

The Assessment of Physical Activity Programs Implementation in the Thai Urban-Setting against the Global Action Plan on Physical Activity Strategic Actions

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Abstract

Physical inactivity is ranked number four leading risk factor of premature deaths from non-communicable diseases. The Global Action Plan on Physical Activity 2018-2030 (GAPPA), adopted in the 71st World Health Assembly in 2018 emphasizes the need for a whole-of-society approach to creating social, cultural, economic, and environments conducive to physical activity. This study assessed the promotion of physical activity in the urban setting of twelve selected municipalities in Thailand against the four GAPPA strategic actions. The findings revealed that all twelve municipalities implemented at least one intervention of the four strategic actions, and achieved 12 out of 20 (60%) GAPPA recommended actions. The city municipalities achieved the highest score, followed by the town and the subdistrict municipalities. The highest achievements were the implementations of strategic action 3: create active people, and strategic action 1: create active societies. This study showed that GAPPA recommendations were relevant and feasible in the Thai context. However, gaps remained in the promotion of strategic action 2: create active environments, and strategic action 4: create active systems. In conclusion, the municipality could be one of the lead agencies for physical activity promotion in an urban setting in collaboration with other public and private stakeholders. GAPPA strategic actions should be translated to be specific tools and indicators for monitoring the progress of policy implementation.

Keywords: physical activity, urban, assessment, community-based, Thailand

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การประเมินการส่งเสริมกิจกรรมทางกายในบริบทเมืองของไทยด้วยแผนปฏิบัติการส่งเสริมกิจกรรมทางกายโลก

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บทคัดย่อ

กิจกรรมทางกายไม่เพียงพอเป็นปัจจัยเสี่ยงอันดับที่สี่ของการเสียชีวิตด้วยโรคไม่ติดต่อ เพื่อแก้ไขปัญหาการมีกิจกรรมทางกายไม่เพียงพอ จึงมีการคิดค้นและสนับสนุนให้มีการปฏิบัติในประเทศไทย ซึ่งได้เน้นความสำคัญของทั้งสังคมเพิ่มให้ครบทุกยุทธศาสตร์ในการสร้างสภาพแวดล้อมทางสังคม วัฒนธรรม เศรษฐกิจและสิ่งแวดล้อมทางกายภาพให้เอื้อต่อการมีกิจกรรมทางกาย การศึกษานี้มีวัตถุประสงค์เพื่อประเมินผลการดำเนินงานการส่งเสริมกิจกรรมทางกายในบริบทเมืองในพื้นที่ 12 เทศบาลด้วยสี่ยุทธศาสตร์ของแผนปฏิบัติการส่งเสริมกิจกรรมทางกายโลก ผลการศึกษาพบว่าทั้งสิบสองเทศบาลมีการนำอย่างน้อยหนึ่งยุทธศาสตร์ไปปฏิบัติในการส่งเสริมกิจกรรมทางกาย โดยในภาพรวมมีการบรรลุ 12 จาก 20 ยุทธศาสตร์ย่อยของแผนปฏิบัติการส่งเสริมกิจกรรมทางกายโลก ทั้งนี้ พบว่าเทศบาลนครมีคะแนนการบรรลุยุทธศาสตร์สูงที่สุด รองลงมาคือเทศบาลเมืองและเทศบาลตำบลตามลำดับ เมื่อจำแนกตามรายยุทธศาสตร์ พบว่าทั้งสิบสองเทศบาลมีการบรรลุยุทธศาสตร์ที่สาม: การส่งเสริมให้ประชาชนกระฉับกระเฉง และยุทธศาสตร์ที่หนึ่ง: การส่งเสริมให้สังคมกระฉับกระเฉงมากที่สุด การศึกษานี้ชี้ให้เห็นว่ายุทธศาสตร์ของแผนปฏิบัติการส่งเสริมกิจกรรมทางกายโลกมีความเหมาะสมและสอดคล้องกับการนำไปใช้ในบริบทไทย ทั้งนี้ แม้ว่าเทศบาลมีความเหมาะสมในการส่งเสริมกิจกรรมทางกาย แต่ก็ยังคงพบช่องว่างในการส่งเสริมในยุทธศาสตร์ที่สอง: การส่งเสริมสภาพแวดล้อมให้เอื้อกิจกรรมทางกาย และยุทธศาสตร์ที่สี่: การส่งเสริมระบบส่งเสริมกิจกรรมทางกาย โดยสรุป เทศบาลมีความเหมาะสมในการส่งเสริมกิจกรรมทางกายในบริบทเมืองร่วมกับภาคีอื่นทั้งภาครัฐและเอกชน และแผนปฏิบัติการส่งเสริมกิจกรรมทางกายโลกควรได้รับการพัฒนาตัวชี้วัดที่เหมาะสมในการประเมินกระบวนการและผลลัพธ์การส่งเสริมกิจกรรมทางกายเพื่อพัฒนานโยบายการส่งเสริมกิจกรรมทางกายต่อไป

คำสำคัญ: กิจกรรมทางกาย, เมือง, ประเมิน, ชุมชน, ประเทศไทย

Background and Rationale

Globally, physical inactivity is the fourth leading risk factor for premature deaths from non-communicable diseases (NCDs) such as heart disease, stroke, breast and colon cancer, and diabetes.^(1,2) Globally, 23% of adults and older adults did not meet the global recommended level of physical activity in 2010.^(2,4) A similar pattern was found in Thailand that 25.4% of adults and older

adults had insufficient physical activity in 2019.^(5,6)

In response to the physical inactivity crisis, the Global Action Plan on Physical Activity 2018-2030 (GAPPA)⁽⁷⁾ adopted in the 71st World Health Assembly in 2018 reiterated the need for a whole-of-society response to create social, cultural, economic, and environmental support conducive to physical activity, as physical activity deeply connects with lifestyles of people in the community. Four stra-

tegic actions: (i) create active societies, (ii) create active environments, (iii) create active people, and (iv) create active systems, are recommended for strengthening physical activity promotion. In Thailand, the National Physical Activity Strategy 2018-2030,⁽⁸⁾ implemented since 2018, is in line with the GAPPA on physical activity promotion.

As the United Nations has estimated that urban populations will double from 30% in 1950 to 68% or nearly 6.7 billion people worldwide by 2050.⁽⁹⁾ The findings from the previous studies that the urban people were less active than the rural people⁽¹⁰⁻¹³⁾ casts an increasing magnitude of physical inactivity in the near future. Promoting physical activity in the urban community is of paramount importance, especially in the countries with rapid urbanization like Thailand. In democratic systems, the elected local governments tend to be more responsive to citizens' need. Also, an organizational structure of local government in terms of mission, budget, staff, as well as strong relationship with local people, is conducive for addressing social determinants of health promotion in communities.⁽¹⁴⁾ In Thailand, there are 2,442 municipalities that can be classified as 30 city, 179 town and 2,233 subdistrict municipalities depending on population size and local tax mobilization.⁽¹⁵⁾ A city municipality is established in an area where there are at least 50,000 citizens, a town municipality in an area of at least 10,000 citizens, and a subdistrict municipality in any other areas. There is a trend for upgrading 5,332 subdistrict administrative organizations (the smallest form of local government) to be subdistrict municipalities

as the growth of urbanization has been increased rapidly.⁽¹⁶⁾

Several studies in Thailand had described the implementation of physical activity promotion in the city municipalities. In 2016, the Department of Health and the Thai Health Promotion Foundation launched the project to define and assist the implementation of physical activity promotion strategies in twelve municipalities throughout Thailand.⁽¹⁶⁻¹⁸⁾ The results revealed that all municipalities had well implemented physical activity promotion programs with similar patterns of implementation in terms of focusing on providing active facilities such as public parks and sport stadiums, as well as supporting activities such as exercise clubs and local sport festivals, health events such as walking, running and biking, and many traditional and cultural festivals in the community.^(16,17) For example, the Chiang Rai City Municipality in the north had provided active early childhood development centers, active primary and secondary schools, schools for the older people, traditional and seasonal festivals i.e. winter flower festival, weekly walking street market with traditional dancing, recreational and natural parks, sport stadiums and gyms, and active tourism.^(16,17)

However, to date, there is no study assessing the effectiveness physical activity promotion implementation in the urban-setting in Thailand in accordance with the GAPPA. Also, the evidence on whether GAPPA is feasible in the urban setting in the context of developing country like Thailand is still missing. To fill the knowledge gaps, this study assessed the level of promoting physical activity



against sub-strategies of the four strategic actions proposed by GAPPA.

Methodology

Study Design

This study reviewed secondary data of the Department of Health and the Thai Health Promotion Foundation on the implementation of physical activity promotion strategies in twelve municipalities throughout Thailand in 2016.⁽¹⁶⁻¹⁸⁾ Secondary data were analyzed based on the four strategic actions of GAPPA.⁽⁷⁾

Population and Sampling Method

Out of 2,442 municipalities in Thailand,⁽¹⁵⁾ 12 municipalities in the study were selected by multiple steps.⁽¹⁶⁻¹⁸⁾ (i) 76 provincial health offices (excluding Bangkok) nominated a municipality in their provinces that had implemented exercise activities providing exercise places and supporting exercise clubs to people for more than two years. (ii) 76 municipalities from 76 provinces were invited to attend the research project meeting. (iii) 12 municipalities with the variety of levels of municipalities (city, town and subdistrict) from 12 health regions were invited to attend the project on a voluntary basis. Table 1 presents characteristics of the selected municipalities.

Table 1 Characteristics of the twelve municipalities⁽¹⁶⁻¹⁸⁾

Municipalities	Levels of municipalities	Regions	Area size (sq.km.)	Number of population	Population density per sq.km.
Chiang Rai	City	North	60.85	70,790	1,163
Phitsanulok	City	Central	18.26	70,346	3,852
Nakhon Sawan	City	Central	27.87	83,574	2,999
Phuket	City	South	12.56	78,421	6,244
Ang Thong	Town	Central	6.19	14,221	2,297
Wang Nam Yen	Town	East	61.50	20,893	340
Nong Bua Lamphu	Town	North-east	39.50	22,340	566
Chaiyaphum	Town	North-east	30.78	36,624	1,190
Satun	Town	South	6.80	23,808	3,501
Thayang	Subdistrict	West	79.00	28,565	362
Wang Noi	Subdistrict	North-east	2.80	3,096	1,106
Nam Pleek	Subdistrict	North-east	3.00	4,103	1,368

* Note: in Thailand, there are 2,442 municipalities that can be classified as 30 city, 179 town and 2,233 subdistrict municipalities depending on population size and local tax mobilization⁽¹⁵⁾.

Data Collection Method

Previous documented data were collected through sessions of direct observation, document review, informal dialogue, and brainstorming meeting among responsible staff of twelve municipalities.⁽¹⁶⁻¹⁸⁾ Direct observations were performed during two-round visits (2-3 days per visit with 4-month interval in between) for evaluating a presence of physical activity promoting places and activities of all age groups in the community. Examples include provision of recreational places i.e. park, market, natural traveling place, walking street, active schools and child development centers, or a provision of exercise equipment, playground, extracurricular syllabus or activities, or a support of exercise club, older persons school activities, etc. Document review report contained geographical and demographic data, and physical activity promoting project with budget data retrieved from the municipality annual report and development plan. For informal dialogue, responsible staff, mainly the director of Division of Public Health and Environment, were informally inquired on details of operational process, problem, solution, and suggestion of providing physical activity promotion to local people in a community. A brainstorming meeting among responsible staff of twelve municipalities was organized at the tenth month of the project to verify the collected data from two visits, the meeting identified success

factor, problem and the ways forward for physical activity promotion in the community.

Analysis Method

We applied the GAPPA framework of four strategic actions,⁽⁷⁾ shown in figure 1, for assessing the effectiveness physical activity promotion implementation in twelve municipalities. Four strategic actions and sub-strategies consisted of (i) create active societies (four sub-strategies: implement social marketing campaigns, promote the co-benefits, provide mass participation events, build workforce capacity), (ii) create active environments (five sub-strategies: integrate transport and urban planning policies, improve walking and cycling networks, strengthen road safety, improve access to public open spaces, implement proactive building policies), (iii) create active people (six sub-strategies: enhance physical education and school-based programs, incorporate physical activity into health and social services, provide programs across multiple settings, improve provision for older adults, prioritize programs for the least active, implement whole-of-community initiatives), (iv) create active systems (five sub-strategies: strengthen policy, leadership and governance, improve and integrate data systems, build research and development, expand advocacy, develop innovative finance mechanisms).



* From the Global Action Plan on Physical Activity 2018-2030 (GAPPA)⁽⁷⁾

Figure 1 Framework of the strategic actions of the Global Action Plan on Physical Activity 2018-2030 (GAPPA)

We applied a yes/no check list to assess the physical activity implementation in twelve municipalities against each GAPPA strategic action. The ‘yes’ criterion is defined by the demonstrated evidence of physical activity implementations in each GAPPA strategic action. For example, in the strategic action 1.1 ‘implement social marketing campaign’, if a municipality had implemented

at least one community-wide social marketing campaign to raise awareness of the benefits from regular physical activity, this municipality was assessed as ‘yes’. However, if the strategic action focuses on the target population or settings, the ‘yes’ criterion would be assessed by the coverage >50% of the target population. For example, in the strategic action 3.4 ‘improve provision for older

adults', the coverage of at least 50% of all older adults in the community would be assessed as 'yes'. The assessment was based on the available evidence of the prior project in 2016.⁽¹⁶⁻¹⁸⁾

Ethical Consideration

The dataset used in this study were from one of the national physical activity-promoting projects conducted by a government agency, called the Department of Health, Ministry of Public Health. As mandated by Public Health Ministerial Regulations 2009,⁽¹⁹⁾ the Department of Health was granted with a mission to develop surveillance system to monitor health behavior and health impact exempting signed consents from respondents. The data for this study were retrieved from open and online publications that could not be mined to obtain confidential individual data; thus, it deemed unnecessary to obtain research ethics approval. The researchers strictly followed ethical standards in research, which all individualized information was strictly kept confidential and not reported in the paper.

Results

In overall, all municipalities achieved at least one 'yes' in the GAPPA strategic actions - as shown in Table 2 and Figure 2. The average 'yes' scores of twelve municipalities are 3/4, 2/5, 5/6, and 2/5 of the strategic action 1, 2, 3, and 4, respectively.

In strategic action 1 (create active societies), 3 out of 4 sub-strategies had a 'yes' score in all municipalities (1.1 implement social marketing campaigns, 1.2 promote the co-benefits, and

1.3 provide mass participation events). While sub-strategy 1.4 build workforce capacity received a 'no' score in all municipalities.

In strategic action 2 (create active environments), sub-strategy 2.4 improve access to public open spaces had a 'yes' score in all municipalities. While sub-strategies 2.3 strengthen road safety and 2.5 implement proactive building policies received a 'no' score in all municipalities. In addition, sub-strategy 2.1 integrate transport and urban planning policies got a 'yes' score in all municipalities except Thayang and Nam Pleek subdistrict municipalities. While sub-strategy 2.2 improve walking and cycling networks had a 'yes' score in only Chiang Rai and Phitsanulok city municipalities.

In strategic action 3 (create active people), 5 out of 6 sub-strategies had a 'yes' score in all municipalities (3.1 enhance physical education and school-based programs, 3.3 provide programs across multiple settings, 3.4 improve provision for older adults, 3.5 prioritize programs for the least active, implement whole-of-community initiatives). While sub-strategy 3.2 incorporate physical activity into health and social services received a 'yes' score in only four city municipalities.

In strategic action 4 (create active systems), 2 out of 5 sub-strategies had a 'yes' score in all municipalities (4.4 expand advocacy and 4.5 develop innovative finance mechanisms). While sub-strategies 4.1 strengthen policy, leadership and governance 4.2 improve and integrate data systems, and 4.3 build research and development received a 'no' score in all municipalities.

Table 2 Physical activity promotion assessment in the twelve municipalities in Thailand according to the strategic actions of the Global Action Plan on Physical Activity 2018-2030 (GAPPA)

The strategic actions	Physical activity promotion in twelve municipalities in Thailand												
	City municipalities			Town municipalities					Subdistrict municipalities				
	Chiang Rai	Phitsanulok	Nakhon Sawan	Phuket	Ang Thong	Wang Nam Yen	Nong Bua Lamphu	Chalya phum	Satun	Thayang	Wang Noi	Nam Pheek	
1. Create active societies													
1.1 Implement social marketing campaigns: Implement best practice communication campaigns to heighten awareness, knowledge and understanding of the multiple health benefits of regular physical activity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1.2 Promote the co-benefits: Conduct campaigns to enhance awareness and understanding of social, economic, and environmental co-benefits of physical activity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1.3 Provide mass participation events: Implement regular mass-participation initiatives in public spaces	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1.4 Build workforce capacity: Strengthen pre- and in-service training of professionals to increase knowledge and skills related to their roles for strengthening an active society	No	No	No	No	No	No	No	No	No	No	No	No	No
2. Create active environments													
2.1 Integrate transport and urban planning policies: Prioritize the principles of compact, mixed land use to deliver highly connected neighborhoods that enable and promote walking, cycling, and the use of public transport	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2.2 Improve walking and cycling networks: Improve the level of service provided by walking and cycling network infrastructure	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No

Table 2 Physical activity promotion assessment in the twelve municipalities in Thailand according to the strategic actions of the Global Action Plan on Physical Activity 2018-2030 (GAPPA) (cont.)

The strategic actions	Physical activity promotion in twelve municipalities in Thailand											
	City municipalities			Town municipalities					Subdistrict municipalities			
	Chiang Rai	Phitsanulok	Nakhon Sawan	Phuket	Ang Thong	Wang Nam Yen	Nong Bua Lamphu	Chalya phum	Satun	Thayang	Wang Noi	Nam Pheek
2.3 Strengthen road safety: Improve road safety and the personal safety of pedestrians, cyclists, and public transport passengers	No	No	No	No	No	No	No	No	No	No	No	No
2.4 Improve access to public open spaces: Strengthen access to public and green open spaces, green networks, recreational spaces and sports amenities	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2.5 Implement proactive building policies: Promote public amenities that are designed to enable people to be physically active in and around the buildings	No	No	No	No	No	No	No	No	No	No	No	No
3. Create active people												
3.1 Enhance physical education and school-based programs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.2 Incorporate physical activity into health and social services: Implement systems of patient assessment and counselling on increasing physical activity	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No
3.3 Provide programs across multiple settings: Enhance provision of physical activity promotion in parks, as well as in workplaces, community centers, recreation and sports facilities	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.4 Improve provision for older adults	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.5 Prioritize programs for the least active	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 2 Physical activity promotion assessment in the twelve municipalities in Thailand according to the strategic actions of the Global Action Plan on Physical Activity 2018-2030 (GAPPA) (cont.)

The strategic actions	Physical activity promotion in twelve municipalities in Thailand											
	City municipalities			Town municipalities			Subdistrict municipalities					
	Chiang Rai	Phitsanulok	Nakhon Sawan	Phuket	Ang Thong	Wang Nam Yen	Nong Bua Lamphu	Chalya phum	Satun	Thayang	Wang Noi	Nam Pheek
3.6 Implement whole-of-community initiatives that stimulate engagement by all stakeholders focusing on grass-roots community engagement and ownership	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4. Create active systems												
4.1 Strengthen policy, leadership and governance: Provide multi-sectoral engagement and coordination mechanisms and progress monitoring and evaluation	No	No	No	No	No	No	No	No	No	No	No	No
4.2 Improve and integrate data systems for population surveillance of physical activity across all ages and multiple domains, sociocultural and environmental determinants of physical activity; and regular monitoring and reporting on implementation	No	No	No	No	No	No	No	No	No	No	No	No
4.3 Build research and development especially the application of digital technologies and innovation aimed at increasing physical activity	No	No	No	No	No	No	No	No	No	No	No	No
4.4 Expand advocacy to key audiences, including, high-level leaders and the wider community	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4.5 Develop innovative finance mechanisms to secure sustained implementation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

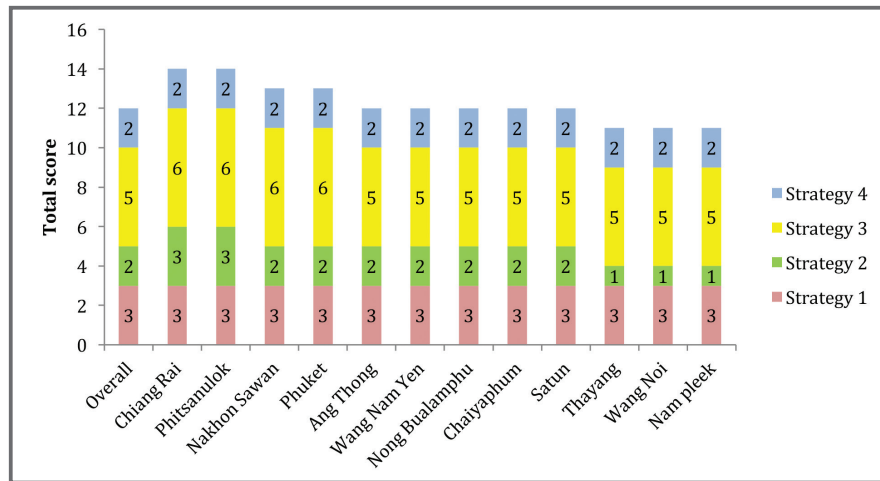


Figure 2 The overall physical activity promotion assessment of twelve municipalities in Thailand according to the strategic actions of the Global Action Plan on Physical Activity 2018-2030 (GAPPA)

The Chiang Rai and Phitsanulok city municipalities had the highest overall ‘yes’ score (14/20), followed by the Nakhon Sawan and Phuket city municipalities (13/20). The Ang Thong, Wang Nam Yen, Nong Bua Lamphu, Chaiyaphum, and Satun town municipalities had similar score of 12/20. The least score, 11/20 was achieved by Thayang, Wang Noi, Nam Pleek subdistrict municipalities.

When disaggregated by level of municipality, the highest percentage of ‘yes’ score was achieved in strategic action 3, ranges between 83% and 100%, followed by strategic action 1, 75% equally across three levels. The least percentage of ‘yes’ score was achieved in strategic action 2, ranged between 20% and 60%, and strategic action 4, 40% equally across three levels of municipality,

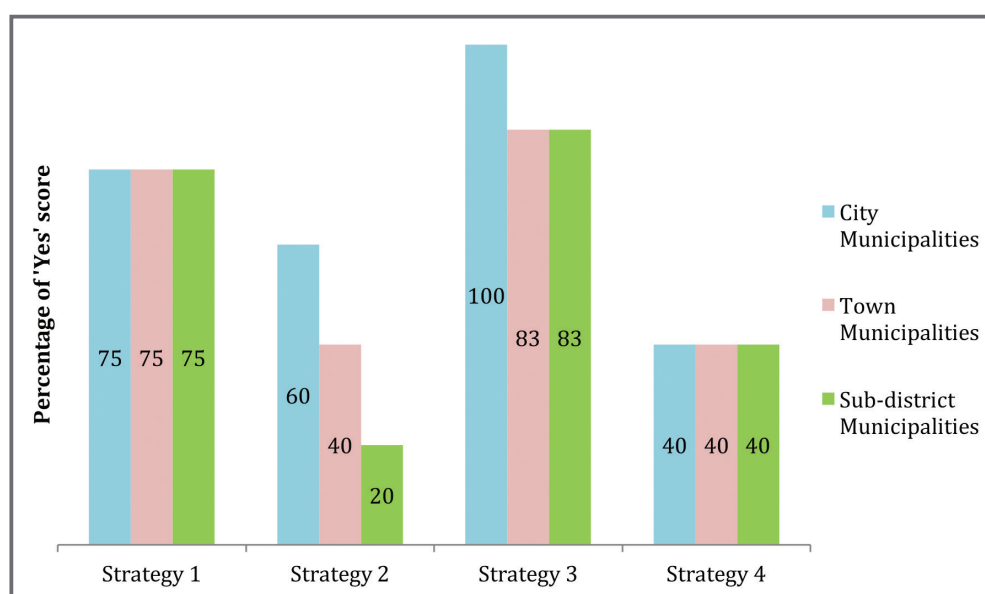


Figure 3 The percentage of ‘yes’ score in each GAPP strategic actions by levels of the municipalities



see Figure 3.

Discussion

In overall, twelve municipalities had at least one ‘yes’ in the GAPPA strategic action, and had an average ‘yes’ score, 12 out of 20 sub-strategic actions (60%). The city municipalities had the highest ‘yes’ score, between 13 and 14 out of 20, followed by the town municipalities, 12 out of 20, and the subdistrict municipalities at 11 out of 20. The highest percentage of ‘yes’ score was found in the strategic action 3 and 1, while the least score was in the strategic action 2 and 4.

In general, physical activity promotion in the community-wide from twelve municipalities in Thailand seemed to be in line with the GAPPA strategic actions especially strategic action 3: create active people, and strategic action 1: create active societies. While the implementation gaps were found in the strategic action 2: create active environments (especially sub-strategies 2.2 improve walking and cycling networks, 2.3 strengthen road safety, and 2.5 implement pro-active building policies), and strategic action 4: create active systems (especially sub-strategies 4.1 strengthen policy, leadership and governance 4.2 improve and integrate data systems, and 4.3 build research and development). Moreover, the higher level of municipalities seemed to be associated with the higher score achievement; likely to have more capacity, responsible persons and funding supports.

The results also revealed that all twelve municipalities, considered as the leading local

governments on physical activity promotion as described by the 2016 project,⁽¹⁶⁻¹⁸⁾ were able to implement 60% of the GAPPA recommendations. This level of achievement led to the recognition of the important roles of municipalities in promoting and supporting physical activity, though there were rooms for further improvements. The areas that the municipalities were relatively successful were in the creation of active people and active societies. This was unsurprised as the local governments had marked records on supporting different exercise clubs in the parks, local sport games, traditional and cultural festivals, walking streets and markets, school based physical activity and recreational programs, and older adult recreational activities.⁽¹⁶⁻¹⁸⁾

However, there were needs to fill the gaps of creating active environments and systems. The low score in the strategic action 2: create active environments, was mainly due to the lack of improving walking and cycling network, strengthening road safety for pedestrians and cyclists and reorienting transport systems which encourage people active mobility in their daily activities. To fill the gaps, municipalities in Thailand can consider to provide a variety of public transport choices such as bus, van, and boat to increase people’s travel choices instead of the use of private car.⁽²⁰⁻²²⁾ However, to implement this policy, a comprehensive consultation with local residents and stakeholders needed to be performed to assess the demand and supply of service. Another proposed option is to provide community transport feeders which support the first-kilometer connectivity between

home and public transport such as small buses, or sidewalks can improve active environment.^(23,24) In addition, restricted car zones should be scaled up throughout cities to make private and public vehicles more difficult to use, especially during the rush hour.⁽²⁵⁾ One of good examples in the area of active transport could be seen through the Safe Route to School initiative in an area of Ranong city to promote walking and cycling of students to school and of local residents in the city center by Ranong town municipality and stakeholders had implemented in the southern region of Thailand.⁽²⁵⁾ Another example was the initiative to build a walking and cycling city in Bangkok, Chachoengsao by implementing a speed reduction and one-way street measure in the center of the city, and support bicycle club for health for general population by Bangkok subdistrict municipality and stakeholders had implemented in the central region of Thailand.⁽²⁵⁾

For the low score in the strategic action 4: create active systems, especially in providing multi-sectoral engagement and coordination mechanisms, improving data systems for population surveillance of physical activity and regular monitoring and reporting on implementation, and in building research and development especially the application of digital technologies and innovation aimed at increasing physical activity, were the main gaps. More efforts in these areas could help boost physical activity implementation, however, the aim of this strategic action was designed for the national or subnational levels, not for individual municipality, as indicated clearly in the GAPP.⁽⁷⁾

The National Physical Activity Strategy 2018-2030⁽⁸⁾ had fully recognized the importance of these issues, hence there were the establishments of the steering committees from various relevant organizations, and five subcommittees since 2018, in order to support physical activity. Subcommittees included research and development, monitoring and evaluation, capacity building, communication, and policy development.⁽²⁶⁾ The annual physical activity survey at the national level,⁽⁶⁾ and the national steps challenge^(27,28) were good examples of actions related to GAPP strategic action 4.

The results of 60% of physical activity implementation in the twelve municipalities reflect that GAPP recommendations are somehow feasible to Thailand's contexts. Moreover, the findings of the study also show positive relationships between higher level of municipalities and high level of physical activity implementation. This can imply that the GAPP, perhaps, is more suitable and feasible to higher level of municipality, and that implementing physical activity promotion needs more resources and capacity. It is similar to the situation around the world that cities that are good at implementing whole-of-city physical activity promotion are from the high-income countries especially the European region.⁽²⁹⁻³³⁾ For example, the Copenhagen and Amsterdam which are the cities for good walkability and everyday bicycle and public transport use that resulting in a more physical activity in the transport domain. This provides lessons for developing countries with a rapid urbanization, like Thailand, to re-orient the transport and urban planning and design condu-



cive to physical activity especially the lower level of municipalities by promoting walking and cycling network in communities and implementing speed limit policy to increase road safety and making car use a non-preferable choice.⁽²⁵⁾

For policy implication, a well-prepared municipality with a long-term clear vision for promoting health and well-being of the people through an active city, is a pre-requisite for successful promotion of physical activities in the population. Municipalities can be one of the main agencies for local physical activity promotion working collaboratively with other public and private stakeholders.^(13,14,16-18,25,34)

The strengths of the study are: this is the first study which assesses physical activity implementation in the urban setting based on the recommendations by GAPPA in three-level municipalities in Thailand; and the twelve municipalities represent a variety of the characteristics in terms of level of municipality, geographical region and population density. However, few limitations are recognized. Firstly, the assessment was based on secondary data of the prior project in 2016 not reflecting the current 2021 situation. Secondly, the GAPPA is designed to be used as a strategic framework for physical activity promotion, not a good tool for monitoring and evaluation of the implementation level. Also, the yes/no criterion of assessment in the study are not able to be fully described the level of implementation. Further study should be designed for more up-to-date evaluation, more variety and numbers of local governments, and using a more comprehensive assessment tool in terms

of implementation details and measurement of outcomes and use of physical activity facilities by local people.

Conclusions

Municipality plays an important role for physical activity promotion in an urban-setting as reflected by this study though there are rooms for improvements especially in the GAPPA strategic action 2: create active environments (especially sub-strategies 2.2 improve walking and cycling networks, 2.3 strengthen road safety, and 2.5 implement proactive building policies), and strategic action 4: create active systems (especially sub-strategies 4.1 strengthen policy, leadership and governance 4.2 improve and integrate data systems, and 4.3 build research and development). All related stakeholders should collaborate and synergize their efforts with the municipality to address physical activity promotion in the local context. Though GAPPA recommendations are used as an initial tool for assessing the physical activity implementation, these should be translated into specific tool, which may include process and outcome indicators for monitoring progress of implementation and making a policy proposal.

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The authors declare no conflict of interest.

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