Findings from a Randomised Controlled Trial Evaluation of Cancer Focus NI’s ‘Dead Cool’ smoking prevention programme in Northern Ireland post-primary schools
The Team

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Introduction

• 7% of children aged 11-16 NI smoking in 2010 (DHSSPSNI, 2012)
• 19% of adults in GB were smokers in 2013 (HSC, 2015)
• 40% of smokers in GB began smoking before age 16 (ONS, 2013)
  • Half will die prematurely (World Health Organisation, 2006)
• Teenagers become quickly addicted to tobacco (DiFranza et al., 2007)
• Those who smoke earlier are more likely to be regular smokers in adulthood (Chassin et al., 2000)
Introduction

• Schools have an important role in:
  • Supporting young people’s wellbeing
  • Acting as buffers against negative health behaviours and outcomes (Marmot, 2010; HBSC; WHO, 2012)

• Prevention better than cessation?
  • Interventions underpinned by Planned Behaviour Theory helpful in delaying or avoiding smoking initiation (Hassandra et al., 2011)
• Evaluation of Cancer Focus NI’s Dead Cool smoking prevention programme began on 1\textsuperscript{st} September 2014 and comprised two strands:
  – Efficacy randomised controlled trial (RCT) with aims to:
    • Evaluate the impact of the programme on smoking outcomes
    • Establish potential for a full scale-up trial
  – Process evaluation to understand how the programme worked
What is Dead Cool?

• Dead Cool is a smoking prevention programme for Year 9 (13-14 year olds) students designed by Cancer Focus NI

• Aims:
  – Reduce the number of young people who start smoking
  – Encourage young people to challenge those who influence smoking behaviour such as friends, parents, other family members
  – Explore the placement of direct and indirect cigarette placement in the media
What is Dead Cool?

- The programme is a series of five sessions.
- One introductory session (delivered by Cancer Focus NI) and four further delivered by the teacher
  - Uses cooperative group-work pedagogy.
- Supported with a resources pack and multi-media resources
  - Video clips on featuring local students of a similar age to Year 9
Randomised Controlled Trial (RCT)

• In the RCT Dead Cool is tested against a control who have ‘treatment as usual’

• Students tested on smoking behaviour before, immediately after, and three and a half months after Dead Cool:
  – Carbon Monoxide in exhaled breath
  – Self-report questionnaire on current smoking behaviour
  – Self-report questionnaire on short and medium term intention to smoke
  – Data from teachers on pupil attendance at sessions
Process Evaluation

• To provide a commentary on how Dead Cool was experienced
• To explore assumptions of how the Dead Cool programme worked
• To explore student/teacher satisfaction and engagement with Dead Cool
  – Teachers delivering Dead Cool
  – Students participating in Dead Cool
  – Interviews and focus groups were audio recorded, transcribed and analysed using thematic analysis
The sample

• 480 Year 9 students
  – Mean age control group 12.51 (SD 0.51) years
  – Mean age Dead Cool group 12.50 (SD 0.51) years
  – Ages between groups did not differ significantly \((F(1, 478)=0.06, p=0.81)\)

• 229 female students, 250 male students, 1 student did not identify their gender
Findings

- Carbon Monoxide in exhaled breath
- Self reported intention to smoke (soon)
- Self reported intention to smoke (next year)
- Process evaluation
Carbon Monoxide (CO) in exhaled breath (ppm)

Mean CO in exhaled breath lower in Dead Cool students than the control group

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre test CO ppm (SD)</th>
<th>Post test T1 CO ppm (SD)</th>
<th>Change at T1</th>
<th>Post test T2 CO ppm (SD)</th>
<th>Change at T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>2.09 (1.35) n=197</td>
<td>1.81 (1.02) n=154</td>
<td>-0.28</td>
<td>1.56 (2.19) n=141</td>
<td>-0.53</td>
</tr>
<tr>
<td>Dead Cool</td>
<td>2.48 (1.82) n=202</td>
<td>1.90 (1.47) n=175</td>
<td>-0.58</td>
<td>1.27 (1.24) n=150</td>
<td>-1.21</td>
</tr>
<tr>
<td>Total</td>
<td>2.29 (1.61) n=399</td>
<td>1.85 (1.28) n=329</td>
<td></td>
<td>1.41 (1.77) n=291</td>
<td></td>
</tr>
</tbody>
</table>
Multi-level model of exhaled breath CO

- Significantly lower Carbon Monoxide in exhaled breath of Dead Cool students at post test 2 (about 3 months after Dead Cool)
  - Excluded those already smoking (CO> 9ppm at pre-test)
  - Post test 2 (p=0.03, ES=-.37)
  - CO results indicated 3 control group students began to smoke during the programme
  - No Dead Cool students initiated smoking in this time (indicates a reduction in smoking uptake by 1.8 students/hundred)
### Self reported intention to smoke - “Do you think you will try a cigarette soon?”

**Dead Cool students indicated they were less likely to smoke soon**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean response at Pre test</th>
<th>Mean response at Post test 1</th>
<th>Change at T1</th>
<th>Means response at Post test 2</th>
<th>Change at T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>0.27 (0.71) n=194</td>
<td>0.32 (0.77) n=170</td>
<td>+0.05</td>
<td>0.46 (1.05) n=167</td>
<td>+0.19</td>
</tr>
<tr>
<td>Dead Cool</td>
<td>0.30 (0.80) n=198</td>
<td>0.42 (1.00) n=190</td>
<td>+0.12</td>
<td>0.40 (0.93) n=171</td>
<td>+0.1 (ES -0.51)</td>
</tr>
<tr>
<td>Total</td>
<td>0.29 (0.76) n=392</td>
<td>0.37 (0.90) n=360</td>
<td></td>
<td>0.42 (0.97) n=338</td>
<td></td>
</tr>
</tbody>
</table>
Self reported intention to smoke—“Do you think you will try a cigarette in the next year?”

Dead Cool students indicated they were less likely to smoke in the next year

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean response at Pre test</th>
<th>Mean response at Post test 1</th>
<th>Change at T1</th>
<th>Mean response at Post test 2</th>
<th>Change at T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4.70 (0.66) n=196</td>
<td>4.67 (0.71) n=173</td>
<td>-0.03</td>
<td>4.74 (0.62) n=159</td>
<td>+0.04</td>
</tr>
<tr>
<td>Dead Cool</td>
<td>4.56 (0.82) n=198</td>
<td>4.52 (0.91) n=186</td>
<td>-0.04</td>
<td>4.54 (0.98) n=166</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(ES -0.09)</td>
</tr>
<tr>
<td>Total</td>
<td>4.63 (0.82) n=392</td>
<td>4.59 (0.82) n=359</td>
<td></td>
<td>4.55 (0.85) n=332</td>
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</tr>
</tbody>
</table>
Findings- Process evaluation

• Teachers rated Dead Cool highly
  – Time constraints limited delivery of extended activities

• Students enjoyed Dead Cool and engaged readily with the materials

• Students developed increased awareness of the pervasive influences of the tobacco industry in media

• Students demonstrated understanding of what influences their thoughts on smoking, concepts of addiction and the cost of smoking
Conclusions

• Dead Cool worked as intended
  – Dead Cool was effective in reducing the likelihood of beginning smoking in Year 9
  – Dead Cool reduced the likelihood that students reported they would try a cigarette
  – Dead Cool increased student understanding of tobacco placement in the media
  – Dead Cool raised student awareness of the factors that influenced choices to smoke

• Dead Cool could be scaled up
  – Inexpensive intervention
  – Teachers can be trained and given resource packs in twilight group sessions
  – Filled a gap in the curriculum
What’s next?

• All three of the main measures showed that the intervention group reported less smoking behaviour and less likelihood to smoke

• Dead Cool shows promise as a smoking prevention programme for Year 9 students and is suitable for testing in a fully scaled randomised controlled trial
Recommendations

• Further research should include:
  – Follow up of the current cohort to measure the potential long term impact of Dead Cool
  – Ongoing evaluation and development of the programme based on study recommendations including a scaled randomised controlled trial (about 36 schools)

• Consider using Dead Cool in Year 8
  – 5% of students recorded CO measurements indicating they were already smoking at the start of Year 9
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When it comes to heritage, we’ve got 150 years and counting.