Online school-based prevention for alcohol and other drugs: A systematic review

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Background

- Alcohol and drug use among adolescents is a major public health concern, and is associated with considerable social costs and harms (Begg et al., 2003).
- Data from the 2010 National Drug Strategy Household Survey indicate that in Australia:
  - 25% of 14-19 year olds have tried an illicit drug
  - Almost 20% have consumed alcohol at a risky level in the past month (AIHW, 2010)
- These results highlight a clear need for prevention. Many school-based prevention programs for alcohol and drugs exist, however the efficacy of these interventions has been limited (Foxcroft & Tsertsvadze, 2011). This is most likely due to implementation and dissemination barriers.
- Interventions delivered via computers or the Internet have the potential to overcome many of these barriers by offering:
  - High implementation fidelity
  - Reduced dissemination costs
  - Increased accessibility and availability

AIM: To identify Internet and computer-based prevention programs for alcohol and other drugs delivered in schools, and to determine the efficacy of these programs.

Method

Data Sources and Study Selection
- The Cochrane Library, PsychINFO and PubMed databases were searched in March 2012.
- Inclusion Criteria: studies needed to be an Internet- or computer-based prevention program for alcohol or other drugs, delivered in a school setting.
- Figure 1 shows the search strategy and study selection process used.

Study Quality
- Quality was assessed using a validated measure for rating study quality (Jadad, 1996).
- Studies were rated against 3 key criteria, on a scale from 0–5*: 1) randomisation, 2) double-blinding, 3) withdrawals and drop-outs.

Outcome Measures
- Primary outcomes: Alcohol and drug use
- Secondary outcomes:
  - Alcohol and drug-related knowledge
  - Attitudes and expectancies
  - Harms caused by one’s own use
  - Intentions and temptations to use
  - Resistance skills and decisional balance

Table 1: Primary and secondary outcome data for identified trials

<table>
<thead>
<tr>
<th>Program</th>
<th>Trial Title</th>
<th>Addictive behaviour</th>
<th>Sample</th>
<th>Intervention</th>
<th>Post-intervention ES/WOR</th>
<th>Follow-up ES/WOR</th>
<th>Post-intervention ES/WOR</th>
<th>Follow-up ES/WOR</th>
<th>Quality Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarettes</td>
<td>Butler et al., 2008</td>
<td>Tobacco</td>
<td>Australia, 10-13yrs n=350</td>
<td>Classroom, 6lessons</td>
<td>-</td>
<td>Smoking initiation, OR 0.91* (INT&lt;CO)</td>
<td>-</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cigarettes</td>
<td>Newton et al., 2008</td>
<td>Tobacco</td>
<td>Australia, 13-17yrs n=496</td>
<td>Classroom, 6lessons</td>
<td>-</td>
<td>Resistance (whole sample), OR 1.03* (INT&lt;CO); Resistance among baseline smokers, OR 1.27* (INT&lt;CO); Behavioral intentions to smoke, OR 0.94* and behavioral intentions among baseline smokers, OR 0.87* (INT&lt;CO)</td>
<td>-</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>Morris, 2009</td>
<td>Alcohol</td>
<td>Australia, 14-17yrs n=442</td>
<td>Self-administered, 5 sessions</td>
<td>Cigarette use, OR 1.27*; Cigarette use among non-smokers, OR 0.79* (INT&lt;CO)</td>
<td>-</td>
<td>Future smoking intentions, OR 0.81</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Prokopec et al., 2010</td>
<td>Tobacco</td>
<td>USA, 13-17yrs n=8352</td>
<td>CD-ROM, 4 lessons</td>
<td>-</td>
<td>Decided not to smoke, ES 0.13* (INT&lt;CO); Decided not to smoke, ES 0.13* (INT&lt;CO); Temptation to smoke, ES 0.27* (INT&lt;CO); Temptation to smoke, ES 0.27* (INT&lt;CO); Tobacco, ES 0.56* (INT&lt;CO); Tobacco, ES 0.56* (INT&lt;CO)</td>
<td>-</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>Vogl et al., 2009</td>
<td>Alcohol</td>
<td>Australia, 16-17yrs n=3368</td>
<td>CD-ROM, 3 lessons</td>
<td>Smoking initiation, OR 0.87* (INT&lt;CO); Smoking initiation, OR 0.87* (INT&lt;CO); Cigarette use among non-smokers, OR 0.79* (INT&lt;CO); Cigarette use among non-smokers, OR 0.79* (INT&lt;CO)</td>
<td>-</td>
<td>Future smoking intentions, OR 0.81</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Newton et al., 2009</td>
<td>Alcohol</td>
<td>Australia, 13-17yrs n=1758</td>
<td>Classroom, 6 sessions</td>
<td>Smoking initiation, OR 0.91* (INT&lt;CO); Cigarette use among non-smokers, OR 0.79* (INT&lt;CO); Cigarette use among non-smokers, OR 0.79* (INT&lt;CO); Cigarette use among non-smokers, OR 0.79* (INT&lt;CO)</td>
<td>-</td>
<td>Future smoking intentions, OR 0.81</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Alcohol</td>
<td>Lord &amp; Norman, 2009</td>
<td>Alcohol &amp; cannabis</td>
<td>Australia, 12-16yrs n=1402</td>
<td>CD-ROM, 3 lessons</td>
<td>Smoking initiation, OR 0.91* (INT&lt;CO); Cigarette use among non-smokers, OR 0.79* (INT&lt;CO); Cigarette use among non-smokers, OR 0.79* (INT&lt;CO); Cigarette use among non-smokers, OR 0.79* (INT&lt;CO)</td>
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Results

- Overall 12 trials of 10 programs were identified, and ES and/or ORs were obtained for 7 programs.
- Of the 7 programs:
  - 6 achieved a reduction in alcohol or drug use
  - 2 increased intentions to smoke
  - The greatest effects were achieved for drug and alcohol-related knowledge, with effectiveness persisting at 6- and 12-month follow-ups for 3 trials.
- ES and ORs were small for drug and alcohol use and secondary outcomes. However, these compare favourably to effects reported for non-computerized school-based prevention programs (Teesson, Newton & Barrett, 2012) and Internet-based treatment programs for young adults (Tait & Christensen, 2010). ES for drug and alcohol prevention typically fall between 0.2–0.3
- This was the first review to focus specifically on computer- and Internet-based programs for the prevention of alcohol and drugs in schools.
- Only 2 of the 10 programs had been evaluated more than once, highlighting a clear need for the cross validation of existing programs.
- Although the number of trials identified in this review is small, the results have major implications for the delivery of alcohol and drug prevention in schools.

Internet- and computer-based programs can be an effective means of delivering drug and alcohol prevention in schools!

Discussion

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