

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

Professor Allen Thurston, Centre for Evidence and Social Innovation, QUB

Dr Laura Dunne, Centre for Evidence and Social Innovation, QUB

Professor Frank Kee, Centre of Excellence for Public Health NI, QUB

Ms Aideen Gildea, Centre for Evidence and Social Innovation, QUB

Dr Nicole Craig, Centre for Evidence and Social Innovation, QUB

Dr Patrick Stark, Centre for Evidence and Social Innovation, QUB

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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)

The Project

- Evaluation of Cancer Focus NI's Dead Cool smoking prevention programme began on 1st 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

Group	Pre test COppm (SD)	Post test T1 CO ppm (SD)	Change at T1	Post test T2 CO ppm (SD)	Change at T2
Control	2.09 (1.35) n=197	1.81 (1.02) n=154	-0.28	1.56 (2.19) n=141	-0.53
Dead Cool	2.48 (1.82) n=202	1.90 (1.47) n=175	-0.58	1.27 (1.24) n=150	-1.21 (ES -0.38)
Total	2.29 (1.61) n=399	1.85 (1.28) n=329		1.41 (1.77) n=291	

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

Group	Mean response at Pre test	Mean response at Post test 1	Change at T1	Means response at Post test 2	Change at T2
Control	0.27 (0.71) n=194	0.32 (0.77) n=170	+0.05	0.46 (1.05) n=167	+0.19
Dead Cool	0.30 (0.80) n=198	0.42 (1.00) n=190	+0.12	0.40 (0.93) n=171	+0.1 (ES -0.51)
Total	0.29 (0.76) n=392	0.37 (0.90) n=360		0.42 (0.97) n=338	

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

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

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



For further information contact:

Professor Allen Thurston a.thurston@qub.ac.uk

Dr Laura Dunne l.dunne@qub.ac.uk

Dunne, L., Thurston, A., Gildea, A., Lazenbatt, A. and Kee, F. (2015) Research Protocol: A Randomized Controlled Trial Evaluation of Cancer Focus NI's Dead Cool Smoking Prevention Programme in post-primary school children. *International Journal of Educational Research*, 75, 24-30.

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