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Segmentation in communities with greatest health inequalities: so what for public health interventions?

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1. Background
A lifestyle survey elicited baseline health data from four Healthy Halifax wards (pop=52,403), areas within the most deprived national quintile based on Indices of Multiple Deprivation (IMD) (1). Healthy Foundations' lifestyle segmentation model (2) was incorporated into survey design to categorise individuals into five attitudinal segments:

- Healthy
- Healthy Halifax
- Deprived
- Deprived Halifax
- Unhealthy

All segments can be found across deprived and affluent social strata. Socio-economic deprivation is linked to poorer health attitudes, behaviours and outcomes (3). Targeting resources where they are most needed may help reduce health inequalities. Research has mainly been nationally focused. Local application of the model is engaging to inform public health interventions. Research within a population skewed in ethnicity and deprivation covers new ground and sheds light on some limitations in generalising the assumptions of the Healthy Foundations model.

2. Aims
- Enhance understanding of health attitudes and behaviours in 4 local populations experiencing greatest health inequalities.
- Contract findings with Healthy Foundations model and synthetic estimations.
- Interpret data for public health planning.

3. Respondent profile: is the data representative?

<table>
<thead>
<tr>
<th>Household income profile</th>
<th>Age profile</th>
<th>Ethnicity profile</th>
<th>Gender profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full city sample</td>
<td>Work force</td>
<td>Sample,</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>female</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>

4. Ethnicity profile

- Ethnicity profile data compared to the estimated deprivation skewed segmentation profile. The synthetic estimates may underrepresent deprivation and ethnicity in the generated profiles.

5. Healthy Halifax segmentation profile differs from Calderdale, deprived quintile and national profiles

- Healthy Halifax 
- Healthy Halifax deprived profile 
- Healthy Halifax deprived quintile profile 
- Healthy Halifax national profile 

6. Healthy Halifax ward level segmentation profiles differ from deprived quintile

- Halifax & Calderdale 
- Healthy Halifax deprived 
- Healthy Halifax deprived quintile 
- Healthy Halifax national 

7. Discussion

Healthy Halifax segmentation profile by gender differed to the national profile, suggesting the gender biases assumed within the model cannot be generalised to local populations. The top quartile of respondents in deprived Halifax suggested low life expectancy and poor health: "...respondents may suggest poor family health in some households if the woman is the main decision maker (1)."

Commissioning decisions and health intervention planning based on estimates may not reflect and reach the needs of a locality. Demographically representative local lifestyle surveys provide more tailored and specific insights.

The Healthy Halifax ward level segmentation profiles differ from other; and from segmentation profiles of Healthy Halifax, Healthy Foundations national and estimates for Calderdale and the most deprivation quintile. Therefore generalised from national synthetic estimates and a local sample to smaller specific populations may be an overestimation of life expectancy and life. To capture the specific local profile and local needs.

Further analysis will involve augmenting segmentation profiles with postcode data to map and plot for local needs using Geographic Information Systems (GIS) technology (2). This could offer greater precision for planning local social marketing and health interventions.

References