Social- ecological Model

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Physical Activity

• Definition of PA and SB
• National PA guidelines
• Prevalence data
• Need to change behaviour
Australian child physical activity & sedentary prevalence rates* 2007 (CSIRO, 2008)

*using PA MAX-48 x previous day recall administrations

Meet PA recs (60 m/d)  
Meet SB recs (<2 h/d)
Wang & Lobstein IJPO 2006

Childhood overweight/obesity: Worldwide trends & 2010 projections
Obesity trends & Type 2 diabetes among children in Japan

VCE PE 2011

Unit 3, Area of Study 1

‘Monitoring and promotion of PA’

Key Knowledge:

• Components of SEM & r’ship between the multiple levels of influence and PA

Key Skills:

• Identify components of SEM
• Apply SEM to critique PA strategies used by govt and non govt organisations to target 2 subpopulation groups
INFLUENCES ON PA?
Social Ecological Model of Physical Activity
Social Ecological Model of Physical Activity

- Physical activity
- Individual Influences
- Socio-cultural Environment
- Physical Environment
- Policy Environment

SETTINGS
- COMMUNITY/NEIGHBOURHOOD
- SCHOOLS
- AFTER-SCHOOL HOURS
- PRIMARY CARE
- TRANSPORT
- FAMILY/HOME
Levels of influence

1. Individual
2. Social environment
3. Physical environment
4. Policy
INDIVIDUAL LEVEL

At the centre of the model

Include:

• Knowledge, attitudes, beliefs, perceived barriers, behaviours, motivation, enjoyment…
• Skills (FMS, sport specific), disabilities, injuries…
• Age, sex, level of education
• SES, employment status…

Target: education / mentoring programs
Levels of influence

Need to consider at each level:

- Setting

- Population
INDIVIDUAL LEVEL

• Individual motivations, preferences & barriers are important to consider & there may be inter-relationships with environmental influences.
SOCIAL ENVIRONMENT LEVEL

Surrounding the individual

- Relationships
- Culture
- Society

Target: community education, support groups, peer programs, workplace incentives, social marketing campaigns
SOCIAL ENVIRONMENT LEVEL

Includes:

• Family support (incl. partner, siblings)
• Peer support
• Institutions / organisations (schools, work)
• Social network access
• Community norms
• Cultural background
• SES of community
• Health professionals – doctors ...
INDIVIDUAL LEVEL

Needs to be considered at:
- Setting level
- Population level (see next slides)
PHYSICAL ENVIRONMENT LEVEL

Natural environment AND built environment

Include:

• Natural factors such as geography, weather
• Availability and access to facilities – parks, playgrounds, ovals, bike tracks…
• Aesthetics or perceived quality of facilities or the natural environment
• Safety – crime rates, traffic density
• Community design – street connectivity
• Public transport
• Important to consider what types of activity to promote/encourage so can target appropriate features of environment

• Careful matching of behaviours & environments to tease apart situation
  – Eg. Relationships between living in cul-de-sac & children’s overall physical activity, active play, walking/cycling?
SAY, BUD, WHERE'S THE BEACH?

Billy-Joe was great on sport but lousy on geography.
POLICY LEVEL

Legislation, regulatory or policy making actions that have the potential to affect PA. Include:

1. Local, state or federal government rulings
2. Local policies / rules in settings such as schools
POLICY LEVEL

Includes:

• Urban planning policies
• Active transport policies
• Education policies
• Health policies
• Environmental policies
• Workplace policies

Can be difficult to change – align with current government focus…
Core principles

• Multiple behaviours influence behaviour
  - more success – target multiple components
• Environments are multidimensional and complex
  - perceived / actual
• Human-environment interactions occur at varying levels of organisation
  - human interactions important (eg. local ? Mass?)
• Interrelationships are dynamic and reciprocal
  - eg. ↑ bike riders = policy for bike paths
Interventions

• Used to describe a strategy, program or policy that is designed to have an impact on PA participation

• Intervention examples:
  - TAAG : Trial of activity for adolescent girls (USA)
  - SWITCH – PLAY : targeting 10 yr. old children (Aust)

• Examples of strategies / programs—next slide

• Government / Non government
Summary of significant influences on youth physical activity

- **Type of PA:**
  1. walk/cycle 3+ times/wk;
  2. total walking;
  3. active commuting;
  4. weekend MVPA;
  5. after school MVPA;
  6. MVPA

**Note:**
y=younger children; o=older children; b=boys; g=girls; L=longitudinal; POS=public open space; MVPA=moderate- to vigorous-intensity

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**PHYSICAL ENVIRONMENT**

**SOCIOCULTURAL**

**INDIVIDUAL**

- Maternal education level (y/b)
- Sex (boy)
- Maternal employment (y/b)
- Age
- Enjoy TV viewing (g)
Summary of significant influences on youth physical activity

**PHYSICAL ENVIRONMENT**

**SOCIOCULTURAL**
- Child’s perception of mother’s computer use (b)
- Parental concern child not active
- Rules prohibiting TV viewing (b; g)
- Maternal education level (y/b)
- Sex (boy)
- Age

**INDIVIDUAL**
- Enjoy TV viewing (g)
- Maternal employment (y/b)
- Parents know many people in neighbourhood (y)
- Dog ownership (y/g; o/g)
- Few children live nearby (o/y)
- Family computer use together (g)

**PHYSICAL ACTIVITY**
- Child’s perception of mother’s liking of computer use (b)
- Fathers’ computer/egame use (g)

**Type of PA:**
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Summary of significant influences on youth physical activity

**PHYSICAL ENVIRONMENT**

- Own >1 car (y/g)
- Public transport is limited (g)
- Heavy traffic (y/b)
- Presence of POS/playgrounds (o/g; y/b)
- Lighting along POS paths (y/b)
- <800m to school (y/o)
- No. recreational facilities in POS (y/g)
- Direct route to school (o)
- No lights/crossings (o/b; y/o; o)
- Steep road on route to school (y)
- Busy road barrier on route to school (y/o)

**SOCIOCULTURAL**

- Child’s perception of mother’s computer use (b)
- Need to cross several roads (o/g)
- Have egames (b)
- Have pay TV (b)
- Satisfied with pedestrian crossings (o)
- Parental concern child not active
- Rules prohibiting TV viewing (b; g)
- Trees provide shade in POS (o/g)
- Signage regarding dogs in POS (o/g)

**INDIVIDUAL**

- Maternal education level (y/b)
- Sex (boy)
- Maternal employment (y/b)
- Enjoy TV viewing (g)
- Dog ownership (y/g; o/g)
- Fathers’ computer/egame use (g)
- Child’s perception of mother’s liking of computer use (b)
- Steep road on route to school (y)

**PHYSICAL ACTIVITY**

- Enjoy TV viewing (g)
- Maternal education level (y/b)
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Individual, social & environmental factors & time spent outdoors (mins/wk) over 5 years among girls

Cleland, et al. JECH  2010 May; 64 (5):

• Younger girls  
  – Indoor tendencies  - 41  
  – Parental encouragement  45

• Older girls  
  – Indoor tendencies  - 14  
  – Parental encouragement  28  
  – No adult to supervise outside  - 32
Links to assessment area

Low Active

High Active
Participant’s neighbourhood represented using GIS

* Neighbourhood defined as 800m radius from residence
USING SEM

To critique / plan a strategy / intervention, consider:

1. Key Stakeholders  (govt / non govt?)
2. Rationale (why doing it?)
3. Outcomes (what are they hoping to achieve?)
4. Target audience
5. Level/s of SEM - relate to core principles
6. Settings
USING SEM  cont.

More detail:

7. Assessment / evaluation of effectiveness
8. Likely effectiveness
9. Level of engagement required
10. Accessibility
11. Sustainability
References


