E-cigarette use and intention to smoke among 10-11 year old never smokers in Wales

Graham Moore, Hannah Littlecott, Laurence Moore, Nilufar Ahmed & Jo Holliday
Chapman (2014) – e-cigarettes best and worst case scenarios for public health

• **Best case scenario**
  – E-cigarettes entirely replace tobacco cigarettes
    • Compared to major technological shifts like digital cameras replacing traditional film-based cameras, or CDs replacing cassettes
  – Even if ‘vapers’ never give up, health risk much lower than when smoking, and dramatic reductions in key health consequences of smoking will be observed

• **Worst case scenario**
  – Most vapers continue to smoke tobacco alongside e-cigarettes (dual use)
  – E-cigarette use becomes widespread among non-smokers
  – E-cigarettes act as a gateway into smoking for young people, reversing downward trends in smoking rates
But what does the evidence say?

• Cessation / harm reduction claims
  – Some evidence e-cigarettes give some smokers a better chance of quitting than attempting unaided (Bullen et al. 2013; Brown et al. 2014)
  – But, the vast majority of adult e-cigarette users still smoke tobacco (ONS 2014)
    • Tentative evidence of usefulness for individual smokers, but far cry from revolution
    • Little evidence that e-cigarettes, in their current form, are likely to entirely replace tobacco

• Gateway effects
  – No evidence of widespread use among adult non-smokers (ONS 2014)
  – Growing evidence of experimental e-cigarette use among youth (Dutra and Glanz 2014), though regular use rare
  – Evidence of role of e-cigarettes as a ‘gateway’ to child smoking non-existent (WHO 2014)
    • But absence of evidence, rather than evidence of absence
    • One US study shows links between e-cigarette use in adolescents and intention to smoke tobacco (Corey et al. 2014)
    • No longitudinal data
Aims and methods of this study

- In 2013, Welsh Government commissioned a survey of children’s exposure to smoke in cars and homes
  - Replication of 2007/8 CHETS Wales surveys
  - Survey of 1600 children in 75 schools
  - E-cigarette questions added into this survey

- Analysis focused on addressing the following questions
  - How does the prevalence of experimental e-cigarette use compare to prevalence of experimental tobacco use in 10-11 year olds?
  - Is experimental e-cigarette use associated with parental and peer smoking?
  - Is use of e-cigarettes associated with intention to smoke tobacco?

- Analysis reported in full in: Moore GF, et al. (in press) E-cigarette use and intention to smoke among 10-11 year old never smokers in Wales. *Tobacco Control*
E-cigarette use

• Few children aged 10-11 report having ever tried smoking tobacco (1.4%)

• However, the percentage who report that they have ever used an e-cigarette was several times as high (5.8%)
  
  – Hence, at this age, most children who have used an e-cigarette have never used tobacco
  
  – 5% of never smokers had tried an e-cigarette
Correlates of e-cigarette use among never smokers

<table>
<thead>
<tr>
<th></th>
<th>E-cigarette use</th>
<th>(n=1280)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parents smoke / use e-cigarettes</strong></td>
<td>E-cigarettes only</td>
<td>3.32 (1.08 to 10.17)</td>
</tr>
<tr>
<td></td>
<td>Tobacco only</td>
<td>1.62 (0.79 to 3.30)</td>
</tr>
<tr>
<td></td>
<td>Both</td>
<td>3.40 (1.73 to 6.69)</td>
</tr>
<tr>
<td><strong>Friends smoking</strong></td>
<td>Yes</td>
<td>5.25 (2.62 to 10.55)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td>Girls</td>
<td>0.76 (0.46 to 1.26)</td>
</tr>
<tr>
<td><strong>FAS</strong></td>
<td></td>
<td>0.90 (0.75 to 1.09)</td>
</tr>
</tbody>
</table>
E-cigarette use and intention to smoke among never smokers

- Few 10-11 year olds’ say they intend to start smoking in the next 2 years
  - But weaker anti-smoking intentions among those who had used an e-cigarette
  - Less likely to say definitely not – more likely to say probably not or maybe

<table>
<thead>
<tr>
<th></th>
<th>Definitely not</th>
<th>Probably not</th>
<th>Maybe, maybe not</th>
<th>Probably yes</th>
<th>Definitely yes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Children who had not used an e-cigarette</strong></td>
<td>1262 (91.3)</td>
<td>95 (6.9)</td>
<td>22 (1.6)</td>
<td>3 (0.2)</td>
<td>1 (0.1)</td>
</tr>
<tr>
<td><strong>Children who had used an e-cigarette</strong></td>
<td>56 (72.7)</td>
<td>10 (13.0)</td>
<td>9 (11.7)</td>
<td>2 (2.6)</td>
<td>0 (0.0)</td>
</tr>
</tbody>
</table>
Correlates of intentions to smoke among never smokers

<table>
<thead>
<tr>
<th></th>
<th>Future smoking intention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=1280)</td>
</tr>
<tr>
<td>Parents smoke / use e-cigarettes</td>
<td>E-cigarettes only</td>
</tr>
<tr>
<td>(reference= neither)</td>
<td>1.15 (0.39 to 3.63)</td>
</tr>
<tr>
<td></td>
<td>Tobacco only</td>
</tr>
<tr>
<td></td>
<td>2.09 (1.30 to 3.44)</td>
</tr>
<tr>
<td></td>
<td>Both</td>
</tr>
<tr>
<td></td>
<td>1.88 (1.07 to 3.31)</td>
</tr>
<tr>
<td>Friends smoking</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>3.40 (1.86 to 6.22)</td>
</tr>
<tr>
<td>Sex</td>
<td>Girls</td>
</tr>
<tr>
<td></td>
<td>0.66 (0.44 to 0.97)</td>
</tr>
<tr>
<td>FAS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.87 (0.75 to 1.00)</td>
</tr>
<tr>
<td>E-cigarette use</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>3.21 (1.66 to 6.23)</td>
</tr>
</tbody>
</table>
Main findings

• Experimental e-cigarette use more common in 10-11 year olds than experimental tobacco use
• More common among children with peers who smoke, and parents who are dual users
  – Are children using e-cigarettes to mimic tobacco use?
  – Or are devices used by parents to reduce their tobacco use, ironically giving children their first exposure to nicotine?
• Few 10-11 year olds report intention to smoke. But, e-cigarette use associated with weaker anti-smoking intentions
Limitations and directions for future research

- **Self-report measures**
  - Do children fully understand what we mean by e-cigarettes?
    - Becoming increasingly differentiated
    - Need for standardised measures across surveys
  - Cross-sectional data, and focus on intentions (a modest predictor of future behaviour)
    - Are children using e-cigarettes *because* they are more open to trying tobacco?
Conclusions

• Need for further longitudinal research to understand relationship between e-cigarette use and smoking intentions
  – E-cigarettes may be valuable quit aids for some current smokers
  – But there is a need to understand how e-cigarettes can be offered in a way that limits their appeal to / use by young people

• A particular concern now that tobacco industry is so heavily invested in e-cigarettes
  – Market increasingly controlled by an industry with no interest in harm reduction, and every interest in recruiting new smokers
  – If there aren’t currently ‘gateway effects’, Big Tobacco is probably already working hard to find ways to manufacture them
References / acknowledgements

• Moore GF, et al. (in press) E-cigarette use and intention to smoke among 10-11 year old never smokers in Wales. *Tobacco Control*

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