Presentation 7:
Breakfast Intake, Bodyweight Status and Associations with Physical Activity Level
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Introduction

• Physical activity level among school children has been found to be low in previous cross-sectional studies in the country:
  • 2007 → 35.5% of adolescents in Kuantan, Pahang had low physical activity level (Dan, Mohd Nasir & Zalilah, 2007)
  • 2011 → the prevalence of low physical activity level among adolescents from the same district was 74.7% (Farah Wahida, Mohd Nasir & Hazizi, 2011)

• Low energy expenditure has been found to be associated with overweight and obesity among Malaysian children and adolescents aged 11 to 15 years (Zalilah et al., 2006).

• This study aimed to determine physical activity pattern and its association with socio-demographic background, bodyweight status and breakfast consumption among 6 to 17 year-old school children and adolescents in Malaysia.
Findings #1
1 in 3 school children had low physical activity level

Distribution of Physical Activity among the Children
(Primary school, \(n=5556\); Secondary school, \(n=3075\); Total, \(n=8631\))

- Low
- Medium
- High

- Primary school:
  - Low: 28.3%
  - Medium: 62.4%
  - High: 9.3%

- Secondary school:
  - Low: 46.7%
  - Medium: 47.8%
  - High: 5.6%

- Total:
  - Low: 34.8%
  - Medium: 57.2%
  - High: 8%
Findings #2

The prevalence of low physical activity level among secondary school children was almost double that of primary school children.

Prevalence of Low Physical Activity Among Boys and Girls
(Primary school, n=5556; Secondary school, n=3075; Total, n=8631)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Girls</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>34.8</td>
<td>42.3</td>
<td>26.2</td>
</tr>
<tr>
<td>Secondary school</td>
<td>46.7</td>
<td>59.5</td>
<td>33</td>
</tr>
<tr>
<td>Primary school</td>
<td>28.3</td>
<td>33.3</td>
<td>22.2</td>
</tr>
</tbody>
</table>

($\chi^2=314.55$, $p<0.001$)
Findings #3
More primary school girls had lower physical activity level (33.3%) than boys (22.2%)

Distribution of physical activity level among primary school children
(Boys, n=2513; Girls, n=3034; Total, n=5556)

More primary school girls had lower physical activity level (33.3%) than boys (22.2%).

Findings #3
\( \chi^2 = 131.01, p < 0.001 \)
Findings #4
The prevalence of low physical activity level among secondary school girls was almost double that of boys

Distribution of physical activity level among secondary school children
(Boys, n=1488; Girls, n=1587; Total, n=3075)

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>33</td>
<td>57.7</td>
<td>9.3</td>
</tr>
<tr>
<td>Girls</td>
<td>59.5</td>
<td>38.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Total</td>
<td>46.7</td>
<td>47.8</td>
<td>5.6</td>
</tr>
</tbody>
</table>

\( \chi^2 = 246.75, p < 0.001 \)
Findings #5
The prevalence of low physical activity level was about the same among children in the urban and rural area.

Overall Distribution of Physical Activity Level by Area
(Rural, n=5915; Urban, n=2716)

- Low
- Medium
- High

(p > 0.05)
### Findings #6

Secondary school children had higher mean screen time than primary school children

<table>
<thead>
<tr>
<th>Screen time</th>
<th>Weekdays</th>
<th>Weekends</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean±SD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Hours)</td>
<td></td>
</tr>
<tr>
<td><strong>Primary school</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>(n=5551)</em></td>
<td>2.28±1.73</td>
<td>4.20±2.78</td>
</tr>
<tr>
<td><strong>Secondary school</strong></td>
<td>2.98±2.20</td>
<td>5.38±3.71</td>
</tr>
<tr>
<td><em>(n=3077)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2.53±1.94</td>
<td>4.62±3.20</td>
</tr>
<tr>
<td><em>(n=8628)</em></td>
<td></td>
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</tr>
</tbody>
</table>

(t=-16.22, p<0.001)  (t=-16.69, p<0.001)

Mean screen time was similar between sexes, area and ethnic groups (p>0.05)
Findings #7
More than 50% of all children had screen time of more than 2 hours per day in the weekdays and weekends

Distribution of screen time in the weekdays and weekends (n=8628)

- ≤2 hours/day
- >2 hours/day

58.9% 41.1% 25.5% 74.5%
Findings #8

There appears to be greater prevalence of overweight and obesity (27.1%) among children with lower physical activity level.
Findings #9
Low physical activity level was higher among breakfast skippers (42%) than breakfast eaters (32.5%)

Physical Activity Level between Breakfast Eaters and Skippers

- Low
- Medium
- High

Breakfast eaters: Low = 32.5%, Medium = 58.9%, High = 8.6%
Breakfast skippers: Low = 42%, Medium = 51.7%, High = 6.3%

(\chi^2 = 66.82, p < 0.001)
Recommendations

• Participation in Physical education should be compulsory for every child in school and ideally should be taught by a trained teacher

• Classes intended for physical activity education should be strictly utilised for this purpose

• Participation in physical education modules could be improved by offering a greater variety of activities and providing appropriate facilities

• Efforts to reduce sedentary lifestyle of children and increase physical activity level should be carried out to reduce the serious problem of overweight/obesity in the country.
References


Thank You