School foodscapes – challenges and opportunities for student health?

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A designated WHO Collaborating Centre for Health Promotion Research.
Childhood overweight/obesity

- Clear evidence of overweight/obesity among Irish children and teenagers

- Up to 25% of primary school children and 19% of teenagers are overweight/obese

- Children’s weight related to social class – even at age 3yrs (Williams et al., 2013)
Determinants of obesity

• Energy imbalance – physical inactivity and poor diet helps to largely explain the obesity epidemic

• A large proportion of children consume energy-dense, nutrient-poor foods & drinks and not enough fruit & vegetables (HBSC 2007, 2012; IUNA 2005; 2008)

• Obesity is strongly determined by individual, social, cultural and economic factors and physical/built environment
  – Availability, proximity, choice

(Morland et al 2002; Layte et al., 2011; Day et al 2011; Timperio et al 2008)
School food environment

• **External school food environment**
  – The built environment on food choice/obesity
  – Planning regulations - “no fry zone” (Nov 2011, April 2014….)

• **Internal school food environment**
  – Health Promoting Schools
  – Vending machines (April 2015)
Aim

• To characterise the food environment in and around post-primary schools
  – Focus on schools involved in the 2010 HBSC survey in Ireland

Children’s lives

| SES: Gender Age Social Class Ethnicity | Contexts: Family School Peers | Risk behaviours: Drinking, smoking... Health enhancing behaviours: Physical activity, leisure activity... | Health outcomes: Well being Life satisfaction Self rated health .......... |
External Food Environment

- 2 km < 30 mins
- 1 km < 15 mins
Mapping the food environment

• Geographic information system (GIS)

• Geo-coded HBSC post-primary schools (n=63)
  – Geodirectory

• 1km circular buffers created around each of the schools

• Food businesses were mapped
  – Fast food outlets, local shops, restaurants…
Ireland Outline

HBSC Post-primary Schools

ArcGIS 10
School characteristics

Geography
- Urban 61.9%
- Rural 38.1%

Gender
- Girls 17.5%
- Boys 22.2%
- Mixed 60.3%

Disadvantage
- DEIS 20.6%
- Non DEIS 79.4%
## External food environment – 1km

<table>
<thead>
<tr>
<th>Mean values of food retail businesses within 1km of Irish schools (n=63)</th>
<th>Urban/rural status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Coffee shops and sandwich bars</td>
<td>3.89</td>
</tr>
<tr>
<td>Restaurants</td>
<td>3.65</td>
</tr>
<tr>
<td>Asian and other ‘ethnic’ restaurants</td>
<td>2.60</td>
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<tr>
<td>Fast Food outlets</td>
<td>4.03</td>
</tr>
<tr>
<td>Supermarkets</td>
<td>1.95</td>
</tr>
<tr>
<td>Local Shops</td>
<td>6.71</td>
</tr>
<tr>
<td>Fruit and Vegetable shops</td>
<td>0.73</td>
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</tbody>
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</table>
External food environment

• Urban schools had more proximate food premises than rural schools

• 75% of schools had 1+ fast food outlets within 1km of school

• 30% of schools had 5+ fast food outlets within 1km of schools
Internal food environment

• 64 out of 119 schools completed questionnaire based on HBSC school level questionnaire

• 5 themes, 25 questions
  – School characteristics, Nutrition, Physical Activity, Violence/bullying and Neighbourhood
Food policies & communication to stakeholders (%)

- Healthy Eating policy: 53.2% (Yes), 14.5% (Verbal), 15.9% (Written)
- Limit sweets/crisps policy: 50.8% (Yes), 15.9% (Verbal), 15.9% (Written)
- Bring sweets/choc to school: 88.9% (Yes)
- Inform students: 64.4% (Yes)
- Inform parents: 37.5% (Yes)
- Inform teachers: 42.9% (Yes)
Food service provision in schools

- Canteen: 69.5% schools (n= 41)
- Tuck Shop: 53.4% schools (n= 31)
- Vending machines: 37.7% schools (n=23)
School food provision - healthy

- **Low fat/skim milk**: 19.4%
- **Whole milk**: 58.3%
- **Yoghurt**: 55.6%
- **Veg/Salads**: 50.0%
- **Fruit**: 69.4%
- **Sandwiches**: 80.6%
- **Wholegrain bread/rolls/wraps**: 80.6%
- **Fruit/veg juice**: 72.2%
- **Bottled water**: 87.1%
School food provision – unhealthy

<table>
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<th>Food Item</th>
<th>Canteen</th>
<th>Tuck shop</th>
<th>Vending machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diet soft drinks</td>
<td>5.6%</td>
<td>35.5%</td>
<td></td>
</tr>
<tr>
<td>Soft/sports/fruit drinks</td>
<td>0.0%</td>
<td>25.0%</td>
<td>64.5%</td>
</tr>
<tr>
<td>Chocolate milk+</td>
<td>12.9%</td>
<td>30.6%</td>
<td></td>
</tr>
<tr>
<td>Chips</td>
<td>47.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conf/biscuits/cake/crisps</td>
<td>0.0%</td>
<td>22.2%</td>
<td>74.2%</td>
</tr>
<tr>
<td>Warm drinks</td>
<td>9.7%</td>
<td></td>
<td>61.1%</td>
</tr>
<tr>
<td>Pizza</td>
<td>3.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ice cream</td>
<td>2.8%</td>
<td>3.2%</td>
<td></td>
</tr>
<tr>
<td>White bread/rolls/wraps</td>
<td>0%</td>
<td>35.5%</td>
<td>75.0%</td>
</tr>
</tbody>
</table>
Summary

• 75% of post-primary schools had 1+ fast food restaurants within 1 km

• No difference by DEIS status (except restaurants)

• Boys schools & urban schools – greater proportion of food businesses close to schools

• Type of food outlets in schools varies (canteen etc.)

• Quality of food in schools can be improved

• Little or no policing of nutrition policies
What can we do?

• Improve health index of food on offer in schools
  • HPS Framework in Ireland (2011)
  • Vending machines

• Planning regulations for new food businesses
  – Supportive environments for young people?

• Enabling healthy choices is challenging but possible
Which option is preferable in schools?
Acknowledgements....

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- Professor Oddrun Samdal, Data Bank Manager, University of Bergen
- All members of the international HBSC network

- HBSC Ireland team in particular Mary Callaghan
Contacts

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Thank you