

## Health promoting lifestyle in educational setting: an intervention study in the universities

Nur Indri Rahayu<sup>1</sup>, Muktiarni<sup>1</sup>, Adang Suherman<sup>1</sup>, Affero Ismail<sup>2</sup>

<sup>1</sup>Department of Sports Science, Faculty of Sports and Health Education, Universitas Pendidikan Indonesia, Bandung, Indonesia

<sup>2</sup>Department of Engineering Education, Faculty of Technical and Vocational Education, Universitas Tun Hussein Onn Malaysia, Johor, Malaysia

### Article Info

#### Article history:

Received Nov 4, 2023

Revised Feb 11, 2024

Accepted Mar 7, 2024

#### Keywords:

Education  
Health promotion  
Healthy lifestyle  
Intervention  
University

### ABSTRACT

The "health promoting universities" strategy has gained popularity and a presence in the higher education system, particularly in universities. It is imperative for higher education establishments to prioritize the promotion of health within their student body and academic community. By safeguarding and boosting students' wellbeing, a strategy centered on encouraging healthy lifestyles has the potential to boost the university's contribution to health improvement and offer significant value to the community. Universities have the power to improve health promotion through community service and to make policies in this area through research and teaching. In order to investigate student behavior in relation to the standard aspects of the health-promoting lifestyle profile, this project will undertake an intervention study involving 150 students with the goal of promoting a healthy lifestyle. A pre-test and post-test control group design was employed in this investigation. The health-promoting lifestyle standard profile II questionnaire was the research instrument, and descriptive statistics and inference were employed for analysis at the .05 significant level. The outcomes demonstrated a noteworthy impact on the implemented measures. This study's findings indicated that interventions in learning environments successfully raised student behavior linked to a healthy lifestyle and its components.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



### Corresponding Author:

Nur Indri Rahayu

Department of Sports Science, Faculty of Sports and Health Education, Universitas Pendidikan Indonesia  
St. Setiabudhi No. 229 Bandung, 40154, Jawa Barat, Indonesia

Email: nurindirahayu1910@upi.edu

## 1. INTRODUCTION

The university is the highest educational institution, where the education system for students is implemented with an andragogical approach. The andragogy approach is a learning process that involves adults in the structure and learning experience. Conditions and learning experiences at universities tend to be more complex than educational institutions at lower levels because they have to consider many external and internal aspects and factors in the learning process [1]. One of the things that must be considered in university life is a health policy for the entire campus community. Health issues have long been a concern among higher education institutions, including health promotion among the campus community. This health promotion-based approach can potentially increase the university's contribution to improving the health of its population [2]. Universities can do many things to promote and protect the health of students and the entire academic community [3]. This must be done to create a work environment, learning, and education conducive to health. Furthermore, this strategy is also expected to contribute to the surrounding environment, help promote health in teaching and research, and also become a resource for public health in general. However, this strategy needs to be

implemented properly. The challenge is developing and building a healthy campus that can realize all of these aspects [4]–[6]. Enthusiasm and interest in the concept of a "health-promoting university" are quite large in line with the demands and expectations regarding improving public health in the campus environment [7]. Health promoting universities is a project supported by World Health Organization (WHO), which is studied based on conceptual, field experience, and a framework for action. In 2000, all living settings and social activities in the city, school, workplace, and home environment must provide greater opportunities to promote health [8]. However, in real conditions, especially in Indonesia, awareness and participation in promoting health still need to be improved. This is indicated by the high rate of sedentary behavior and low participation rate in sports/physical activity [9]. This condition results in a high risk of hypokinetic diseases (53% heart disease and stroke). Indonesia was even ranked 9<sup>th</sup> in the world for diabetes in 2010 and is predicted to rise to 6<sup>th</sup> in 2030 [10]. The same condition occurs in the university environment. Several conditions of health problems occur not only for physical health but also for mental health. Some students experience weight gain to the point of obesity, and around 24.9% of students experience anxiety [11]. Unhealthy lifestyles and eating patterns cause negative emotions and are risk factors for eating disorders and excessive weight gain [12]–[14]. The relationship between mental health and obesity is very complex, based on a 2010 systematic review finding that people who experience depression have a 58% increased risk of becoming obese [15].

To overcome these conditions and problems, it is necessary to carry out strategies and solutions. One is by researching the area of building a healthy campus: health-promoting lifestyle in the universities, which focuses on increasing health promotion in the campus environment. Health promotion in the university environment can be carried out with several strategies, including making policies to protect health and improve the welfare of the campus community [16]. Another strategy is through teaching and research processes, as well as conducting socialization and community service related to health [17]. This research aims to explore, visualize, develop, and promote a healthy lifestyle by conducting an intervention study to assess the health-related behavior of the community in the campus environment to create a "healthy campus" and "health promoting universities".

## 2. LITERATUR REVIEW

There has been a lot of research conducted in the field of health science studies which is linked to the world of education. Especially in the last two decades, there has been a rapid increase in evaluating and designing research related to health promotion through physical activity tests [18], [19]. This has become a supporting system for health institutions and organizations to produce evidence-based physical activity recommendations that are used as a medium to promote a healthy and active lifestyle throughout life [19], [20]. This research makes a significant contribution to public health, especially in managing and changing health behavior. The world of education is also a strategic setting to facilitate health promotion. through educational and learning settings, the transfer of knowledge regarding the importance of an active lifestyle is effective in helping to improve the level of public health. In various countries, guidelines have been created to improve physical activity and health. These guidelines provide recommendations for adults to carry out moderate to high-intensity physical activity with a duration of between 150-300 minutes and with a frequency of at least 2 times a week [21]. This recommendation was made in the context of preventive and curative efforts to overcome health problems caused by lack of movement or non-infectious diseases. Several research results state that adults who are sedentary and do not carry out physical activity according to recommendations are at increased risk of developing non-communicable diseases (for example type 2 diabetes and heart disease) and may be the main cause of death [22].

Overall, innovative interventions are needed to encourage people to be physically active on a regular and sustainable basis. An integrative approach to promoting physical activity and a health-promoting lifestyle is a concept that can be effectively implemented in education and learning settings so that it becomes a habit. This health promotion activity focuses on involving participants in continuous physical activity, with moderate to vigorous intensity, carried out for a short duration but done as often as possible. Possible activities include walking from the parking lot to the classroom or office building, squatting and standing while waiting in line, standing while teaching or doing work, or climbing stairs when going to the room [23]. Health promotion activities in educational settings at universities are supported by WHO. Health promoting universities is a project supported by WHO which is studied based on conceptual, field experience, and framework for action. During the year 2000, all settings of people's lives and social activities in cities, schools, workplaces, and home environments, must provide greater opportunities to promote health (WHO Europe Copenhagen, 1998). Schools are identified as ideal places for physical activity and health promotion. Health promotion and an active lifestyle can be a preventive and curative source for non-infectious disease problems such as obesity, high blood pressure, heart disease, and so on. educational settings, especially in universities have access to the majority of adolescents, adequate facilities, and qualified personnel to achieve

effective results [24]. Many school-based interventions are effective in increasing physical activity and preventing obesity [25], [26]. In comparison, evidence on the effectiveness of school-based interventions targeting adolescents found that school-based interventions were twice as successful as interventions targeting adolescents in regular social settings [14], [25], [27]. The challenge of achieving health behavior change has prompted the exploration of new and interesting intervention strategies.

### **3. METHOD**

#### **3.1. Research design**

This research was quasi-experimental with a pretest–posttest control group design. The study's statistical population consisted of students from the Universitas Pendidikan Indonesia. The research was conducted for four months. The research location that is affordable and most likely to be measured is the Universitas Pendidikan Indonesia. Following the research objectives, explore, visualize, develop, and promote a healthy lifestyle.

#### **3.2. Sampling**

The subjects in this study were 150 students at the Universitas Pendidikan Indonesia. By comparing the means of two separate groups with a 95% confidence interval and a significance level of .05, the sample size was calculated using the sample size formula. Each group's total number of samples had a sample size of  $n=75$ . We employed a multistage random sampling strategy in this investigation. Two groups were chosen after a list of all faculties was created. The control group and the intervention group. The samples for the intervention and control groups were chosen at random. According to the student's medical record, there was no physical or mental illness that met the study's inclusion criteria. Students with medical or mental illnesses, as well as those who declined to continue participating in the study and filled out questionnaires, were excluded from the study. Following the justification of the project's sampling methodology, the following stage involves obtaining written consent, establishing the project's aim, and guaranteeing information confidentiality before initiating the study. In both groups, questionnaires were filled out and collected together with the demographic data.

#### **3.3. Method**

Before the intervention was carried out, the researcher gave informed consent to the participants as a sign of agreement that the sample was willing to voluntarily become participants in this research. This research was carried out by providing health promotion interventions to the campus community which were carried out by the research team for all treatment groups 2 times a week, while the control group did not receive any intervention. The intervention carried out was counseling, providing materials, and practicing physical activity directly to the treatment group. Both sample groups underwent a pre-test before the intervention and a post-test after the intervention. The intervention program consists of 16 training sessions for 45 to 60 min in  $n=75$  groups using methods of short lectures, group discussions, questions, and answers, role-playing, and training materials, including instructional booklets, posters, pamphlets, progressive muscle relaxation training audio, physical activity, and nutrition.

#### **3.4. Data collection**

Data collection in this study used the health-promoting lifestyle standard profile II questionnaire to examine student behavior related to health promoting lifestyle and its dimensions. The standard health-promoting lifestyle questionnaire, which has six dimensions-spiritual growth (11 items), health responsibility (13 items), interpersonal researcher relationships (7 items), stress management (6 items), physical activity (8 items), and nutrition (7 items) [28]. The validity and reliability of this tool have been substantiated by numerous studies. A training regimen was created and put into action for the intervention group. Encouraging factors, attitudes, and subjective norms are all included in interventions pertaining to lifestyle aspects.

#### **3.5. Data analysis**

Using inferential statistical tests, the data collected following the intervention were examined using IBM SPSS version 20 (International Business Machines Corporation (IBM), New York, United States). The inference analysis used in this research is the independent sample t-test to test differences in each dimension of health promoting lifestyle between the intervention group and the control group.

### **4. RESULTS**

The results of data analysis using a paired sample t-test stated that the intervention carried out in an educational setting affected student behavior related to health promoting lifestyle ( $P 0.001$ ). In detail, the differences in each dimension of health promoting lifestyle between the intervention group and the control

group are described in Table 1. Based on Table 1, it can be explained that there are 6-dimensional items that build a health promoting lifestyle that is compared between the intervention and control groups. In addition, there are also the results of the overall analysis of the health promoting lifestyle variables in the intervention group and the control group. From the results of data analysis using the independent sample t-test, it is known that there are significant differences in the dimensions of health responsibility (p 0.001b), physical activity (p 0.001b), nutrition (p 0.003), spiritual growth (p 0.001), interpersonal relations (p 0.001), and stress management (p 0.002). Based on the average value obtained, it can be stated that the effect of educational setting intervention in the intervention group is better than the control group. The analysis results also stated that overall, the behavior related to the health promoting lifestyle of students in the intervention group was better than students in the control group (p 0.001).

Table 1. Independent sample t-test of health-promoting lifestyle and its dimensions in the control and intervention groups

Dimensions of health-promoting lifestyle profile	Mean ± standard deviation (SD)		Significance
	Intervention	Control group	
Health responsibility	25.04±5.09	21.36±4.89	0.001
Physical activity	16.49±4.28	14.41±4.95	0.001
Nutrition	26.24±4.21	22.38±4.30	0.003
Spiritual growth	27.59±3.31	23.30±4.02	0.001
interpersonal relations	26.23±4.31	24.36±3.99	0.001
Stress management	18.44±4.78	17.26±3.79	0.002
Overall	140.03±21.67	123.07±25.94	0.001

## 5. DISCUSSION

In general, the study's results stated that the health promotion behavior of students' lifestyles increased positively after being given intervention in an educational setting [29]. The effect of this intervention can also be supported based on behavioral change theories by increasing self-efficacy and self-confidence [30], also strengthening individual factors which are determining factors in improving the quality of lifestyle [31]. These factors include beliefs, values, perceptions, behavior patterns, and norms that contribute to quality improvement and health promotion for each individual [32]. Given that health promotion interventions using a behavioral approach seek to change individuals' behavior and encourage them to adopt a healthier lifestyle [33]. Therefore it can be concluded that education related to health promotion by influencing decision-making related to health can change individual behavior related to health [34], [35]. A healthy lifestyle is a valuable resource that reduces and prevents non-infectious diseases and their complications [36]. Based on the results of the research above, interventions carried out in educational settings influenced the healthy lifestyle behavior of the intervention group, this is in line with the results of research which stated that interventions through the educational process could increase the participants' healthy lifestyle scores [37], [38]. In another study, it was also stated that the average score of behavior in health promotion in female participants increased after 3 months of intervention [39]. These findings are also consistent with the results of studies that found health promotion interventions lead to increased attitudes toward health-related behaviors, improved skills, and healthy living behaviors [2], [40].

## 6. CONCLUSION

According to the study's findings, health-related behaviors and lifestyles, in all of their facets, can be increased and promoted through educational interventions in health promotion. Thus, interventions in health education settings, nutrition, environment modification, lifestyle adjustment, and behavior modification can all help to enhance population health behavior. As per the study's findings, the concept of self-efficacy is effectively employed in the implementation of health-promoting lifestyle in educational settings to encourage the adoption and adherence to healthy lifestyle activities. This is particularly successful in promoting a healthy lifestyle and promotes changes in healthy lifestyle behavior as well as the capacity to promote health literacy initiatives.

## REFERENCES




- [1] D.-P. Chen *et al.*, "Exploration of the external and internal factors that affected learning effectiveness for the students: a questionnaire survey," *BMC Medical Education*, vol. 23, no. 1, Jan. 2023, doi: 10.1186/s12909-023-04035-4.
- [2] I. Ahlstrand *et al.*, "Health-promoting factors among students in higher education within health care and social work: a cross-sectional analysis of baseline data in a multicentre longitudinal study," *BMC Public Health*, vol. 22, no. 1, Dec. 2022, doi: 10.1186/s12889-022-13690-z.

- [3] J. Newton, M. Dooris, and J. Wills, "Healthy universities: an example of a whole-system health-promoting setting," *Global Health Promotion*, vol. 23, no. 1, pp. 57–65, Mar. 2016, doi: 10.1177/1757975915601037.
- [4] S. Kumar and G. S. Preetha, "Health promotion: an effective tool for global health," *Indian Journal of Community Medicine*, vol. 37, no. 1, pp. 5–12, 2012, doi: 10.4103/0970-0218.94009.
- [5] F. T. Dayagbil, D. R. Palompon, L. L. Garcia, and M. M. J. Olvido, "Teaching and learning continuity amid and beyond the pandemic," *Frontiers in Education*, vol. 6, Jul. 2021, doi: 10.3389/educ.2021.678692.
- [6] A. Dakanalis *et al.*, "The association of emotional eating with overweight/obesity, depression, anxiety/stress, and dietary patterns: a review of the current clinical evidence," *Nutrients*, vol. 15, no. 5, Feb. 2023, doi: 10.3390/nu15051173.
- [7] L. Sanci *et al.*, "Towards a health promoting university: descriptive findings on health, wellbeing and academic performance amongst university students in Australia," *BMC Public Health*, vol. 22, no. 1, Dec. 2022, doi: 10.1186/s12889-022-14690-9.
- [8] WHO, "Closing the gap in a generation: health equity through action on the social determinants of health - final report of the commission on social determinants of health," 2008, [Online], Available at <https://www.who.int/publications/i/item/WHO-IER-CSDH-08.1> (Accessed date: 20 February 2022).
- [9] N. I. Rahayu, A. Suherman, Jajat, K. Sultoni, M. Muktiarni, and R. Maryanti, "Technology's influence on pattern of physical activity and sedentary behaviors among early childhood," *Journal of Engineering Science and Technology*, vol. 18, no. 1, pp. 453–462, 2023.
- [10] J. E. Shaw, R. A. Sicree, and P. Z. Zimmet, "Global estimates of the prevalence of diabetes for 2010 and 2030," *Diabetes Research and Clinical Practice*, vol. 87, no. 1, pp. 4–14, Jan. 2010, doi: 10.1016/j.diabres.2009.10.007.
- [11] W. Cao *et al.*, "The psychological impact of the COVID-19 epidemic on college students in China," *Psychiatry Research*, vol. 287, p. 112934, May 2020, doi: 10.1016/j.psychres.2020.112934.
- [12] M. J. Crockett *et al.*, "Dissociable effects of serotonin and dopamine on the valuation of harm in moral decision making," *Current Biology*, vol. 25, no. 14, pp. 1852–1859, Jul. 2015, doi: 10.1016/j.cub.2015.05.021.
- [13] S. Barakat *et al.*, "Risk factors for eating disorders: findings from a rapid review," *Journal of Eating Disorders*, vol. 11, no. 1, p. 8, Jan. 2023, doi: 10.1186/s40337-022-00717-4.
- [14] K. Buru, T. I. Emeto, A. E. O. Malau-Aduli, and B. S. Malau-Aduli, "The efficacy of school-based interventions in preventing adolescent obesity in Australia," *Healthcare*, vol. 8, no. 4, Nov. 2020, doi: 10.3390/healthcare8040514.
- [15] B. V. Blasco, J. García-Jiménez, I. Bodoano, and L. Gutiérrez-Rojas, "Obesity and depression: its prevalence and influence as a prognostic factor: a systematic review," *Psychiatry Investigation*, vol. 17, no. 8, pp. 715–724, Aug. 2020, doi: 10.30773/pi.2020.0099.
- [16] A. Mehri, M. Solhi, G. Garmaroudi, H. Nadrian, and S. Sigaldehy, "Health promoting lifestyle and its determinants among university students in Sabzevar, Iran," *International Journal of Preventive Medicine*, vol. 7, no. 1, 2016, doi: 10.4103/2008-7802.180411.
- [17] M. Gore, D. R. Yeravdekar, and D. K. Menon, "The impact of on-campus health promotion activities on healthy lifestyle behaviours of Indian University students," *Asia Pacific Journal of Health Management*, vol. 18, no. 1, Apr. 2023, doi: 10.24083/apjhm.v18i1.1473.
- [18] C. J. Greaves *et al.*, "Systematic review of reviews of intervention components associated with increased effectiveness in dietary and physical activity interventions," *BMC Public Health*, vol. 11, no. 1, Dec. 2011, doi: 10.1186/1471-2458-11-119.
- [19] G. B. Samdal, G. E. Eide, T. Barth, G. Williams, and E. Meland, "Effective behaviour change techniques for physical activity and healthy eating in overweight and obese adults; systematic review and meta-regression analyses," *International Journal of Behavioral Nutrition and Physical Activity*, vol. 14, no. 1, Dec. 2017, doi: 10.1186/s12966-017-0494-y.
- [20] D. S. C. Davies, F. Atherton, M. McBride, and C. Calderwood, "UK chief medical officers' physical activity guidelines," *Department of Health and Social Care*, pp. 1–65, 2019.
- [21] F. C. Bull *et al.*, "World health organization 2020 guidelines on physical activity and sedentary behaviour," *British Journal of Sports Medicine*, vol. 54, no. 24, pp. 1451–1462, Dec. 2020, doi: 10.1136/bjsports-2020-102955.
- [22] U. Ekelund *et al.*, "Dose-response associations between accelerometry measured physical activity and sedentary time and all cause mortality: systematic review and harmonised meta-analysis," *BMJ*, vol. 366, Aug. 2019, doi: 10.1136/bmj.14570.
- [23] J. P. Sanders *et al.*, "'Snackitivity™' to increase physical activity: time to try something different?," *Preventive Medicine*, vol. 153, Dec. 2021, doi: 10.1016/j.ypmed.2021.106851.
- [24] C. Foster, M. Hillsdon, M. Thorogood, A. Kaur, and T. Wedatilake, "Interventions for promoting physical activity," *Cochrane Database of Systematic Reviews*, Jan. 2005, doi: 10.1002/14651858.CD003180.pub2.
- [25] E. Waters *et al.*, "Interventions for preventing obesity in children," *Sao Paulo Medical Journal*, vol. 132, no. 2, p. 128, 2014, doi: 10.1590/1516-3180.20141322T2.
- [26] N. Eather, P. J. Morgan, and D. R. Lubans, "Improving the fitness and physical activity levels of primary school children: results of the fit-4-fun group randomized controlled trial," *Preventive Medicine*, vol. 56, no. 1, pp. 12–19, Jan. 2013, doi: 10.1016/j.ypmed.2012.10.019.
- [27] G. Nagy-Pénczes, F. Vincze, and É. Bíró, "A school intervention's impact on adolescents' health-related knowledge and behavior," *Frontiers in Public Health*, vol. 10, Mar. 2022, doi: 10.3389/fpubh.2022.822155.
- [28] S. N. Walker, K. R. Sechrist, and N. J. Pender, "The health-promoting lifestyle profile: development and psychometric characteristics," *Nursing Research*, vol. 36, no. 2, pp. 76–81, 1987.
- [29] M. Solhi, F. E. F. Azar, J. Abolghasemi, M. Maheri, S. F. Irandoost, and S. Khalili, "The effect of educational intervention on health-promoting lifestyle: intervention mapping approach," *Journal of Education and Health Promotion*, vol. 9, no. 1, p. 196, 2020, doi: 10.4103/jehp.jehp\_768\_19.
- [30] L. C. Bohlen *et al.*, "Do combinations of behavior change techniques that occur frequently in interventions reflect underlying theory?," *Annals of Behavioral Medicine*, vol. 54, no. 11, pp. 827–842, Nov. 2020, doi: 10.1093/abm/kaa078.
- [31] H. Yu, P. Zhang, X. Wang, Y. Wang, and B. Zhang, "Effect of health education based on behavioral change theories on self-efficacy and self-management behaviors in patients with chronic heart failure," *Iranian Journal of Public Health*, vol. 48, no. 3, pp. 421–428, 2019, doi: 10.18502/ijph.v48i3.884.
- [32] T. M. Bisbey, M. P. Kilcullen, E. J. Thomas, M. J. Ottosen, K. Tsao, and E. Salas, "Safety culture: an integration of existing models and a framework for understanding its development," *Human Factors: The Journal of the Human Factors and Ergonomics Society*, vol. 63, no. 1, pp. 88–110, Feb. 2021, doi: 10.1177/0018720819868878.
- [33] N. I. Rahayu, A. D. Bachari, M. Muktiarni, and R. Maryanti, "Information and communication technology (ICT) intervention targeting physical activity and diet behaviors in people with disabilities: vosviewer mapping analysis," *Journal of Engineering Science and Technology*, vol. 18, pp. 164–175, 2023.
- [34] V. Raghupathi and W. Raghupathi, "The influence of education on health: an empirical assessment of OECD countries for the period 1995-2015," *Archives of Public Health*, vol. 78, no. 1, p. 20, Dec. 2020, doi: 10.1186/s13690-020-00402-5.




- [35] C.-H. Liao and S. Bercea, "Success factors of health promotion: evaluation by dematel and m-dematel methods — a case study in a non-profit organization," *PLOS ONE*, vol. 16, no. 12, Dec. 2021, doi: 10.1371/journal.pone.0260801.
- [36] M. E. Cerf, "Healthy lifestyles and noncommunicable diseases: nutrition, the life-course, and health promotion," *Lifestyle Medicine*, vol. 2, no. 2, Apr. 2021, doi: 10.1002/lim2.31.
- [37] A. Amiri, F. Rkshshany, and R. Farmanbar, "The effect of educational program based on basnef model on healthy lifestyle of taxi drivers in Langroud," *Journal of Torbat Heydariyeh University of Medical Sciences*, vol. 1, no. 4, pp. 45–54, 2014.
- [38] A. Adeba, T. Dessalegn, and B. Tefera, "Theory-based lifestyle educational intervention through intensive community leaders' affects healthy lifestyles adoption of middle-aged nekemte populations: a quasi-experimental control study," *Medicine (Spain)*, vol. 102, no. 5, p. E31414, Feb. 2023, doi: 10.1097/MD.00000000000031414.
- [39] Z. Rezaie, V. K. Jahromi, V. Rahmanian, and N. Sharifi, "The effect of educational intervention based on the self-efficacy theory of high school students in adopting preventive behaviors of COVID-19," *Journal of Education and Health Promotion*, vol. 11, no. 1, 2022, doi: 10.4103/jehp.jehp\_274\_22.
- [40] I. Altun, "Effect of a health promotion course on health promoting behaviours of university students," *Eastern Mediterranean Health Journal*, vol. 14, no. 4, pp. 880–887, 2008.

## BIOGRAPHIES OF AUTHORS






**Nur Indri Rahayu**    was born on October 19, 1981, in Bandung, West Java. The author has a history of education in elementary school (1987-1993), junior high school (1993-1996), high school (1996-1999), bachelor's degree (1999-2003), master's degree (2018-2010), and doctoral degree (2012-2016). S1 education majoring in recreation health education taken by the author at the Universitas Pendidikan Indonesia (UPI), masters in sports management at the National University of Malaysia, and doctoral in sports education taken at the Universitas Pendidikan Indonesia. The author is currently a lecturer at the Department of Sports Science, Faculty of Sports and Health Education UPI Bandung since 2003. The author is an expert and researcher in sports management and physical activity. The author is currently a researcher for SUNRISE an International Study of Movement Behaviors in the early years, The SUNRISE Coordinating Center based at the University of Wollongong, Australia. The author is also a licensed international Zumba instructor and active fitness practitioner. She can be contacted at email: nurindirahayu1910@upi.edu.






**Muktiarni**    is a lecturer at the Universitas Pendidikan Indonesia. She received her master's degree in technology and vocational education from the Universitas Pendidikan Indonesia in 2019. She is actively working on projects related to digital technology in education, including the project member for UNESCO-UNEVOC coaction project. She has published several book chapters in the areas of digital technology and technical vocational education and training (TVET) and more than 40 academic research papers. Her work is devoted to culinary education and TVET. She can be contacted at email: muktiarni@du.edu.



**Adang Suherman**    is a lecturer in the Department of Sports Education at the Universitas Pendidikan Indonesia (UPI). He was born in Cianjur on June 18, 1963. The author has a history of education bachelor (1982-1987) at UPI, majoring in physical health and recreation education, a master (1995-1996) at Ohio State University majoring in primary physical education teacher, and doctoral degree (2002-2007) at UPI majoring in curriculum and learning. Since 2013, he has been inaugurated as a professor in sports teaching. Then, starting on July 29, 2020, he was entrusted with the position of deputy chancellor for planning, organization, and information systems at UPI for the 2020-2025 term. The organizational experience he is currently running in 2022 is the coach in the Indonesian MSME Association Organization and Coaching Expert Staff in the Central Indonesian National Sports Committee organization. In the last five years, many works have been inscribed by him, including one book and 58 scientific articles, which have been published in accredited national and international journals. He can be contacted at email: adangsuherman@upi.edu.



**Affero Ismail**    is the head of the UTHM Digital Innovation Centre, the UNEVOC Centre Coordinator, and an associate professor in the Department of Engineering Education, Faculty of Technical and Vocational Education. He formerly served as the head of Department at the Malaysia Research Institute for Vocational Education and Training (MyRIVET). He has a Ph.D. in TVET, a master of science in human resource development, and a bachelor of engineering in computer and communication systems. He is a professional member of the Malaysia Board of Technologist and Young Scientist Network, Academy of Science Malaysia. His research interests include curriculum development, digitization, training, teaching and learning, professional development, the sustainable development goals, and green skills. He can be contacted at email: affero.ismail@gmail.com.