



The 2018 Taiwan Report Card

on Physical Activity for Children and Youth



Table of Content

• The Active Healthy Kids Global Alliance and Global Matrix.....	2
• About the 2018 Taiwan Report Card on Physical Activity for Children and Youth.....	4
• Methodology.....	5
The Stages of Work.....	5
Main Data Sources.....	6
Summary of Indicators.....	8
International Standardized Grading Theme.....	9
• Results.....	10
Summary of Grades.....	10
Overall Physical Activity.....	11
Organized Sport and Physical Activity Participation.....	13
Active Play.....	15
Active Transportation.....	17
Sedentary Behaviors.....	18
Physical Fitness.....	20
Family and Peers.....	22
School.....	23
Community and Built Environment.....	25
Government Strategies and Investments.....	28
• Recommendations.....	30
• Priorities for Future Research.....	35
• Next Steps.....	36
• Report Card Development Team.....	37
• References.....	38



The Active Healthy Kids

Global Alliance and Global Matrix

Among children and youth (5-17 years), physical activity has been found to provide beneficial effects on physical, physiological, developmental, mental, cognition, and social health as well as academic achievement in several systematic reviews [1, 2]. Studies in Taiwan showed that improvement in physical fitness is significantly associated with better academic grades in junior high school students [3]. On the other hand, physical inactivity among school-aged children has been found to be associated with lower physical fitness and adverse physical, mental, social and cognitive health outcome [1, 2]. Physical inactivity in childhood also leads to lower physical activity levels in later life [4], which is a major factor for the increasing prevalence of non-communicable diseases worldwide [5].

With the growing global epidemic of physical inactivity in children, The Active Healthy Kids Report Card was first introduced by Canada in 2005 as an initiative to provide evidence-based evaluations of the physical activity levels and the related health behaviors [6]. The government strategies and approaches to promote physical activity among children and adolescents were also examined. The Canadian report card model has soon attracted global attention. In 2014, the Active Healthy Kids Global Alliance (www.activehealthykids.org) was formed as a network of researchers, health professionals and stakeholders who are working together to advance physical activity in children and youth worldwide. One of the initiatives of the Active Healthy Kids Global Alliance is to present the information on overall physical activity levels, physical activity behaviors, and their influential factors of children and youth in all countries through a standardized grading framework (from “A” = excellent to “F” = failing), the Global Matrix. The Active Healthy Kids Global Alliance facilitates and supports the development of physical activity report card in participating countries. All report cards followed the standardized methodology for international comparisons. The network provides a platform for exchange of ideas and promoting collaborations at the global level to tackle the growing burden of physical inactivity among children and youth.



The Active Healthy Kids Global Alliance produced the first Global Matrix (i.e., Global Matrix 1.0) in 2014, presenting grades for nine physical activity indicators from 15 countries [7]. The Global Matrix 2.0 expanded the results to 38 countries in 2016 [8]. In 2017, National Taiwan University of Sport sponsored the Taiwan Report Card research team, consisted of experts from five universities, to produce its first report card. This Taiwan Report Card is part of the Global Matrix 3.0 that summarizes the grades for 10 indicators from 49 countries [9].



About the 2018 Taiwan Report Card on Physical Activity for Children and Youth

Taiwan joined Global Matrix 3.0 in 2017, with a team of experts from five local institutions. The research team is co-led by Dr Chen-Kang Chang from National Taiwan University of Sport and Dr Ching-Lin Wu from National Chung Hsing University. The purpose of the Report Card is to summarize the current status regarding physical activity levels and the related factors in Taiwanese children and youth, identify gaps in current knowledge, and act as an advocacy tool to promote physical activity opportunities for children and youth. In addition, this Report Card allows Taiwan to share its current status and effort in promoting physical activity with the global community.

The Report Card comes in short and long forms. The short form of the Report Card, containing grades of each indicator with concise information, is intended to be accessible to the general population. The long form of Report Card, presenting more detailed information on the data sources considered, the grading process, references, and caveats associated with each of the indicators, is aimed at academics, educators, government agencies, and non-government organizations. Both forms of Report Card are available in Chinese and English in order to disseminate the results at national and international levels. An academic publication based on the 2018 Taiwan Report Card on Physical Activity for Children and Youth was published in the *Journal of Exercise Science and Fitness* [10]. The comparison between Taiwan and other 29 countries with very high Human Development Index was also published [11].



Methodology

The Stages of Work

1 Collection and Preparation of Data

Identification and organization of the best available data on the indicators by the Research Working Group.

2 Assessment and Grading

Critical evaluation of the organized evidence and assigning the grades using the standardized grading scheme by the Research Team.

3 Publication and dissemination

Production and publication of Short-Form and Long-Form Report Cards which summarize the grades and relevant information to be shared with the public, health and educational professionals, researchers, government agencies, non-governmental organizations and industries. The short- and long-form of Report Card can be downloaded from <http://ssrc.camel.ntupes.edu.tw>.



Main Data Sources

The Taiwan Report Card 2018 was developed based on the best available evidence organized from numerous national surveys, government reports, and academic studies where physical activity and related health behaviors and settings were examined. While all available data were identified, only studies and reports that fulfilled the following criteria were included in the grading process:



The data source must be nationally representative for Taiwanese children and youth aged 5-17 years.



The data should be collected and analyzed or published after 2010.



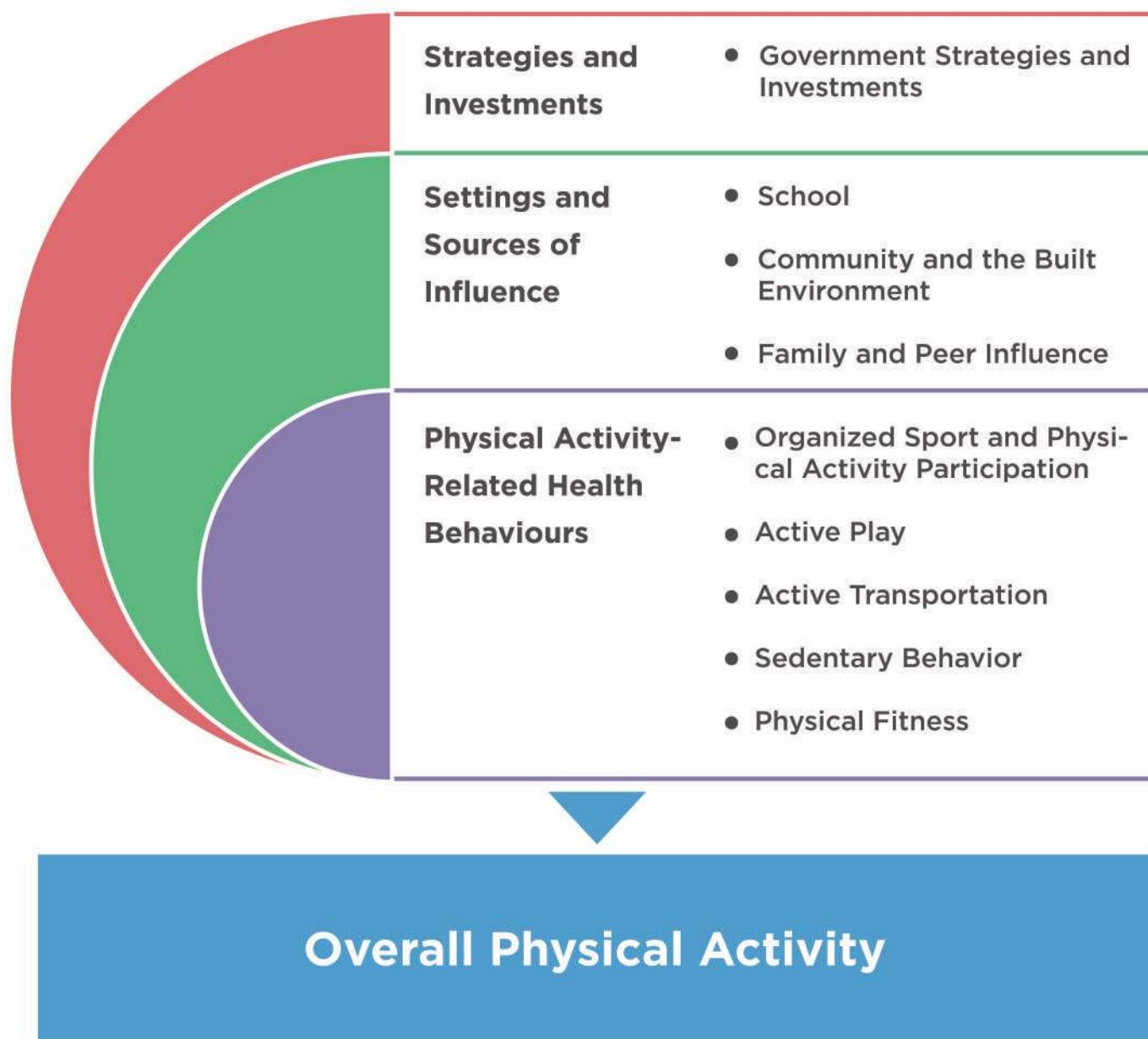
The methodology for data collection should be scientifically appropriate.



Summary of Data Sources

Main data sources	Characteristics of the data
Nutrition and Health Survey in Taiwan, 3 waves, 2010-2012 [12-14]	Stratified national survey, self-reported physical activity 1st-6th grade, n=1260 7th-9th grade: n=1779 10th-12th grade: n=1169
Census of Physical Education, school year 2016-17 [15]	Organized by Ministry of Education. All elementary, junior high, and senior high schools are mandatory to submit the data
Student Participation in Physical Activity Survey, school year 2016-17 [16]	Stratified national survey, self-reported questionnaire, 5th-12th grade, n=27796
Health Behavior Survey in Junior High School Students, 2016 [17]	Stratified national survey, self-reported questionnaire, 7th-9th grade, n=5556
Life Style Survey of Children and Teenagers, 2014 [18]	Stratified national survey, self-reported questionnaire, n=5130 (12-17-year-olds)
Survey of Internet Usage in Students, 2015 [19]	Stratified national survey, self-reported questionnaire, 4th-12th grade, n=8998
Nationwide physical fitness test in all schools, school year 2014-2015 [20-22]	Organized by Ministry of Education. All students in elementary, junior high, and senior high schools are mandatory to undergo 4 fitness tests: 800/1600m walk-run, 60 s sit-up, sit-and-reach, and standing long jump. Height and weight were also measured to determine body mass index (BMI)
Database of sport facilities [23]	Managed by Sport Administration, Ministry of Education
Exercise Status Survey, 2017 [24]	Stratified national survey, telephone interview, 13-17-year-old, n=1366
Opinions toward Exercise Environment Survey, 2017[25]	Internet survey, >13-year-old, n=10164
National Health Interview Survey [26]	Stratified national survey, face-to-face interview < 12-year-old, n=2809 13-17-year-old, n=2006

Summary of Indicators



International Standardized Grading Theme

This first Taiwan Report Card presents grades for 10 indicators. The portions of Taiwanese children and youth meeting the benchmarks of each indicator were determined according to the organized data. The grades are awarded to each of the indicators using a predetermined grading framework.



* The grade for each indicator is based on the percentage of children and youth meeting a defined benchmark

A+ 100% - 94%	A 93% - 87%	A- 86% - 80%
B+ 79% - 74%	B 73% - 67%	B- 66% - 60%
C+ 59% - 54%	C 53% - 47%	C- 46% - 40%
D+ 39% - 34%	D 33% - 27%	D- 26% - 20%
F < 20%	INC incomplete data	

A We are succeeding with a large majority of children and adolescents (81%-100%)	D We are succeeding with less than half of children and adolescents (21%-40%)
B We are succeeding with well over half of children and adolescents (61%-80%)	F We are succeeding with very few children and adolescents (0%-20%)
C We are succeeding with about half of children and adolescents (41%-60%)	INC (Incomplete data) Where current Taiwanese data are inadequate to assign a grade



Results

Summary of Grades

INDICATOR		GRADE
 Overall Physical Activity		F
 Organized Sport and Physical Activity Participation		D-
 Active Play		INC
 Active Transportation		C-
 Sedentary Behavior		C-
 Physical Fitness		B-
 Family and Peers		INC
 School		B+
 Community and the Built Environment		B+
 Government Strategies and Investments		B+





Benchmark

The proportion of children and youth with at least 60 minutes of daily moderate- to vigorous-intensity physical activity.

Rationale

- 5.4% of junior high school students and 12.1% of senior high school students had at least 60 minutes of moderate-to-vigorous-intensity physical activity daily.
- 7.49% of boys and 5.75% of girls in elementary schools engaged in moderate-intensity physical activity at least 4 days per week.

Key Findings

- Nutrition and Health Survey in Taiwan in 2010 showed that only 5.4% junior high school students (8.7% of boys and 1.9% of girls) met the World Health Organization (WHO) standard of at least 60 minutes of moderate to vigorous physical activity per day [12].
- Nutrition and Health Survey in Taiwan in 2011 showed that only 12.1% senior high school students (19.4% of boys and 5.8% of girls) met the WHO standard [13].
- Nutrition and Health Survey in Taiwan in 2012 showed that 76.98% of elementary school students engaged in high-intensity physical activity 1-2 days per week, while only 5.75% of boys and 2.84% of girls engaged in high-intensity physical activity more than 4 days per week [14].
- Nutrition and Health Survey in Taiwan in 2012 showed that 68.76% of elementary school students engaged in moderate-intensity physical activity 1-2 days per week, while only 7.49% of boys and 5.45% of girls performed moderate-intensity physical activity more than 4 days per week [14].



- Global School-based Student Health Survey 2016 showed that 59.7% of junior high school students (66.0% of boys and 55.6% of girls) had 60 minutes of daily physical activity more than 3 days per week [27].
- Global School-based Student Health Survey 2015 showed that 48.4% of junior high school students (56.3% of boys and 40.0% of girls) engaged in 60 minutes of daily physical activity more than 3 days per week [28].
- Of junior high school students, 19.8% (27.4% of boys and 9.8% of girls) met the WHO standard of 60 minutes of moderate-to-high-intensity physical activity per day in 2014, while in 2015 the levels decreased to 14.6% (20.0% of boys and 8.9% of girls) met the WHO standard, according to Statistical Year Book of Health Promotion [29].

Research Gaps

- The research on objectively measured physical activity in nationally representative population is needed.
- Continuous monitoring and evaluation every 3 years through health surveillance are important to assess changes and trends in physical activity behavior in children and youth.
- Studies are needed to explore the motivations and barriers for children and youth of various socioeconomic status to engage in physical activities in daily life in different regions of Taiwan.
- The data regarding physical activity levels in preschool children are lacking.





Organized Sport and Physical Activity Participation

D-

Benchmark

The proportion of children and youth who participate in sport clubs or teams in schools.

Rationale

- 25.4% of elementary school students participated in sports clubs or teams.
- 21.3% of junior high school students participated in sports clubs or teams.
- 17.0% of senior high school students participated in sports clubs or teams.

Key Findings

- According to Census of School Physical Education, there are, in average, 3.2 sport clubs and 2.4 sport teams in each elementary school. The total number of participants was 201,049 in sport clubs (17.1% of total students) and 96,568 (8.3% of total students) in elementary schools in school year 2016-17 [15].
- There are, in average, 4.3 sport clubs and 3.5 sport teams in each junior high school. The total number of participants was 114,172 in sport clubs (16.6% of total students) and 32,163 (4.7% of total students) in school year 2016-17 [15].
- There are, in average, 6.0 sport clubs and 4.2 sport teams in each senior high school. The total number of participants was 108,360 in sport clubs (14.9% of total students) and 15,381 (2.1% of total students) in school year 2016-17 [15].



Research Gaps

- The research on the number of participants enrolled in sport clubs outside the school system is necessary.
- In order to promote participation in organized sport, research on factors affecting children's and adolescents' involvement in organized sports, and the parents' perspectives is required.
- The research on the effect of age- and ability-appropriate sport organizations on participation rate is necessary, especially in girls.
- The importance of participating in organized sport, both within and outside the school system, in meeting the physical activity recommendation needs to be examined.
- The social and mental benefits of participating in organized sport programs within and outside the school system require further investigation.





Benchmark

The proportion of children and youth who engage in unstructured or unorganized active play for several hours a day.

Rationale

- We were unable to identify any survey or study that investigated the participation rate or time spent in unorganized play in a nationally representative population.

Key Findings

- According to Report of Student Participation in Sport, during the school semesters, the proportions of students who accumulated more than 150 minutes of physical activity per week at the school, excluding physical education classes, were 30.2% in elementary schools, 23.6% in junior high schools, and 20.2% in senior high schools in school year 2015-16 [30].
- During the winter break, the proportions of students who accumulated more than 150 minutes of physical activity per week were 30.6% in elementary schools, 26.5% in junior high schools, and 24.5% in senior high schools in school year 2015-16 [30].
- During the summer break, the proportions of students who accumulated more than 150 minutes of physical activity per week were 37.6% in elementary schools, 32.0% in junior high schools, and 28.9% in senior high schools in school year 2015-16 [29].
- It is not clear how much of the aforementioned physical activity can be classified as Active Play.



Research Gaps

- A clear definition of active play is required in order to promote the research in this area.
- Given the sporadic nature of active play, particularly among young children, it is important to establish reliable methods or instruments to capture all activities accurately and objectively.
- More studies are needed to explore the amount of active play and the location it is performed, especially in younger children.
- The motivations and barriers toward active play also need to be examined, especially in parents.





Benchmark

The proportion of children and youth who cycle or walk to school at least once a week.

Rationale

- 33.7% of elementary students, 19.3% of junior high school students, and 22.1% of senior high school students used cycling or walking as the primary method for transportation to schools [16].

Key Findings

- According to Report of Student Participation in Sport, among elementary school students, 29.7% used walking and 4.0% used cycling as the major method of transportation to schools in school year 2016-17 [16].
- Among junior high school students, 1.4% used walking and 17.9% used cycling as the major method of transportation to schools in school year 2016-17 [16].
- Among senior high school students, 11.7% used walking and 10.4% used cycling as the major method of transportation to schools in school year 2016-17 [16].
- According to Health Behavior Survey in Junior High School Students, 51.7% of boys and 41.3% of girls cycled or walked to schools at least 5 days a week in 2016 [17].

Research Gaps

- More research is required to estimate the contribution of active transportation to overall physical activity in children and youth.
- Further research is needed to identify motivations and barriers of active transportation, such as built environment, air pollution, and safety.





Sedentary Behaviors

C-

Benchmark

The proportion of children and youth who has non-study-related screen time less than 2 hours per day.

Rationale

- Among the 12-17-year-olds, 53.4% of boys and 53.9% of girls averaged 1 to 4 hours per day using internet.

Key Findings

- According to Report of Internet Usage in Students Survey, on school days, elementary school students spent 57.8 minutes per day on the internet for non-study purposes, while junior and senior high school students spent 115.8 and 147.2 minutes, respectively. During holidays, internet time increased to 120.1, 231.0, and 266.1 min per day in elementary, junior high, and senior high school students, respectively [19].
- Among the 12-17-year-olds, 17.1% of boys and 18.4% of girls averaged less than 1 hour per day using internet, 53.4% of boys and 53.9% of girls averaged 1 to 4 hours, while 15.5% of boys and 16.1% of girls averaged 4 to 7 hours [18].
- According to National Health Interview Survey, average time spent on watching TV, playing video games, and using the internet was 110 minutes on non-holidays and 206 minutes on holidays, in children younger than 12 years old [26]
- Average daily sedentary time was 9.6 hours in the 12-17-year-olds [18].



Research Gaps

- Screen time should include time spent on smart phones, computers, and TV. The screen time may be divided to study-related or study-unrelated purposes.
- The research on sedentary behavior in children and adolescents should also include time spent on sitting in classes, after-classes, and at home for studying.
- The influence of sedentary behavior on the level of physical activity should be investigated in children and adolescents with different demographics.





Benchmark

The proportion of children and youth whose results of all 4 fitness tests are above the 25th percentile of the norms.

Rationale

- 58.5% elementary school students, 60.0% junior high school students, and 53.4% senior high school students in school year 2014-15 scored better than the 25th percentile in all 4 fitness tests (sit-ups in 60 seconds, sit-and-reach, 800/1600 m walk/run, and standing long jump) [20-22].

Key Findings

- The national norms were published by Ministry of Education, Taiwan, in 2012.
- 25.9% elementary school students, 28.0% junior high school students, and 23.4% senior high school students in school year 2014-15 scored better than the 50th percentile in all 4 fitness tests [20-22].
- Fitness levels in children and adolescents have been decreasing from 1997 to 2013 [31].
- It is noteworthy that 28.1% of 7-12 year-olds and 29.5% of the 13-15 year-olds were overweight or obese in school year 2016-17 [32]. In addition, according to the three waves of National Health Survey in Taiwan, [12-14] the percentage of underweight ranged from 13-21% across different age groups. Although the BMI cut-off for underweight, overweight and obesity published by the Ministry of Health and Welfare [33] is slightly different from the WHO standards, it is alarming that only approximately 50-60% of Taiwanese youth have ideal body weight.



Research Gaps

- The association between physical activity and physical fitness should be examined.
- The association among overweight or obese, underweight, and the results of all physical fitness tests should be investigated to examine the most important indicators.
- The association among physical activity, all components of physical fitness, physical health, and psychological health should be investigated, both in short-term and long-term studies.
- The effect of engaging in organized or unorganized sport on physical fitness should be explored.
- The studies on the effect of changes in physical activity and physical fitness on physical and psychological health and academic achievement may be used to promote the awareness of physical activity in parents and educators.





Benchmark

1. The proportion of family members who facilitate physical activity opportunities for their children.
2. The proportion of family members who are physically active with their kids.
3. The proportion of children and youth with friends and peers who encourage and support them to be physically active.

Rationale

- We were unable to find any study on Family and Peer with nationally representative data.

Research Gaps

- The attitude toward physical activity, and the time spent with their children engaging in physical activity in family members, especially parents, is required to provide the evidence for family support.
- The research on the proportion of friends and peers who are active and the level of physical activity is needed. The friends and peers may have to be classified according to the closeness in friendship or on-line and off-line.
- The methods of grouping physically active children with their inactive friends can be used to experimentally investigate the peer effect on physical activity in children and youth.





Benchmark

1. The proportion of schools with active school policies.
2. The proportion of schools where most students are offered the mandated 2 physical education classes per week.
3. The proportion of schools where most students are taught by physical education specialists.
4. The proportion of schools that offer physical activity opportunities (excluding physical education) to most of their students.
5. The proportion of schools with students who have regular access to facilities and equipment that support physical activity.

Rationale

- According to Census of School Physical Education, among all elementary, junior high, and senior high schools, 84.3% reported meeting the Sport and Health 150 (SH 150) policy, accumulating at least 150 minutes of physical activity per week at the school, excluding physical education classes in school year 2016-17 [15].
- All schools averaged 1.83-2.01 physical education classes per week [15].
- Among all teachers who taught physical education classes, 48.7% in elementary schools, 93.0% in junior high schools, and 95.2% in senior high schools were certified [15].
- Among all levels of schools, 97.1% of them have basketball courts and 90.1% of them have running tracks [15].
- Most of these facilities, including 94.2% running tracks and 88.0% basketball courts, are freely open to public after the class [15].



Key Findings

- Elementary schools averaged 1.83 physical education classes per week, while junior high schools averaged 2.01 classes and senior high schools averaged 2.00 classes in school year 2016-17 [15].
- Among all levels of schools, 41.2% of them have volleyball courts, 17.3% have soccer fields [15].
- Only 13.7% elementary schools have playground [15].

Research Gaps

- The amount and intensity of physical activity during physical education classes should be monitored to evaluate the effectiveness of such classes.
- The proportion of students who meet the SH150 criteria should be investigated.
- Whether the infrastructure for physical activity is sufficient in schools of different locations should be investigated.
- The quality and safety of infrastructure for physical activity in schools should be examined.
- Research is needed to determine the factors that influence physical activity participation in children while at school.
- The research on physical activity facilities and programs and the level of physical activity in preschools is required.





Community and Built Environment



Benchmark

1. The proportion of residents who perceive their municipality is doing a good job at promoting physical activity.
2. The proportion of municipalities with policies promoting physical activity.
3. The proportion of municipalities with infrastructure specifically geared toward promoting physical activity.
4. The proportion of youth who report having facilities for physical activity available to them in their community.
5. The proportion of youth who are satisfied with facilities for physical activity in their community.

Rationale

- Each local government has certain policies for promoting physical activity, with a small number of them specifically targeting at children and youth.
- A total of 12,270 sport facilities across all counties and cities were included in the database of Sport Administration, Ministry of Education [23].
- Among the 13-17-year-olds, 81.1% of them considered that their neighborhood has sufficient facilities for physical activity with easy access [24].

Key Findings

- According to Opinions toward exercise and sport environment, the residents who aged 13 years and older and had participated in sport or watched sporting events in the previous year gave average satisfaction scores of 2.44 to 3.25, out of 5, to the degree of emphasizing physical activity by their local governments.



The residents gave average scores of 53.6 to 71.1, out of 100, to their local governments in the effort to establish the environment to promote physical activity[25].

- Each local government has certain policies for the promotion of physical activity, with most of them aiming at the overall population and a small number of them specifically targeting at children and youth.
- Cycling has gained significant popularity in recent years as a form of recreation and transportation. It was estimated in 2016 that the total length of cycling paths in Taiwan is 5530 km, spreading across most counties and cities [23].
- According to Exercise Status Survey, among the 13-17 year-olds, 17.2% considered that their neighborhood had very sufficient exercise facilities, 63.9% considered sufficient, while 15.0% felt insufficient and 3.3% felt very insufficient. The facilities have high accessibility as the responders spent an average of 9.6 minutes to reach the exercise facility, with 49.5% of them spending less than 10 minutes and 39.6% spending 10 to 19 minutes. They usually reached the facilities by walking (53.2%) or cycling (40.2%). Among the responders, 7.0% were very satisfied, while 79.6% were satisfied with the facilities [24].
- Overall, most communities have policies to promote physical activity with a sufficient number of facilities.

Research Gaps

- The nationally representative data with the appropriate sampling methodology are needed regarding the satisfaction in the built environment, including quality, accessibility, safety, and adequacy of equipment by children, youth, and their parents.
- The facilities, safety, and accessibility of community parks in promoting physical activity, especially in young children, require further study.



- There is a lack of information regarding the influence of built environment on physical activity behavior in children and adolescents across different regions to provide the evidence for effective strategies to establish active communities.
- The role of community in promoting physical activity in children and youth needs to be further investigated.





Government Strategies and Investments



Benchmark

1. Evidence of leadership and commitment in providing physical activity opportunities for all children and youth.
2. Allocated funds and resources for promoting physical activity for all children and youth.
3. Demonstrated progress through the key stages of public policy making.

Rationale

- The central government has invested significant funds to two major projects toward promoting physical activity: Creating a Sport Island (2010-15) and Sport i (love) Taiwan (2016-21).
- The SH 150 project, implemented in 2014, aims to increase physical activity in the school setting.
- The annual budget for Sport Administration, Ministry of Education, was 8.45 billion NT in 2017, increased by 16% from the previous year. Approximately 20-30% of which was allocated to children and youth.
- Overall, the government has shown leadership and commitment by implementing major projects with increasing, but still insufficient, funding to promote physical activity, while making steady progress in policy for promoting physical activity in children and youth.

Key Findings

- The two major projects toward promoting physical activity, Creating a Sport Island (2010-15) and Sport i (love) Taiwan (2016-21), have significantly improved the infrastructures and quality of events for physical activity across the country.



- The annual budget for Sport Administration, Ministry of Education, despite a 16% increase from the previous year, still accounts for only 0.43% of the total central government budget in 2017.
- Another source of budget for health promotion in youth accounts for 1.95 billion NT from Ministry of Health and Welfare. However, it is unclear how much of that budget is directed toward promoting physical activity.

Research Gaps

- The researches in policy analysis are required to identify their effectiveness in increasing motivations and decreasing barriers for physical activity in children and youth.
- Longitudinal studies on physical activity levels in children and youth are needed to assess the effect of the related policy.
- The comparison of related policy and their effectiveness across nations is required to learn from one another's strength and experience.



Recommendations

Based on the grades and findings, the Research Team recommend the following directions to all stakeholders, including academics, government, communities, media, and family, to increase physical activity in children and youth.



Greater efforts are required by all stakeholders to raise the awareness of the benefits of physical activity to children and youth, including current and future physical and psychological health, cognitive functions, and academic achievement.



Schools and communities should work closely with parents to promote active lifestyles among children and adolescents by encouraging them to participate in more physical activities, such as active play, active transportation and organized sport.



The age- and sex-differences in physical activity behavior should be taken into account in the development and implementation of more effective physical activity interventions and programs.



The age-specific rules should be applied in organized sports for young children to promote and maintain their interest in participation.



Schools and government should allocate sufficient free time, facilities, equipment, and budget to increase the number of sport clubs and sport teams.





The government and communities should encourage organized sport outside the school system by providing sufficient facilities, equipment, funding, and regular opportunity to compete.



Organized sport programs for children and youth within and outside the school system should emphasize on the skill development, promoting the participation, and nurturing positive attitude toward sport and life, while focusing less on the results of competition.



The government and business should support organized sport clubs and programs for children and youth outside the school system by providing free or low-cost facilities, budget, and tax breaks.



As the role model, parents should practice an active lifestyle together with their children, for example, doing physical activity or sports together as a whole family. Parents should also limit their own use of electron devices such as smart phones and tablets, in front of their children.



Family members, especially parents, should support physical activity by volunteering in organized sport, especially the ones in which their children participate.



The physical education classes should improve physical literacy in students by introducing sports and activities that are fun and engaging. The aim is to prepare them for life-long participation in a wide variety of sports and physical activities.





The Ministry of Education should ensure that the physical education curriculum is properly implemented in all schools with continuous evaluation and improvement to support a long-term active lifestyle.



More enjoyable physical activity programs toward different genders and ages should be implemented in schools to reach the goal of SH150 policy.



Sports facilities at school should be well-maintained and made accessible to the public after school hours, especially to organized sport programs outside the school system.



More awareness is needed among the parents and caregivers regarding the physical and social benefits associated with active play, especially in young children.



Parents, caregivers and pre-school authorities should encourage and plan indoor and outdoor active play activities to develop active lifestyle in young children.



The local governments and schools should work together to create a safe and convenient environment for active transportation.



Parents, teachers, children and youth should be educated about the negative effects of excessive screen-based activities. The screen time for non-study purposes should be limited to a maximum of 2 hours a day.





Active and interactive video games can be promoted to replace the sedentary ones with the aim to increase physical activity and reduce sedentary behaviors.



Schools should instruct teachers to insert short periods of physical activity into prolonged hours of study to increase physical activity and learning efficiency in children and youth.



More efficient management policy should be implemented for easier reservation of public sport facilities.



The governments should perform regular checkups for all the public physical activity facilities to ensure the quality and safety.



Playgrounds and parks should provide suitable and sufficient facilities for children of different ages, especially young children, to promote active play.



The community should work together to create an environment for children and youth to safely engage in outdoor physical activity.



More resources should be allocated to maintenance and management of the existing sport facilities, including the built environment and human resources.





The government should focus on providing a large number of safe, adequate, and accessible sport facilities for a wide range of population, rather than allocating most of the budget to a limited number of large and expensive ones that are only available to selected groups.



The public sport facilities should provide adequate and clean support amenities such as shower, toilets, changing rooms, seats with shades, and concession stands.



Priorities for Future Research

Among the aforementioned research gaps, the followings issues warrant higher priority. Researchers could focus on the following issues to enhance the knowledge in establishing effective strategies to promote physical activity in children and youth. The government, non-government organizations, and universities should provide funding resources for the research in these issues.



The longitudinal monitoring of objectively measured physical activity levels and the changes in motivators and barriers toward physical activity in children and youth is necessary.



The studies investigating Active Play and Family and Peer in nationally representative samples are required.



The effect of changes in built environment on changes in physical activity levels in children and youth should be monitored to evaluate their effectiveness.



The effects of physical activity on cognitive function, psychological health, wellbeing, and academic achievements in children and youth require further investigation.



Next Steps

This is the first version of the Taiwan Report Card on Physical Activity for Children and Youth. We are planning to publish the report continuously to examine the changes to each indicator. To do so, we need further funding and are seeking partnerships with individuals or organizations.

Those who may consider providing financial or other support please contact Dr Chen-Kang Chang (wspahn@ntupes.edu.tw) for further information.



Report Card

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