Results from a pragmatic policy trial of e-cigarettes for smoking cessation and harm reduction

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Track 1, AOS2-2
No conflicts of interest
The smoking problem

• >50% smokers die because of smoking

• One billion deaths this century

• What are we doing about it?

Prevent uptake    Increase quitting
Nicotine replacement therapy (NRT)

- Recommended for short-term use
- Doubles chance of success in short-term
- BUT only ~10% remain quit after one year
- Quit rates have not improved
Tobacco harm reduction

“People smoke for nicotine but they die from the tar”

- Professor Michael Russell

- Addictiveness ≠ harmfulness

- Substitute cigarettes long-term with other nicotine products
  - Improve quitting
  - Prevent relapse
Electronic cigarette

- E-cig, personal vaporiser, vape
- Inhale nicotine aerosol
- Millions of users worldwide
- Banned in Australia
- Safety? “95% less harmful”
- Efficacy? Only two controlled trials
Comparing policies with a randomised controlled trial

Policy scenarios

- Current approach
- Harm reduction

A: Quit with NRT
B: Long-term NRT
C: Long-term NRT/e-cig

Which policy will result in the most smokers quitting?
Comparing policies with a randomised controlled trial

Method:

• Participants
  • $n = 1,563$
  • ≥5 cigarettes per day
  • No intention to quit necessary
  • Recruited online throughout Australia
Study Design

Recruitment
- Screening / Baseline survey

Randomisation
- A: Quit (n = 324)
- B: Quit or substitute (n = 620)
- C: Quit or substitute (n = 619)

Products
- NRT
- E-cigarettes and/or NRT

Follow-ups
- For 1 year after ordering

NRT: nicotine replacement therapy
Trial Nicotine Products

Standard NRT (all conditions)

E-cigarette (condition C only)
Preferred product by condition

- Gum
- Lozenge
- Inhalator
- Mouth Spray
- E-cigarette

Chosen product (%)
## Proportion quit

<table>
<thead>
<tr>
<th></th>
<th>A: Quit with MN</th>
<th>B: Substitute or quit with MN</th>
<th>C: Substitute or quit with MN or EC</th>
<th>C vs A</th>
<th>C vs B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 324</td>
<td>n = 620</td>
<td>n = 619</td>
<td></td>
<td></td>
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<tr>
<td>6 month continuous abstinence</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>seven months</td>
<td>2.8%</td>
<td>1.8% (0.27-1.63)</td>
<td>1.3%</td>
<td>0.46 (0.17-1.21)</td>
<td>0.69 (0.27-1.73)</td>
</tr>
<tr>
<td>one year</td>
<td>6.8%</td>
<td>4.2% (0.35-1.15)</td>
<td>5.0%</td>
<td>0.74 (0.42-1.32)</td>
<td>1.17 (0.69-2.01)</td>
</tr>
<tr>
<td>7 day point prevalence</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>seven months</td>
<td>9.6%</td>
<td>7.9% (0.52-1.36)</td>
<td>7.4%</td>
<td>0.77 (0.47-1.25)</td>
<td>1.19 (0.74-1.93)</td>
</tr>
<tr>
<td>one year</td>
<td>12.3%</td>
<td>10.8% (0.58-1.36)</td>
<td>10.8%</td>
<td>0.85 (0.56-1.31)</td>
<td>0.96 (0.66-1.38)</td>
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</table>
## Dual use

<table>
<thead>
<tr>
<th></th>
<th>A: Quit with MN</th>
<th>B: Substitute or quit with MN</th>
<th>C: Substitute or quit with MN or EC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 173</td>
<td>n = 341</td>
<td>n = 346</td>
</tr>
<tr>
<td><strong>Smoking and using medicinal nicotine</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>seven months</td>
<td>53 (30.6%)</td>
<td>89 (26.1%)</td>
<td>63 (18.2%)</td>
</tr>
<tr>
<td>one year</td>
<td>47 (27.2%)</td>
<td>75 (22.0%)</td>
<td>47 (13.6%)</td>
</tr>
<tr>
<td><strong>Smoking and using e-cigarette</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>seven months</td>
<td>6 (3.5%)</td>
<td>19 (5.6%)</td>
<td>61 (17.6%)</td>
</tr>
<tr>
<td>one year</td>
<td>7 (4.0%)</td>
<td>13 (3.8%)</td>
<td>40 (11.6%)</td>
</tr>
<tr>
<td><strong>Smoking and using either medicinal nicotine or e-cigarettes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>seven months</td>
<td>55 (31.8%)</td>
<td>100 (29.3%)</td>
<td>104 (30.1%)</td>
</tr>
<tr>
<td>one year</td>
<td>50 (28.9%)</td>
<td>83 (24.3%)</td>
<td>74 (21.4%)</td>
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</tbody>
</table>
Conclusions

• No advantage to harm-reduction policy?

• No advantage to including first-generation e-cigarettes?

• Alternative explanations:

  • Weak intervention (written material only)

  • First-generation e-cigarette device
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