



สถาบันพัฒนาสุขภาพอาเซียน

ASEAN INSTITUTE *for*  
HEALTH DEVELOPMENT

**Leisure Time Physical Inactivity and Sedentary  
Behaviour and Lifestyle Correlates among  
Students Aged 13–15 in ASEAN, 2007–2013**

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# Background

- Little information: relationship between physical inactivity, sedentary behaviour and health risk status and behaviour, mental health and protective factors among adolescents in ASEAN.

- Aim of this study:

self-reported leisure time physical inactivity frequency and sedentary behaviour and lifestyle correlates among school children in ASEAN

# Method

- **Secondary analysis: Global School-based Health Survey (GSHS) seven ASEAN (Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand, and Vietnam);**
- A two-stage cluster sample design was used to collect data to represent all students in grades 6, 7, 8, 9, and 10 in each country
- the year of data collection, ranging from 2007 to 2013.

# Measures & analysis

- The Patient-Centred Assessment and Counselling for Exercise Plus Nutrition (PACE+) self-report physical activity measure (used in this study).
- Physical inactivity was defined as obtaining less than 60 min of moderate to vigorous-intensity physical activity per day on at least 5 days per week [4,8].
- “Sedentary” behaviour was defined as spending 3 or more hours per day sitting when not in school or doing homework [2,4]
- Logistic regression was used for the assessment of the impact of explanatory variables for physical inactivity and sedentary behaviour (binary dependent variables) for boys and girls separately.

# Results

Table 2. Details of participating country samples included in the analyses (age 13-15 years only) (N = 30,284).

Study Country	Study Year	Country Income Level [39]	Gross National Income <i>per capita</i> [39] US\$	Urban Population % [40]	Overall Response Rate %	Sample N (13-15 Years)	Male %	13 Years %	14 Years %	15 Years %	Secondary School Gross Enrolment Ratio [41] 2012/13
Cambodia	2013	LI	1020	21	85%	1734	49.1	24.0	38.1	37.9	NA
Indonesia	2007	LMI	3630	53	93%	2867	49.5	33.2	45.2	21.6	83%
Malaysia	2012	UMI	11,120	74	89%	16,095	49.5	33.3	33.6	33.0	71%
Myanmar	2007	LMI	NA	34	95%	1983	50.0	37.1	34.3	28.6	NA
Philippines	2011	LMI	3500	44	82%	3640	48.3	29.9	32.9	37.2	85%
Thailand	2008	UMI	5780	49	93%	2223	49.2	37.1	36.2	26.7	86%
Vietnam	2013	LMI	1890	33	96%	1742	46.6	1.0	47.8	51.2	NA

LI = Low income; LMI = Lower middle income; UMI = Upper middle income; NA = Not available.

Table 3. Prevalence and duration of physical activity and sedentary behaviour among school-going adolescents in ASEAN.

Study Country	Prevalence of Physical Activity			Prevalence of Sedentary Behaviour				Physical Inactivity (<5 Days/Weeks)			Sedentary Behaviour (≥3 h or More)		
	<3 Days	3-4 Days	5-7 Days	<1 h	1-2 h	3-4 h	≥5 h	All	Boys	Girls	All	Boys	Girls
	%	%	%	%	%	%	%	%	%	%	%	%	%
Cambodia	82.4	8.3	9.3	63.7	25.8	6.1	4.4	90.7	89.4	92.0	10.5	11.0	10.0
Indonesia	60.3	15.3	24.4	23.0	43.3	21.6	12.1	75.6	74.0	77.1	33.7	33.0	34.2
Malaysia	59.9	18.4	21.7	23.9	33.3	24.7	18.0	78.3	71.7	84.8 <sup>***</sup>	42.7	41.9	43.5
Myanmar	62.9	11.9	25.2	53.3	36.3	5.7	4.7	74.8	71.9	77.7 <sup>*</sup>	10.5	12.8 <sup>***</sup>	8.2
Philippines	77.8	8.3	13.9	38.5	29.2	16.6	15.7	86.1	85.2	86.9	32.3	29.8	34.6 <sup>*</sup>
Thailand	59.2	16.7	24.1	27.6	32.8	21.6	18.0	75.9	66.7	84.8 <sup>***</sup>	39.6	38.5	40.5
Vietnam	67.8	14.0	18.2	23.4	41.6	23.8	11.2	81.8	76.3	86.8 <sup>***</sup>	35.0	33.8	36.0
All	67.2	13.2	19.6	31.2	35.8	19.5	13.5	80.4	76.5	84.1 <sup>***</sup>	33.0	31.8	34.0 <sup>*</sup>

\*\*\*  $p < 0.001$ ; \*  $p < 0.05$ .

**Table 5.** Associations between physical inactivity prevalence, health behaviour, mental health and protective factor variables in school going adolescents by gender from 7 ASEAN countries.

Variable	Boys		Girls	
	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)
Socio-demographics				
Age in years				
13	1.00	1.00	1.00	
14	0.93 (0.77–1.12)	0.98 (0.82–1.18)	1.12 (0.89–1.40)	
15	0.82 (0.67–0.99) *	0.84 (0.68–1.03)	1.25 (0.97–1.61)	
Hunger				
Never	1.00	1.00	1.00	
Rarely	1.21 (1.03–1.41) *	1.10 (0.93–1.30)	1.06 (0.85–1.31)	
Sometimes/mostly/always	1.58 (1.34–1.86) ***	1.27 (1.05–1.54) *	1.15 (0.97–1.37)	
Country income				
Upper middle income	1.00	1.00	1.00	
Low income/Lower middle income	1.70 (1.45–1.98) ***	1.82 (1.54–2.15) ***	0.94 (0.76–1.16)	
Health risk status and behaviour				
BMI weight status				
Normal weight/Underweight	1.00		1.00	
Overweight or obese	0.99 (0.80–1.22)		0.86 (0.68–1.10)	
Walk/bike to school in the past 7 days				
0	1.00	1.00	1.00	1.00
1–6	0.83 (0.69–0.99) *	0.78 (0.65–0.95) *	0.72 (0.59–0.87) ***	0.71 (0.59–0.86) ***
7	0.63 (0.5–0.75) ***	0.65 (0.53–0.79) ***	0.53 (0.43–0.64) ***	0.55 (0.44–0.67) ***
Attendance of physical education <sup>1</sup>				
0 days/week	1.00	1.00	1.00	1.00
1 day/week	0.25 (0.1–0.37) ***	0.32 (0.20–0.50) ***	0.44 (0.31–0.64) ***	0.54 (0.38–0.79) ***
2 or more days/week	0.19 (0.1–0.29) ***	0.28 (0.17–0.45) ***	0.33 (0.22–0.49) ***	0.48 (0.31–0.75) ***
Sitting ( $\geq 3$ h/day)	0.67 (0.5–0.79) ***	0.70 (0.60–0.82) ***	0.87 (0.74–1.01)	
Fruits (<2 servings) (base = 2 or more servings)	1.38 (1.1–1.59) ***	1.16 (0.97–1.40)	1.16 (0.98–1.37)	
Vegetables (<3 servings) (base = 3 or more servings)	1.45 (1.2–1.68) ***	1.23 (1.01–1.49) *	1.29 (1.09–1.53) **	1.21 (1.02–1.43) *
Bullied	1.20 (1.0–1.43) *	1.03 (0.87–1.22)	1.09 (0.94–1.26)	
Current tobacco use (base = no)	1.12 (0.9–1.37)		1.23 (0.84–1.83)	
Current alcohol use (base = no)	0.97 (0.7–1.21)		1.11 (0.75–1.62)	
Poor mental health				
No close friends (base = yes)	0.95 (0.6–1.35)		1.31 (0.85–2.01)	
Loneliness (base = no)	0.78 (0.6–0.99) *	0.69 (0.52–0.92) **	1.19 (0.89–1.59)	
Suicidal ideation (base = no)	1.10 (0.8–1.42)		1.38 (1.06–1.80) *	1.20 (0.90–1.59)

Table 5. *Cont.*

Variable	Boys		Girls	
	UOR (95% CI)	AOR (95% CI)	UOR (95% CI)	AOR (95% CI)
Protective factors				
School attendance (past 30 days)	0.71 (0.6-0.84) ***	0.84 (0.71-1.00)	0.80 (0.64-0.99) *	0.92 (0.74-1.64)
Peer support in school (mostly/always)	0.51 (0.4-0.58) ***	0.63 (0.53-0.76) ***	0.58 (0.49-0.69) ***	0.70 (0.59-0.82) ***
Parental/guardian supervision (mostly or always)	0.62 (0.5-0.72) ***	0.82 (0.7-0.96) *	0.58 (0.49-0.68) ***	0.75 (0.64-0.89) ***
Parental/guardian connectivity (mostly/always)	0.68 (0.6-0.77) ***	0.90 (0.7-1.05)	0.59 (0.50-0.70) ***	0.75 (0.63-0.90) **
Parental/guardian bonding (mostly/always)	0.60 (0.5-0.69) ***	0.76 (0.6-0.89) ***	0.67 (0.56-0.81) ***	0.94 (0.78-1.13)

<sup>1</sup> Analysis for Cambodia, Malaysia, Philippines and Vietnam only (excluding Indonesia, Myanmar and Thailand) \*\*\*  $p < 0.001$ ; \*\*  $p < 0.01$ ; \*  $p < 0.05$ ; UOR = Unadjusted Odds Ratio; AOR = Adjusted Odds Ratio; CI = Confidence Interval.





# Conclusion

Overall, a high prevalence of leisure time physical inactivity (80.4%, 76.5% in boys and 84.1% in girls) and sedentary behaviour (33.0%)

→ highest (>85%) in Cambodia and the Philippines and the lowest (75-76%) in Indonesia, Myanmar and Thailand.

Several socio-demographic indicators, health risk status and behaviour, poor mental health and protective factors were identified which may help guide physical activity promotion programmes in school-going adolescents in ASEAN

Thank you very much  
ขอบคุณค่ะ

