

Review

Physical Activity Measurement Methodologies: A Systematic Review in the Association of South East Asian Nations (ASEAN)

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Summary

1. Systematic review of the methodologies used to estimate PA in countries within the ASEAN group (10 countries)
2. Distilled amount of PA research within the ASEAN group
3. Offered discussion points & directions for future PA research

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of Malaysia**

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ILSI

Southeast
Asia Region

Funding support for the systematic review



sports



Review

**Physical Activity Measurement Methodologies:
A Systematic Review in the Association of South East
Asian Nations (ASEAN)**

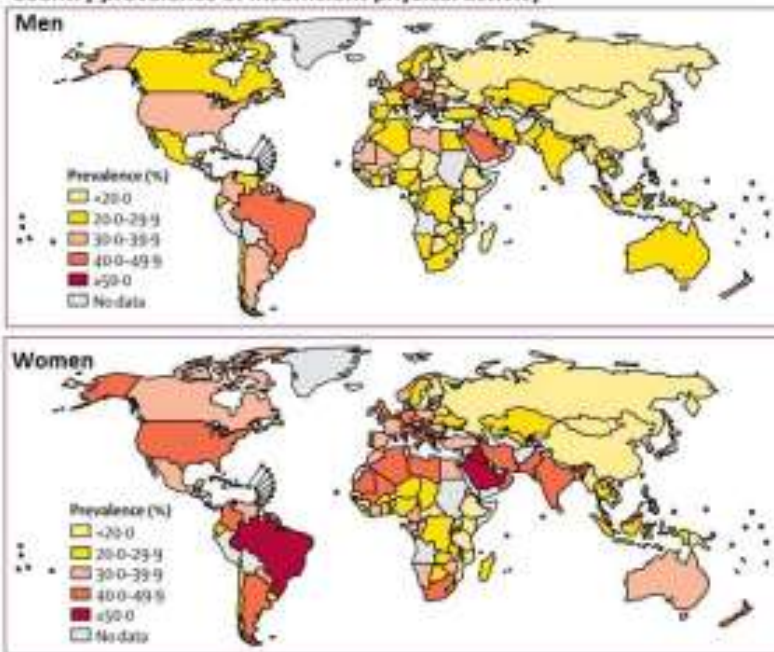
Yi-Shin Lee , John Komar  and Michael Yong Hwa Chia 

My co-authors Lee & Komar for joint work

Background

HI countries have twice the prevalence of physical inactivity (not meeting PA guidelines) than LI countries

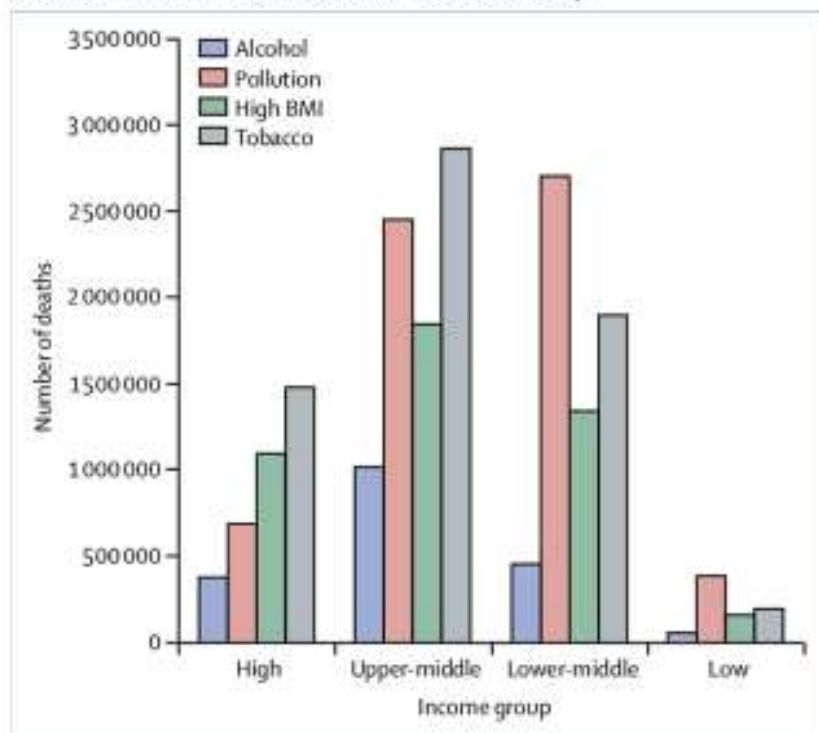
Country prevalence of insufficient physical activity



Guthold et al (2018) Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1.9 million participants. *Lancet Glob Health* 2018; 6: e1077-86

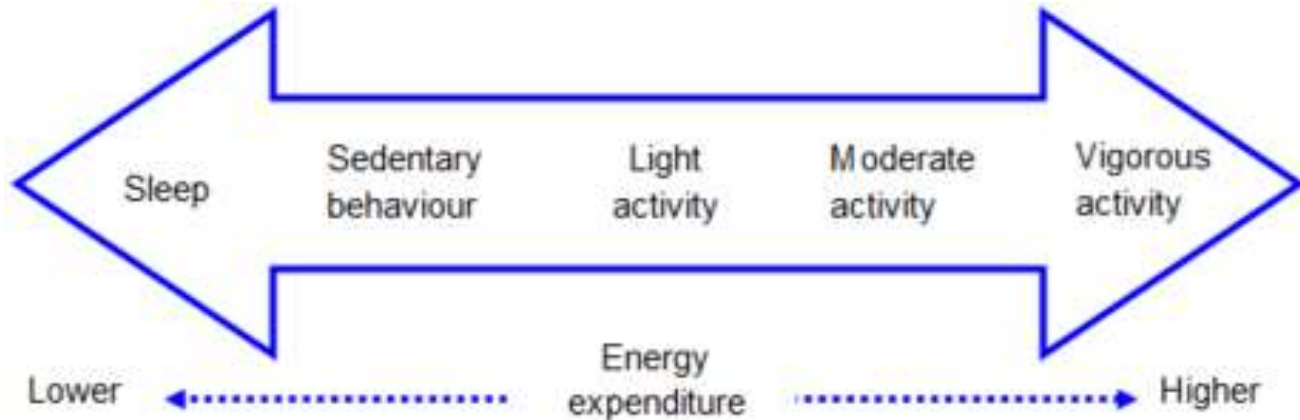
Country income & NCD mortality

Global Burden of Disease 2015 study



Fuller et al (2018). Pollution and non-communicable disease: time to end the neglect. *The Lancet Planetary Health*. 2, e96-e98

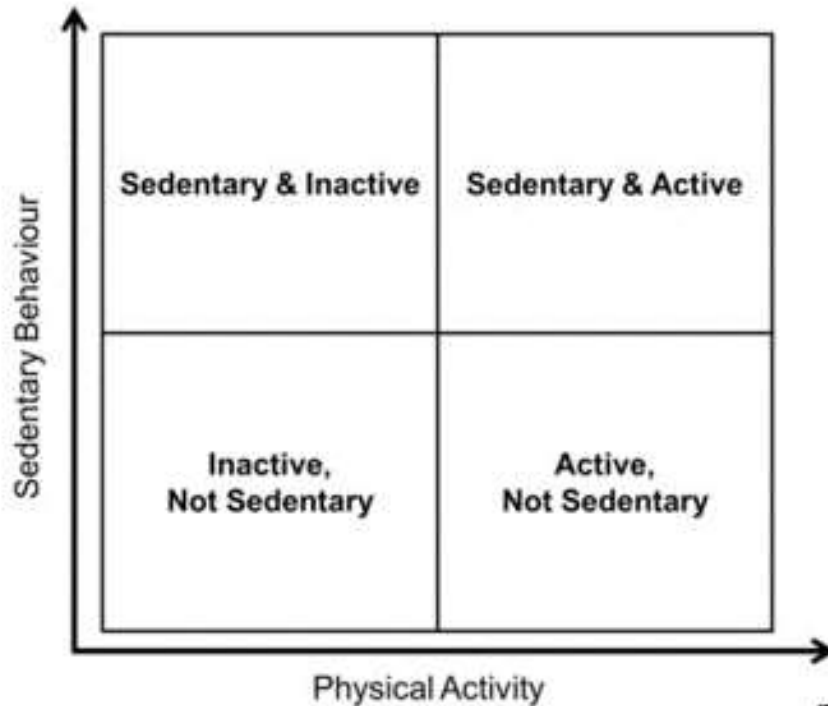
Discerning physical inactivity & sedentary behaviour- they are NOT the same



Google image

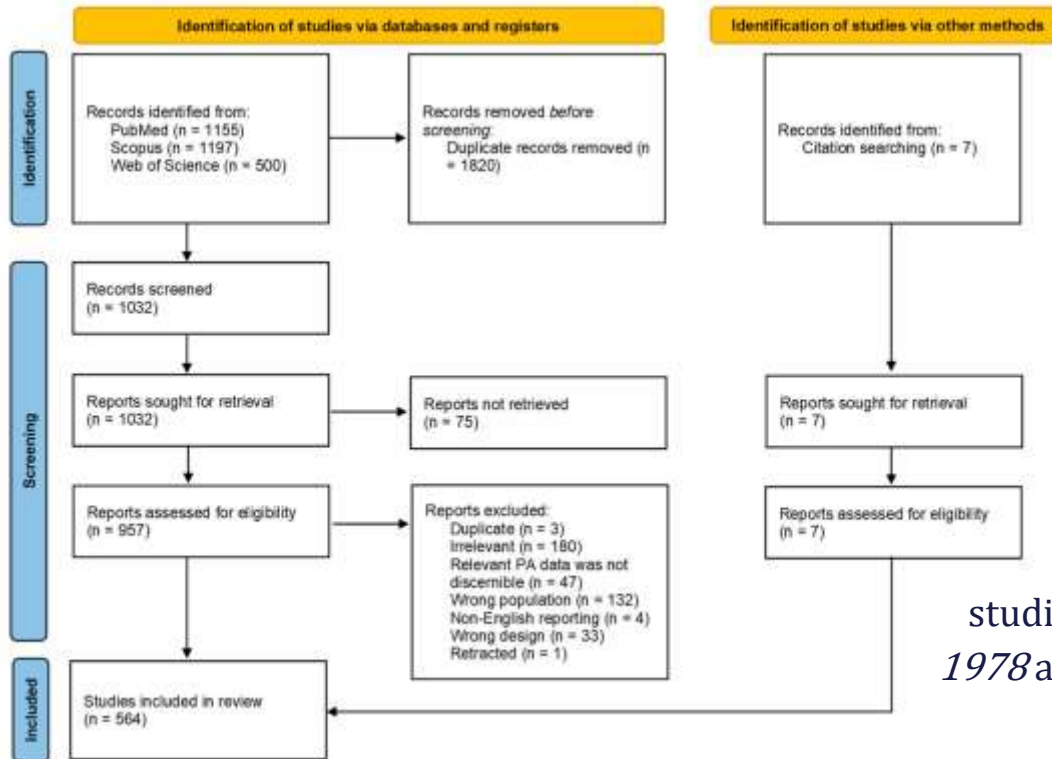
1. Physical inactivity- means *NOT meeting specific PA guidelines for age*
2. Sedentary behaviour means *engaging in activities using low energy of less than 1.5 METs when awake in a lying, sitting or reclining posture*
3. 1 MET is the energy expenditure when sitting quietly at rest

Possible daily routines



Google image

Literature search and selection process



564

studies published between 1978 and 2020 were included

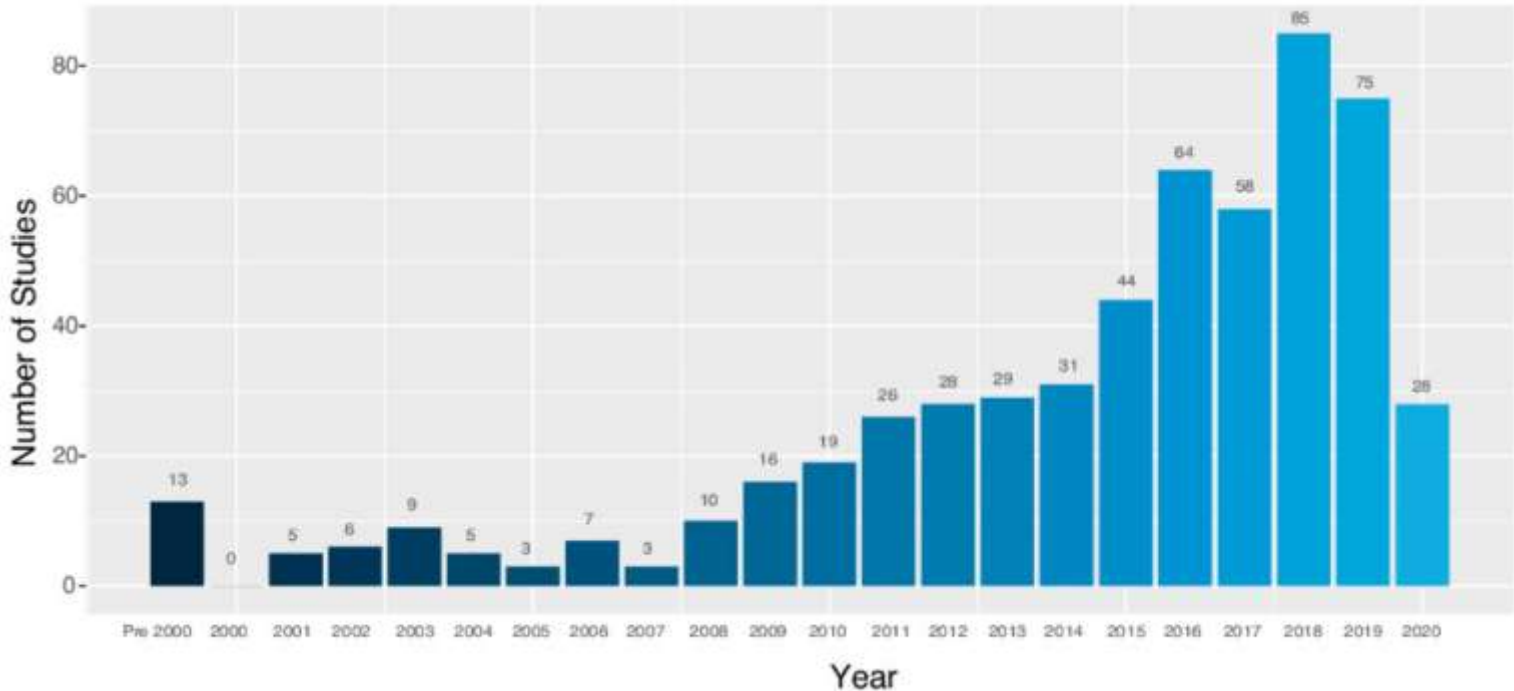
PRISMA inclusion/exclusion processes for the systematic review were used
Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines

ASEAN countries were:

Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand & Vietnam

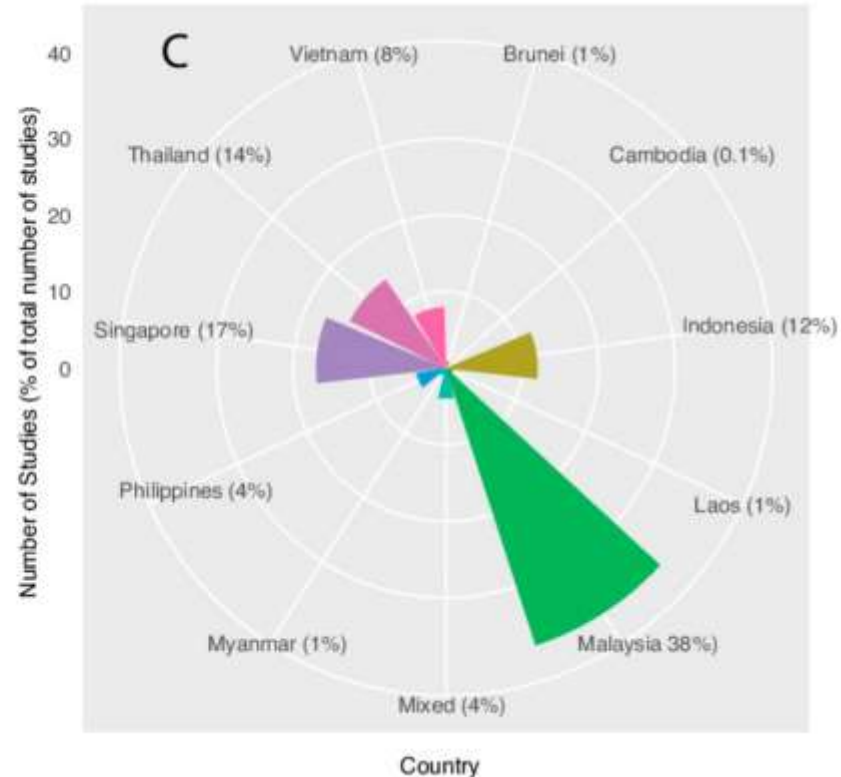
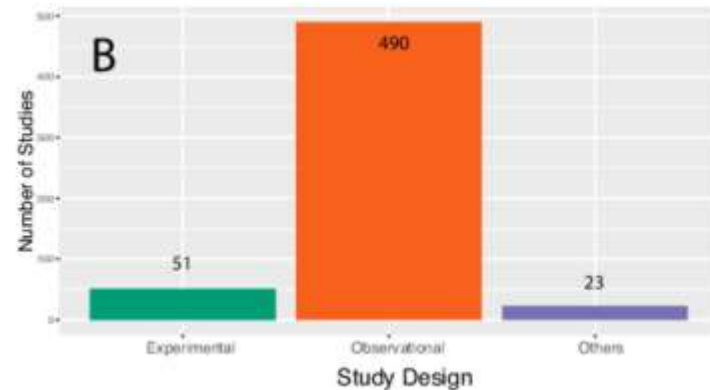
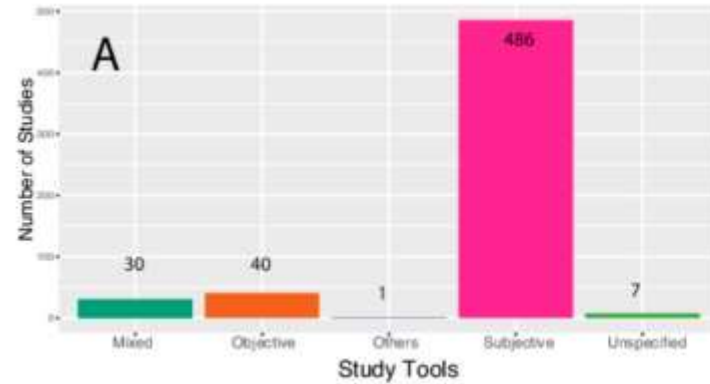
Population of ASEAN was 661.5 million as of 2020

3rd most populous after China & India



Number of studies published by year
(over 22-year period; 1978-2020)

Distilled findings



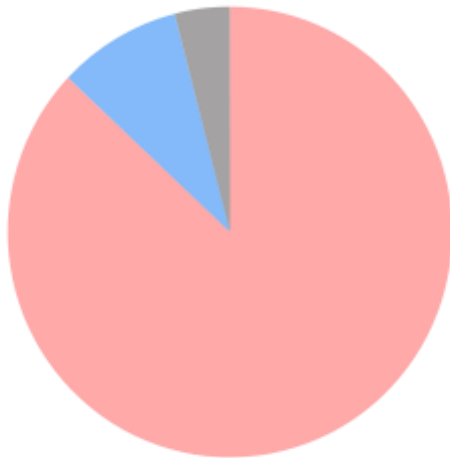
A- Distribution of studies by study tool type

B- By study design

C- By country

Finer grain results

Type of study design



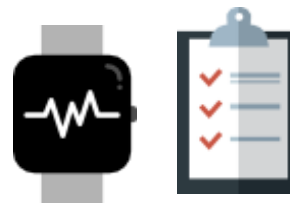
Observational (87%) Experimental (9%)
Others (4%)



86%
used subjective tools like questionnaires, logs, diaries



7%
used objective tools like accelerometers, HR monitors



5%
used a combination of both

More PA research produced in ASEAN nations with higher GDP per capita

12-37%
Malaysia, Singapore, Thailand and Indonesia

0.4-1.1%
Brunei, Cambodia, Laos and Myanmar



Physical inactivity rates are higher in higher income ASEAN countries

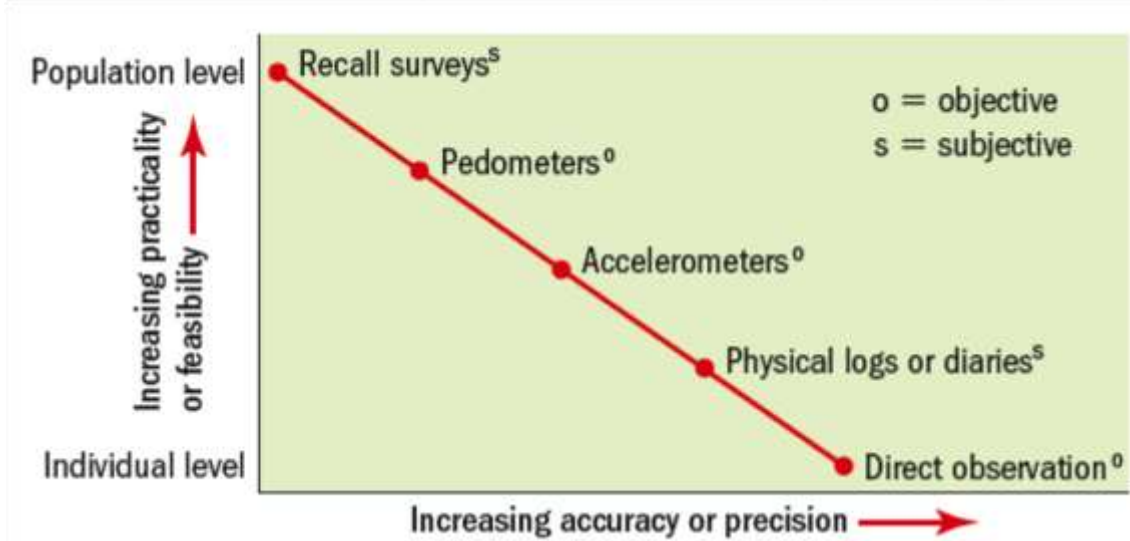
Different study designs

Observational or experimental designs?

Each design has its own merits & demerits

RCTs- lack generalizability as inclusion and exclusion criteria in such studies limit studies to a select type of a population- normal or overweight, athlete or non-athlete

Observational studies- open to left-censorship bias, right-censorship bias



PA measurement tool used is dependent on



The specific research question(s)



Feasibility & practicality of study

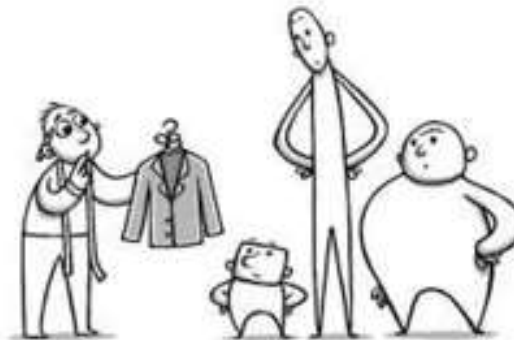


Resources available



Administrative considerations

Not a 'one-size-fits-all' for every situation across different countries



Google image

Future directions



Consistency of questionnaires used for inter-nation comparison and tracking changes in PA over time



Possible refinements to questionnaires to better capture other types of PA



Moving toward the adoption of a common surveillance framework for PA and sedentary behaviour



Joint lifestyle and time use research across ASEAN countries
Richer countries & partner
less well-off countries

World Health Organisation 2020

Physical activity pronouncements

Every move counts- reduce SB & increase PA



Evolution to 24-hr activity or movement guidelines rather than stand-alone behaviour guidelines



Google images

Lifestyle behaviours over each 24-hour cycle have bi-directional impact on each other

Importance of muscle & bone strengthening exercise



Daily routine of pull up exercise



THANK YOU
for your
ATTENTION!