

The Urgency of Lifestyle Medicine in Indonesia: A Preventive Approach in the Face of Budgetary Constraints

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Abstract

Indonesia faces a rising burden of non-communicable diseases (NCDs) such as coronary artery disease (CAD), obesity, hypertension, type 2 diabetes mellitus (T2DM), and cancer. At the same time, the national healthcare budget has reached its limitations. Lifestyle medicine offers a cost-effective, evidence-based approach to prevention and disease reversal. This article discusses six key lifestyle interventions: plant-based diet (PBD), exercise, stress management, smoking cessation, restorative sleep, and strong social support. Indonesia is well-positioned to adopt lifestyle medicine due to the availability of food resources, low-cost exercise programs, ample leisure time, and strong familial and social support. However, many healthcare professionals remain reluctant to embrace this approach due to a lack of training and personal lifestyle challenges. Prof. Dasaad Mulijono (DM) at Cardiology Centre Bethsaida Hospital has successfully implemented lifestyle medicine, leading the movement in Indonesia with the support of artificial intelligence (AI) in patient management and education. AI is increasingly capable of handling routine medical tasks, making doctors need to focus on empathetic, promotive, and preventive care. Publishing successful case studies is crucial for encouraging the broader adoption of lifestyle medicine among healthcare providers. The ultimate goal is not only to treat but also to prevent and reverse chronic diseases, ensuring a healthier future for Indonesia.

Keywords: Lifestyle Medicine, Non-Communicable Diseases, Preventive Healthcare, Plant-Based Diet, Artificial Intelligence in Healthcare, Bethsaida Hospital, Prof. Dasaad Mulijono, Public Health, Chronic Disease Reversal

1. Introduction

Indonesia, as a developing country, faces a growing burden of NCDs such as obesity, diabetes, cardiovascular diseases, and cancer [1,2]. A practical solution is needed to address the increasing healthcare costs and the government's health budget reaching its limitations. Lifestyle medicine, which focuses on prevention through evidence-based lifestyle interventions, is a promising approach that warrants prioritization [3-5]. This article examines six key lifestyle interventions and addresses the reluctance of health

care professionals to adopt this approach, while also exploring the role of AI in shaping the future of medical care.

2. The Six Pillars of Lifestyle Medicine

2.1. Importance of Lifestyle Interventions

The impact of various lifestyle interventions is unequal, with dietary changes playing the most significant role in disease prevention and reversal. Based on our experience, we have observed the following approximate weight distribution for lifestyle interventions:

Lifestyle Intervention	Importance (%)
Plant-Based Diets	60-80%
Exercise	10-20%
Stress Management	3-5%
Smoking Cessation	3-5%
Restorative Sleep	2-5%
Good Social Support	2-5%

However, dietary changes are the most challenging intervention for patients despite their importance. Behavioural patterns, cultural influences, and easy access to processed foods make dietary transitions challenging. Thus, patient education, personalized meal plans, and community support must be given special attention to facilitate long-term nutritional improvements.

2.1.1. PBD

A diet rich in whole plant-based foods has been extensively proven to prevent and even reverse many chronic diseases [6-8]. In Indonesia, where whole-grain rice and vegetables are dietary staples, promoting a shift away from processed foods and high-sugar intake can significantly reduce healthcare burdens. Public education and policy changes, such as subsidies for healthy food and taxation on ultra-processed foods, could facilitate this transition.

2.1.2. Exercise

Physical inactivity is a significant risk factor for many diseases. Simple interventions, such as promoting daily walking, investing in cycling infrastructure, and implementing workplace wellness programs, can lead to long-term health benefits [9,10]. Encouraging cultural shifts, such as incorporating traditional Indonesian dance and martial arts (e.g., pencak silat) as exercise forms, may enhance public participation. Additionally, Indonesia offers an advantage with its affordable access to outdoor exercise spaces, community-based physical activities, and plenty of leisure time, making it easier for individuals to adopt an active lifestyle.

2.1.3. Stress Management

Chronic stress contributes to many health conditions, including hypertension and depression. Mindfulness, meditation, and community-based relaxation activities should be promoted. Indonesia's rich tradition of spirituality, such as meditation and yoga, should be leveraged to reduce stress-related diseases. The strong familial culture in Indonesia also provides an inherent emotional support system, making stress management practices more effective when combined with social connections.

2.1.4. Smoking Cessation

Indonesia has one of the highest smoking rates in the world [11]. Despite government efforts, smoking remains a leading cause of

preventable deaths. Stricter regulations, higher taxation on tobacco products, and robust public health campaigns are necessary. Moreover, medical professionals must actively educate and support smoking cessation programs.

2.1.5. Restorative Sleep

Sleep deprivation is associated with an increased risk of obesity, heart disease, and cognitive decline [12]. Urbanization and digital distractions have worsened sleep quality among Indonesians. Public awareness campaigns and workplace policies promoting work-life balance can help address this issue.

2.1.6. Good Social Support

Social isolation is linked to various health risks, including heart disease. Indonesia has a strong community-based culture [13], which should be harnessed to create programs that strengthen social ties. Encouraging participation in community events and volunteer activities can foster social support and well-being.

3. The Reluctance of Healthcare Professionals

Despite overwhelming evidence supporting lifestyle medicine, many doctors in Indonesia are hesitant to implement these practices. The primary reasons include:

- Lack of formal training in lifestyle medicine during medical education.
- Personal challenges in adopting a healthy lifestyle can lead to reluctance to advocate it.
- A healthcare system heavily focused on curative rather than preventive measures.
- Lack of time and incentives in providing lifestyle education

4. Solutions:

1. Integrate lifestyle medicine into medical education – Medical schools must incorporate preventive medicine and nutrition courses.
2. Healthcare providers as role models – Hospitals and clinics should create wellness programs for their staff, encouraging doctors to adopt and promote a healthy lifestyle.
3. Financial incentives for preventive care – Encouraging healthcare providers to emphasize prevention through government and insurance incentives.

6 PILLARS IN LIFESTYLE PROGRAM AT BETHSAIDA HOSPITAL



**PLANT BASED
DIET**



EXERCISE



**SMOKING
CESSATION**



**RESTORATIVE
SLEEP**



**STRESS
MANAGEMENT**



**SOCIAL
SUPPORT**

5. A New Era in Heart Care: Bethsaida Hospital's Lifestyle Medicine Success

At Bethsaida Hospital in Indonesia, under the visionary leadership of Professor Dasaad Mulijono, the Department of Cardiology has pioneered the implementation of a PBD as a central therapeutic modality for both the prevention and reversal of NCDs. This clinically supervised, evidence-based intervention targets the underlying metabolic derangements—such as systemic inflammation, insulin resistance, endothelial dysfunction, and oxidative stress—that drive disease progression. Unlike conventional approaches that primarily manage symptoms, the PBD offers a root-cause strategy for long-term disease control and reversal.

The clinical outcomes observed across a broad patient population have been both consistent and remarkable. Many hypertensive individuals have achieved sustained blood pressure normalization, allowing safe discontinuation of antihypertensive therapy. Overweight patients have reached and maintained a healthy body mass index (BMI) in the range of 21–22. Patients with dyslipidaemia have attained optimal low-density lipoprotein cholesterol (LDL-C) levels—often below 30 mg/dL—through a synergistic approach combining PBD with high-intensity statin and ezetimibe therapy. In those with moderate renal impairment, serum creatinine levels have returned to normal. T2DM patients, including insulin-dependent individuals, have demonstrated excellent glycaemic control, with HbA1c consistently below 6%, frequently allowing the cessation of insulin therapy.

Notably, our interventional cardiology patients have exhibited an exceptionally low restenosis rate of approximately 2%, which is significantly lower than global averages. Angiographic data have revealed not only stabilization of atherosclerotic plaques but, in

many cases, regression of CAD. These findings are a testament to the synergy between interventional procedures and lifestyle-based nutritional therapy.

During the COVID-19 pandemic, our PBD program played a pivotal role in protecting vulnerable populations. The intervention proved lifesaving for thousands of elderly patients with multiple comorbidities by enhancing immune competence, modulating inflammatory pathways, and optimizing overall metabolic health. As a result, the program contributed to significantly reduced hospitalization rates and mortality among this high-risk demographic [14-17].

Taken together, these clinical and public health outcomes underscore the transformative potential of a plant-based dietary paradigm. Beyond its impact on weight loss, the PBD fundamentally restores metabolic integrity, improves cardiovascular health, and elevates overall patient resilience, positioning it as a cornerstone in both preventive and therapeutic medicine.

One of the key factors behind our success is the integration of AI in patient management. AI has helped us streamline patient education, provide personalized health recommendations, and monitor adherence to lifestyle changes. We have offered preventive interventions by utilizing AI-powered predictive analytics to identify and address potential complications before they become severe [18-21]. At Bethsaida Hospital, our cardiology unit has successfully adopted and implemented lifestyle medicine programs for our patients. We have observed significant improvements in cardiovascular health outcomes through a structured approach that integrates PBD, exercise, stress management, and social support. We have become leaders in promoting lifestyle medicine

in Indonesia, demonstrating its effectiveness in preventing and reversing chronic diseases.

6. The Role of AI in Healthcare and the Urgency of Empathy

AI is rapidly transforming the healthcare industry [22]. AI is already capable of:

- Providing medical information and education to patients.
- Assisting in diagnostics and predictive analytics.
- Automating routine tasks, reducing physician workload.

As AI and robotics continue to evolve, technology may soon assume many of a doctor's promotional and preventive duties. However, AI lacks empathy and the human touch required for holistic care [23]. This underscores the importance of healthcare professionals prioritizing lifestyle medicine and patient education now before technology takes over these roles entirely [24].

Moreover, publishing our work in medical journals and presenting our successful lifestyle medicine approach at conferences will encourage more doctors to follow our path. By sharing our data and case studies, we can inspire a paradigm shift in Indonesian healthcare, where prevention is valued as much as, if not more than, a cure [25].

7. Conclusion

Indonesia's healthcare system is under financial strain, and the growing burden of chronic diseases necessitates a shift toward lifestyle medicine. While many doctors remain reluctant due to a lack of training and personal lifestyle challenges, integrating lifestyle medicine into medical education and incentivizing prevention-based care can address these issues.

Thanks to its abundant food resources, affordable exercise opportunities, ample leisure time, and a strong family support system, Indonesia is well-positioned to effectively implement lifestyle medicine. As AI advances, medical professionals must prioritize empathy and human connection, which technology cannot entirely replace. By embracing lifestyle medicine now, Indonesia can reduce healthcare costs and create a healthier and more sustainable future for its people. We aim to treat, prevent, and reverse chronic diseases, thereby ensuring a higher quality of life for all.

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