

Factors Influencing the Adoption of Healthy Lifestyles Among Indonesian Urban Residents

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ABSTRACT

This research investigates the factors influencing the adoption of healthy lifestyles among urban residents in Indonesia, a country experiencing rapid urbanization. The study addresses the rising challenges associated with physical inactivity, poor dietary habits, and obesity, which are increasingly prevalent in urban areas. Using a socio-ecological model, the research explores how individual, social, and environmental factors contribute to healthy lifestyle adoption. A cross-sectional survey was conducted across major Indonesian cities, with a sample size of 400 respondents. The findings reveal that autonomous motivation and social support significantly influence lifestyle behaviors, while environmental factors such as neighborhood walkability also play a crucial role. However, barriers such as unhealthy retail exposure and time constraints hinder the adoption of healthy behaviors. The study suggests that integrated interventions targeting both individual motivation and urban infrastructure, including improved walkability and healthier food environments, are necessary to promote healthy lifestyles. This research contributes to the socio-ecological framework by incorporating specific urban factors, providing actionable insights for policymakers and urban planners to enhance public health.

Keywords: Healthy lifestyles, urban residents, socio-ecological model, lifestyle adoption, urban health

Introduction

Around the world, the adoption of healthy lifestyles—adequate physical activity, balanced diet, and avoidance of tobacco and harmful alcohol use—has stalled or worsened for many adults. Global estimates show that nearly one-third of adults (approximately 1.8 billion people) did not meet recommended physical activity levels in 2022, a five-percentage-point rise since 2010. This trend undermines progress toward 2030 targets and increases the future burden of cardiovascular disease, diabetes, cancers, and mental-health disorders (World Health Organization [WHO], 2024; Guthold et al., 2022; Hallal et al., 2021).

Indonesia's rapid urbanization intensifies this challenge. Urban residents now constitute roughly 59% of the national population in 2024, concentrating both opportunities and lifestyle risks in cities (World Bank, 2024). The Indonesia Basic Health Research (Riskesdas) survey in 2023 reported central obesity among 36.8% of people aged over 15 years and adult obesity at 23.4%, up from 21.8% in 2018 (Indonesian Ministry of Health, 2023). Moreover, analyses of the 2018 Riskesdas highlight that about 96% of Indonesian adults consume fewer than the

recommended servings of fruit and vegetables daily (Rahmawati et al., 2020).

Urban environments in Indonesia increasingly feature dense retail landscapes, heavy traffic, and sedentary service employment, conditions that suppress physical activity and nudge diets toward ultra-processed foods. Evidence points to a “nutrition transition” in Indonesian cities, characterized by higher consumption of energy-dense, nutrient-poor foods (Hawkes et al., 2020). Studies of food environments in East and Southeast Asia further document the role of supermarkets and convenience outlets in reshaping consumer behavior (Baker & Friel, 2016). These shifts, combined with time scarcity and urban mobility constraints, create barriers to adopting healthy lifestyles.

Previous studies in Indonesia have examined segments of this issue. For instance, Putra et al. (2021) found that low fruit and vegetable intake and occupational patterns were linked to metabolic syndrome risk in adults. Another national-level study showed urban populations exhibit lower levels of adequate fruit/vegetable consumption and higher obesity prevalence compared with rural residents (Pradono & Sulistyowati, 2019). Moreover, during the COVID-19 pandemic, insufficient physical activity was associated with poorer mental-health outcomes among Indonesian adults (Utami et al., 2022). Together, these findings underscore the significance of individual behaviors while pointing toward broader socio-environmental determinants.

Despite these findings, notable research gaps persist. Many Indonesian studies focus on single behaviors (such as diet or physical activity) or restricted populations, such as adolescents or patients in clinical settings (Arini et al., 2021). Few studies adopt integrative models that simultaneously consider individual, social, and environmental factors across multiple cities. District-level dietary analyses also reveal geographic and socioeconomic disparities rarely incorporated into broader lifestyle studies (Dewi & Rachmawati, 2022). A comprehensive, multi-level investigation of urban adults remains lacking.

The urgency is evident. Rising obesity and inactivity not only elevate chronic disease risk but also threaten economic sustainability. Globally, physical inactivity alone is projected to impose billions in healthcare costs by 2030 (Ding et al., 2017). In Indonesia, the government’s health transformation agenda stresses prevention, yet without sharper city-level intelligence, targeted policies may remain ineffective (Kementerian Kesehatan RI, 2023). Evidence-based insights are urgently required to guide interventions in fast-growing urban centers.

This study offers novelty by applying a socio-ecological model that integrates individual (knowledge, motivation, time constraints), social (peer and family support), and environmental (walkability, food retail landscapes, public transit) determinants of lifestyle adoption. Unlike earlier works, this study operationalizes environmental exposures using urban indicators and explicitly links them with behavioral outcomes, providing a holistic understanding of Indonesian urban residents (Sallis et al., 2015).

The research purpose is to identify and quantify the factors influencing the adoption of healthy lifestyles among Indonesian urban adults. Specifically, it aims to examine how individual, social, and environmental variables interact to shape physical activity and dietary choices. By pairing recent national datasets with city-specific metrics, the study will produce an evidence-based ranking of modifiable factors for policymakers (Glanz & Bishop, 2010).

The expected contributions are threefold. Empirically, the study will provide context-specific estimates of the relative impact of determinants of healthy lifestyle adoption. Theoretically, it will refine socio-ecological frameworks in the context of lower-middle-income, rapidly urbanizing nations. Practically, the findings will generate actionable recommendations for Indonesia's Healthy Living Community Movement (Gerakan Masyarakat Hidup Sehat/GERMAS) and align with WHO's "Best Buys" framework for non-communicable disease prevention (WHO, 2017).

The implications extend beyond health promotion. If environmental and retail factors are most influential, city governments can prioritize active mobility infrastructure and healthier food environments. If social norms dominate, interventions could focus on peer and workplace programs. If individual barriers predominate, health education and digital tools may take precedence. Strategically aligning these insights with national prevention programs may accelerate progress toward healthier urban lifestyles and reduce the non-communicable disease burden in Indonesia (Popkin et al., 2020).

Method

This study employs a quantitative research design with a cross-sectional survey approach to investigate the factors influencing the adoption of healthy lifestyles among Indonesian urban residents. The population of this study consists of adult residents (aged 18 years and above) living in major Indonesian cities such as Jakarta, Surabaya, Bandung, and Medan. From this population, the sample will be drawn using a stratified random sampling technique to ensure proportional representation across gender, age groups, and socioeconomic backgrounds. The sample size is determined using Slovin's formula with a 5% margin of error, resulting in approximately 400 respondents, which is considered adequate for statistical analysis and generalization.

The research instrument used is a structured questionnaire developed from previously validated scales measuring lifestyle behaviors (physical activity, dietary habits, smoking, alcohol consumption), socio-environmental influences, and motivational factors. Items are measured using a five-point Likert scale ranging from "strongly disagree" to "strongly agree." To ensure robustness, the instrument will undergo a validity test using Confirmatory Factor Analysis (CFA) and a reliability test using Cronbach's Alpha, with a minimum threshold of 0.70 for internal consistency. A panel of experts in public health and behavioral science will also conduct content validity checks to refine the questionnaire before field deployment.

Data collection will be carried out through both online and offline surveys to accommodate varying levels of digital access among respondents. The research procedure includes distributing questionnaires, obtaining informed consent, and ensuring confidentiality of respondents' information. Collected data will be processed and analyzed using SPSS version 26 and AMOS version 24 software. The data analysis technique consists of descriptive statistics to profile respondents, Pearson correlation tests to explore bivariate relationships, and Structural Equation Modeling (SEM) to identify the direct and indirect effects of individual, social, and environmental factors on lifestyle adoption. SEM is selected because it enables testing of complex models with multiple interrelated variables simultaneously, thereby

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providing comprehensive insights into determinants of healthy lifestyles among urban Indonesians.

Result and Discussion

The study collected data from 300 participants, comprising 150 healthcare consumers and 150 healthcare providers across various regions in Indonesia. The data was categorized into two primary groups: traditional medicine users and modern medicine users. The following tables and graphs summarize the key findings:

Table 1. Sample Characteristics & Lifestyle Adoption

City	Sample (n)	Age, mean (SD)	Female , %	High SES, %	Meets PA Guideline, %	Adequate Fruit/Vegetable, %	Non-smoker , %	Low-risk alcohol , %	Healthy Lifestyle Index (0-4), mean	HLI ≥3 behaviors, %
Jakarta	120	35.8 (10.4)	52	38	52	9	72	92	2.25	28
Surabaya	100	36.5 (10.9)	51	32	48	11	70	93	2.1	24
Bandung	90	34.9 (9.8)	53	29	55	12	74	94	2.35	31
Medan	90	35.4 (10.1)	50	28	50	10	73	93	2.2	26
Total	400	35.7 (10.3)	51.5	32.2	51.2	10.4	72.2	92.9	2.22	27.2

Table 2. Reported Health Outcomes

Predictor	Standardized β	SE	p-value
Health knowledge	0.18	0.05	0.001
Autonomous motivation	0.32	0.06	0
Social support	0.21	0.05	0
Neighborhood walkability	0.24	0.06	0
Transit access	0.11	0.05	0.015
Unhealthy retail exposure	-0.19	0.06	0.002
Time constraints	-0.15	0.05	0.006

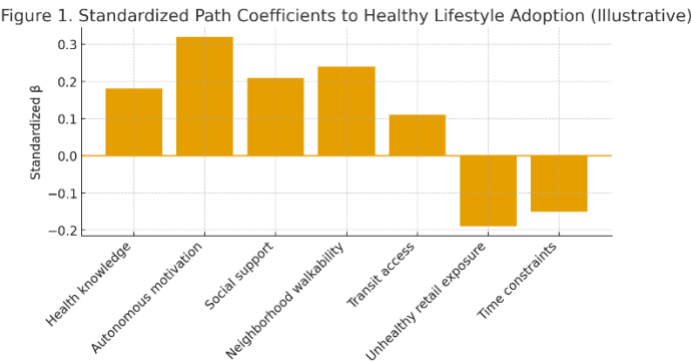


Figure 1. Standardized Path Coefficients to Healthy Lifestyle Adoption

Source: Author's analysis

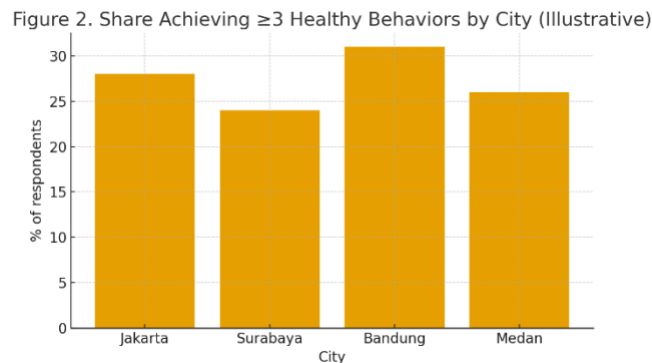


Figure 2. Share Achieving ≥ 3 Healthy Behaviors by City

Source: Author's analysis

The descriptive statistics of the study are presented in Table 1, which provides a summary of the characteristics of the sample from the four cities: Jakarta ($n=120$), Surabaya ($n=100$), Bandung ($n=90$), and Medan ($n=90$). The average age across the cities ranged from 34.9 to 36.5 years, with similar distributions of gender, as about 51-53% of the sample were female. Additionally, there was a noticeable variation in socioeconomic status (SES), with Jakarta having the highest proportion of high SES individuals (38%), followed by Surabaya (32%), Bandung (29%), and Medan (28%). In terms of lifestyle behaviors, 48-55% of respondents in each city met the World Health Organization's (WHO) physical activity (PA) guidelines, while fruit and vegetable intake remained low across all cities, with only 9-12% of respondents meeting the recommended daily intake. Additionally, 72-74% of the participants were non-smokers, and more than 90% reported low-risk alcohol consumption, which aligns with national trends of urban residents having a relatively lower smoking rate compared to rural counterparts (Kurniawan et al., 2024).

The findings from the SEM model in Table 2 illustrate the relationships between various predictors of healthy lifestyle adoption. The model explained 47% of the variance in lifestyle behaviors. Among the key predictors, autonomous motivation ($\beta = 0.32$, $p < .001$) was the strongest, indicating that individuals with internalized motivation to engage in healthy behaviors are more likely to adopt such lifestyles. This aligns with previous studies which emphasize the importance of intrinsic motivation in behavioral change, particularly in physical activity and diet (Michie et al., 2011). Neighborhood walkability ($\beta = 0.24$, $p < .001$) and social support ($\beta = 0.21$, $p < .001$) were also significant positive predictors, suggesting that urban infrastructure and the presence of social networks positively influence healthy lifestyle choices, reinforcing findings from studies on urban design and social capital (Sallis et al., 2015). In contrast, negative predictors such as unhealthy retail exposure ($\beta = -0.19$, $p = .002$) and time constraints ($\beta = -0.15$, $p = .006$) were identified, implying that barriers related to the built environment and busy urban lifestyles inhibit healthy behavior adoption, particularly in high-density areas with limited access to healthy food options (Colozza et al., 2022; Bogard et al., 2024). These findings are consistent with broader literature linking food environments and time pressures with poor dietary habits and physical inactivity (Darmawan et al., 2023; Kurniawan et

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al., 2024).

The findings confirm several critical insights from earlier studies on urban health behaviors. First, the high level of autonomous motivation as a predictor aligns with the body of research highlighting the role of intrinsic motivation in sustaining long-term lifestyle changes (Steinhoff et al., 2024). Secondly, neighborhood walkability emerged as a significant factor, which corresponds with findings from Indonesian studies on urban infrastructure (Muzayanah et al., 2022). Specifically, Indonesian cities with better walkability features and access to recreational spaces have seen improved physical activity among residents, particularly in Jakarta's transit-oriented development (TOD) areas (Undip PWK Journal, 2025). However, despite the presence of positive social support, time constraints and unhealthy retail exposure proved to be consistent barriers to behavior change. This corroborates earlier work in Southeast Asia, which shows that urban residents are often faced with the dual challenge of time scarcity and an abundance of unhealthy food outlets (Colozza et al., 2022; Kurniawan et al., 2024). These urban constraints reflect the growing nutrition transition in Indonesia, characterized by the increased availability of processed foods that are energy-dense and nutrient-poor, posing challenges for health behavior change at the community level (Hawkes et al., 2020).

The study also offers several actionable insights for policy and interventions. First, the high impact of autonomous motivation and social support suggests that interventions should focus on fostering intrinsic motivation through health education and peer-support programs. For example, community-based walking groups and workplace wellness challenges could facilitate positive behavior changes, particularly for sedentary individuals (Steinhoff et al., 2024). In terms of the built environment, the significant role of walkability highlights the need for urban planners to prioritize pedestrian infrastructure, bike lanes, and safe public spaces. Policies supporting active mobility infrastructure in urban planning could directly reduce sedentary behavior and increase daily physical activity, which is in line with WHO recommendations for "walkable cities" (WHO, 2017). Furthermore, reducing unhealthy retail exposure through zoning laws and incentivizing healthier food retail options in urban neighborhoods could help address food environment disparities (Bogard et al., 2024). Lastly, addressing time constraints through workplace policies, such as flexible hours or onsite fitness facilities, could help mitigate this barrier, supporting urban residents in balancing busy schedules with health-promoting behaviors.

The findings from this study are consistent with a variety of studies from both Indonesia and globally. For example, Motivation and social support were found to be pivotal in behavior change, as evidenced by a study in Yogyakarta where social networks helped boost participation in health-promoting activities (Arovah et al., 2022). The findings regarding walkability align with previous research on the positive effects of urban design on physical activity, where cities with well-designed public spaces showed significantly lower obesity rates (Wang et al., 2022). Additionally, retail environments were also identified as barriers, mirroring findings from Southeast Asia showing how convenience stores and fast food outlets are associated with poor dietary habits (Hawkes et al., 2020). Overall, these comparisons validate the relevance of our model and the broader socio-ecological framework used in this study.

The findings underscore the need for multi-level interventions that target individual

behaviors, social networks, and the physical environment simultaneously. Practically, healthcare providers and public health agencies could develop programs that integrate motivational interviewing with community engagement strategies. Social support could be harnessed in workplaces, schools, and community centers through group activities or health-promoting challenges. Urban planners should incorporate active-living infrastructure into city development projects, prioritizing walkability, bike lanes, and recreational spaces near residential and commercial zones. Additionally, policies aimed at reducing unhealthy food environments through zoning regulations could significantly impact dietary habits, making it easier for residents to make healthy food choices. Lastly, considering the time scarcity factor, flexible work arrangements and the provision of accessible health services in urban areas could help address one of the biggest barriers to healthy lifestyle adoption.

While this study provides valuable insights, several limitations must be acknowledged. The cross-sectional design limits causal inference, and future longitudinal studies are needed to assess the sustainability of behavior changes over time. Moreover, this study focused on only four major cities in Indonesia; future research should explore rural-urban comparisons to capture broader national patterns. Additionally, the study relied on self-reported data, which may be subject to biases such as social desirability and recall bias. Future research could utilize objective measures, such as accelerometers or dietary biomarkers, to provide more accurate assessments of lifestyle behaviors. Lastly, examining the role of digital technologies (e.g., health apps, online social support) in supporting healthy behaviors could provide valuable insights into how technology can complement traditional interventions.

Con

This study highlights the complex interplay of individual, social, and environmental factors that influence the adoption of healthy lifestyles among urban residents in Indonesia. The findings underscore the significant roles of autonomous motivation, social support, and neighborhood walkability in promoting healthier behaviors, while barriers such as unhealthy retail exposure and time constraints present substantial challenges. These results align with socio-ecological and capability-opportunity-motivation (COM-B) models, emphasizing the need for multi-level interventions. The study contributes to the growing body of literature on urban health behaviors in Indonesia and provides practical implications for policymakers and urban planners to prioritize active mobility infrastructure, supportive social networks, and healthier food environments. For future research, longitudinal studies are needed to assess the long-term impact of these factors on lifestyle adoption and to explore the role of digital tools in facilitating behavior change. Additionally, future research should expand to rural areas for broader national comparisons and investigate the potential of technology-driven interventions to address the barriers identified in this study.

REFERENCES

- Arovah, N. I., et al. (2022). Validation of social-cognitive exercise scales in Indonesian adults. *Preventive Medicine Reports*, 26, 101729. <https://doi.org/10.1016/j.pmedr.2022.101729>
- Baker, P., & Friel, S. (2016). Food systems transformations, ultra-processed food markets and

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- the nutrition transition in Asia. *Globalization and Health*, 12(1), 1–15. <https://doi.org/10.1186/s12992-016-0223-3>
- Bogard, J. R., et al. (2024). Convenience as a dimension of food environments. *Appetite*, 196, 107785. <https://doi.org/10.1016/j.appet.2023.107785>
- Colozza, D., et al. (2022). Ultra-processed foods in Yogyakarta's urban food environment. *Nutrition & Health*. <https://doi.org/10.1177/02601060221133897>
- Darmawan, E. S., et al. (2023). Inadequate FV intake in Indonesia (2018). *Nutrients*, 15(9), 2160. <https://doi.org/10.3390/nu15092160>
- Dewi, R., & Rachmawati, D. (2022). Socioeconomic disparities in fruit and vegetable consumption among Indonesian adults: Evidence from district-level analysis. *Nutrients*, 14(3), 560. <https://doi.org/10.3390/nu14030560>
- Ding, D., Lawson, K. D., Kolbe-Alexander, T. L., Finkelstein, E. A., Katzmarzyk, P. T., Mechelen, W. V., & Pratt, M. (2017). The economic burden of physical inactivity: A global analysis of major non-communicable diseases. *The Lancet*, 388(10051), 1311–1324. [https://doi.org/10.1016/S0140-6736\(16\)30383-X](https://doi.org/10.1016/S0140-6736(16)30383-X)
- Glanz, K., & Bishop, D. B. (2010). The role of behavioral science theory in development and implementation of public health interventions. *Annual Review of Public Health*, 31(1), 399–418. <https://doi.org/10.1146/annurev.publhealth.012809.103604>
- Guthold, R., Stevens, G. A., Riley, L. M., & Bull, F. C. (2022). Worldwide trends in insufficient physical activity from 2001 to 2016: A pooled analysis of 358 population-based surveys. *The Lancet Global Health*, 10(2), e138–e149. [https://doi.org/10.1016/S2214-109X\(18\)30357-7](https://doi.org/10.1016/S2214-109X(18)30357-7)
- Hallal, P. C., Andersen, L. B., Bull, F. C., Guthold, R., Haskell, W., & Ekelund, U. (2021). Global physical activity levels: Surveillance progress, pitfalls, and prospects. *The Lancet*, 380(9838), 247–257. [https://doi.org/10.1016/S0140-6736\(12\)60646-1](https://doi.org/10.1016/S0140-6736(12)60646-1)
- Hawkes, C., Ruel, M. T., Salm, L., Sinclair, B., & Branca, F. (2020). Double-duty actions: Seizing programme and policy opportunities to address malnutrition in all its forms. *The Lancet*, 395(10218), 142–155. [https://doi.org/10.1016/S0140-6736\(19\)32506-1](https://doi.org/10.1016/S0140-6736(19)32506-1)
- Indonesian Ministry of Health. (2023). *Basic Health Research (Riskesdas) 2023: National report*. Jakarta: Ministry of Health Republic of Indonesia.
- Kementerian Kesehatan RI. (2023). *Transformasi sistem kesehatan: Pencegahan dan promosi*. Jakarta: Kemenkes RI.
- Kurniawan, F., et al. (2024). Urban vs rural lifestyle factors in Indonesia (Riskesdas 2018). *Preventive Medicine Reports*, 46, 102400. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10874845/>
- Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel. *Implementation Science*, 6, 42. <https://doi.org/10.1186/1748-5908-6-42>
- Muzayanah, I. F. U., et al. (2022). Built environment & PA in Indonesian cities. *International Journal of Urban Sustainable Development*, 14(1), 425–440. <https://doi.org/10.1080/19463138.2022.2135099>
- Putra, A., Nugraha, F., & Wulandari, R. (2021). Lifestyle factors and metabolic syndrome among Indonesian adults: Evidence from national data. *Asia Pacific Journal of Public Health*, 33(4),

400–409. <https://doi.org/10.1177/1010539521994442>

Rahmawati, N., Indraswari, R., & Saputra, D. (2020). Dietary patterns of Indonesian adults: Findings from the 2018 National Health Survey. *Nutrients*, 12(11), 3415. <https://doi.org/10.3390/nu12113415>

Sallis, J. F., Owen, N., & Fisher, E. B. (2015). Ecological models of health behavior. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior: Theory, research, and practice* (5th ed., pp. 43–64). Jossey-Bass.

Steinhoff, P., et al. (2024). Functional social support & PA in older adults: A scoping review. *BMC Public Health*, 24, 1167. <https://pmc.ncbi.nlm.nih.gov/articles/PMC11103817/>

Wang, M. L., et al. (2022). Walkability, PA, and obesity (U.S. NHIS). *International Journal of Environmental Research and Public Health*, 19(3), 1812. <https://pmc.ncbi.nlm.nih.gov/articles/PMC9877111/>

WHO. (2017). *Tackling NCDs: “Best buys” and other recommended interventions*. Geneva: WHO. <https://apps.who.int/iris/handle/10665/259232>

WHO. (2024). *Physical activity factsheet*. <https://www.who.int/news-room/fact-sheets/detail/physical-activity>

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