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CONTENT

REPORT CARD DEVELOPMENT TEAM

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Chief Investigator

Razinah Sharif, PhD

Scientific Advisor

John J. Reilly, PhD
University of Strathclyde, Scotland

Research Working Group

Chong Kar Hau, MSc
Hazizi Abu Saad, PhD
Nur Hadiyani binti Zakaria, BSc
Ong Min Li, BSc
Poh Bee Koon, PhD
Wong Jyh Eiin, PhD

Steering Group Committee

Mohd Ismail Noor, PhD (Chair) (Taylor's University)
Chin Yit Siew, PhD (Universiti Putra Malaysia)
Denise Koh Choon Lian, PhD (Universiti Kebangsaan Malaysia)
Mahenderan Appukutty, PhD (Universiti Teknologi MARA)
Norimah A. Karim, PhD (Malaysian Association for the Study of Obesity)
Ruzita Abd Talib, PhD (Universiti Kebangsaan Malaysia)
Sharifah Wajihah Wafa, PhD (Universiti Sultan Zainal Abidin)

Stakeholders Group Committee

Ahmad Taufik Jamil, MPH (Universiti Kebangsaan Malaysia)
Eliza Hafiz, PhD (National Aerobics and Fitness Association)
Gan Wan Ying, PhD (Nutrition Society of Malaysia)
Mohd Zaid bin Mohd Ghazali, BSc (National Sports Institute)
Nur Asmara Diana Abdullah, MEd (Ministry of Education Malaysia)
Saiful Adli bin Suhaimi, MSc (Ministry of Health Malaysia)
Selina Khoo Phaik Lin, PhD (Universiti Malaya)
Yazid bin Abdul Rani, MSc (National Aerobics and Fitness Association)

Design and Production

UKM Cetak Sdn. Bhd.

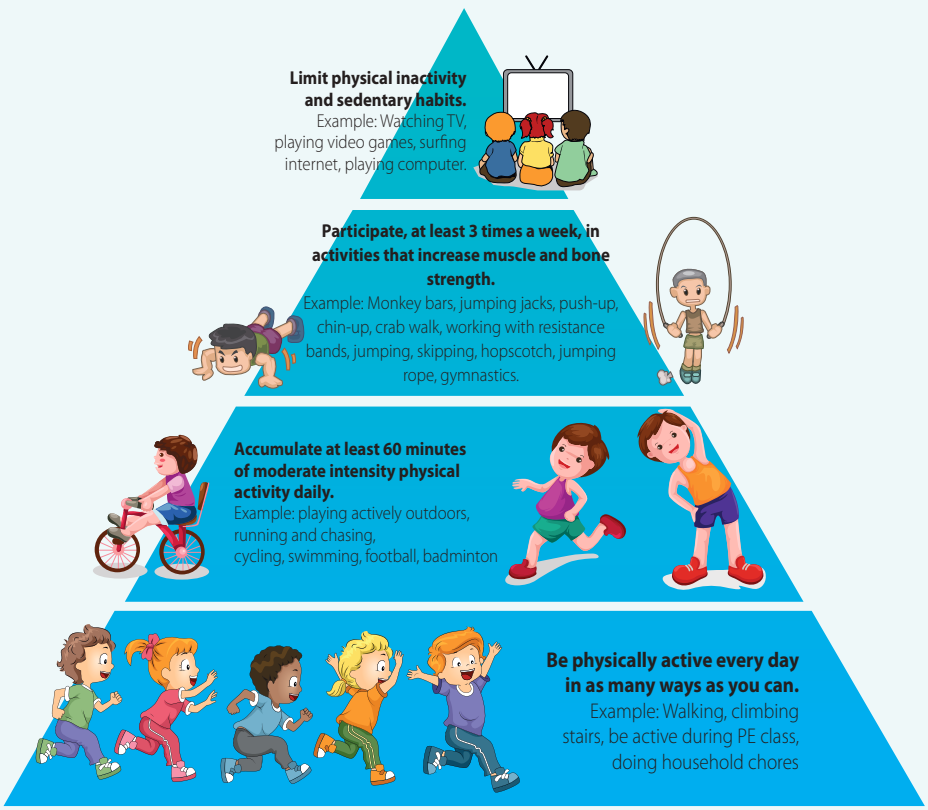
ABOUT MALAYSIA ACTIVE HEALTHY KIDS REPORT CARD 2016

The Active Healthy Kids Report Card was first introduced by Canada[1] in 2005 as an initiative to provide annual evidence-based evaluations of the physical activity-related health behaviours and settings, as well as the national strategies and approaches for physical activity promotion among children and adolescents. The Canadian report card model has attracted global attention for its great success as an advocacy instrument to promote and increase physical activity across multiple settings, such as family, community, and government. In 2014, the Active Healthy Kids Global Alliance (www.activehealthykids.org) was formed with the aims of facilitating and supporting the development of physical activity report card in different countries using harmonised methodology in order to allow for international comparisons. The global network provides a platform for exchange of ideas and promoting collaborations at the global level to tackle the growing issue of physical inactivity among children and adolescents.[2]

The Active Healthy Kids Malaysia development team was established in 2014 as a collaborative effort with the Active Healthy Kids Global Alliance to produce the first Malaysia Active Healthy Kids (MAHK) Report Card. This is the first initiative undertaken to provide a comprehensive, evidence-based assessment of physical activity behaviours at various levels of the socio-ecological model among Malaysian children and adolescents aged 5-17 years. It is anticipated that this report card will provide an updated summary of the current “state of the nation” for physical activity among Malaysian children and adolescents as well as evidence-based recommendations on how to improve their physical activity behaviours. This report card will inform the local researchers of the current research priorities in physical activity among children and adolescent, and more importantly, will increase the exchange of knowledge between researchers and policy makers on developing effective strategies to promote active and healthy lifestyles in the population.

PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOUR RECOMMENDATIONS FOR MALAYSIAN CHILDREN AND ADOLESCENTS

The Malaysian Dietary Guidelines[3,4] have outlined several recommendations for promoting physical activity and limiting sedentary behaviours in the population based on the Physical Activity Pyramid (Figure 1). A summary of these physical activity recommendations is shown in Table 1.



Source: NCCFN (2010)

Figure 1. Physical Activity Pyramid for Malaysian Children and Adolescents
Source: NCCFN (2010)[4] (Reproduced with permission)

Table 1. Summary of the Malaysian physical activity and sedentary behaviour recommendations for children and adolescents

	Physical Activity	Sedentary Behaviour
General recommendations	Children and adolescents should be physically active every day in as many ways as they can.[3]	Children and adolescents should limit physical inactivity and sedentary habits.[3]
Specific recommendations	Toddlers (aged 1-3 years) should accumulate at least 30 minutes a day, while preschoolers (aged 4-6 years) should accumulate 60 minutes a day of structured† physical activity.[4]	Children and adolescents should be discouraged from extended periods of inactivity and should not be sedentary for more than 60 minutes at a time.[3]
	Toddlers (aged 1-3 years) and preschoolers (aged 4-6 years) should engage in a minimum of 60 minutes to several hours per day of unstructured‡ physical activity.[4]	Children and adolescents should limit screen time‖ to not more than two hours a day.[3]
	Children and adolescents should accumulate at least 60 minutes of moderate-intensity§ physical activity daily.[3]	
	Children and adolescents should include muscle and bone strengthening activities as part of their 60 minutes or more daily physical activity for at least three times per week.[3,4]	

[3]Malaysian Dietary Guidelines for Children and Adolescents (NCCFN 2013); [4]Malaysian Dietary Guidelines (NCCFN 2010).
†Structured physical activity refers to physical activity done in a structured or organised environment (such as badminton, football, swimming).
‡Unstructured physical activity refers to physical activity done in free play (e.g. walking, taking the stairs, bike riding)
§Moderate-intensity activity refers to physical activity carried out at 3.0 to 6.0 METs (METs was defined as multiples of the resting rates of oxygen consumption during physical activity)
‖Screen time refers to time spent on watching television, playing video games and using the computer or surfing the internet.

METHODOLOGY AND DATA SOURCES

Stages of Work

The MAHK Report Card 2016 was developed and produced by the Research Working Group (RWG), whose responsibilities involved determining the benchmarks to be used to grade the report card indicators, identifying and assessing the key data sources, gathering and evaluating the available evidence, and assigning grades to each indicator following the Active Healthy Kids Canada Report Card protocol.[1] The proposed grades and supporting evidence by the RWG were then validated by a scientific advisor from the Active Healthy Kids Global Alliance and further reviewed by a Steering Group Committee consisting of local experts in physical activity and health. Following approval by the Steering Group, the proposed grades were presented, discussed, and agreed upon during a consensus meeting held with a Stakeholder group from the government agencies and non-governmental organisations who are actively involved in physical activity promotion. Figure 2 summarizes key stages of work in the development of the Report Card 2016.

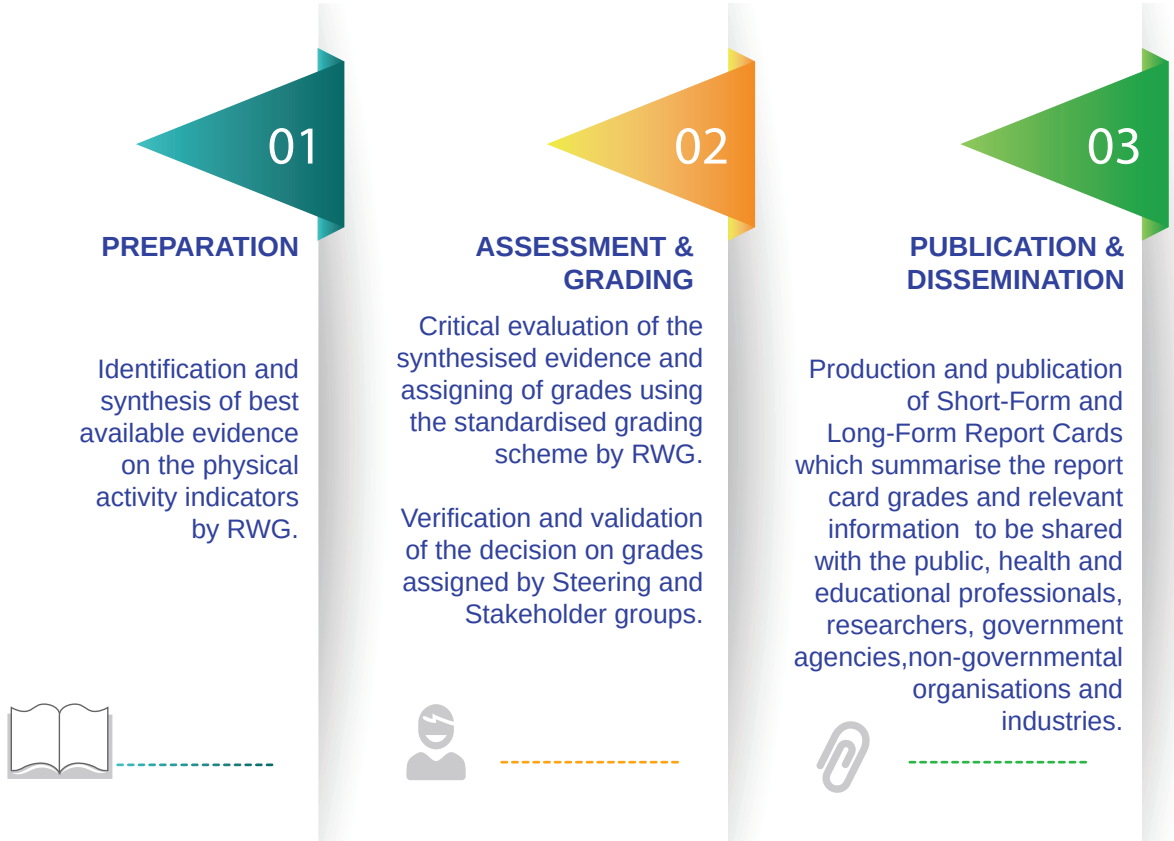


Figure 2. Key stages of developing the Malaysia Active Healthy Kids Report Card 2016

Main Data Sources

The MAHK Report Card 2016 was developed based on the best available evidence synthesised from numerous national surveys and health reports where physical activity and related health behaviours and settings were part of the outcome measures. While all available data were sourced, only studies and reports that fulfilled the following criteria were included as the main data sources for this report card:

01

- The data source must be nationally-based (i.e. representing Malaysian children and adolescents aged 5-17 years)

02

- The sample size obtained must be of at least 500 subjects

03

- The data should be analysed or published from the year 2009 onwards.

These international criteria were set based on the Canadian model,[1] which noted that (1) data used for grading should be from recent national surveys or cohort studies, and (2) the sample size must be large enough to be representative of the whole population. Table 2 summarizes the details of main data sources that are used to inform the grades of the physical activity indicators.

Table 2. Description of the main data sources used to inform the grades of report card indicators

Data source	Descriptions	Study variables	Contribution to indicators (1-11)†
Global School-based Health Survey – Malaysia (GSHS Malaysia 2012)	A school-based survey of the behavioural risk and protective factors in 10 key areas related to the leading causes of morbidity and mortality among Forms 1-5 (aged 13-17 years) in 2012 (n = 25507).[5]	Physically active for at least 60 minutes per day on five or more days during the past seven days[9]	1
Nutrition Survey of Malaysian Children (SEANUTS Malaysia 2010-2011)	A national nutrition survey for children aged 0.5-12 years in 2010-2011 (n =3542).[6] Only findings from those aged 7-12 years were considered.	Usual mode of transportation to and from school[10]	5
		Fulfillment of screen time recommendation[11]	6
		Fulfillment of fruit and vegetable intake recommendation[12]	7
Report on School Sports Infrastructure and Programmes Survey (i-KePS Report 2014)	A survey conducted by the Ministry of Education for assessing the availability of sports infrastructure and programmes at national primary and secondary schools in 2014.[7]	Percentage of schools with a sports field[7]	8
Annual Report of Ministry of Health 2012	An annual report prepared by the Ministry of Health on government policies and initiatives in health promotion and disease prevention.[8]	Data on government strategies and investments in promoting physical activity[8]	11

†Indicators: 1) Overall Physical Activity; 2) Organised Sports and Physical Activity Participation; 3) Physical Education and Physical Activity Participation; 4) Active Play; 5) Active Transportation; 6) Sedentary Behaviour; 7) Diet ; 8) School; 9) Community and the Built Environment; 10) Family and Peer Influence; 11) Government Strategies and Investments.

Grading Scheme

Using the international standardised grading framework,[1] the grade for each indicator was assigned by comparing prevalence of the health behaviour or outcome, obtained from the best available evidence synthesized from the main data sources, against a specific evidence-based recommendation or benchmark.

Following are the definitions of the letter grade:

A	We are succeeding with a large majority of Malaysian children and adolescents (80-100%).
B	We are succeeding with well over half of Malaysian children and adolescents (60-79%).
C	We are succeeding with about half of Malaysian children and adolescents (40-59%).
D	We are succeeding with less than half of Malaysian children and adolescents (20-39%).
F	We are succeeding with very few Malaysian children and adolescents (<20%).
INC	Incomplete Grade, where current Malaysian data were not available or were inadequate to assign a grade.

INDICATOR

The MAHK Report Card 2016 assessed 11 indicators relating to physical activity in children and adolescents that were grouped into four main categories (see Figure 3):

The following sections provide a more detailed description of the grades that were assigned to each indicator, how the grades were assigned, and the recommendations and research gaps based on expert consensus of current evidence. The format of each section is as follows:

The grade - the letter grade (A, B, C, D, F or INC) assigned in the 2016 MAHK Report Card.

Benchmark - this section lists the benchmark used to assign grade for each indicator.

Rationale - this section describes how the assigned grade was allocated based on the best available evidence.

Key Findings - this section describes how the assigned grade was allocated based on the best available evidence.

Other Findings - this section lists published research findings from local studies, other than the main data sources, that are relevant to the primary or secondary benchmarks of an indicator.

Recommendations - this section provides evidence-based recommendations for improving the future grade, based on discussions among the RWG and Steering Group Committee.

Research Gaps - this section lists the high-priority gaps in current literatures that need to be addressed to better inform the grade in the future.

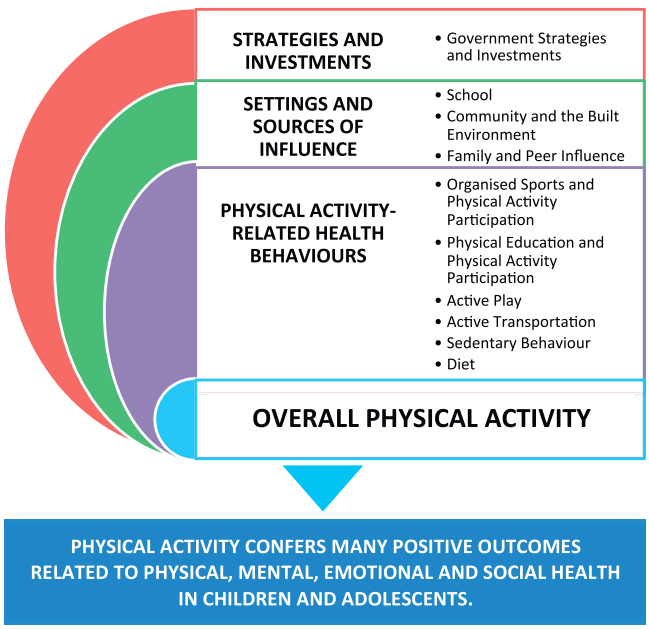


Figure 3. Summary of indicators for Malaysia Active Healthy Kids Report Card 2016

Adapted from Active Healthy Kids Canada 2013 Report Card on Physical Activity for Children and Youth.[13]

OVERALL PHYSICAL ACTIVITY D

Benchmark

The proportion of children and adolescents being physically active for at least 60 minutes per day on five or more days in a week.

Rationale

Overall Physical Activity was assigned a grade of D because less than one quarter of the secondary school adolescents self-reported that they were physically active for a total of at least 60 minutes per day on five or more days per week.[9] The available data on physical activity among children[11,14,15] were not included in the grading system as they focused on ranking physical activity participation rather than quantifying the total time spent doing physical activity per day. Nevertheless, it is important to note that the data used to grade this indicator was not specific with regards to the intensity of the activities as recommended by the guidelines, that is, accumulating at least 60 minutes of moderate-intensity physical activity daily.[3]

Key Findings

Only 22.8% of Malaysian adolescents (21.7% for 13-15 years; 24.5% for 16-17 years) were physically active for at least 60 minutes per day on five or more days in a week.[9]

Other Findings

- SEANUTS Malaysia study reported that children aged 7-12 years walked 9023 steps per day.[11] Only 15.2% of them (14.9% boys; 15.6% girls) met the recommended daily step counts (boys: 13000 steps; girls: 11000 steps), which has been suggested to be representative of 60 minutes of moderate-to-vigorous intensity physical activity daily in children.[16]
- Findings from the Malaysian School-Based Nutrition Survey 2012[15] and MyBreakfast Study 2013[14] also showed that 42.7-65.2% of children and adolescents aged 6-17 years were categorized as having moderate to high physical activity levels.
- The Malaysian Adolescent Health Risk Behaviour (MyAHRB) study conducted in 2013 found that, on average, the older adolescents aged 16-17 years were physically active on 2.8 days per week.[17]
- Older children and girls consistently reported lower physical activity levels than their younger and male counterparts.[10,14,15]

Recommendations

- Greater efforts are required to raise awareness of the health-related benefits of physical activity to children and adolescents. These are not just limited to physical health and fitness but also mental health and cognitive development that are closely associated with academic achievement and future personal health.

- 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 organised sports.

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

Research Gaps

- Nationally representative data using objective measures are needed to better quantify habitual physical activity levels and patterns.

- Continuous monitoring and evaluation through annual health surveillance are important to assess changes and trends in physical activity behaviour in children and adolescents.

- More studies are needed to explore the motivation and barriers for Malaysian children and adolescents to engage in physical activities in daily life.

ORGANISED SPORTS AND PHYSICAL ACTIVITY PARTICIPATION

INC

Benchmark

The proportion of children and adolescents who participate in organised sports and/or physical activity programmes.

Rationale

An Incomplete (INC) grade was assigned to Organised Sports and Physical Activity Participation indicator as the available data were limited. The only data available indicates involvement in class competitions but does not represent regularity of participation.

Other Findings

- According to the report on evaluating the impact of the implementation of "One Student One Sport" policy,[18] 85% of the students have represented their clubs in class competitions at school.
- SEANUTS Malaysia reported that among primary school children, the frequency of participation in organised or structured physical activity as expressed in scores was higher among boys, older children and those categorised as having higher overall physical activity levels.[10]

Recommendations

- Students should be equipped with knowledge and skills needed to participate in organised sports and physical activity programmes.
- Introducing sports and activities that are fun, engaging and safe through the sport clubs may help foster positive attitudes toward and encourage regular involvement in organised sports or physical activity programmes.
- Education and sports departments should work closely with the school authorities to ensure that there are adequate resources/facilities and time allocation to support organised sports participation among students.

Research Gaps

- Children's and adolescents' participation in organised sports and physical activity programmes, both inside and outside of school should be assessed on a regular basis.
- In order to promote participation in organised sports, research on factors affecting children's and adolescents' involvement in organised sports is required.
- Critical evaluation on the characteristics and skill requirements of different sports, such as intensity, duration and skills/techniques, is important in helping children to develop confidence and competence needed to engage in age- and ability-appropriate sports.
- Evidence on how the different forms of participation in organised sports or physical activity (frequency, intensity, types and duration) contribute to the overall physical activity levels is needed to further highlight the importance of organised sports participation in helping to achieve the recommended physical activity levels.

PHYSICAL EDUCATION AND PHYSICAL ACTIVITY PARTICIPATION

INC

Benchmark

- The proportion of children and adolescents who participate in one lesson of Physical Education* (not including school sport) every week.
- The proportion of children and adolescents who actively participate during every Physical Education lesson.
- The proportion of children and adolescents who are physically active during recess or lunch time.

**In Malaysia, the mandated time allocations are 30 minutes each for 84 lessons per year for Standard 1 to 3; 30 minutes each for 60 lessons per year for Standard 4 to 6; and 40 minutes each for 60 lessons per year for Form 1 to Form 5.*[19]

Rationale

An Incomplete (INC) grade was assigned to the Physical Education and Physical Activity Participation indicator because the national data available on the proportion of children and adolescents who participate in one lesson of Physical Education (not including school sports) every week was not considered eligible for grading due to a high proportion of invalid responses.[17,20]

Other Findings

- Data from GSHS 2012 showed that 42.2% of the secondary school adolescents reported that they attend Physical Education lesson once a week;[20] while the Malaysian Adolescent Health Risk Behaviour (MyAHRB) study conducted in 2013 reported that the adolescent population attended Physical Education lesson approximately once a week on average.[17]

- SEANUTS Malaysia reported that only 38.7% of primary school children reported that they were “always active” during Physical Education lesson.[10]

- In the Malaysian Health and Adolescents longitudinal Research Team (MyHeART) study, approximately 21.2% of the adolescents reported that they were “always active” during Physical Education lessons, while less than one-fifth of them were active (e.g. ran or played a little bit/ran around or played quite a bit/ran or played hard most of the time) during recess (15.1%) or lunch time (14.2%).[21]

- Several challenges that hinder the full implementation of the Physical Education programmes at schools have been identified. These include the lack of qualified Physical Education teachers, teaching of other examination subjects during Physical Education lessons, and the lack of facilities and equipment.[22]

Recommendations

- In view of the importance of participation in Physical Education lesson on improving daily physical activity and health-related fitness levels,[17,23] the Ministry of Education should ensure that the planned programmes are properly implemented in all schools.

- The Physical Education lessons should be continually monitored, evaluated and improvised by considering the needs of students of diverse age groups and background in order to increase their participation rates.

Research Gaps

- There is a need to evaluate the quality of the current Physical Education programmes conducted at all schools, such as teaching style of the Physical Education teachers, participation rate of students - in order to get a better understanding of the strengths and weaknesses of the programmes delivered.

- Studies on identifying the determinants or motivators towards participation in Physical Education lessons among students are important to support effective curriculum planning, development, and delivery.

ACTIVE PLAY INC

Benchmark

The proportion of children and adolescents who participate in unstructured and unorganised active play.

Rationale

An Incomplete (INC) grade was assigned to Active Play indicator as there is no universal definition of active play and defined benchmarks or guidelines available for active play recommendation. Besides, data is only available for preschoolers aged 4-6 years,[24] which does not fully represent the broad age range of children and adolescents.

Other Findings

- SEANUTS Malaysia reported that Malaysian preschoolers aged 4-6 years spent an average of 2.2 hours in active play per day, with nearly half of them (40.2%) playing actively for more than 2 hours a day.[24]
- Analyses of sociodemographic patterns found that boys spent more time than girls on active play (2.5 hours vs 1.8 hours). However, no differences were observed between areas of residence, ethnic groups, household income categories and parental education levels.[24]
- The majority of parents reported children's enjoyment of active games (47.7%) and the availability of playgrounds (35.0%) as the main motivators that encourage their young children to play actively.[24]

Recommendations

- There is a need to create more awareness among the parents and caregivers about the physical and social benefits associated with active play, which are different from organised sports.
- Parents should encourage their children to play actively, and should refrain from discouraging their children participating in active play.
- Parents, caregivers and school authorities should encourage and plan indoor and outdoor active play games and activities to develop habits of active play every day among children and adolescents.

Research Gaps

- There is a need for a clear and universal definition of active play in order to encourage, promote and facilitate research activities in this area.
- Given the sporadic nature of active play, particularly among young children, it is important to establish reliable methods/instruments to capture all activities accurately and objectively.
- More studies are needed to explore the involvement of Malaysian children and adolescents in active play in order to provide solid information for developing appropriate and effective strategies, approaches and guidelines to promote active play among the childhood population.

ACTIVE TRANSPORTATION D

Benchmark

The proportion of children and adolescents using active transportation* at least part of the way to and/or from school on at least one of the past five school days.

**Active transportation is defined as any form of human-powered transportation (e.g. walking, cycling).*[25]

Rationale

Active Transportation was assigned a grade of D as data shows that only about one-fifth of the primary school children reported using active transportation (walking or cycling) at least part of the way to and/or from school on at least one of the five school days.[10] While there is national data on active transportation use for adolescents,[20] it was not considered in the grading process due to a high proportion of invalid responses in the study.

Key Findings

Only 24.6% of the children reported cycling or walking as their usual mode of transportation to and from school.[10]

Other Findings

- Data from GSHS 2012 reported that 53.1% of the secondary school adolescents walked or cycled to or from school on at least one day in a week.[20] However, nearly half of this proportion (22.2%) reported the frequency of more than five days, which is considered invalid given that there are only five schooling days per week in Malaysia.
- Two studies conducted in Selangor revealed that only a small proportion of parents allowed their children to walk (3.6-28.3%) or cycle (11.0-23.2%) to school.[26,27]
- In terms of parental awareness on the importance of walking and cycling to school,[27] all parents agreed that walking and cycling are healthy practices and 90% of them agreed that active commutes to school could reduce obesity among children. However, the majority of them also perceived that walking and cycling to school could expose their children to the dangers or crime (99%) or traffic hazards (96%).

Recommendations

- Multi-sectoral policies and strategies on creating safe and supportive built environment, such as greater provision of sidewalks and bike lanes, lower speed limits, and placing crossing guards near schools are needed to further promote and encourage active transportation among children and adolescents.

- Government should consider adopting good examples of initiatives and policies on creating suitable, safe environment that facilitate walking and cycling activities from other countries, such as Australia[28] and the United States.[29]

Research Gaps

- There is a dearth of literature on how mode of transportation contributes to overall physical activity of Malaysian children and adolescents.

- Further research is needed to identify built environment characteristics that facilitate or motivate the population to engage more in active transportation whenever it is possible.

SEDENTARY BEHAVIOUR D

Benchmark

The proportion of children and adolescents who meet the recommended two hours or less of screen time per day.[3]

Sedentary behaviour can be defined as "a state when body movement is minimal and energy expenditure approximates resting metabolic rate".[30] It represents more than an absence of activity, which refers also to participation in physically passive behaviours such as television viewing, reading, sitting in a car/bus and etc.[31] However, given that most research to date has focused primarily on screen-based behaviours, the benchmark used for grading the sedentary behaviour indicator was, therefore, based on screen time recommendations.[3]

Rationale

Sedentary Behaviour indicator was assigned a grade of D as only one-third of children aged 7-12 years reportedly met the recommended screen time of two hours or less a day.11 The available data on adolescent population20 did not specifically describe the total time spent on doing screen-based activities, and hence, was not eligible for the grading.

Key Findings

Approximately 31.6% of primary school children met the screen time recommendation,[11] that is, not more than two hours a day.[3]

Other Findings

- The GSHS 2012 study revealed that 52.7% of Malaysian adolescents spent two hours or less per day doing sitting activities, which include sitting and watching television, playing computer games, talking with friends.[20]
- As reported by SEANUTS Malaysia, preschoolers spent on average 1.5 hours in front of screens daily, with 73.0% of them meeting the two-hours or less screen time recommendation.[24]
- In a study conducted in Kuala Lumpur, primary school children reportedly spent an average of 1.6 hours and 3.0 hours each day on internet surfing and television viewing, respectively. About 47.5% spent three hours or more watching television daily.[32]
- Another study conducted among adolescents aged 12-19 years in Kelantan reported that, on average, they spent 3.5 hours a day on screen-based sedentary behaviours.[33]

- Sedentary behaviour, primarily assessed as time spent in screen-based activities, was positively associated with adiposity levels and obesity risks among children11 and adolescents.[33]

Recommendations

- Parents, children and adolescents should be informed or educated about the negative effects of excessive screen-based activities, which may contribute to high levels of sedentary behaviours among children and adolescents.

- Parents and caregivers should be encouraged to limit their children's screen time to a maximum of two hours a day.

- If children are inclined towards playing electronic games, parents can encourage them to play active and interactive video games rather than sedentary ones.

- School educators should provide opportunities to break prolonged sedentary hours during school time, for example by incorporating physical activity breaks into existing classroom activities. The effectiveness of such strategies should be examined.

Research Gaps

- As sedentary behaviour consists of low energy-cost activities occurring during leisure time or school, more research is needed to evaluate sedentary behaviours of children and adolescents comprehensively across all domains.

- There is an increasing trend of using smartphone and tablet computers among children and adolescents. Therefore, the assessment of screen-based activities should also capture time spent on using these mobile devices.

- More quality evidence from studies with robust research designs and methods are needed to better understand how sedentary behaviour influences overall health status of children and adolescents, independent of their overall physical activity levels.

DIET D

Benchmark

The proportion of children and adolescents eating adequate amounts of fruits and vegetables every day. Children aged under 7 years are recommended to eat two servings of fruits and two servings of vegetables daily; children aged 7-18 years are recommended to eat two servings of fruits and three servings of vegetables daily.[3]

Fruits and vegetables intake was chosen as the benchmark to grade the Diet indicator as there is currently a lack of a single, summary measure of overall diet for the Malaysian population. Moreover, fruits and vegetables intake has been broadly used as an indicator of healthy eating globally, and has been previously shown to be associated with physical activity and sedentary behaviour in children and adolescents.[34,35] In addition, there are clear and widely-accepted recommendations for this eating behaviour.

Rationale

Diet was assigned a grade of F as less than one-fifth of primary school children reported achieving the recommended daily intake of fruits and vegetables.[12] Although national data of fruits and vegetables intake in adolescents was available,[20] it provides only the estimates of consumption frequency without assessing the amount consumed per intake, and hence it was not included in the grading.

Key Findings

Only a small proportion of primary school children met the dietary guidelines[3] of eating two servings of fruits (aged 7-9 years: 13.4%; aged 10-12 years: 19.6%) and three servings of vegetables daily (aged 7-9 years: 9.5%; aged 10-12 years: 16.1%). The compliance rates were higher among older children than younger children for both fruits and vegetables intake.[12]

Other Findings

- Data from GSHS Malaysia showed that nearly half of the secondary school adolescents usually eat fruits two or more times per day (44%), whereas less than one-third of the population eat vegetables three or more times per day (29.8%).[20]
- Two small-scale local studies also reported a moderate prevalence of daily consumption of fruits and vegetables among preschoolers aged 4-6 years, ranging from 27.5% to 40.6% for fruits intake and 37.6% to 46.9% for vegetables intake.[36,37]
- Children from low-income families were consistently found to have the lowest consumption of fruits and vegetables (amount of servings consumed or frequency of consumption) in comparison to children from middle- and high-income families.[36,38]

Recommendations

- Parents play an important role in shaping their children's eating behaviour. In addition to increasing the availability and accessibility of fruits and vegetables at home, parents should also increase their own consumption to model good eating behaviours to their children.

- Government and school authorities should work closely with school canteen operators to create supportive environment for fruits and vegetables consumption at schools. It is important to make fresh fruits and vegetables affordable, and as accessible core food at school canteen and in school feeding programmes, such as *Rancangan Makanan Tambahan.*

- More collaborative efforts between parents, government and relevant stakeholders (e.g. food industry, media) are required to change the children and adolescents' eating habits and their perceptions about fruits and vegetables. For example, branding fruits and vegetables as delicious and refreshing rather than as healthy foods and promoting their health benefits rather than focusing on the health consequences of not eating them.

- More effective, strategic approaches on ensuring the accessibility and affordability of fresh fruits and vegetables, particularly among the low-income families, are needed in order to promote regular fruits and vegetables intake as part of their daily diet.

Research Gaps

- Identifying the determinants of fruits and vegetables intake using a multilevel approach is important for development of effective, evidence-based national policy or programmes to promote fruits and vegetables consumption among children and adolescents.

- Annual evaluations of fruits and vegetables intake using valid and reliable assessment tool at the national level are required to monitor children and adolescents' adherence to dietary recommendations.

SCHOOL B

Benchmark

The proportion of schools that have access to a gymnasium (or indoor play space)/outside sports field/hard court/playground/sports equipment.

Rationale

The School indicator was assigned a grade of B as it was estimated that over half of national primary and secondary schools in Malaysia have sports fields.[7]

Key Findings

About 74.5% of the national primary and secondary schools in Malaysia have sports fields.[7]

Other Findings

Based on the report evaluating the impact of the implementation of "One Student One Sport" policy, approximately 77% of students reported that they had access to sports equipment.[18]

Recommendations

- Sports facilities at school should be well maintained and made accessible to students during and after school hours.
- Government should take into consideration the geographical differences and the number of students when allocating resources for sports facilities.

Research Gaps

- Studies need to be carried out to determine the usability of the sport facilities in schools.
- Research is needed to determine the factors that influence physical activity participation of the children while at school.
- There is currently a lack of surveys into preschool physical activity facilities and programmes which is important for assessing physical activity level of preschoolers at school.


01
8

COMMUNITY AND THE BUILT ENVIRONMENT INC

Benchmark

- The proportion of children and adolescents living in a neighbourhood with at least one park or playground area.
- The proportion of children or parents who report having well-maintained facilities, parks and playgrounds in their community.
- The proportion of parents who prevent their children from being physically active outdoors in their community, on their own or with friends, because of safety concerns.

Rationale

An Incomplete (INC) grade was assigned to the Community and the Built Environment indicator given the lack of available national data to assess the relevant benchmark. In addition, existing data covers only certain geographical areas and does not represent the full age range of children and adolescents as defined in this report card.

Other Findings

- Findings from the SEANUTS Malaysia showed that concerns about children's safety, such as fear of injury and parental fear of kidnapping, was the major barrier to active play among preschoolers. House area, which includes indoor and outdoor areas within a house compound, was reported as the place where the majority of preschoolers (84.1%) usually play actively.[24]
- More than half of adolescents (58.6-63.3%) from Selangor reported that they have access to recreational areas/parks located near their homes.[39,40]
- A study conducted in Negeri Sembilan reported that 85.8% of primary school children agreed that the physical activity facilities were well-maintained in their community. However, more than 30% of parents expressed that their neighbourhoods were not safe for their children to engage in outdoor physical activities (e.g. heavy traffic, limited number of crosswalks, high crime rates).[41]
- Multiple built environment attributes, such as aesthetics quality, pedestrian infrastructure, access and proximity to facilities, safety and threats, have been shown to support or influence children's and adolescents' physical activity and playground/park usage.[42-44]

Recommendations

- As parental concerns on safety are the primary barriers to active play, identifying and promoting safe outdoor spaces for active play is important.
- Parents and caregivers should make efforts to create and promote a safe home environment to support physical activity in young children as the house area is the place where they usually play actively.
- The community should come together to create a safe outdoor environment where the children can play actively and safely.
- Future playground/park area and recreational facilities designs should take into account not only the supportive built environment characteristics but also the needs of children of diverse age groups or backgrounds in order to create a suitable environment for them to engage in outdoor play activities.

Research Gaps

- There is a lack of information regarding the quality of the physical built environment in communities across the country, such as the availability and accessibility of play areas or recreational parks, the adequacy of exercise facilities and equipment, and their levels of cleanliness or maintenance.
- More large-scale studies evaluating the influence of community and built environment on physical activity behaviours of the children and adolescents are needed to provide solid evidence for supporting strategic actions on creating healthier and more active living environment.

FAMILY AND PEER INFLUENCE INC

Benchmark

- The proportion of parents meeting the recommended physical activity guidelines: adults should accumulate at least 30 minutes of moderate-intensity physical activity on at least five to six days a week, preferably daily.[4]
- The proportion of children and adolescents with at least one screen-based device in their bedroom.
- The proportion of children and adolescents who are physically active together with their parents or friends/peers.

Rationale

An Incomplete (INC) grade was assigned to the Family and Peer Influence indicator because there is currently no national data available for the relevant benchmarks. While data on physical activity of Malaysian adults[45] are available; it was not possible to identify the proportion of parents who met the physical activity guidelines.

Other Findings

- According to the National Health and Morbidity Survey 2011, about 66.5% of Malaysian adults aged 18 years and above were physically active, that is, accumulated at least 30 minutes of moderate-intensity physical activity per day on five or more days a week.[45] However, the proportion of parents were not reported.
- The report on evaluating the impact of the implementation of “One Student One Sport” policy showed that the majority of parents participated in physical activity with their children during weekends (78%) and provided support to their children to play sports at schools (90%).[18]
- About 20.9% of children from Kuala Lumpur[32] and 19.3% of the adolescents from Sarawak[46] reported having at least one television in their bedroom.
- In a study conducted in Selangor, it was found that more adolescents reported that they preferred to do physical activity with their friends (32.6%) than with the members of their family (11.9%). Approximately 38.3% claimed that their family members were not physically active.[39]

Recommendations

- As role models, parents should be encouraged to practice an active lifestyle together with their children, for example, doing physical activity or sports together as a whole family.
- Parents should encourage and support their children to engage in active outdoor play or sports activities by providing appropriate facilities and equipment, and to limit their usage of electronic gadgets, such as smartphones and tablets, whenever possible.

Research Gaps

- Evaluation on physical activity behaviours of both children and their family members through dyadic research are needed to provide more quality evidence of the extent and influence of family support on physical activity participation among children and adolescents.
- Future physical activity interventions should consider incorporating peer-based strategies to improve children's and adolescents' participation in physical activity.

GOVERNMENT STRATEGIES AND INVESTMENTS B

Benchmark

Allocated resources for the implementation of physical activity promotion strategies and initiatives for all children and adolescents.

Rationale

Grade B was assigned to the Government Strategies and Investments indicator. This is based on a critical evaluation by the RWG and Steering Group Committee on the many government policies and initiatives aiming at promoting active healthy lifestyle in children and adolescents that have been implemented since year 2009.[8] It is worth noting that although the government has invested in many programmes to promote physical activity, their implementations have not been subject to any systematic evaluation and hence the effectiveness of these approaches remains largely unknown.

Key Findings

The following are the government policies and initiatives considered by the RWG and Steering Group Committee when assigning the grade:

- **Health policies**
  - Although there is currently no specific policy for physical activity in Malaysia, the government has incorporated various strategies to promote physical activity of children and adolescents in the national policies and strategies, including the National Sports Policy[47] and the "One Student One Sport" policy.[48]

    a) The National Sports Policy was established in year 2009 with the primary goal of creating a sport culture among Malaysians. This encompasses participation in sports and physical activities through Sports for All, High Performance Sports and Sports as an Industry. This policy outlines the objectives, strategies, roles and responsibilities of each government agency, non-governmental organisations, sports and fitness councils or associations, institutions of higher learning as well as bodies and individuals involved in sports.[47]

    b) The "One Student One Sport" policy was developed specifically targeted for school children and adolescents and was introduced to the Malaysian education system in year 2011. This policy makes it compulsory for every student to participate in at least one type of sports conducted in a planned and systematic way at school. The short- and long-term objectives of this policy include: to improve physical fitness, to build self-esteem, to foster racial unity, to develop sports culture, to fulfill children's natural affinity to be physically active, to provide a balance between academics and physical fitness, and to provide a platform for excellence in sports for all school-going children and adolescents.[48]

- **Physical activity initiatives**
  - Many programmes that aimed to instill active and healthy lifestyles among the population have been implemented and conducted by the Ministry of Health. These include the "10,000 steps a day" campaign introduced in 2009;[49] *Nak Sihat* (Want to be Healthy) campaign launched in 2013;[50] and *Doktor Muda* (Young Doctors) club, a school-based health promotion programme introduced in 2006 at schools as a collaborative effort between Ministry of Health and Ministry of Education.[51]

Recommendations

- Government and the relevant implementing agencies should monitor and evaluate the effectiveness and sustainability of each planned strategy/programme in promoting physical activity among children and adolescents.
- There is a need to develop and implement a national physical activity policy with the primary goal of promoting physical activity participation in the population in order to move our country towards a healthier and more active nation.
- Age-specific, evidence-based guidelines on physical activity and sedentary behaviour are needed to enable the populations to be better informed of the amount, types, and intensity of physical activity needed to acquire health benefits and ways to achieve the recommended levels of physical activity.
- Strong collaborations between government, non-governmental organisations, industries and other relevant stakeholders need to be established and maintained with the aim of creating supportive and suitable environments to increase physical activity participation among the populations.

Research Gaps

- More high quality evidence from large-scale, longitudinal studies examining the physiological, psychological and sociological benefits/effects of physical activity participation and sedentary behaviour in children and adolescents are needed to provide a firm foundation for policy development and public health practices.
- Timely evaluation of all key government strategies and initiatives on promoting physical activity in children and adolescents are important and needed to ensure that resources and funds are allocated accordingly.

SUMMARY OF GRADES

Table 3: Grades for each Indicator in
the Malaysia Active Healthy Kids Report Card 2016

INDICATOR	GRADES
OVERALL PHYSICAL ACTIVITY	D
ORGANISED SPORTS AND PHYSICAL ACTIVITY PARTICIPATION	INC
PHYSICAL EDUCATION AND PHYSICAL ACTIVITY PARTICIPATION	INC
ACTIVE PLAY	INC
ACTIVE TRANSPORTATION	D
SEDENTARY BEHAVIOUR	D
DIET	F
SCHOOL	B
COMMUNITY AND THE BUILT ENVIRONMENT	INC
FAMILY AND PEER INFLUENCE	INC
GOVERNMENT STRATEGIES AND INVESTMENTS	B

Note. The grade for each indicator is based on the percentage of children and adolescents meeting a defined benchmark: A is 80%–100%; B is 60%–79%; C is 40%–59%, D is 20%–39%; F is <20%; INC is incomplete data combined with lack of an evidence-based recommendation.

GENERAL RECOMMENDATIONS FOR ACTION

- Government and professional bodies need to raise public awareness on the importance and benefits of physical activity at population level, especially among the parents and school authorities. Education on ways to increase physical activity and reduce sedentary behaviours should start at an early age, and can be achieved through various approaches including mass media (e.g. print media, electronic media, events, influential individuals, role models, advocates).

- Physical activity programmes and interventions should be inclusive, involving active participation, and taking into consideration the social and cultural needs of children and adolescents from diverse backgrounds. More interventions should be tailored to specific groups including those at high risks for inactive behaviours (e.g. special needs children, girls, older children).

- Multi-sectoral partnerships and collaborations are necessary to create supportive environments for effective implementation of physical activity promotion initiatives and strategies at different levels, such as school, community, and national level. Commitment from government, non-governmental agencies, private sectors, schools, sports associations, local community groups and parents are needed to deliver successful initiatives.

- Government, policy makers and other stakeholders should regularly review and update the existing physical activity strategies and programmes to ensure that they are consistent with the best practice in improving physical activity through multi-disciplinary approaches.

- Continuous monitoring and evaluation on the efficacy, cost-effectiveness, and sustainability of the physical activity interventions, strategies or policies of different sectors, including government, non-governmental organisations and private sectors, are required to ensure better understanding of the extent and quality of their implementations and to identify target areas for future plans of action.

RESEARCH PRIORITIES

- The lack of nationally representative data using standardised, valid methods and evidence-based guidelines for benchmarking in children and adolescents has precluded comprehensive evaluation of physical activity behaviours, particularly in the areas of Organised Sports and Physical Activity Participation, Physical Education and Physical Activity Participation, Active Play, Family and Peer Influence, and Community and the Built Environment.

- Periodic assessment of physical activity of children and adolescents using reliable objective and subjective tools is needed at the national level.

- There is a need for more research into the determinants and barriers for physical activity in children and adolescents across multiple contexts and levels using multilevel analytic approaches. In particular, more research is needed to examine environmental and policy determinants of physical activity among Malaysian children and adolescents.

- Reports on evaluation of physical activity programmes and initiatives by the public and private sectors must be made readily available and easily accessible.

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