School food environments: exploring fast food chain restaurants around post-primary schools in Ireland.

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Childhood obesity

- 1 in 5 Irish children aged 5-12 years are overweight or obese (IUNA, 2005)

- 19% of 13-17 yr olds are overweight/obese (IUNA, 2008)

- 1 in 4 nine year olds overweight/obese (GUI, 2009)
  - Girls more likely than boys to be overweight (22% vs 16%) and obese (8% vs 6%)

- Children’s weight related to social class
Determinants of obesity

- Obesity is strongly determined by social, cultural and economic factors & physical environment

- Effects of the built environment on food choice/obesity
  - Availability
  - Proximity
  - Food choice

(Morland et al 2002; Layte et al., 2011)
(Day et al 2011; Timperio et al 2008)
Food environment & schools

- Food environment around schools

- Nov 2011 - Minister for Children & Youth Affairs – proposed planning regulations controlling the proximity of fast-food businesses to schools
Aim

• To explore the number of fast food chain restaurants around post-primary schools in Ireland

  ◦ School type
    • Urban/rural
    • DEIS/non-DEIS

  ◦ Area level deprivation
Food Environment

- School locations
  - HBSC data
- 119 post primary schools
- 9,290 post-primary students – HBSC 2010
HBSC - background

- A cross-national research study conducted in collaboration with the WHO Regional Office for Europe

- HBSC Ireland 2010 involved more than 16,000 students

- The study aims to gain new insight into, and increase our understanding of young people's health and well-being, health behaviours and their social context
Children’s lives

Contexts:
- Family
- School
- Peers

Risk behaviours:
- Drinking, smoking...
- Health enhancing behaviours:
  - Physical activity, leisure activity...

Health outcomes:
- Well being
- Life satisfaction
- Self-rated health

SES:
- Gender
- Age
- Social Class
- Ethnicity
Fast food restaurant - as chain restaurants with 2+: expedited food service, takeout business, limited or no wait staff, and payment prior to receiving food (Block et al 2004)
Food Environment

2 km < 30 mins

1 km < 15 mins
Mapping the food environment
GIS

- Geographic Information System

- Integrates hardware, software and data for capturing, storing, manipulating, analysing, managing, and presenting all types of geographical data
Mapping the food environment

- Geo-coded HBSC post primary schools (n=119)
  - Geodirectory

- 1km and 2km circular buffers created around each of the schools

- All well known fast food restaurant chains were mapped
  - Supermacs, BK, McDonalds...

- Mapped SAHRU deprivation Index scores to ED level
  - (Kelly & Teljeur 2007)
+ Buffers
## Results

<table>
<thead>
<tr>
<th>No. of fast food chain restaurants</th>
<th>1Km circular buffer % (n)</th>
<th>2Km circular buffer % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>53.8 (64)</td>
<td>43.7 (52)</td>
</tr>
<tr>
<td>1</td>
<td>19.3 (23)</td>
<td>18.5 (22)</td>
</tr>
<tr>
<td>2</td>
<td>10.1 (12)</td>
<td>5.0 (6)</td>
</tr>
<tr>
<td>3</td>
<td>5.9 (7)</td>
<td>11.8 (14)</td>
</tr>
<tr>
<td>4</td>
<td>2.5 (3)</td>
<td>1.7 (2)</td>
</tr>
<tr>
<td>5</td>
<td>4.2 (5)</td>
<td>5.0 (6)</td>
</tr>
<tr>
<td>6</td>
<td>3.4 (4)</td>
<td>4.2 (5)</td>
</tr>
<tr>
<td>7+</td>
<td>0.8 (1)</td>
<td>10.1 (12)</td>
</tr>
</tbody>
</table>

46.2% had 1+ fast food restaurants located within 1km
56.3% had 1+ fast food restaurants located within 2km
Results to date

- Access to fast food restaurant chains was greater for urban schools
- No difference between DEIS/non DEIS schools
- Positive correlation between fast food restaurant chains & SAHRU area level deprivation
Summary

- This data provides a step towards identifying the density and type of food retail environments surrounding schools in Republic of Ireland.

- The effects of the school food environment on food choices and obesity risk among children in Ireland has yet to be established.
Next Steps....

- Ordnance Survey Ireland roads network data

- Link data to HBSC Ireland survey - frequency of consumption of
  - fruit and vegetables
  - chips
  - soft drinks

- Policy implications...?
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- Department of Children and Youth Affairs
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Questions?