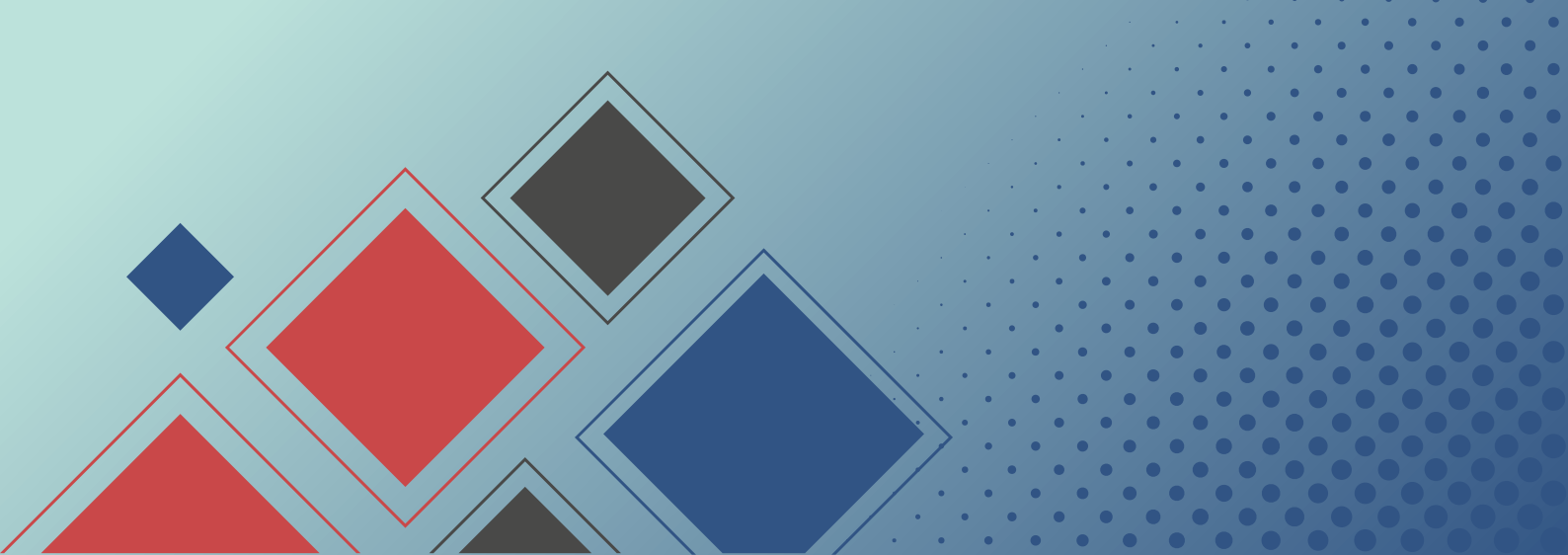


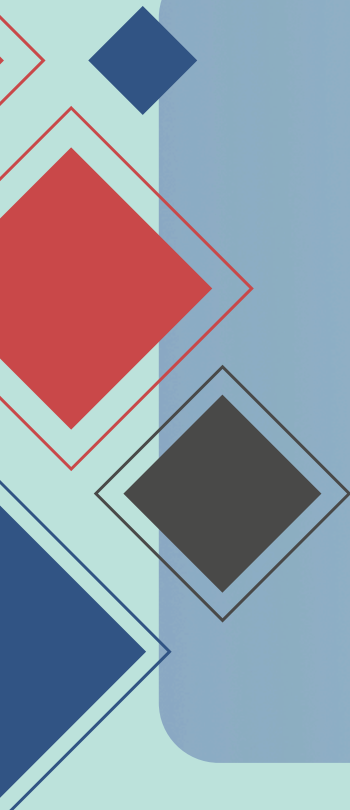


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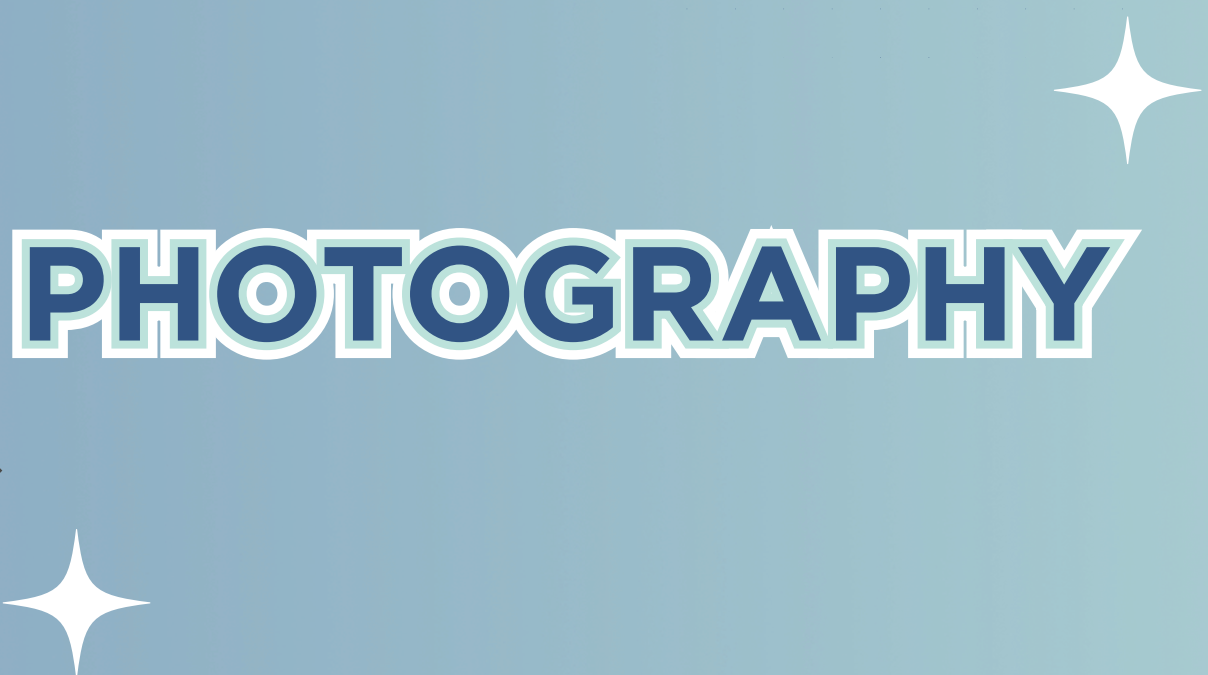
✦ ACADEMIC BUNDLE OF CREATIONS ✦

IMSTC 2026
BY AMSA-UNHAS 2025/2026





PHOTOGRAPHY



身土不二 (*SHINDO FUJI*):
THE GROUND AS OUR
SANCTUARY, THE STEP AS
OUR HARVEST

RADEN DEWI SALMA KHAIRUNNISAA
NUR FATHONAH PADMADIPOERA

3RD PLACE

“身土不二 (*Shindo Fuji*): The Ground as Our Sanctuary, The Step as Our Harvest”

Raden Dewi Salma Khairunnisaa Nur Fathonah Padmadipoera

Hasanuddin University

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In this modern era, technology offers conveniences that separate humans from physical activity. However, an ancient Japanese philosophy, 身土不二 (*Shindo Fuji*), states that the human body and the earth it stands on form an inseparable unity. This photo captures a golden moment of a group of young people who choose to run in public spaces rather than use vehicles. They interpret a deep understanding of health literacy and demonstrate a community that fights against misinformation about instant lifestyles by choosing long-term health investments. According to the World Health Organization (WHO), sufficient physical activity can reduce the risk of death by 20-30%, a fact that has been internalized into a strong culture in Japan.

This work successfully visualizes a process of how literacy and the role of community outreach transform into long-term lifestyle habits through organic health promotion. This photo conveys that future health innovations do not always depend on sophisticated hospitals and medical equipment, but also on supportive public spaces. Based on 身土不二 (*Shindo Fuji*): “the body and the land are a unity”, it reminds humans that every step on earth is the most inclusive primary health system for achieving sustainable empowerment.

Keywords: 身土不二 (*Shindo Fuji*), health literacy, sustainable empowerment.



***SILIH ASAH (THE MIND),
SILIH ASIH (THE HEART),
SILIH ASUH (THE HAND)***

**RADEN DEWI SALMA KHAIRUNNISAA
NUR FATHONAH PADMADIPOERA**

Silih Asah (The Mind), Silih Asih (The Heart), Silih Asuh (The Hand)

Raden Dewi Salma Khairunnisaa Nur Fathonah Padmadipoera

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Silih Asah (The Mind) is reflected through medical workers who use technology to record patients' identities, concerns, and medical histories. Although the healthcare workers operating the technology are not clearly visible, the focus of this moment is on the patients in the background. The data collected becomes the “fuel” for evidence-based policies and ensures that every medical step taken is based on accurate information (Data-Driven Surveillance).

The deliberately blurred focus of the health workers symbolizes that their individual identities, titles, and positions are secondary to their dedication. This is where the spirit of *Silih Asih* (The Heart) works their hearts and vision remain sharply focused on the patients. They have shed their egos for one noble mission, humanity, as the main driver that unite all medical workers to serve without discrimination (Patient-Centred Integrated Care).

The interaction between healthcare workers and digital technology, which appears to meld together in this photo, is a manifestation of interprofessional collaboration and technology (Interprofessional-Technological Synergy). *Silih Asuh* (The Hand) is depicted through an integrated delivery of care system which does not lie in the prominence of individuals, but in how they support each other as a whole.

Keywords: *Data-Driven Surveillance, Patient-Centered Integrated Care, Interprofessional-Technological Synergy.*





BEYOND THE SCREEN

**RADEN DEWI SALMA KHAIRUNNISAA
NUR FATHONAH PADMADIPOERA**

Beyond the Screen

Raden Dewi Salma Khairunnisaa Nur Fathonah Padmadipoera

Hasanuddin University

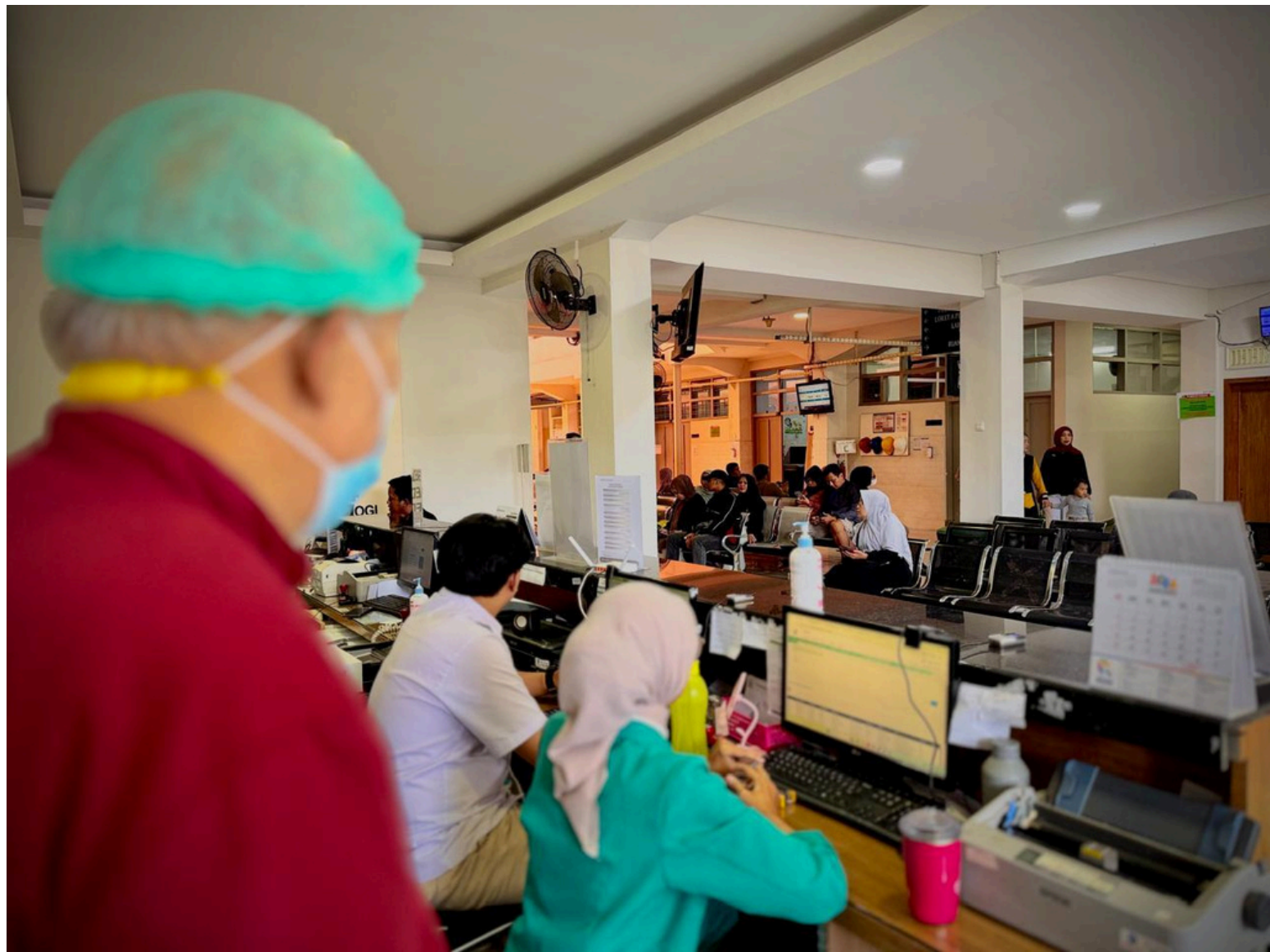
[Correspondence E-mail: radendewisalma@gmail.com]

Amid the overwhelming flow of digital information, the healthcare sector today faces a major challenge in the form of widespread misinformation that often confuses the public. This photograph captures a crucial moment, when a patient chooses to step beyond the screen and seek the truth directly from reliable sources.

On the other side, the image highlights innovation in healthcare services through Interprofessional Education (IPE). Physicians collaborate and engage in discussions with fellow healthcare professionals to ensure that every medical recommendation is grounded in careful, holistic consideration. This interprofessional collaboration is not merely about clinical efficiency, but a commitment to delivering the most accurate and trustworthy information to patients.

By strengthening health literacy through factual and collaborative dialogue, we are building the foundation of a resilient community. Ultimately, sustainable health can only be achieved when society has access to accurate knowledge and places its trust in a healthcare system that operates with integrity.

Keywords: Health Literacy, Interprofessional Education (IPE), Medical Misinformation.



**THE SUNRISE OF LIFE:
CULTIVATING
INTERPROFESSIONAL UNITY
FOR RESILIENT CARE**

NURQALBI PUTRI MULYANI

FINALIST



The Sunrise of Life: Cultivating Interprofessional Unity for Resilient Care

nurqalbi.putri15@gmail.com

Introduction/Background: The birth of a newborn marks the ultimate "sunrise" of human existence, representing both hope and the vulnerability that a healthcare system must protect. This photograph captures the essence of "Strengthening Unity" by portraying medical students in a moment of silent, focused observation as a nurse providing expert neonatal care. It highlights that health innovation is not only found in advanced machinery but also in the sustainable transfer of clinical wisdom and the synergy between different healthcare professions to ensure a resilient start for every new life.

Objectives: This work aims to visualize the importance of interprofessional education and mentorship in nurturing the resilience of future medical practitioners. By documenting the interaction between experienced hands, eager learners, and a newborn, the photo seeks to advocate for a healthcare model where unity and shared knowledge become the foundation for sustainable community empowerment.

Keywords: Neonatal care, interprofessional unity, clinical mentorship, health empowerment, nurturing resilience.



**THE SYNERGY OF SIGHT:
ENHANCING CLINICAL
DIAGNOSIS THROUGH
COLLABORATIVE
RADIOGRAPHIC ANALYSIS**

NURQALBI PUTRI MULYANI

FINALIST



The Synergy of Sight: Enhancing Clinical Diagnosis Through Collaborative Radiographic Analysis

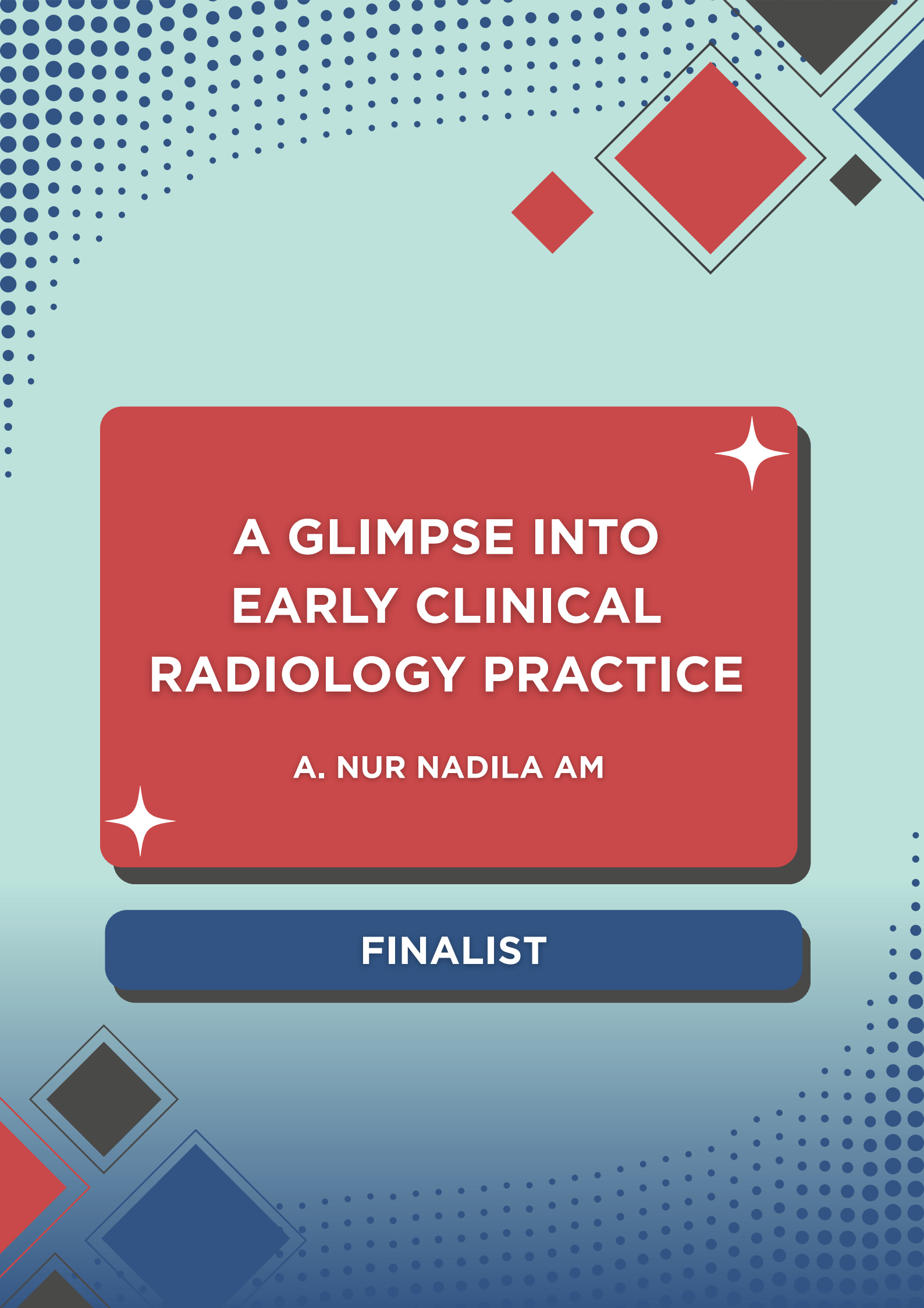
nurqalbi.putri15@gmail.com

Introduction/Background: Medical imaging plays a pivotal role in modern diagnostics, allowing healthcare professionals to visualize internal structures and identify pathologies that are not apparent through physical examination alone. The interpretation of these images, such as X-rays, is a fundamental skill in medicine, requiring careful analysis and often benefiting from collaborative discussion. This photograph captures a candid moment within a clinical setting, illustrating the focus and teamwork involved in the diagnostic process.

Objectives: The objective of this photograph is to visually document and emphasize the collaborative nature of medical diagnosis and education. It aims to portray the shared intellectual effort between individuals as they analyze radiographic findings, highlighting the importance of teamwork and critical thinking in arriving at an accurate understanding of a patient's condition.

Keywords: *Collaboration, Diagnosis, Education, Medical Imaging, X-ray*





A GLIMPSE INTO EARLY CLINICAL RADIOLOGY PRACTICE

A. NUR NADILA AM

FINALIST

A Glimpse into Early Clinical Radiology Practice

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Hasanuddin University

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Introduction : Radiology plays a vital role in modern healthcare by providing essential diagnostic information that supports accurate clinical decision-making. This photograph depicts an early clinical exposure activity in a hospital radiology unit, where a medical student is guided by a radiographer during an X-ray examination. The presence of protective equipment and imaging devices reflects the emphasis on patient safety, radiation protection, and adherence to standard operating procedures. Early exposure to radiological practice allows medical students to observe how technology, teamwork, and professionalism intersect in real clinical settings. Beyond understanding imaging results, students begin to appreciate the ethical responsibility and precision required in diagnostic services. Such experiential learning strengthens clinical awareness and reinforces the importance of safe, efficient diagnostic workflows as part of a resilient health system.

Objectives : This image aims to highlight the significance of early clinical exposure in radiology as a foundational component of medical education. It emphasizes how direct observation of diagnostic imaging procedures fosters professional responsibility, patient safety awareness, and clinical preparedness, contributing to the development of competent future physicians and sustainable healthcare systems.

Keywords : *Clinical Exposure; Diagnostic Imaging; Medical Education; Patient Safety; Radiology*



A. Nur Nadila AM
AMSA - UNHAS

**AT THE BEDSIDE,
WE BEGIN TO
BECOME DOCTORS**

A. NUR NADILA AM



At the Bedside, We Begin to Become Doctors

A. Nur Nadila AM

Hasanuddin University

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Introduction : Early clinical exposure is a vital component of medical education that allows students to engage directly with real healthcare environments. This photograph portrays a group of medical students receiving bedside instruction from a clinical supervisor in a hospital ward. The scene reflects the transition from classroom-based learning to patient-centered care, where observation, communication, and professionalism are emphasized. Surrounded by clinical equipment and the setting of inpatient care, students are introduced to the importance of teamwork, ethical conduct, and attentive listening in medical practice. Such exposure helps students understand that effective healthcare extends beyond medical knowledge, encompassing empathy, collaboration, and responsibility toward patients. By witnessing real clinical interactions under supervision, future physicians begin to develop clinical reasoning and professional attitudes essential for safe and effective healthcare delivery. This experiential learning contributes to strengthening healthcare systems by preparing a competent and compassionate medical workforce.

Objectives : This image aims to highlight the role of bedside teaching and early clinical exposure in shaping professional identity among medical students. It emphasizes how guided learning in real patient care settings fosters clinical preparedness, teamwork, and ethical awareness, supporting the development of resilient and sustainable healthcare systems.

Keywords : *Bedside Teaching; Clinical Exposure; Medical Education; Patient Care; Professionalism*



A. Nur Nadila AM
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THE SILENT LANGUAGE OF LABORATORY TOOLS

A. NUR NADILA AM



The Silent Language of Laboratory Tools

A. Nur Nadila AM

Hasanuddin University

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Introduction: Clinical laboratory work is often perceived through numerical results and written reports, while the preparatory process behind them remains unseen. This photograph captures a carefully arranged set of laboratory instruments commonly used in basic hematological examinations, including capillary blood sampling. Items such as test tubes, pipettes, reagents, alcohol swabs, and a timer are presented in a clean and orderly manner, emphasizing the importance of preparation, sterility, and precision. The visual composition reflects the quiet discipline of laboratory practice, where accuracy begins long before a specimen is analyzed. Through a minimalistic and top-down perspective, the image highlights how each tool plays a crucial role in ensuring reliable diagnostic outcomes.

Objectives: This photograph aims to illustrate the significance of proper laboratory preparation as the foundation of accurate medical diagnostics. It seeks to raise awareness that behind every laboratory result lies a meticulous process requiring discipline, organization, and responsibility. Additionally, the image encourages appreciation of laboratory professionals whose attention to detail directly contributes to patient safety and quality healthcare.

Keywords : *accuracy, diagnostics, hematology, laboratory, preparation*



A. Nur Nadila AM
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WHEN CARE STEPS OUTSIDE THE CLINIC

MUHAMMAD RIZQI

FINALIST

When Care Steps Outside the Clinic

Muhammad Rizqi

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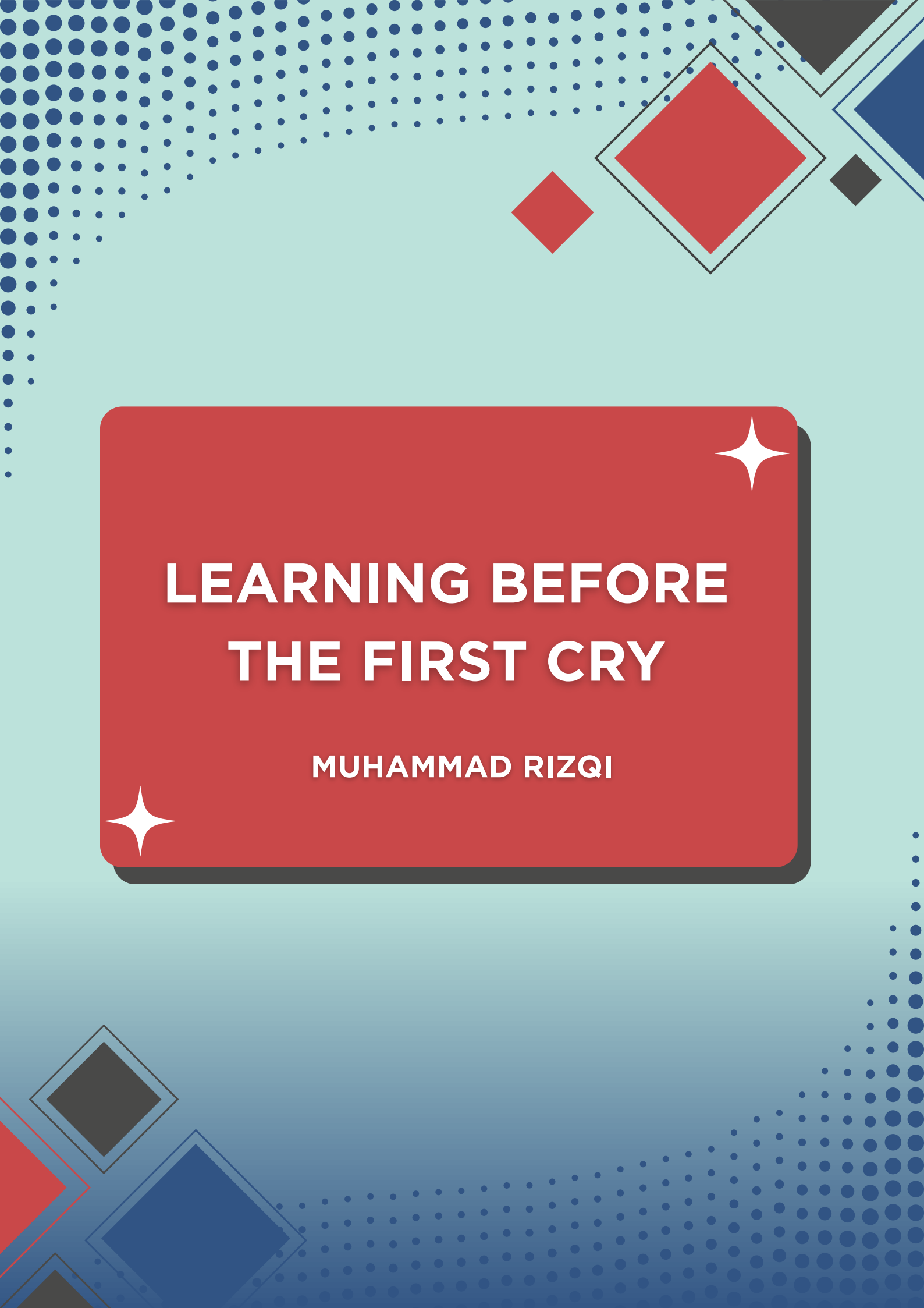
Introduction: Community based health initiatives play a vital role in promoting preventive care and strengthening public awareness of personal health. This photograph was taken during a weekly car free day held within the university area, where medical students provided free health screenings for community members engaging in morning physical activities. The open public setting reflects how healthcare services can be brought closer to the community, reducing barriers to access and encouraging early detection of health issues. Through direct interaction with individuals participating in recreational exercise, medical students performed basic health assessments while also practicing communication and patient centered care. Such activities highlight the role of future healthcare professionals in supporting community empowerment and fostering trust between the public and the healthcare system. Preventive screenings conducted in informal settings can enhance public engagement and reinforce the importance of routine health monitoring as part of a healthy lifestyle.

Objectives: This image aims to raise awareness of the role of community based preventive health services in strengthening health system resilience. It emphasizes how active involvement of medical students in public health initiatives contributes to sustainable healthcare delivery by promoting early detection, health education, and community empowerment.

Keywords: *Community Health; Medical Student; Preventive Healthcare; Screening.*



Muhammad Rizqi
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LEARNING BEFORE THE FIRST CRY

MUHAMMAD RIZQI

Learning Before the First Cry

Muhammad Rizqi Hasanuddin University

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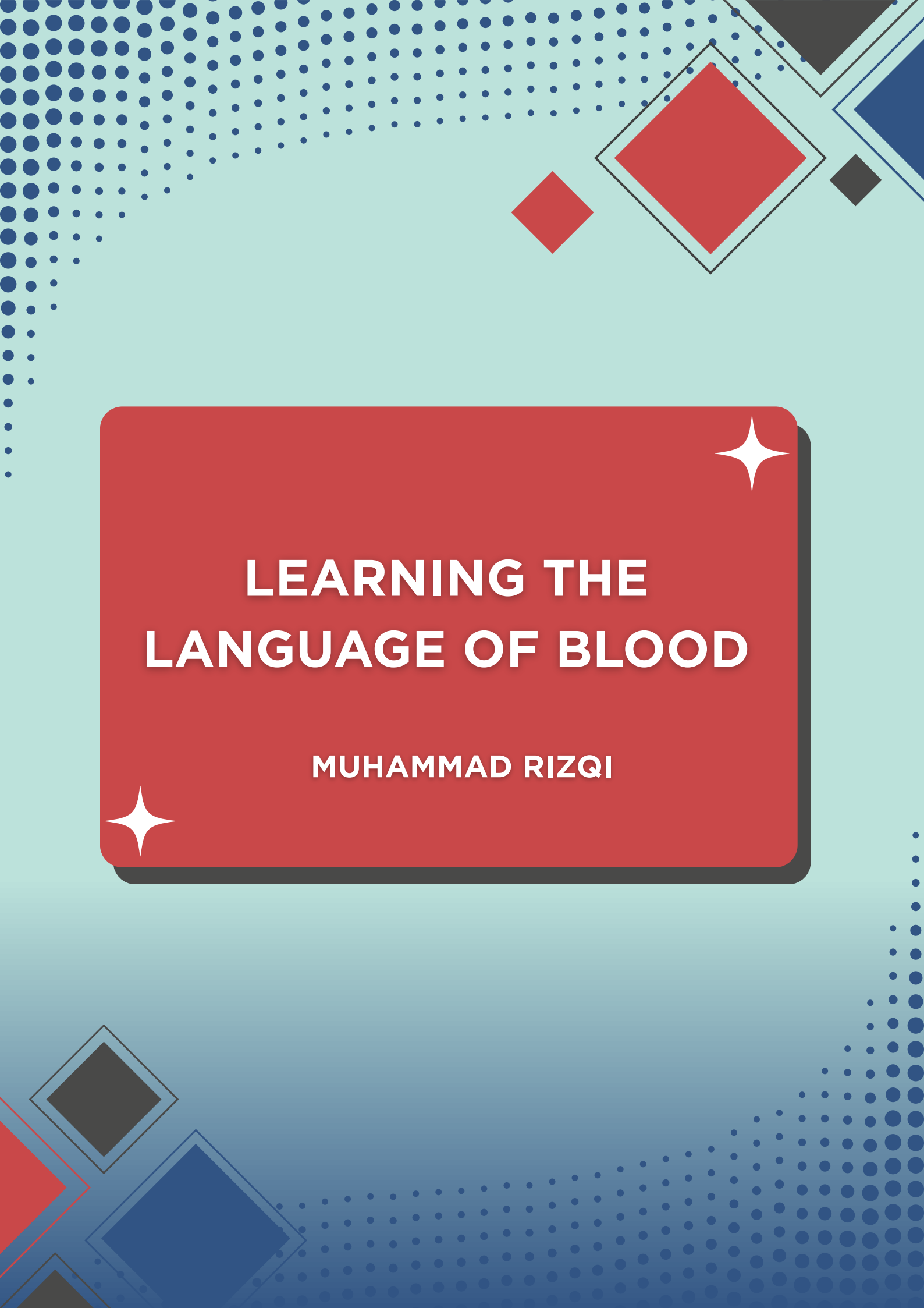
Introduction: Early clinical exposure allows medical students to gain foundational understanding of clinical processes before direct patient involvement. This photograph was taken in a regional hospital in Maros during an early clinical exposure program, where medical students observed the process of childbirth while waiting for an active labor case. In the absence of an immediate patient, digital learning media were used to review and understand the stages and procedures of parturition. This setting reflects how clinical education adapts to situational limitations while maintaining learning continuity. Observing childbirth is a critical component of medical training, as it introduces students to maternal care, clinical decision making, and the dynamics of delivery rooms. The collective viewing of the procedure fosters peer discussion and shared learning, reinforcing unity and preparedness among future healthcare providers. The use of digital tools complements clinical exposure by ensuring students remain engaged and informed, even outside direct patient encounters.

Objectives: This image aims to highlight the role of adaptive learning strategies in strengthening medical education and healthcare system resilience. It emphasizes how early exposure to childbirth care, supported by digital media, prepares medical students to deliver safe, informed, and compassionate maternal healthcare in the future.

Keywords: *Childbirth Observation; Early Clinical Exposure*



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LEARNING THE LANGUAGE OF BLOOD

MUHAMMAD RIZQI

Learning the Language of Blood

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Introduction: Early clinical exposure is a crucial component of medical education that bridges theoretical knowledge with real world healthcare practice. This photograph was taken in the clinical laboratory of a teaching hospital during an early clinical exposure program, where a medical resident guided students through the process of blood group examination. At this stage, students are introduced to fundamental diagnostic procedures under direct supervision, allowing them to understand not only technical steps but also the responsibility attached to accurate laboratory work. Laboratory based learning plays a vital role in strengthening health systems, as basic diagnostic skills form the backbone of safe and effective patient care. Through direct observation and guided practice, future physicians develop clinical reasoning, attention to detail, and an appreciation of standard operating procedures that ensure reliability of results. The presence of a resident highlights the continuity of medical education, where knowledge is transferred across generations within the healthcare system.

Objectives: This image aims to raise awareness of the importance of early and structured clinical exposure in nurturing competent healthcare professionals. It emphasizes how strengthening foundational diagnostic competencies from the beginning of medical training contributes to health system resilience and sustainability through a prepared, meticulous, and ethically grounded workforce.

Keywords: *Laboratory Medicine; Resilience.*



M u h a m m a d R i z q i
A M S A - U n h a s



THE BODY AS THE FIRST CLASSROOM



ATHIRA ZALSABILAH

The Body as the First Classroom

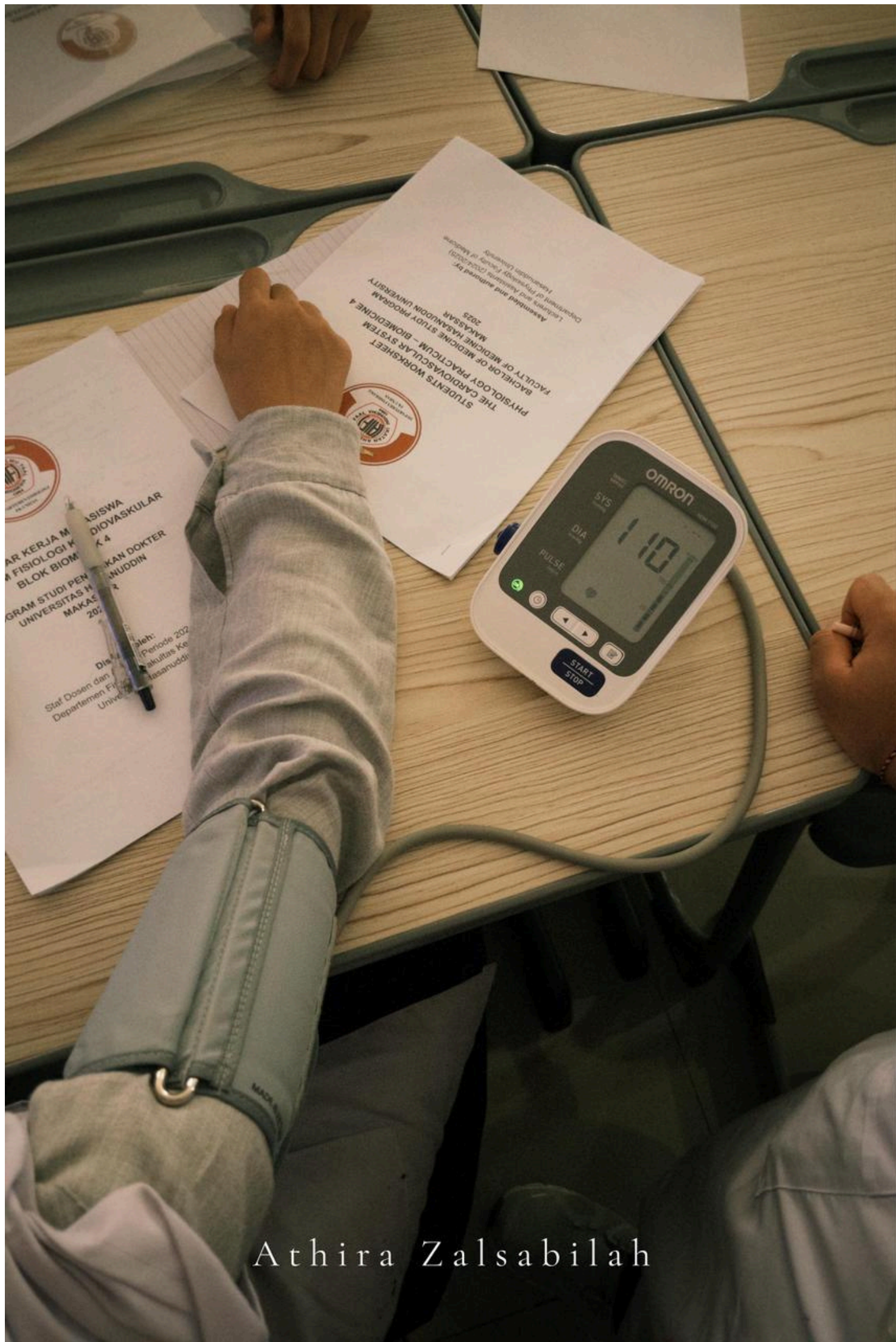
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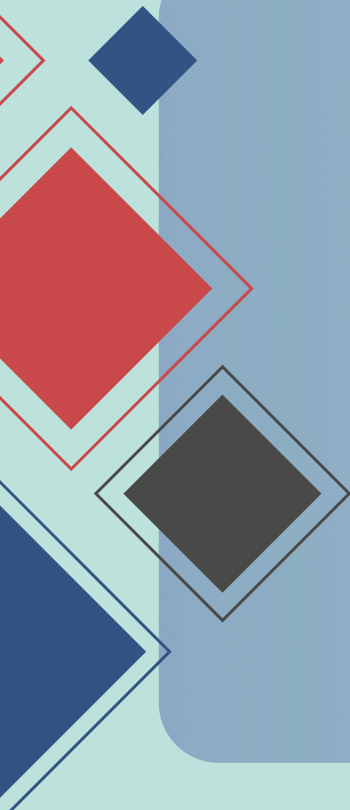
Introduction: In the brief interlude between lectures, a blood pressure cuff tightens around the arm of a medical student, turning an ordinary pause into a moment of reflection. Captured within the learning space, this image portrays how medical education extends beyond theory into lived experience. The act of measuring blood pressure becomes a quiet dialogue between body and knowledge, where personal health data mirrors broader patterns within populations. In an era shaped by misinformation and unequal access to care, this simple measurement symbolizes the foundational role of epidemiology, health literacy, and reliable data in nurturing collective resilience.

Objectives: This work aims to highlight how everyday clinical practices among medical students contribute to understanding population health through disease surveillance and epidemiological awareness. It seeks to emphasize the importance of health literacy within medical education, where future physicians learn to interpret, trust, and communicate health information responsibly. Furthermore, it underscores the value of integrated and innovative healthcare systems that begin in academic environments, fostering preventive mindsets, continuity of care, and sustainable empowerment for communities.

Keywords: *Medical education; health; integrated healthcare.*



Athira Zalsabilah



PUBLIC POSTER





SOCMED-TRAP: SELF-DIAGNOSE? ASK EXPERTS FIRST!

**M. ATHAYA HAYYAN
SITI AURA RAMADHANI
SYAUKI AKIFURAHMAN
GISELLE KINAWA PIRADE**

SOCMED-TRAP: Self-Diagnose? Ask Expert First!

M. Athaya Hayyan¹, Siti Aura Ramadhani², Syauki Akifurahman³, Giselle Kinawa Pirade⁴

Hasanuddin University

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Introduction: Self-diagnosis refers to the practice of identifying or labeling one's own health condition based on personal interpretation of symptoms, often relying on information from social media rather than consultation with qualified health professionals. The rapid expansion of digital platforms has made health-related content widely accessible, however, much of this information lacks proper fact-checking and clinical context. Evidence suggests that approximately one in three individuals have self-assessed a mental health condition based solely on social media exposure. Short-form and highly engaging content may oversimplify complex symptoms, promote misconceptions, and amplify unverified claims. This practice can be harmful due to the SOCMED-TRAP, which includes symptom misinterpretation, overconfidence bias, increased confusion, stress and anxiety, misinformation overload, algorithm-driven echo chambers, delay in seeking care, and being trapped in persistent thoughts. Common misconceptions include equating temporary sadness with clinical depression or assuming a brief video can confirm a specific mental disorder.

Objectives: This public poster aims to raise awareness of the risks of self-diagnosis, introduce the SOCMED-TRAP framework, and encourage safer, evidence-based approaches through professional consultation, credible sources, and EXPERT guidance.

Keywords: *Misinformation; Public health awareness; Self-diagnosis; Social media.*

SOCMED TRAP

Self-Diagnose? Ask EXPERT First!

Self-diagnosis is when a person identifies or labels their own health condition based on personal interpretation of symptoms, often using information found online or on social media instead of consulting a qualified health professional.

SCAN
FOR
MORE



1 in 3

people have self-assessed a mental health condition based on information from social media without professional consultation.

WHY IS IT
DANGEROUS?

Symptoms Misinterpretation

Overconfidence bias

Confusion, stress, & anxiety

Misinformation overload

Echo chambers of algorithm

Delay in care

TRAP ped in thoughts

Role of Social Media

Social media is widely used for health info, but content often lacks fact-checking. Bite-sized advice can oversimplify symptoms, leading to misunderstandings and beliefs based on popularity, not science.

MISCONCEPT EXAMPLE
Believing a 15-second TikTok video means you have a specific mental disorder

Evaluate your symptoms clinically

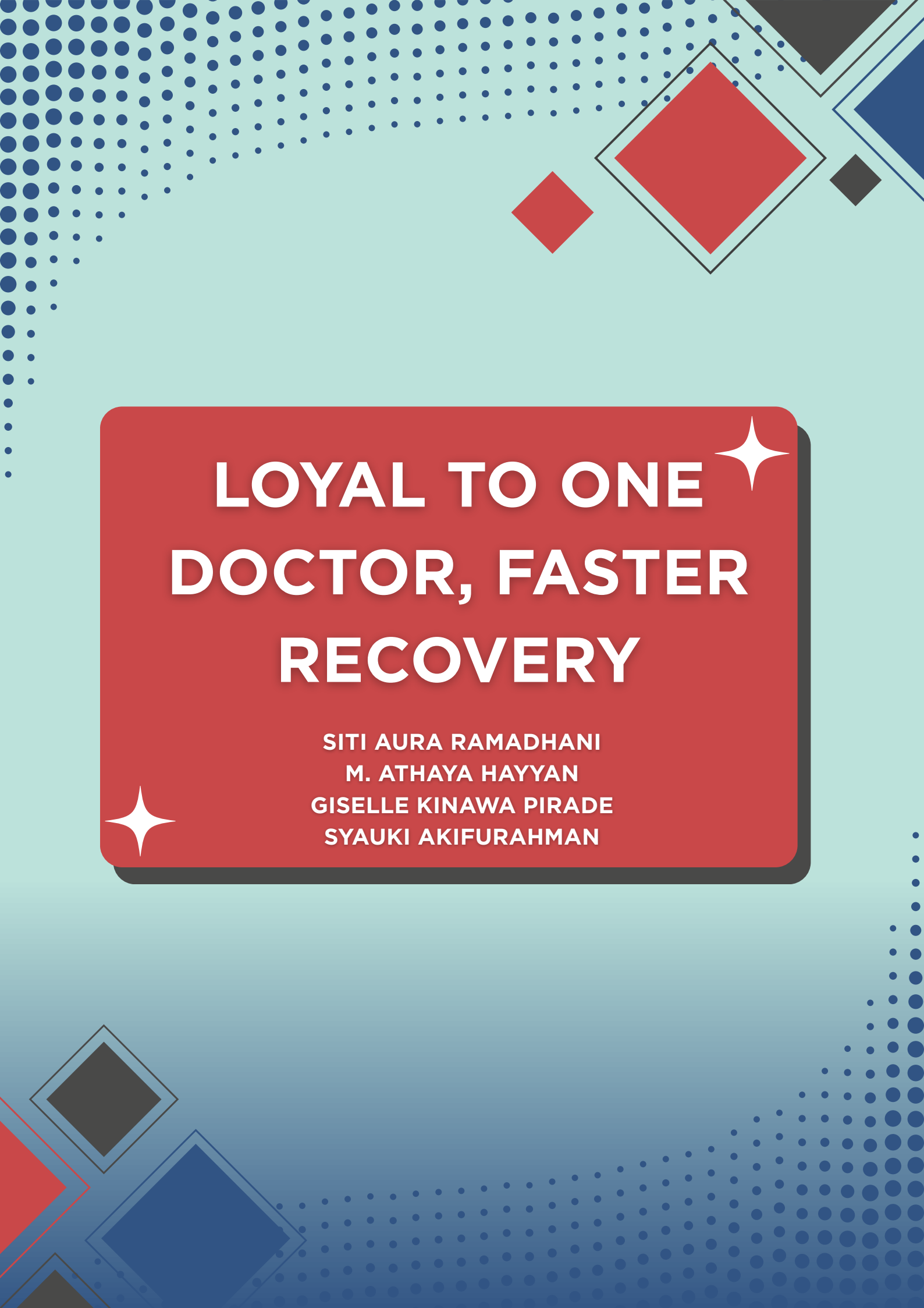
EXPLORE credible sources

Plan to consult a clinician before forming conclusions

Engage in evidence-based health tools

Record your health history

Talk to trained experts for accurate diagnosis



LOYAL TO ONE DOCTOR, FASTER RECOVERY

**SITI AURA RAMADHANI
M. ATHAYA HAYYAN
GISELLE KINAWA PIRADE
SYAUKI AKIFURAHMAN**



Loyal to One Doctor, Faster Recovery

Siti Aura Ramadhani¹, M. Athaya Hayyan², Giselle Kinawa Pirade³, Syauki Akifurahman⁴

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Introduction: Globalization has made it easier for people to access healthcare providers. However, this can encourage patients to engage in "Doctor Shopping," where they consult multiple doctors or healthcare platforms for the same case to obtain multiple prescriptions, diagnostic tests, and medical opinions. This phenomenon can occur due to various factors, such as self-diagnosis, which forces patients to obtain their desired conclusions from their doctors, patients demanding large quantities of specific medications, and distrust of doctor's opinions. Research shows that patients who frequently change doctors have a significantly lower chance of survival. This behavior can lead to **Over-medication**, **Numerous Conflicting Opinions**, and **Elevated Costs and Stress** for the patient.

Objectives: This public poster aims to provide information about what doctor shopping is and raise awareness of the risks among people with health problems. Furthermore, this poster introduces a method to encourage an effective approach to preventing the phenomenon of doctor shopping through LOYAL: **L**imit the Options, **O**pen Communication, **Y**ield to the Progress, **A**lways Verify to Doctor, and **L**ease it to Doctor.

Keywords: *Doctor shopping, Over-medication, Patient Safety.*

Loyal to One Doctor, Faster Recovery!

Scan Me!



What Is Doctor Shopping?

Doctor Shopping is seeking care from multiple doctors for the same problem without coordination or sharing records. It fragments your care and hides your full story.

Why does it happen here?

Fragmented System

Easy access to many clinics & specialists without linked records.

Seeking Certainty

Patients often visit multiple doctors for chronic or unresolved issues.

Digital Access

Patients often visit multiple doctors for chronic or unresolved issues.



Why ONE is risky?



Over-medication



Numerous Conflicting Opinions



Elevated Costs and Stress

More doctors = better care

MYTH

Better care comes from coordination, not quantity

FACT

Correct Steps with LOYAL

L

Limit The Options

Choose only one Doctor Or medical platform wisely



Open Communication

Give your Full history and Converse honestly

Y

Yield to the progress

Always be Patient's and trust the Recovery timeline

A

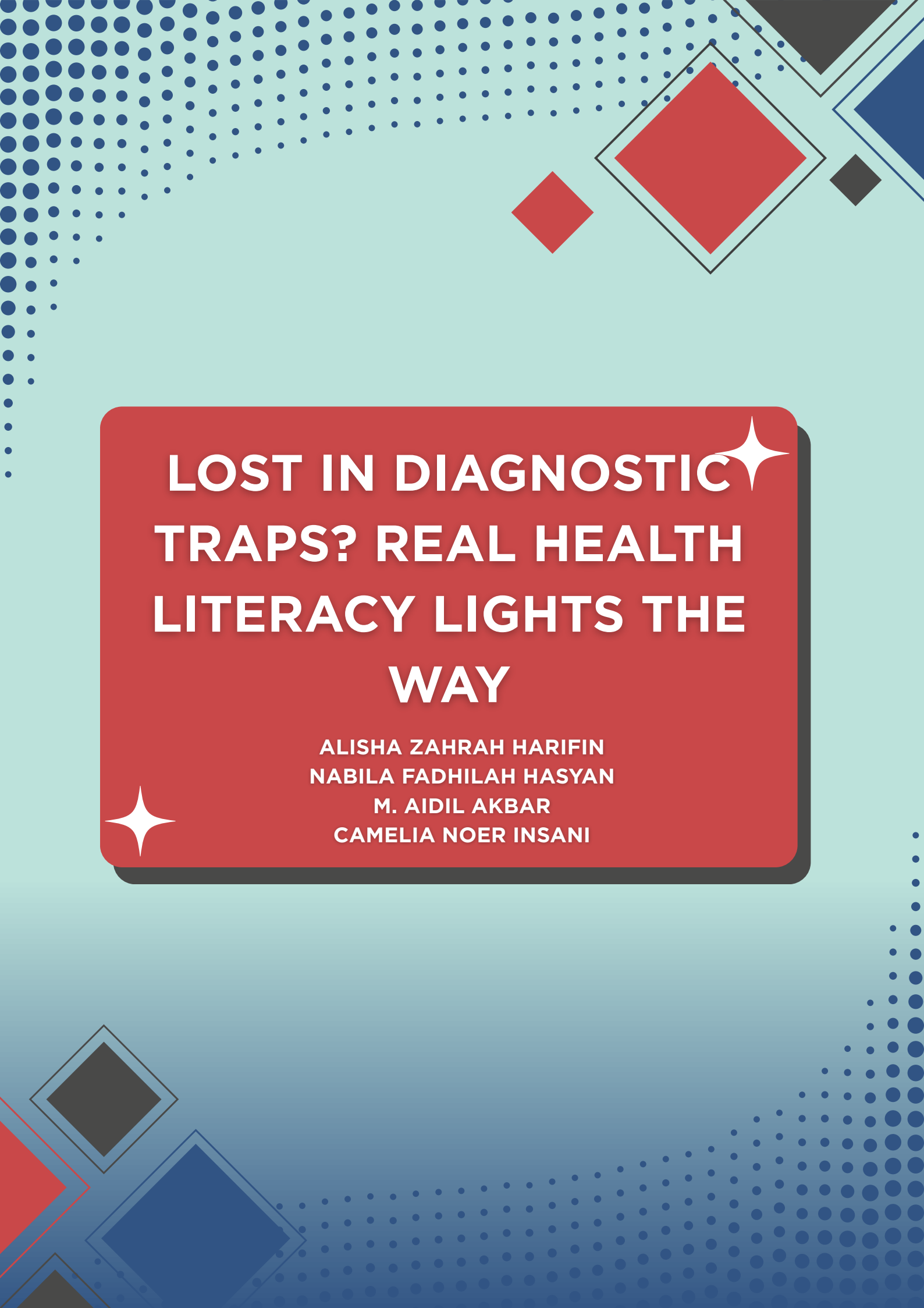
Always Verify to Doctor

Verify to your main Doctor for all YouTube decision

L

Leave it to Doctor

Trust and Leave it to your Doctor to Guide your Health journey



LOST IN DIAGNOSTIC TRAPS? REAL HEALTH LITERACY LIGHTS THE WAY

**ALISHA ZAHRAH HARIFIN
NABILA FADHILAH HASYAN
M. AIDIL AKBAR
CAMELIA NOER INSANI**

Lost in Diagnostic TRAPS? REAL Health Literacy Lights the Way

Alisha Zahrah Harifin¹, Nabila Fadhilah Hasyan², M. Aidil Akbar³, Camelia Noer Irsani⁴

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Introduction:

The increasing availability of health-related information has changed how individuals interpret symptoms and make judgments about their own health. While access to information can support awareness, it may also encourage self-diagnosis, defined as identifying a disorder without professional medical consultation. Evidence indicates that self-diagnosis is highly prevalent, with a study reporting that approximately 75% of individuals have self-diagnosed at least once in their lifetime. Without sufficient health literacy, individuals may rely on simplified or incomplete information, leading to premature health labels and inappropriate self-management. This phenomenon highlights the importance of guiding the public toward critical interpretation of health information and appropriate help-seeking behavior.

Objectives:

This public poster aims to raise awareness of self-diagnosis by outlining key risk factors through the TRAPS framework—Trending diagnoses, Rapid symptom matching, Algorithmic exposure, Partial information, and Selective attention. In addition, it introduces the REAL approach—Resist quick conclusions, Evidence over assumptions, Ask for professional help, and Literacy before labels—as a preventive strategy to promote informed decision-making and responsible health-seeking practices.

Keywords: *health literacy, self-diagnosis, symptom interpretation*

LOST IN DIAGNOSTIC TRAPS?

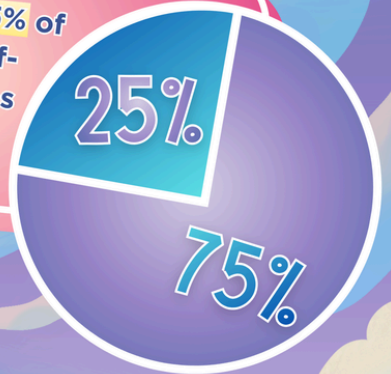
REAL HEALTH LITERACY LIGHTS THE WAY

DESCRIPTION

Self-diagnosis is the process in which individuals diagnose or identify disorders within themselves, often by matching their experienced symptoms with information found on the internet, without professional medical consultation.

DID YOU KNOW?

A study finds that 75% of participants have self-diagnosed themselves once in their lifetime.



Get To
Know More

WHAT CAUSES SELF-DIAGNOSIS?

T

Trending
Diagnoses

R

Rapid
Symptoms
Matching

A

Algorithmic
Exposure

P

Partial
Information

S

Selective
Attention



PREVENT SELF-DIAGNOSIS

R

Resist
quick
conclusions

E

Evidence
over
assump-
tions

WITH REAL INFORMATION

A

Ask for
profes-
sional
help

L

Literacy
before
labels



ARE FALLS PART OF AGING? NO! PREVENT THEM WITH STAND

**SANDRI NABILAH ESAFIANO
NURQALBI PUTRI MULYANI
ANDI NAYLA FADAL**

Are FALLS Part of Aging? No! Prevent Them With STAND

sandri.nabila2007@gmail.com

Background: Elderly falls represent a silent yet devastating public health crisis, causing approximately 684,000 deaths annually, with 80% occurring in low- and middle-income countries. Contrary to popular belief, falling is not a normal consequence of aging but a preventable geriatric condition. Data shows a critical education gap: 92% of older adults have never received fall-prevention literacy, even though 33% have already experienced falls. These incidents lead to severe physical injuries, loss of independence, and significant caregiving burdens, threatening the resilience of our aging population.

Objectives: This public poster aims to foster resilience and achieve sustainable empowerment by providing accessible health education for the elderly and their families. By introducing the "FALLS" mnemonic to identify warning signs and the "STAND" framework for daily prevention, this work seeks to strengthen community unity in proactive care. The ultimate goal is to shift public perception and equip individuals with innovative, easy-to-remember strategies to ensure that while aging is inevitable, falling remains preventable.

Keywords: *Elderly falls, Fall prevention, Health literacy, Nurturing resilience, Sustainable empowerment.*



Are FALLS Part of Aging? **NO!** Prevent Them with **STAND**

ELDERLY FALLS : Silent Public Health Crisis !

1 DEFINITION

Elderly falls are unintentional events in which older adults come to rest on the ground or a lower level during daily activities such as standing, walking, or changing positions. These incidents are not a normal part of aging, but a multifactorial geriatric condition influenced by impaired balance, muscle weakness, orthostatic hypotension, medication effects, visual problems, and environmental hazards (1)

2 THE SHOCKING FACTS

684.000

people die each year due to falls
80% occur in low- and middle-income countries (2)

4 THE IMPACT OF ELDERLY FALLS

On the Individuals:

- Fractures & head injury
- Loss of confidence
- Reduced mobility
- Fear of falling again (4)

**CRISIS!
!ALERT
92%**

of older adults never received fall-prevention education, yet 1 in 3 has already experienced a fall (3)

5 THE IMPACT OF ELDERLY FALLS

On family & community:

- Increased caregiving burden
- Long-term disability
- Higher healthcare costs (4)

WARNING SIGNS!

F



Feeling dizzy when standing

A



Altered balance or walking pattern

L



Legs getting weak

L



Loss of vision or blurred sight

S



Sudden previous fall

HOW TO PREVENT ELDERLY FALLS:

S



Sit for a moment before standing

T



Take care of medications

A



Activate muscles with regular exercise

N



Notice hazards at home

D



Discuss symptoms with healthcare providers

GUIDEBOOK:

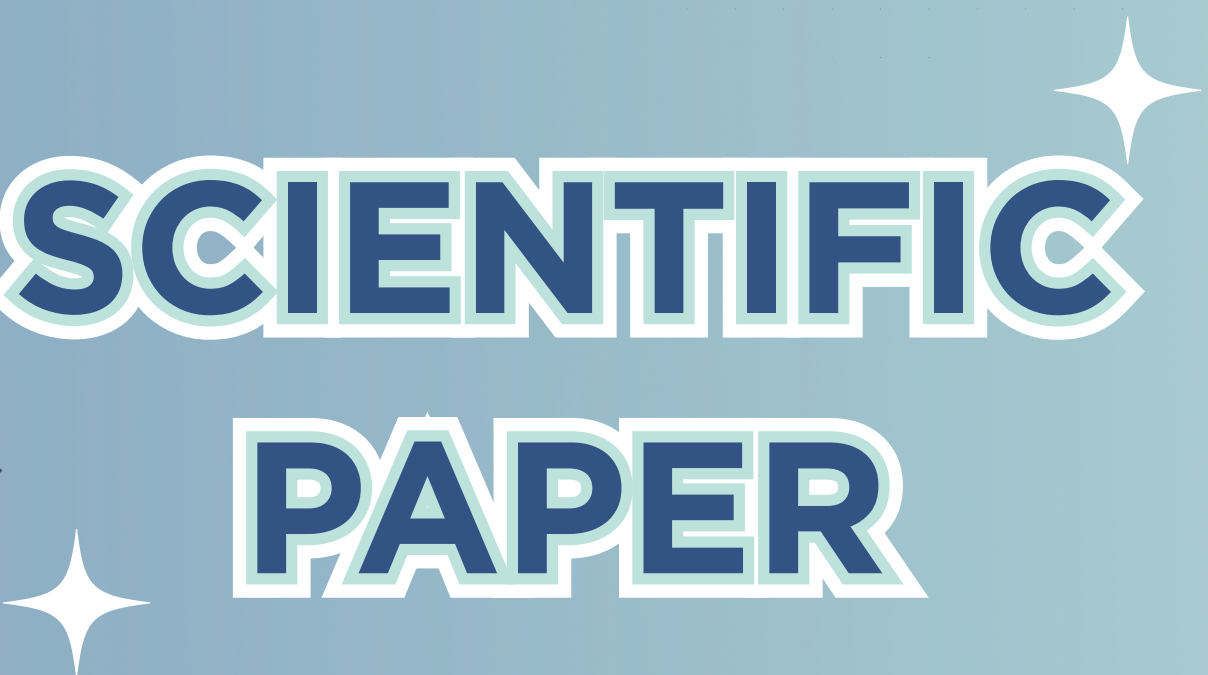


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SCIENTIFIC PAPER



**SCHOOL-BASED LIFESTYLE
MODIFICATION STRATEGIES
FOR ADDRESSING LIFESTYLE-
RELATED DISEASES IN
CHILDREN AND ADOLESCENTS**

**MUH. AVILA ZAKY RAMADHAN
MUH. ATHAYA HAYYAN
MUHAMMAD RIZQI
SHERINA JUANITA**

School-Based Lifestyle Modification Strategies for Addressing Lifestyle-Related Diseases in Children and Adolescents

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Background: Lifestyle-related diseases, particularly overweight and obesity, have emerged as major public health challenges around the children and adolescents worldwide. School-based lifestyle modification interventions have been increasingly implemented to address modifiable behavioral risk factors associated with future chronic disease.

Objective: This review aimed to evaluate current evidence on school-based lifestyle modification interventions targeting children and adolescents, with a focus on intervention characteristics and outcomes related to anthropometry and cardiovascular scores.

Methods: A comprehensive electronic search was conducted using PubMed, Google Scholar, and ScienceDirect to identify studies published within the past 10 years. Eligible studies included school-based interventions targeting children and adolescents that incorporated lifestyle modification strategies. Data were extracted and synthesized narratively.

Results: Eight studies met the inclusion criteria, comprising randomized controlled trials and quasi-experimental designs conducted across multiple countries. Most studies reported modest to significant improvements in anthropometric outcomes, including reductions in BMI, BMI z-score, or overweight prevalence.

Conclusion: School-based lifestyle modification interventions demonstrate overall effectiveness in improving key risk indicators of lifestyle-related diseases among children and adolescents. Early initiation, multicomponent design, and long-term implementation is critical for maximizing intervention impact. However, evidence linking these interventions directly to long-term chronic disease outcomes remains limited, suggesting the need for standardized measures and extended follow-up in future research.

Keywords: *adolescents, childhood obesity, children, chronic diseases, school based intervention.*

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INTRODUCTION

Lifestyle-related diseases, particularly overweight and obesity in children and adolescents, have escalated into a major global public health crisis. Recent global estimates indicate that approximately 20% of children and adolescents aged 5–19 years are living with overweight, while about 9.4% are living with obesity, a severe form of overweight that significantly increases the risk of type 2 diabetes, cardiovascular disease, and other chronic conditions later in life¹. This prevalence reflects a dramatic increase compared with two decades ago, when obesity affected only about 3% of this age group. For the first time in history, obesity now exceeds underweight among school-age children and adolescents globally, underscoring the urgency of effective preventive strategies.

Evidence from systematic reviews indicates that school-based interventions can positively impact obesity-related behaviors and weight outcomes. For example, multi-component school programs that combine health education, physical activity promotion, and nutritional improvements have been shown to produce small but significant reductions in body mass index (BMI) and BMI z-scores compared with control groups². Another review of randomized controlled trials reported that school-based interventions improved physical activity levels and dietary behavior among primary school children³.

Despite these promising findings, several challenges remain. Previous studies vary widely in design, intervention components, implementation quality, and outcome measurement, which complicates the comparison and synthesis of results across studies. Some interventions focus primarily on health education, whereas others incorporate environmental changes, family involvement, or digital tools. The effectiveness of these novel strategies, especially when combined and adapted for broader lifestyle-related disease prevention beyond obesity, is still not fully established⁴.

This systematic review aims to comprehensively evaluate current evidence on novel school-based lifestyle modification strategies for addressing lifestyle-related diseases in children and adolescents. Specifically, it seeks to identify intervention components, delivery mechanisms, and outcomes related to weight status, dietary habits, physical activity behaviors, and other health indicators. Understanding these elements is crucial for informing future school health programs and aligning with global efforts to prevent chronic disease beginning in early life.

METHODS

This literature review was conducted through a comprehensive electronic search of major digital databases to identify school-based health interventions aimed at lifestyle modification for the prevention of chronic diseases among children and adolescents. Searches were performed on major digital databases such as PubMed, Google Scholar and Science Direct. The search keywords used are "lifestyle" "school based interventions" "Obesity" "cardiovascular diseases" "diabetes mellitus" "child" "adolescent". The criteria of inclusion are as follow: (1) studies published within 10 years; (2) studies targeting children and adolescents; and (3) studies using lifestyle modifying interventions. The exclusion criteria

involves: (1) studies targeting adults (2) studies using pharmacological interventions; and (3) studies published not in English. Data was extracted and synthesized to describe lifestyle modifying interventions on preventing lifestyle-related diseases among children and adolescents.

RESULTS

A total of 8 studies were obtained after screening for eligibility. These studies were conducted in various countries (Bulgaria, Hungary, Belgium, Finland, Greece, Spain, China, USA, Vietnam, Malaysia, Norway, Spain) and employed a variety of methods from quasi experimental to multicentered randomized controlled trials as described in **Appendix 1**. Studies targets participants aged 5-17 years old from a variety of educational institutes from primary school to secondary school.

Results of the study vary in measurement and overall effectiveness as shown in **Appendix 2**. 7 of the included studies show a modest to significant result, while 1 show an overall non-significant effect.

The majority of studies reported significant improvements in anthropometric measures following school based lifestyle interventions. Large scale randomized controlled trials demonstrated that combined dietary and physical activity programs implemented in school settings resulted in greater reductions in BMI or BMI z score compared with control groups. In a European multicountry trial children with overweight in the intervention group showed a significantly greater reduction in BMI z score over two years than those in the control group⁵. Similar reductions were observed in randomized controlled trials conducted in Iran Vietnam Malaysia and Spain with intervention durations ranging from several weeks to multiple years^{8-10,12}.

Beyond obesity related outcomes several studies reported improvements in broader health indicators. A multicenter study in China found that a school based lifestyle intervention significantly improved cardiovascular health as measured by the Life's Essential 8 composite score and increased the odds of achieving high cardiovascular health particularly among primary and junior secondary school students⁶. A quasi experimental study in the United States reported modest reductions in BMI percentile and significant improvements in systolic and diastolic blood pressure particularly in the full length intervention format⁷.

Multicomponent interventions that engaged multiple levels of the school ecosystem yielded more consistent benefits. Programs incorporating nutrition education structured physical activity parental involvement and modifications to the school food environment were associated with significant reductions in BMI z score and increases in vigorous physical activity⁸. However changes in certain health behaviors such as television viewing time and energy intake were not consistently observed across studies despite improvements in anthropometric outcomes^{7,8}.

Mental health outcomes were assessed in one cluster randomized controlled trial focusing on increased school based physical activity. No significant improvement in overall mental health was observed at the population level. However subgroup analyses revealed potential benefits among adolescents with poor baseline mental health and among immigrant students¹¹.

Overall the included studies indicate that school based lifestyle interventions are effective in improving key risk indicators of lifestyle related diseases particularly overweight and cardiovascular health in children and adolescents. The effects were more pronounced in younger age groups and in interventions of longer duration.

Variability in outcomes was observed across studies and appeared to be influenced by study design intervention duration program components and participant characteristics. Randomized controlled trials with larger sample sizes consistently demonstrated significant reductions in BMI related outcomes^{5,8-10,12} whereas quasi experimental designs reported more modest and context dependent effects⁷.

Intervention duration emerged as an important differentiating factor. Long term interventions lasting two years or more were associated with reductions in the prevalence and incidence of overweight as well as sustained effects over extended follow up periods^{5,9,12}. Shorter interventions produced limited or selective benefits and in some cases failed to demonstrate significant changes in BMI particularly when delivered in abbreviated formats⁷.

Age of participants also influenced intervention effectiveness. Studies involving younger children reported stronger and more consistent benefits in both anthropometric and cardiovascular outcomes compared with those focusing on older adolescents^{5,6,9}. Interventions targeting adolescents with established obesity showed reductions in BMI and BMI for age z score although the magnitude of change was generally smaller¹⁰.

Differences were also observed across outcome domains. Anthropometric measures demonstrated the highest level of consistency across studies while behavioral and mental health outcomes were more heterogeneous. Interventions focused solely on increasing physical activity did not yield population wide improvements in mental health although potential benefits were identified in vulnerable subgroups¹¹.

Finally intervention approach appeared to affect outcome consistency. Theory driven and multilevel interventions that integrated behavioral frameworks family involvement and environmental changes produced more stable effects compared with single component physical activity programs^{8,10}. Long term follow up data indicated that school based lifestyle interventions may produce sustained benefits that persist beyond the active intervention period¹².

In summary despite heterogeneity in design and outcomes the overall direction of effects across studies supports the effectiveness of school based lifestyle modification strategies in mitigating risk factors for lifestyle related diseases in children and adolescents.

DISCUSSIONS

Children and adolescents with obesity are at increased risk of developing chronic health conditions. Childhood obesity has been consistently associated with a higher risk of hypertension, prediabetes, asthma, and non-alcoholic fatty liver disease¹³. Recent global trends have shown that the rate of childhood obesity has doubled since the year 2000. This trend is largely driven by the rise of unhealthy lifestyle behaviors, including poor dietary habits, physical inactivity, and prolonged sedentary behavior.

The persistence of obesity and related lifestyle risk factors from childhood into adulthood substantially increases the lifetime risk of chronic diseases and places a huge burden on healthcare systems. Another evidence indicates that 44% of obese children and 80% obese adolescents maintain their weight condition well into their adulthood, further worsening the risk of chronic disease¹⁴. Overweight and obese children are also at a high risk of depression, showing an effect on children's mental health. Given that dietary habits, physical activity levels, and sedentary behaviors are often established during school-age years, early implementation of healthy habits plays an important role in affecting lifetime health benefits. Schools provide a structured and accessible environment for implementing lifestyle modification interventions, making school-based programs a key approach for mitigating obesity-related health risks among children and adolescents.

Based on our review the effectiveness of school-based intervention on lifestyle shows a promising result. These studies are done in large-scale or long-term settings. Multiple studies involving combined dietary and physical lifestyle intervention shows consistent results of reducing BMI value, BMI z-score, and obesity prevalence^{8-10,12}. However, effects of these interventions on mental health were less effective showing an overall insignificant effect and modest benefit on specific immigrant groups¹¹. Younger initiation age of intervention shows a higher effectivity in increasing cardiovascular health⁶.

Current studies are limited by a few factors. First, no direct study that correlates lifestyle modifying interventions to actual prevalence of chronic diseases, but instead relies on BMI or waist circumference measurements. Studies designed to assess direct chronic disease outcomes in children and adolescents require a substantial amount of time and resources, which may explain the absence of such evidence in current literature. Second, substantial heterogeneity was observed across included studies in terms of intervention type, duration, intensity, and outcome measures, limiting direct comparability and inhibiting quantitative synthesis.

CONCLUSION

Provide a brief summary of the study's main insights and their significance. Reaffirm the importance of the research and its contribution to academic discourse or healthcare practice.

RECOMMENDATION

Future research should adopt standardized outcome measures and data analysis frameworks to facilitate comparability across studies and enable robust meta-analyses. Additionally, studies

should incorporate outcome measures that directly assess the relationship between lifestyle modification interventions and the incidence or prevalence of chronic diseases, rather than relying only on BMI analysis. Longitudinal studies extending from childhood into late adolescence or adulthood are needed to generate stronger evidence regarding the long-term effectiveness of these interventions.

Furthermore, the implementation of lifestyle modification interventions should emphasize comprehensive dietary and physical activity components and be initiated at younger ages. Such interventions should be accompanied by long-term follow-up to evaluate the consistency of observed effects and their potential impact on chronic disease risk.

CONFLICT OF INTEREST

Author declares no conflict of interest.

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APPENDIX

No.	Author, (year)	Country	Target Population	Sample Size	Measurement
1	Argyropoulou et al., 2025	Bulgaria, Hungary, Belgium, Finland, Greece, Spain	RCT, School-aged children (5–12 y)	N=9255	BMI z-score
2	Guo et al., 2025	China	RCT, Children and adolescents (7–17 y)	intervention N=30 629 control N=26 581	CVH and health behaviour score
3	Narayanan et al. 2019	USA	Quasi-Experimental, fifth grader students	N=361	BMI percentile
4	Amini et al. 2016	Iran	RCT, Primary school students (9 - 13 y)	Intervention N=167 Control N=167	BMI, hip circumference, screen time
5	Pham et al. 2024	Vietnam	RCT, Secondary school students (11 - 12 y)	Intervention N=368 Control N=365	BMI
6	Lai et al. 2023	Malaysia	RCT, Secondary school students	Intervention N=200 Control N=200	BMI
7	Åvitsland et al. 2020	Norway	RCT,secondary school students (14 - 15 y)	Intervention 1 N= 523 Intervention 2 N=381 Control N=487	Mental health Questionnaire score
8.	Recasens et al. 2018	Spain	RCT, 8 year follow up study from age 8	Intervention N=272 Control N=237	BMI

Appendix 1. Characteristics table

No	Author (Year)	Type of Study	Sample	Type of Intervention	Key Method	Results	Main Finding
1.	Argyropoulou, M., et al. (2025)	Randomized Control Trial	School-aged children (5–12 y) N = 9255 from 6 European countries	School-based lifestyle program (diet + activity)	2-year school lifestyle intervention vs control, measured BMI z-score	Children with overweight in intervention had greater deflation BMI z-score vs control (significant)	School-based lifestyle interventions can improve BMI z-score in <i>overweight</i> children, socio-demographic factors (age, sex, family income, mom's weight) influence success
2.	Guo et al. 2025	Multicenter Study	Children and adolescents aged 7–17 y from 94 schools in China Intervention N = 30,629 Control N = 26,581	School based lifestyle intervention targeting diet and physical activity	School based lifestyle intervention vs control, cardiovascular health assessed using Life's Essential 8 composite scores	Intervention increased CVH score (+0.89 points), increased odds of high CVH (OR 1.14), and improved health behavior score (+1.35), with stronger effects in primary and junior schools (significant)	School based lifestyle interventions improve cardiovascular health in children and adolescents, particularly when implemented at younger ages
3.	Narayana et al. 2019	Quasi experimental study	Fifth grade students in Title I schools. Schools in District of Columbia and Orange County California	School based lifestyle intervention using health mentors Standardized nutrition and physical activity	KiPOW! Full and Lite interventions vs control Pre post comparison of BMI percentile	KiPOW! Full showed a modest reduction in BMI percentile vs control ($P = .04$), with stronger effects in Orange County ($P < .001$) KiPOW! Lite showed no significant BMI	Mentor based school interventions can improve BMI percentile and blood pressure in children Higher intervention intensity produces greater benefits

				curriculum delivered by medical and health trainees Active play during recess and healthy eating role modeling Lite 5 week and Full 10 week intervention formats	e and blood pressure	percentile reduction ($P = .41$) Systolic blood pressure improved in Full ($P < .046$) Diastolic blood pressure improved in both Full ($P = .02$) and Lite ($P = .03$)	Academic community partnerships can strengthen school wellness policy and support childhood obesity prevention
4.	Amini et al. 2016	Randomized Controlled Trial	Overweight and obese primary school children 334 pupils Intervention group $N = 167$ Comparison group $N = 167$ Twelve primary schools in Tehran	School based multicomponent lifestyle intervention Nutrition education and increased physical activity for students Lifestyle modification for parents Changes to food items sold in school canteens	18 week school based intervention vs comparison group Pre and post intervention measurements of anthropometry physical activity and dietary behaviors	Significant reduction in BMI Z score ($p = .003$) and hip circumference ($p < .001$) in the intervention group Waist circumference increased in both groups but less in the intervention group ($p = .001$) Vigorous physical activity increased in the intervention group ($p < .001$) No significant difference in TV viewing time between groups ($p = .08$) Energy intake increased in the	A comprehensive school based lifestyle intervention can effectively reduce BMI Z score and improve physical activity in overweight and obese primary school children Multilevel strategies involving students parents and the school food environment are effective for addressing childhood obesity and can be scaled at the national level

						intervention group ($p < .001$)	
5.	Pham et al. 2024	Rando mized Control led Trial	Schoolchild ren aged 11–12 years N = 733 Four schools in Hanoi Vietnam	School based multicompo nent healthy lifestyle intervention Component s targeting diet physical activity and healthy behaviors Implemente d over two years	2 year school based lifestyle intervent ion vs control Primary outcome s incidence of overwei ght and obesity Second ary outcome s prevalence and remission of overwei ght and obesity Assesse d at baseline and 2 year follow up	Prevalence of overweight decreased by 9.24 percent in the intervention group vs 3.01 percent in control Odds of overweight were lower in the intervention group OR 0.633 95% CI 0.434–0.925 $P =$ 0.018 Incidence of overweight was 1.31 percent in the intervention group vs 5.33 percent in control Odds of incident overweight were lower in the intervention group OR 0.226 95% CI 0.063–0.813 $P =$ 0.023 Odds of overweight remission were higher in the intervention group OR 2.219 95% CI 1.220–4.036 $P =$ 0.009	A long term school based healthy lifestyle intervention effectively reduced the incidence and prevalence of overweight in early adolescents The intervention had limited impact on obesity outcomes Findings support school based prevention strategies for lifestyle related disease risk in children and adolescents

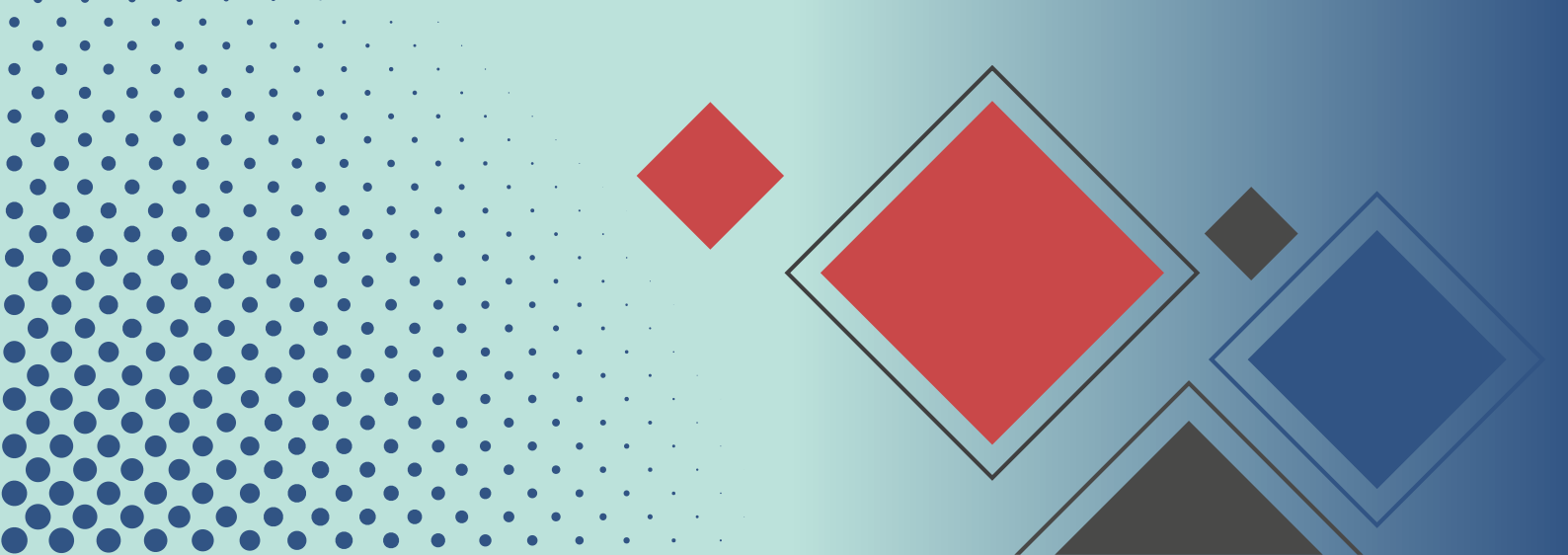
						No significant effect on obesity incidence or remission	
6.	Lai et al. 2023	Cluster randomized controlled trial	Overweight and obese adolescents N = 400 Recruited from 8 secondary schools in Seremban, Malaysia	School based group intervention Five face to face sessions delivered bi weekly	Theory based intervention grounded in Social Cognitive Theory Intervention group compared with control group receiving usual school practice Outcome assessment at baseline, immediate post intervention, and 3 month follow up	BMI reduced from 28.10 to 27.93 and further to 27.80 kg per m2 in intervention group BMI for age z score reduced from 2.19 to 2.12 and further to 2.07 Significant intervention effect for BMI and BAZ compared with control group Statistical significance reported using generalized linear mixed model analysis	School based theory driven lifestyle intervention was effective in reducing BMI and BMI for age z score and improving health related behaviors among overweight and obese adolescents The program demonstrated feasibility for integration into regular school co curricular activities

7.	Åvitsland et al. 2020	Cluster randomized controlled trial	Adolescents aged 14–15 years N = 2084 from 29 lower secondary schools in Norway	School-based physical activity interventions Two intervention models M1 and M2 increasing physical activity by approximately 120 minutes per week	29-week school physical activity intervention vs control Mental health measured using Strengths and Difficulties Questionnaire	No significant improvement in mental health in the overall population Subgroup benefits observed in adolescents with poor baseline mental health and immigrant students	School-based physical activity interventions did not improve mental health at the population level Potential benefits may exist for vulnerable subgroups Further studies are needed to confirm subgroup effects
8.	Recasens et al. 2018	Randomized Controlled Trial	Primary school children School based cohort with long term follow up	School based nutrition and physical activity intervention IVAC educational approach	RCT with 8 year follow up BMI assessed from baseline to 2016	BMI increase was lower in the intervention group vs control Difference 0.68 kg per square meter favoring intervention P = 0.045 BMI reduction maintained at 8 years minus 0.27 kg per square meter P = 0.025	School based lifestyle intervention produced sustained long term reduction in BMI Effects persisted years after intervention ended

Appendix 2. Extraction table



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