Sport – a vehicle to promote physical activity to youth

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1. Background to sport in Australia
2. Ecological correlates of sport participation
3. Cluster analysis – sport participation and sedentary behaviour
Sport

Sport: “a human activity involving physical exertion and skill as the primary focus with elements of competition where rules and patterns of behaviour governing the activity exist formally through organisations, and is generally recognised as a sport” (Nat. Sport and Active Recreation Policy Framework 2011)

• Sport : sub-set of Leisure-time physical activity
• Organised/Non organised: Team, individual

Benefits of sport

Health (sport specific evidence)
• Higher rates of physical fitness (Hothman 2005)
• Higher rates of self-esteem (Eime 2013)
• More positive social interactions, decreased levels of depressive symptoms (Eime 2013)
• Lower rates of obesity (Drake 2012)

Wider
• Social cohesion, Community interaction
• National pride
• Economy (employment…)
• International engagement
Sport participation

- Substantial contribution that organised sports make to overall levels of PA during youth (Booth 2004, Katzmarzyk 1998, Wickel 2007)
- Sport contributes approximately 45% of MVPA in young Australians (Active Healthy Kids Aus. 2014)
- High participation rates (66% Aus. children) ** (Australian Health Survey 2012)
- However, rates start to decline in late childhood and continue to decline with age (CAPANS 2007)

Trends

- Declines in youth meeting PA guidelines (19%), however participation in specific domains or types of PA have increased (eg. LTPA) (ABS 2012)

- Engagement in organised sport among Australian youth has not matched these increases (increase in 3% over the last 10 years) (ABS 2012)

So what are they doing??
To consider:

• Specific types of PA might not be capturing youth interest
• Is traditional sport enough?
• Aus. Govt – ‘new products’
• Different ways to attract different groups?

*Large number of new programs appearing, but not evidence based*

Correlates

While very few systematic studies have been conducted to test effective strategies for promoting sport and active recreation participation in children or adults, there is only emerging evidence regarding the correlates of participation.
TiLT (Teenagers in Leisure Time)

AIMS

• to explore the ecological correlates of sport participation in 12 to 14 year olds, to further understand the reasons youth do or do not participate in sport.
• to identify the correlates presenting the strongest association with sport participation, and explore their contribution to total sport participation.

Participants

• 184 youth, aged 12-14
• 115 males, 69 females
• Recruited from schools in Melbourne
Methods

• Self-report survey

1) Sport Participation
   - Assessed using a modified version of the APARQ (Booth et al. 2002; Morley et al. 2012).
     a) Choice of sports (29 + other)
     b) Frequency & duration
   - Reasons for non sport participation

2) Potential correlates
   - Based on Ecological model

Measure

<table>
<thead>
<tr>
<th>Construct</th>
<th>Individual level</th>
<th>Environmental level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived physical competence</td>
<td>Availability of sport facilities in local area</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Access to sport facilities in local area</td>
<td></td>
</tr>
<tr>
<td>Enjoyment</td>
<td>Availability of sport equipment at home</td>
<td></td>
</tr>
<tr>
<td>Athletic Identity</td>
<td>Access to sport equipment at home</td>
<td></td>
</tr>
<tr>
<td>Outcome expectancies</td>
<td></td>
<td></td>
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<tr>
<td>Social level</td>
<td></td>
<td></td>
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<tr>
<td>Influence of the coach</td>
<td></td>
<td></td>
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<tr>
<td>Coach support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family modelling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support – PE teacher</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support - Family</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family norms</td>
<td></td>
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</tbody>
</table>
Analysis

• Bivariate and multivariate regression models were undertaken to examine associations between the ecological variables and sports participation

• accounted for sex and clustering by school

Results

• Total mean sport participation = 518 minutes with a mean frequency of 5.8 bouts of sport / week.

• Boys participated in 560 minutes from 6.3 bouts of sport / week, and girls 441 minutes from 4.9 bouts of sport / week, significance (p=.056)
Results – Bivariable analysis

Associations btw. variables & time spent in organised sport (mins/week)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Bivariable coefficient</th>
<th>Standardised Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>0.66(0.44, 0.89)**</td>
<td>0.50</td>
</tr>
<tr>
<td>Subjective norms</td>
<td>0.72(0.39-1.04)*</td>
<td>0.46</td>
</tr>
<tr>
<td>Perceived competence</td>
<td>0.89 (0.84, 0.94)*    **</td>
<td>0.44</td>
</tr>
<tr>
<td>Athletic identity</td>
<td>0.62(0.27-.97)*</td>
<td>0.42</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>0.41(0.08, 0.73)*</td>
<td>0.32</td>
</tr>
<tr>
<td>Parent support</td>
<td>0.89(.26-1.54)*</td>
<td>0.42</td>
</tr>
<tr>
<td>Parent modelling</td>
<td>0.97(.01-1.92)*</td>
<td>0.36</td>
</tr>
<tr>
<td>Access to sport facilities (n)</td>
<td>0.80(.22-1.39)*</td>
<td>0.32</td>
</tr>
<tr>
<td>Access to sport equipment (h)</td>
<td>0.15(.02-.28) *</td>
<td>0.31</td>
</tr>
</tbody>
</table>

** p < 0.01 , * p < 0.05

Results- Multivariable analysis

<table>
<thead>
<tr>
<th>Correlate</th>
<th>Coeff (95% CI)</th>
<th>r²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>.37 (.06, .67)*</td>
<td>.25</td>
</tr>
<tr>
<td>Subjective norms</td>
<td>.30 (.10, .49)*</td>
<td>.21</td>
</tr>
<tr>
<td>Negative coach perception</td>
<td>-.18 (-.30, -.01)*</td>
<td>.01</td>
</tr>
<tr>
<td>Perceived competence</td>
<td>-.08 (-.17, .01)</td>
<td>.20</td>
</tr>
<tr>
<td>Athletic identity</td>
<td>.06 (-.53, .69)</td>
<td>.18</td>
</tr>
<tr>
<td>Parent support</td>
<td>.26 (-.18, .66)</td>
<td>.17</td>
</tr>
<tr>
<td>Parental modelling</td>
<td>.18 (-.41, .76)</td>
<td>.13</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>.15 (-.04, .34)</td>
<td>.10</td>
</tr>
<tr>
<td>Access to sport facilities in the</td>
<td>.13 (-.15, .42)</td>
<td>.10</td>
</tr>
<tr>
<td>neighbourhood</td>
<td></td>
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</tbody>
</table>

* Adj. for sex, clustering by school & all other variables included in the model
  ** p<0.05
Discussion

• Together, correlates from all levels of the ecological model were better able to predict the variance in sport participation - previous sport studies examined mostly individual level correlates – need to explore further the interaction of all 3 levels.

• Targeting self-efficacy & subjective norms in future interventions

Adolescent sport and sedentary behaviour participation: a cluster analysis and exploration of group characteristics

Aims:
• Identify groups of adolescents who participate in unique combinations of sport and sedentary behaviour
• Identify any between group differences in demographics
• Explore the correlates which present the strongest associations
**TiLT 2!**

- 8 Victorian secondary schools (20% response)
- 429 participants (12-16 years)

**Self-report survey assessed:**
- Sedentary behaviour participation (ST)
- Sport participation (mins / week)
- Correlates (aligned with ecological framework)

**Results**

<table>
<thead>
<tr>
<th></th>
<th>Boys (n=216)</th>
<th>Girls (n=210)</th>
<th>Total (n=426)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sport (mins / week)</td>
<td>42.9 (13.2-80.5)**</td>
<td>25.7 (0-64.3)</td>
<td>34.3 (2.1-70.4)</td>
</tr>
<tr>
<td>Screen time (mins / day)</td>
<td>21.8 (139.8-318.8) **</td>
<td>192.9 (111.8-270)</td>
<td>210 (124.3-300)</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01
**Results - Clusters**

**Boys**
- LSp/HSt (low sport/high ST)
- HSp/MSt (high sport/mod ST)
- LSp/LSt (low sport/low ST)

**Girls**
- MSp/HSt (mod sport/high ST)
- LSp/LSt (low sport/low ST)
- HSp/LSt (high sport/low ST)

**Results - BOYS**

**Significant differences between cluster groups:** (Kruskal-Wallis H test)
- Self-perception, barriers, int. motivation for sport
- Family support, friend support and social norms
- Access to sport, opportunity

**Cluster group membership:** (Multinomial logistic regression)
Boys in the LSp/HSt were 23% less likely to report high accessibility to sport facilities and high internal motivation and more likely to report barriers to participation than their HSp counterparts.
Results - GIRLS

Significant differences between cluster groups: (Kruskal-Wallis H test)
- Preference for sport, self-perception, int. motivation
- Family support
- Opportunity to play sport

Cluster group membership: (Multinomial logistic regression)
Girls in the LSp/LSt were 10% less likely to report high internal motivation compared to their HSp counterparts

Discussion

• Distinct clusters suggest multiple behaviours (SB and sport) occur in co-existence
• Target specific adolescent groups when developing future interventions
• Perceived barriers to sport differed significantly by cluster group – real or perceived?
• Directions of associations – self-efficacy and internal motivation...
Next steps

- Self-perception - unpack
- Internal motivation as moderator?
- Environmental influence
- Measurement of sport participation

Thank you 😊