explore spatial patterns, clustering, and associations of disease events. Current applications span various fields, including mapping infectious disease outbreaks, assessing healthcare accessibility, environmental exposure modeling, and predicting non-communicable disease risk.
Conclusion: The growing adoption of GIS-based tools and spatial statistics in disease surveillance systems strengthens prevention efforts, optimizes resource allocation, and promotes data-driven decision-making.

Keywords: Spatial Analysis; Disease Surveillance; GIS; Epidemiology; Indonesia

ID: 2026

ASSOCIATION BETWEEN AGE, SEX, AND HISTOPATHOLOGY ON RECURRENCES AND THERAPY RESPONSE OF NASOPHARYNGEAL CANCER PATIENTS IN WEST NUSA TENGGARA

Mochammad Alfian Sulaksana[1], Hamsu Kadriyan[1], Didit Yudhanto[1], Abdul Qadar Punagi[2], Nova Audrey L. Pieter[2], Ricky Setiadi Yusuf[3]

[1]Department of Otorhinolaryngology-Head and Neck Surgery, Faculty of Medicine, Mataram University, Mataram, Indonesia
[2]Department of Otorhinolaryngology-Head and Neck Surgery, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia
[3]Psychosomatic and Palliative Medicine Division, Department of Internal Medicine, Dr. Cipto Mangunkusumo National Hospital, Jakarta, Indonesia
*Corresponding author: dr.alfian.s@gmail.com

ABSTRACT

Background and Objectives: Nasopharyngeal cancer (NPC) is the most common case in thehead and neck area. This malignancy arises from the epithelium of the nasopharynx. It is influencing all populations worldwide, but in some parts it is endemic. About 6,2/100.000 cases were recorded in Indonesia by 2012. This study aims to investigate the associations of age andgender with NPC outcomes, including recurrences, prognosis, and therapy response.
Methods: This study employed cross-sectional design, encompassing all NPC patients in West Nusa Tenggara as of 2024. We included all NPC patients who were already diagnosed with NPC by histopathology, had completed NPC therapies, and had data available. Statistical analysis with descriptive and association analysis was conducted.
Results: This study found that in West Nusa Tenggara in 2024, there are 113 patients of NPC,and 73 of them are eligible to be included in this study. The mean age of NPC patients 49,37, andthey are dominated by males (69,9%) rather than females (30,1%). This research shows that only gender with recurrences are statistically significant (P value = 0,027), while other variables showed nonsignificant test results.
Conclusion: There are many factors that contribute to NPC therapies, such as age, gender, and type of cancer, based on histopathological examination. Significant results in the type of therapy show that the choice of therapy depends on the type of cancer and individual characteristics.

Keywords: Nasopharyngeal cancer, therapy response, recurrences, demography

ID: 2027

THE GREAT MIMICKER: CEREBRAL TUBERCULOMA IN A YOUNG WITH HIV POSITIVE

Fauzan Faqih[1], Triana Dyah Cahyawati[2], Novia Andansari Putri[2], Mayumi Agestia Sesariana[2], Baiq Fanindya Harliza[2]

[1]Department of Radiology, Faculty of Medical and Health Sciences, Mataram University, Mataram, Indonesia
[2]Department of Radiology, West Nusa Tenggara Provincial General Hospital, Mataram, Indonesia
*Corresponding author: ojanfaqih97@gmail.com

ABSTRACT

Background and Objectives: Cerebral tuberculoma, a severe form of central nervous system tuberculosis, presents a major diagnostic challenge, particularly in patients with HIV. This case report aims to highlight the clinical and radiological features of tuberculoma in a young adult with HIV, emphasizing the shifting epidemiology of intracranial TB in this demographic.
Methods: A 36 year old male, recently diagnosed with HIV (B20), presented with a one week history of escalating headaches and one year history of diplopia (double vision). A neurological examination revealed left sixth cranial nerve palsy. To determine the cause, a contrast-enhanced Magnetic Resonance Imaging (MRI) of the brain was conducted.
Results: The MRI displayed multiple ring enhancing lesions in the brainstem and left cerebellum hemisphere, featuring a characteristic T2-hypointense core and no restricted diffusion. These findings were highly indicative of tuberculomas. Based on the compelling imaging and the patient's immunocompromised state, a presumptive diagnosis was established, avoiding an invasive biopsy.
Conclusion: This case highlights the importance of considering cerebral tuberculoma in young adults with HIV who present with neurological symptoms. The dual epidemic of HIV and TB is a key factor in the increasing prevalence of intracranial TB among this age group. Advanced MRI is crucial for an accurate, non-invasive diagnosis, enabling prompt and effective medical treatment.

Keywords: Cerebral Tuberculoma, Intracranial Tuberculosis, HIV, Young Adult, Neuroimaging

ID: 2028

ANTIOXIDANT POTENTIAL OF TYPHONIUM FLAGELLIFORME TUBER AND LEAF EXTRACTS: A PRELIMINARY STUDY

Baiq Risky Wahyu Lisnasari[1*], Tuhfatul Ulya[1], Indra Purnomo[1], Dhea Syafitri Dwiyanti[1]

[1]Pharmacy Program, Faculty of Medicine and Health Sciences, Universitas Mataram, Mataram, Indonesia
*Corresponding author: baiqrisky@staff.unram.ac.id

ABSTRACT

Background and Objectives: *Typhonium flagelliforme* (Lodd.) Blume, known as "Keladi Tikus," is traditionally used for inflammation and cancer. While the antioxidant activity of its leaf extract has been reported, studies on the tuber that commonly used in traditional remedies, remain limited. This study aimed to determine the total flavonoid content (TFC) and antioxidant activity of *T. flagelliforme* tuber extract and to compare the results with previously reported data from the leaf extract.
Methods: Dried tubers were macerated with 96% ethanol for 72-hours, followed by an additional 24-hour extraction. TFC was determined using the aluminum chloride colorimetric method with quercetin as a standard, measured at 491 nm. Antioxidant activity was evaluated using the DPPH radical scavenging assay with 40 ppm DPPH solution, read at 516 nm. Published leaf data from similar methods were used for comparison.
Results: The tuber extract showed a TFC of 4.26 mg QE/g and strong radical-scavenging activity with an IC_{50} 10,1 µg/mL. Compared to reported leaf extract values (TFC 198 mg QE/g; IC_{50} 76,10 µg/mL), the tuber displayed lower flavonoid content but stronger antioxidant activity. This difference may reflect plant part variation, extraction yield, or assay parameters.
Conclusion: T. *flagelliforme* tuber exhibits potent antioxidant activity despite its lower TFC compared to the leaf. Further standardized assays are planned to confirm these findings and support its evidence-based use as a tropical medicinal resource.

Keywords: antioxidant activity, DPPH assay, flavonoid content**,** tuber extract, *Typhonium flagelliforme*

ID: 2030

PROFILE OF SKIN DISEASES IN REMOTE VILLAGES IN SUMBAWA REGENCY, WEST NUSA TENGGARA

Muhammad Rifqi Ihsan Habibi[1], Aurora Dyah Anggraini Wijaya[1], Astri Ferdiana[2], Yogi Triatmakusuma[3], Marlous Grijsen[4]

[1]Faculty of Medicine and Health Sciences, Mataram University, West Nusa Tenggara, Indonesia
[2]Department of Public Health, Faculty of Medicine and Health Sciences, Mataram University, Indonesia
[3]Sumbawa Regional General Hospital (RSUD Sumbawa), West Nusa Tenggara, Indonesia
[4]Oxford University Clinical Research Unit Indonesia, Faculty of Medicine Universitas Indonesia, Jakarta, Indonesia
*Corresponding author: rifqi.i.habibi@gmail

ABSTRACT

Background: Skin diseases are among the leading causes of disability worldwide, mainly due to eczema, fungal, and bacterial infections, as well as neglected tropical diseases (NTDs) such as scabies and leprosy. In Indonesia, limited access to dermatological care in remote regions contributes to underdiagnosis and untreated cases.
Objectives: To describe the local epidemiological profile of skin diseases and provide baseline data to support targeted community dermatology interventions.
Methods: A descriptive cross-sectional study was conducted during a skin camp in Sumbawa Regency, West Nusa Tenggara. Data from 222 participants with confirmed clinical diagnoses by trained dermatologists were analyzed descriptively using JASP 0.95.1. Variables included type of skin disease, age, and sex. Ethical clearance and participant confidentiality were ensured.
Results: Among 222 participants (113 females; 109 males), the most common diagnoses were eczema (35.1%), scabies (18.9%), tinea (9.5%), pityriasis versicolor (8.6%), and neurodermatitis (5.4%). Eczema affected both genders equally, scabies was more frequent in females. Adults aged 19–60 years represented the majority of cases. Rare chronic conditions, including leprosy (0.5%), were also identified.
Conclusion: The predominance of common and preventable skin diseases underscores the ongoing burden of neglected tropical skin diseases. Strengthening primary dermatology services, hygiene promotion, and community education remains essential in rural Indonesia.

Keywords: Skin diseases; Neglected Tropical Diseases; Scabies; Leprosy; Sumbawa Regency

ID: 2031

NEUTROPHIL-TO-LYMPHOCYTE RATIO AS A PREDICTOR FOR SEVERITY OF LEFT VENTRICULAR HYPERTROPHY IN END-STAGE RENAL DISEASE

Yanna Indrayana[1,*], Herpan Syafii Harahap[2], Yusra Pintaningrum[1], Romi Ermawan[1], Amanukarti Resi Oetomo[3]

[1]Department of Cardiovascular, Medical Faculty, Mataram University, Mataram, Indonesia
[2]Department of Neurology, Medical Faculty, Mataram University, Mataram, Indonesia
[3]Department of Internal Medicine, Mataram General Hospital, Mataram, Indonesia
*Corresponding author: yannaindrayana@gmail.com

ABSTRACT

Background and Objectives: The aim of this study was to investigate the correlation between neutrophil-to-lymphocyte ratio (NLR) and Hypersensitive C-reactive protein (hs-CRP) with severity of left ventricular hypertrophy (LVH) in end-stage renal disease patients.
Methods: A cross sectional study was conducted, involving 50 patients with end-stage renal disease on regular hemodialysis at West Nusa Tenggara General Hospital. Severity LVH measured by left ventricular mass index (LVMI) determined by echocardiography performed by a cardiologist. According to NLR value the participant were divided into low NLR (≤ 3) and high NLR (>3). Participant also divided according hs-CRP levels into low hs-CRP (≤ 3) and high hs-CRP (>3). Spearman correlation analysis was used to assess the relationship between NLR and also hs-CRP with LVMI using SPSS statistics version 26.
Results: Comparation analysis demonstrated the LVMI was significantly higher in subjects with high NLR compare to those with low NLR (195 g/m2 vs 153 g/m2, p= 0.001). But there was no difference LVMI between subjects with high hs-CRP compared with low hs-CRP (164 g/m2 vs 177 g/m2, p= 0.32). Spearman correlation analysis demonstrated a positive correlation between NLR and LVMI (r=0.384, p= 0.006). There was no correlation between hs-CRP levels with LVMI (p= 0.28).
Conclusion: NLR is a simple method that can predict severity of LVH in patients with end-stage renal disease on regular hemodiaysis. It can be a predictor for cardiovascular outcome in these population.

Keywords: neutrophil-to-lymphocyte ratio, hypersensitive C-reactive protein, left ventricular hypertrophy, hypertension, end-stage renal disease

ID: 2032

THE EFFECT OF HYPERBARIC OXYGEN THERAPY ON MUSCLE FATIGUE RECOVERY TIME IN FUTSAL PLAYERS

Ida Ayu Eka Widiastuti[1*], Mohammad Rizki[2], Putu Suwita Sari[3], I Dewa Ayu Risna Jayanthi[4], Nurul Ridha Muttaqiin[5]

[1,3,4,5]Maritime Medicine Study Program, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
[2]Department of Clinical Pathology, Faculty of Medicine and Health Sciences, University of Mataram, Mataram, Indonesia
*Corresponding author: ayueka@unram.ac.id

ABSTRACT

Background and Objectives: Futsal is an endurance sport that involves large muscle contractions, which carry a considerable risk of muscle fatigue. Hyperbaric oxygen therapy (HBOT) has been shown to accelerate cell regeneration and tissue repair, potentially helping to alleviate fatigue and restore endurance capacity. This study aims to determine the effect of HBOT on muscle fatigue recovery time in futsal athletes.
Methods: This study is an experimental research involving futsal athletes as the study subjects. The subjects were divided into two groups: one group received HBOT for 90 minutes after a 40-minute futsal match, while the control group underwent conventional recovery methods. The subjects were selected using a simple random sampling method. The enzyme lactate dehydrogenase (LDH) was examined using a colorimetric test with blood samples. Blood samples were collected from the median cubital vein before the futsal match (P1), immediately after the game (P2), two hours post-match (P3), and twenty-four hours post-match (P4).
Results: The results showed no significant difference in LDH levels between the treatment group and the control group based on the independent t-test, for P1, P2, P3, and P4, with significance (p) values of 0.885, 0.402, 0.149, and 0.675, respectively. However, there were significant differences in LDH enzyme levels between before the match and immediately after the match (p = 0.000), before the game and 2 hours post-match (p = 0.000), as well as before the match and 24 hours after the game (p = 0.003).
Conclusion: LDH levels are affected by muscle fatigue; however, HBOT does not significantly influence LDH levels.

Keywords: HBOT, LDH, futsal players, muscle fatique

ID: 2036

CHALLENGES IN THE DIAGNOSIS AND TREATMENT OF TUBERCULOSIS PNEUMONIA WITH SEPTIC SHOCK : RARE CASE REPORT

Mc Syaiful Ghazi[1], M. Mirsa Nidzarsyah[1], Metta Octora[2], Bagus Ramanto Saputra[3],Rina Lestari[4], Komang Sri Rahayu Widiasari[4]

[1]Pulmonology and Respiratory Specialist Program, Faculty of Medicine and Health Sciences, Mataram University, NTB, Indonesia
[2]Master's Program in Public Health, Faculty of Medicine and Health Sciences, Mataram University, NTB, Indonesia
[3]Department Clinical Microbiology, West Nusa Tenggara Barat Province Hospital, NTB, Indonesia
[4]Department Pulmonology and Respiratory West Nusa Tenggara Barat Province Hospital, NTB, Indonesia
*Corresponding author: tibiamulia@gmail.com

ABSTRACT

Introduction: Tuberculosis pneumonia is an acute form of pulmonary tuberculosis caused by Mycobacterium tuberculosis with rare clinical manifestations, but it is often misdiagnosed as ordinary bacterial pneumonia. The incidence of TB pneumonia is only about 1-7% of pulmonary TB cases and is greatly influenced by diagnostic facilities.
Case Description: A 30-year-old female patient complained of shortness of breath, coughing up phlegm, a history of fever, and weight loss. Auscultation of the lungs revealed rales. Chest X-ray findings showed infiltrates, fibrosis, and cavities. The patient was diagnosed with pulmonary tuberculosis accompanied by septic shock and was hospitalized for 17 days. She was given antibiotic therapy in addition to antituberculosis drugs, but it did not give significant results as in the case of ordinary bacterial pneumonia. Sputum culture results also did not support a bacterial infection.
Discussion: Septic shock is more common in patients with weakened immune systems, but it can occur in individuals with normal immune systems. The patient's occupation, night shift work schedule, and alcohol consumption likely contributed to the decreased immune response. Chest X-ray findings showed infiltrates, fibrosis, and cavities suggestive of tuberculosis. Sepsis associated with TB must be treated with aggressive combination therapy, including antibiotics and antituberculosis drugs.
Conclusion: This case shows that pulmonary tuberculosis can develop into sepsis and septic shock even in individuals with normal immune status. Early diagnosis and prompt treatment with a combination of antibiotics and antituberculosis drugs are proven to be very important in preventing severe complications and increasing the chances of recovery.

Keywords: Pulmonary Tuberculosis, Antibiotic, Septic Shock, Pneumonia

ID: 2052

PREVALENCE OF *STAPHYLOCOCCUS AUREUS* CARRIER AMONG HEALTHCARE WORKERS IN LOMBOK, INDONESIA

Metta Octora[1]*, M. Andiffa Arifianto[2], Komala Heni[2]

[1]Master of Public Health Program, Faculty of Medicine and Health Sciences, Universitas Mataram, Mataram, Indonesia
[2]Bachelor of Medicine Program, Faculty of Medicine and Health Sciences, Universitas Mataram, Mataram, Indonesia
*Corresponding author: mettaoctora@unram.ac.id

ABSTRACT

Background and Objectives: *Methicillin-Resistant Staphylococcus aureus (MRSA)* infection remains a major public health concern with a high global prevalence. According to WHO, Antimicrobial Resistance: Global Report on Surveillance, MRSA proportions in 83 countries exceeding 20% across all regions, with some areas reaching over 80%. National surveillance data from eight referral hospitals in Indonesia revealed an MRSA prevalence ranging from 25% to 65%, with the national average of 38%. This study aimed to describe the prevalence of MRSA carrier among healthcare workers in Lombok, Indonesia.
Methods: This descriptive observational study used total sampling involving 49 healthcare workers in Intensive Care Units of class B and C hospital in Lombok. Participant characteristics were obtained through questionnaires. Nasal swabs were collected using 0.9% NaCl, inoculated on blood agar for 24 hours, followed by Gram staining, catalase and coagulase testing, and subculture on mannitol salt agar. Positive isolates were further tested with cefoxitin (30 µg); and isolates showing inhibition zones <20 mm were classified as MRSA. Data were analyzed using SPSS software.
Results: MRSA carrier was found in 23.3% healthcare workers in class B hospital and 21.05% in class C hospital. Prior antibiotic use within the last three months was reported by 30–36.8% of participants, and 30–42.1% had never participated in Infection Prevention and Control (IPC) training.
Conclusion: The prevalence of MRSA carrier among healthcare workers in Lombok, ranged from 21.05% to 23.3%. Prior antibiotic use and lack of IPC training may contribute to MRSA colonization among healthcare workers in intensive care settings.

Keywords: MRSA, carrier, colonization, antibiotics, infection prevention and control (IPC)

ID: 2053

GUT MICROBIOTA PROFILE IN STUNTED CHILDREN IN LABUAPI HEALTH CENTER, LOMBOK: A PILOT STUDY

Metta Octora[1*], Rosyunita[2], I Gusti Ayu Sri Andayani[3]

[1]Program Studi Magister Kesehatan Masyarakat, Fakultas Kedokteran dan Ilmu Kesehatan Universitas Mataram, Mataram, Indonesia
[2]Program Studi Pendidikan Dokter, Fakultas Kedokteran dan Ilmu Kesehatan Universitas Mataram, Mataram, Indonesia
[3]Laboratorium Riset Terpadu Fakultas Kedokteran dan Ilmu Kesehatan Universitas Mataram, Mataram, Indonesia
*Corresponding author: mettaoctora@unram.ac.id

ABSTRACT

Background and Objectives: Stunting remains a major public health problem among children in Indonesia. Nutritional intake during growth is influenced by multiple factors, including the composition of the gut microbiota. The relationship between a child's nutrient intake and gut microbiota is bidirectional: diet shapes the gut microbial community, and gut microbes, in turn, influence nutrient metabolism and absorption. Imbalance of gut microbiota (dysbiosis) can disrupt intestinal homeostasis and impair digestive and absorptive functions, which may consequently affect overall child growth. This pilot study aimed to analyze the metagenomic profile of gut microbiota in stunted children.
Methods: A metagenomic study was conducted on fecal samples from three stunted children aged 24–59 months attending the Labuapi Primary Health Center, Lombok. Approximately 5–10 grams of feces were collected in sterile containers and processed using the Mebep Stool DNA Minikit (DNK2301), which included stages of sample input, cell lysis, protein and inhibitor precipitation, DNA binding, washing, and elution. Library preparation was performed using the Native Barcoding Kit (Oxford Nanopore Technologies) compatible with the PromethION P2 Solo platform, followed by sequencing to generate long reads for each flow cell. Bioinformatic analyses were subsequently performed.
Results: In sample 1, Bacteroidota dominated (>50%) the gut microbiota, while approximately 35% of sequences were classified as Unknown, indicating incomplete taxonomic classification. This may reflect either database limitations or high microbial diversity, suggesting the need for improved reference databases or alternative classification methods such as long-read metagenomics. A similar pattern was observed in sample 2. In sample 3, Unknown taxa outnumbered all other species, while the rest were primarily dominated by Bacteroidota. Antibiotic resistance analysis revealed a strong potential resistance to chloramphenicol, macrolides, lincosamides, and streptogramin B, partial resistance to β-lactam antibiotics, and likely resistance to sulfamethoxazole and tetracycline classes.
Conclusion: The gut microbiota profile of stunted children at the Labuapi Health Center, Lombok, was dominated by Bacteroidota, a common component of normal gut flora. However, a significant proportion of unclassified bacterial sequences suggests the presence of novel or poorly characterized taxa, warranting further investigation using long-read metagenomic approaches. Additionally, a high potential for multi-class antibiotic resistance was observed among the detected microbial communities.

Keywords: stunting, dysbiosis, gut microbiota, metagenomics

ID: 2054

PROJECT-BASED LEARNING IN PREVENTIVE MEDICAL SERVICES FOR COASTAL COMMUNITIES AND REMOTE ISLANDS

Boy Subirosa Sabarguna[1*], Benny Jovie[2], Djatiwidodo Eka prasetya[1], Risma[2]
[1]Marine Medicine Specialist Study Program, Faculty of Medicine, Hang Tuah University, Surabaya
[2]Faculty of Medicine, Hang Tuah University, Surabaya
*Correspondent Author: sabarguna24@hangtuah.ac.id

ABSTRACT

Introduction: Indonesia's Vast Coastline, With 17,499 Islands, Is A Blessing To Be Grateful For, But Also A Challenge To Manage For Fairness And Prosperity. This Situation Cannot Be Allowed To Continue Without Real And Sustained Efforts, As The Large Population Demands That It Be A Driver Of Successful Development.
Objective: This Study Aims To Provide A Learning Model For Students Of The Marine Medicine Specialist Study Program To Implement Project-Based Learning In Preventive Services For Coastal And Remote Island Communities. This Will Become A Milestone For Current And Future Improvement.
Data Collection And Analysis: Data Were Collected Using Written Questionnaires In The Form Of Closed-Ended And Open-Ended Questions, Summarized, And Analyzed Qualitatively According To The Theme. The Data Were Previously Provided In Printed Books, Then Written And Discussed With The Support Of Relevant References.
Conclusion: Shows Good Prospects For Sustainable Implementation.
Suggestions: Continuous Recapitulation Of Results Is Carried Out To Evaluate And Improve.

Keywords: Indonesian Coast, Data Collection And Analysis, Preventive Services In Coastal Areas, Project-Based Learning, Implementation In Coastal Communities, And Remote Islands.

ID: 2082

PATIENT PROFILE OF LEPROSY AND ITS IMPLICATIONS FOR HEALTH SECURITY IN WEST NUSA TENGGARA PROVINCE, INDONESIA: STRENGTHENING HEALTH RESILIENCE IN TROPICAL AND ISLAND REGIONS

Lillah Faizah[1], Lina Nurbaiti[2], Amelia Ramdani Hasby[3]*
[1]Master of Public Health Program, Faculty of Medicine and Health Sciences, Universitas Mataram
*Corresponding author: faizahlillah@gmail.com

ABSTRACT

Background and Objectives: Leprosy is a chronic infectious disease caused by *Mycobacterium leprae* and remains a significant public health concern in Indonesia. National data from 2024 indicate that over 90% of new cases are multibacillary, 10% occur in children, and nearly 6% present with grade 2 disabilities. In West Nusa Tenggara Province, the prevalence in 2025 remains above 1 per 10,000 population in several districts, suggesting that elimination targets have not yet been achieved. Strengthening surveillance systems, promoting early case detection, and ensuring complete treatment are essential to achieve the 2030 leprosy elimination goal. This study aims to describe the demographic and clinical profiles of leprosy patients treated at Universitas Mataram Hospital between 2020 and 2022.
Methods: A descriptive retrospective study design was employed using medical records and patient registries from the Dermatology and Venereology Clinic of Universitas Mataram Hospital. All confirmed leprosy cases diagnosed between August 2020 and July 2022 (n = 85) were included. The variables analyzed comprised sex, age group, leprosy classification, reaction status, disability grade, and relapse status. Data were summarized using frequencies and percentages.
Results: During the study period, a total of 1,912 patient visits were recorded, of which 85 (4.44%) were related to leprosy. Female patients accounted for 53.8% of cases. The adult age group constituted the largest proportion (42.4%). The multibacillary form was predominant (84.6%), and leprosy reactions were observed in 61.5% of cases. Disabilities were identified in 50% of patients, while 11.5% of multibacillary cases experienced relapse within 12 months after release from treatment.
Conclusion: The findings underscore the predominance of multibacillary cases, the high frequency of leprosy reactions, and the considerable burden of disability, indicating delays in diagnosis and gaps in early detection. Strengthening surveillance systems, enhancing community awareness, and ensuring adherence to complete multidrug therapy are critical strategies to advance global health security and support progress toward the “Zero Leprosy” target.

Keywords: leprosy, patient profile, health security, Indonesia, West Nusa Tenggara

GHI 2025