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

• UK – restrictions in place – 400m from schools, youth clubs and parks
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 Location
  • 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

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

......
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

1 km < 15 mins

2 km < 30 mins
Mapping the food environment
GIS

• Geographic Information System

• integrates hardware, software and data for capturing, storing, manipulating, analyzing, managing, and presenting all types of geographical data

• Data & Layers
Mapping the food environment

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

• 1km and 2kms 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)
ArcGIS 10

Ireland Outline

HBSC Post-primary Schools
+ 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....

• OSI roads network data

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

• Policy implications...?
Acknowledgements

• Children, Parents, Schools

• Professor Candace Currie, International Coordinator, St. Andrews University

• Professor Oddrun Samdal, Data Bank Manager, University of Bergen

• HBSC network of researchers

• Department of Health

• Department of Children and Youth Affairs
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Thank you!

Questions?