School food environments and adolescent health

Dr Colette Kelly
Director Health Promotion Research Centre
National University of Ireland Galway

Symposium: Obesity across childhood and adolescence
EHPS, Galway, August 2018
Background

• Adolescent are not meeting dietary recommendations and youth overweight is of public health concern \(^1\)

• School food environments – important context to support and enable healthy food choices \(^2\)

• Evidence to date for a role of external school food environment and diet is equivocal \(^3\)
  – Mostly cross-sectional studies and from North America
  – Cultural, environmental, behavioral and planning or regulatory factors
  – Methodological issues and the environmental data sources

• Data in Ireland are lacking
Aim

Study 1: To examine associations between fast food outlets surrounding post-primary schools and youth dietary habits

- Using cross-sectional HBSC Ireland survey data
- www.hbsc.org; www.nuigalway/hbsc

Study 2: To explore adolescent’s perception of local school food environment

- Qualitative multi-method study with post-primary school students
Methods

Study 1 - HBSC Ireland
(n=63 schools; 5344 students)

Student-level data
- Demographics,
- Daily fruit, veg, sweets, soft drinks
- Family food environment

School-level data
- School food availability
- Urban/rural status

GIS
- Geocoded PP schools
- 1km buffer
- Categorised food outlets

Focus groups
- n=6 schools
- Mapping exercises
- Topic guide
- Photos

Study 2 - Mapping
N=6 schools; 96 students

Multivariate logistic regression

Thematic analysis
Associations between fast food environments and diet  
n=5,344

<table>
<thead>
<tr>
<th></th>
<th>Fruit daily</th>
<th>Vegetables daily</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted Odds Ratios</td>
<td>Adjusted Odds Ratios</td>
</tr>
<tr>
<td>Food sold in school</td>
<td>0.87</td>
<td>1.05</td>
</tr>
<tr>
<td>Rural</td>
<td>0.92</td>
<td>1.04</td>
</tr>
<tr>
<td>&gt;10% fast food within 1km</td>
<td>0.78*</td>
<td>0.79**</td>
</tr>
<tr>
<td>DEIS schools</td>
<td>0.79*</td>
<td>0.73**</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01; ***p<0.001

Controlling for demographic, family food environment and school (DEIS, internal food availability)
# Associations between fast food environments and diet

*n=5,344*

<table>
<thead>
<tr>
<th></th>
<th>Soft drinks daily</th>
<th>Sweets daily</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjusted Odds Ratios</td>
<td></td>
</tr>
<tr>
<td>Food sold in school</td>
<td>0.99</td>
<td>0.91</td>
</tr>
<tr>
<td>Rural</td>
<td>0.76</td>
<td>0.86</td>
</tr>
<tr>
<td>&gt;10% fast food within 1km</td>
<td>1.00</td>
<td>0.94</td>
</tr>
<tr>
<td>DEIS schools</td>
<td><strong>1.79</strong>*</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01; ***p<0.001

*Controlling for demographic, family food environment and school (DEIS, internal food availability)*
Study 2 Results – Food Outlets (AVAILIBILITY)

- Spar/Londis/Centra/Costcutter
- Supervalu
- Local supermarkets
- Lidl/Aldi/Dunnes
- Local Cafes
- Topaz
- Subway
- Apache/Papa Johns/Dominos
- Sweet shops
- Local fast food places
- Supermacs/McDonalds/BK
- Local pubs
- Local restaurants
- Easons
- Local hotels
- Local health food shop
Study 2 Results – FOODS PURCHASED

- Health bars
- Sesame sticks
- Milk, water
- Yoghurt
- Salads, fruit salads
- Nuts, popcorn
- Wraps, paninis, soup
- Chicken curry, lasagne
- Sausage (rolls) and chips
- Energy drinks – Edge, Lucozade sport
- Pot Noodles
- Coffee
- 7up/Coke/Mi wadi
- Biscuits, buns
- Croissant
- Burgers, pizza
- Sweets
- Chocolate, pizza
- Wedges
- Hot chicken fillet rolls
Drivers: food outlets and food choice

- Drivers: food outlets and food choice
  - Convenience/TIME
  - Proximity
  - Cost
  - Quality
  - Familiarity
  - Peers

- "They’re just quick"
- "It’s across the road"
- ".. they’re cheap and like you get enough bon bons that would last the day."
- ".. they’re out of date."
- "They’re mean"
- ".. just stand outside XXX rather than go in and buy something"
Conclusion

• Poor dietary habits reported by students – objective and subjective data

• The healthy choice is not the easy choice

• Need to re-consider a ban on fast food premises near schools

• Time to align health with planning for the built environment

• Important to work with students, schools and local food outlets to impact youth health.
Acknowledgments

- Thank you to all children, parents, teachers and school managements
- The Department of Health
- Millennium Fund Project Grant, NUI Galway
- The HBSC National Advisory Committee
- Professor Candace Currie, International Coordinator of HBSC, University of St. Andrew’s
- Professor Oddrun Samdal, Data Bank Manager, University of Bergen
- All members of the international HBSC network
- HPRC researchers: Mary Callaghan, Ursula Kenny, Lorraine Burke and Grace O’Shea

Ethics granted by NUI Galway Research Ethics Committee
THANK YOU
Questions?
