STUDY REFERENCE: C/ADEPIS02

Programme name: “ASSIST (A Stop Smoking in Schools Trial)”

Contact details:
Michael Day, CEO of DECIPHer Impact Ltd. Email: michael.day@decipher-impact.com
DECIPHer Impact is a not for profit company jointly owned by Cardiff University and the University of Bristol.

Programme description and objectives

Despite the many years it takes for early tobacco use to translate into tobacco-related morbidity later in life, evidence suggests that addiction is usually established during adolescence. Preventing young people from starting smoking is therefore crucial to developing effective tobacco prevention strategies.

The ASSIST (A Stop Smoking In School Trial) programme is a peer-led intervention aimed at promoting smoke-free behaviours among children aged 12-13 years. ASSIST combines a peer-led approach with the diffusion of innovation theory: it encourages the development and dissemination of new norms of smoking behaviour through the training of influential Year 8 students who work as peer supporters.

The programme develops through different stages. First, influential students are identified through questionnaires carried out with all students (Questions about trust, respect and leadership are asked: “Who do you respect in Year 8 at your school?”, “Who are good leaders in sports or other groups’ activities in Year 8 at your school?” and “Who do you look up to in Year 8 at your school?”) Once peer supporters are nominated, they receive intensive training to intervene effectively with their peers and diffuse messages to discourage them from smoking. The training takes place outside of school over two consecutive days, and is delivered by professional health staff. The content of the training is covering issues such as health, the environment, the law, the real cost of smoking, quitting and second hand smoke. It aims to increase peer supporters’ knowledge in relation to smoking, as well as to develop their communication skills and personal development. After the training, peer-supporters are asked to intervene informally in everyday life with their peers to encourage them not to smoke. They are also required to keep a diary with records of the conversations.

The intervention period lasts for 10 weeks in which peer supporters undertake informal conversations with other students on the benefits of remaining smoking free. During the intervention trainers provide additional support through four follow-up school visits in which they meet with peer-supporters and monitor their activities.

The ASSIST programme shows that teenagers themselves can be more effective in delivering interventions targeted to stop teens from starting early smoking. The use of informal settings and involvement of peer supporters in fact creates a sense of ownership, which enhances the effectiveness of the intervention.
Target Population

Year 8 students aged 12-13 years old from 59 different schools in Wales and England.

Expected Outcomes

To prevent smoking uptake in secondary schools and reduce smoking prevalence among adolescents, particularly among students who are at higher risk (occasional, experimental, ex-smokers). The study estimates that, if correctly implemented in schools across the UK, the programme would prevent 20,000 young people every year from starting smoking.

Study references


Related studies


Study details

The effectiveness of the ASSIST intervention was evaluated through a Cluster Randomised Controlled Trial conducted at school level. The trial was implemented within 59 secondary schools in England and Wales over a period of three years (2001 to 2004).

Study Sample

A total number of N= 10,730 Year 8 students aged 12 – 13 years was involved. Schools were randomly assigned through stratified block randomisation to either the control group, in which they continued their usual smoking education programmes, or to the intervention group where the ASSIST programme was implemented. There were 30 schools (n=5,385) assigned to the intervention and 29 schools (n=5,372) assigned to the control group respectively. In the intervention group 835 students completed the training and became peer-supporters.

Outcome measures

Smoking prevalence over the past week was measured through completion of self-reported questionnaires and reported for two groups: all the school year students and the group at higher risk i.e. occasional, experimental or ex-smokers. Questionnaires included a standard set of questions about smoking behaviour designed for young people. Saliva samples were also asked to be provided in order to measure cotinine concentrations and keep reporting bias to a minimum.

Questionnaires were completed by each student in the classroom and students were required not to confer with each other while filling it up. Outcome data were collected at baseline, immediately after intervention, 1-year follow-up and at 2-year follow-up. Rates of follow-up at any point of data collection were more than 90%.

Empirical Methodology

Stratified random sampling of 66 secondary schools was selected from 113 schools that agreed to participate in the programme. Stratification was conducted by country, type of school (independent or state) mixed or single sex, English or Welsh speaking, size of school and level of entitlement to free school meals. 59 of these schools agreed to be randomised to either the intervention or control group. A stratified randomisation was then conducted. Strata were defined according to the same criteria as for the random sampling.

To assess the effectiveness of the intervention, a three-level modelling analysis with data from all three follow-ups points (levels set on school, student, and repeated follow-up measurements) was carried out. Odds ratios of being a smoker in the intervention group were then compared to the control group.

Results and Impact

Significant differences in outcomes were found between the intervention and control groups. Results demonstrate that the programme was effective in reducing smoking uptake among adolescents in the intervention group. Smoking prevalence was lower in intervention than control schools up to 2-year follow-up, although less positive impact is shown in the long run. Contrary to premises, no more beneficial effects were found on groups at higher risk.
Prevalence of smoking in the last week for all students

- Immediately after intervention the odds of being a smoker for students in the intervention group was 25% less than in the control group.
- After 1 year the odds of being a smoker in the intervention group were 23% less than in the control group.
- After 2 years the odds of being a smoker in the intervention group were 15% less than in the control group. However, this difference was not statistically significant which may be due to an attenuation of the intervention effect over time.

Prevalence of smoking in the past week for sub-groups at higher risk

- Results for high-risk groups show that after 1 year the odds of being a smoker in the intervention group were 25% less than in the control one, and after 2 years the odds were 15% less.
- Such outcomes suggest that the intervention did not have a more beneficial effect on students identified as at higher risk.

Effect of the intervention

- Odds ratios from the multilevel modelling, with data from all three follow-up points, show a 22% reduction in regular smoking in the intervention group compared to the control group.
- No significant difference on the effect of the intervention was found between subgroups (gender, peer-supporter status, deprivation measured by free school meal entitlement).
- Comparison of self-reported smoking questionnaires with data on concentrations of salivary cotinine revealed that only 1% of students at the 1-year follow-up and 3% of students at the 2-year follow-up who reported not smoking were not consistent with their saliva samples.

Impact grade: 2

Cost of the intervention

In the present study, the intervention cost was calculated according to number of staff employed, travel time and distances, accommodation for training days, vouchers for peer supporters. Data were collected every week. Overall, the average cost of the intervention was then estimated at £27 per student and £4,700 per school. Campbell at al. (2008) also calculates different average costs (taking into account sole implementation in local areas, cutting off travel expenses) for a total value of of £23 per student and £3,937 per school.

Overall quality of evidence

The study provides good evidence on peer-led approaches that use an informal education approach to prevent children and adolescents from taking up smoking. As a RCT was conducted, few criteria intrinsically related to the quality of evidence needs to be addressed:

i) **Fair and independent evaluation.** The study reports a good quality evaluation that involves a large-scale cluster randomised controlled trial with randomisation at school level. The randomisation technique makes use of stratified block randomisation to restrict chance imbalances between the groups.

ii) **Statistical power:** Advanced statistical methods to data analysis were performed and high levels of response rates for students and retention rates for schools were achieved at each follow-up point.
iii) **Minimum bias**: a few baseline differences persisted between these groups. In particular, more students in the control group reported to smoke every week compared to the intervention group.

iv) **Transferability and generalisability**: Main reservation is represented by the fact that, only one trial (Campbell et al. 2008) was conducted and no additional experiments tested the intervention on other populations. This may imply that more studies, in different contexts, should be conducted to confirm reliability of evidence and external validity of the intervention.

**Level of evidence grade: 6**
### Appendix: details of impact grades and quality of evidence grades are set out below

<table>
<thead>
<tr>
<th>Impact grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>0 (none)</td>
<td>No relationship between the youth service and the outcome in question.</td>
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<tr>
<td>1 (low)</td>
<td>Provision of the youth service may be positively related to one but not all outcomes or just for sub-groups of the target population.</td>
</tr>
<tr>
<td>2 (medium)</td>
<td>The youth service has moderate impact on all outcomes and sub-groups or high impact on some outcomes and sub-groups.</td>
</tr>
<tr>
<td>3 (high)</td>
<td>The youth service has high impact on all outcomes and sub-groups.</td>
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<thead>
<tr>
<th>Score</th>
<th>Type of study</th>
<th>More Description</th>
<th>Example of a study</th>
<th>How to improve the quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Basic</td>
<td>Studies that describe the intervention and collect data on activity associated with it.</td>
<td>A study that describes the intervention and states how much it cost or how many hours of services young people received.</td>
<td>Collect some “before and after” data on the outcome of interest for those receiving the intervention. If it is too late for that, collect outcome “after” data for the group receiving the services and try to compare these outcomes with comparable youth using other sources of data.</td>
</tr>
<tr>
<td>1</td>
<td>Descriptive, anecdotal, expert opinion</td>
<td>Studies that ask respondents or experts about whether the intervention works.</td>
<td>A study that uses focus groups or expert opinion or indeed surveys those who received the intervention after they received it.</td>
<td>Collect some “before and after” data on the outcome of interest for those receiving the services. If it is too late for that, collect outcome “after” data for the group receiving the services and try to compare these outcomes with comparable youth using other sources of data.</td>
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<tr>
<td>2</td>
<td>Study where a statistical relationship (correlation) between the outcome and receiving services is established</td>
<td>The correlation is observed at a single point in time, outcomes of those who receive the intervention are compared with those who do not get it.</td>
<td>A study that conducts a survey only after the services have been delivered and concludes that youths who received the services responded more positively than those who did not.</td>
<td>This evidence does not allow for the fact that prior to the intervention youths who received the service may have been different from those who did not. Collect some before and after data on the outcome of interest for those receiving the intervention. If it is too late to do that, see if you can compare outcomes for a clearly defined comparison or control group using other “before” data sources, such as administrative data.</td>
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<tr>
<td>3</td>
<td>Study which accounts for when the services were delivered by surveying before and after</td>
<td>This approach compares outcomes before and after an intervention.</td>
<td>A study that conducts a survey before and after the program.</td>
<td>If you have before-after data you can measure the change in a particular outcome after the services were delivered. Try to determine whether you can compare this gain in the outcome for those who received the youth services to the gain for a similar group of youth who did not receive the services. You might use administrative data for this.</td>
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<td>4</td>
<td>Study where there is both a before and after evaluation strategy and a clear comparison between groups who do and do not receive the youth services</td>
<td>These studies use comparison groups, also known as control groups.</td>
<td>A study that matches two locations where both individuals and areas are comparable and surveys them before and after the program e.g. pilot studies.</td>
<td>You have most of the data you need. Contact an expert on statistics or econometrics and they will be able to apply various statistical methodologies to improve the robustness of your results e.g. matching methods to define a better control or comparison group. NOTE: this is the minimum level of evaluation quality applied by the Social Research Unit et al (2011), which also stipulates that any such study fulfil various quality criteria.</td>
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<tr>
<td>5</td>
<td>As above but in Study with a before</td>
<td>A study that uses a</td>
<td>Short of a random control trial, this methodology is the</td>
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<td>Level</td>
<td>Description</td>
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<td>Additional Notes</td>
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<td>6</td>
<td>Study where intervention is provided on the basis of individuals being randomly assigned to either the treatment or the control group.</td>
<td>A study that compares results from two independent randomly generated groups (one receiving the intervention and the other one not) and uses statistical analysis to determine effectiveness of the programme.</td>
<td>The gold standard. It is challenging to run a RCT, with cost, ethical and practical issues arising. Even with a RCT you have to think about how generalisable it is to other situations. If the RCT was only males, it cannot tell you about how well the youth service would do for females, for example.</td>
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<td>7</td>
<td>Various studies that evaluate an intervention which has been provided through random allocation at individual level.</td>
<td>The Intervention has been evaluated more than once and its effectiveness is assessed through more than one RCT showing high level of statistical analysis and reporting high quality of evidence.</td>
<td>Same challenges of level 6 apply here. To improve conduct Meta-analysis or Systematic reviews of RCT which compares results from various numbers of studies involving experimental analysis.</td>
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