BACKGROUND

Tobacco use and the exposure to tobacco smoke are associated with premature death from chronic disease, losses to society, and substantial burden on the healthcare system (Centers for Disease Control and Prevention, 2008). In young adults, the more immediate health effects include increased respiratory symptoms, as shortness of breath, persistent cough, wheezing and increased breathlessness after exercise (Oliveira-Vianna et al., 2008), and cardiovascular diseases (U.S. Department of Health and Human Services, 2012). While people start using tobacco in early adolescence (before age 18), the college years are a critical time in the development of smoking behavior and tobacco use (Centers for Disease Control and Prevention, 2007). In fact some undergraduates start smoking at university and the consumption of smoking is consolidated at this age (Brown, 2013). However, most tobacco programs for this group of age, are based around prevention and not in cessation of tobacco use.

OBJECTIVE

To evaluate the effectiveness of smoking cessation programs for college students.

Figure 1 shows the results of the literature review. A total of six RCT and two QRT (O’Neill et al, 2000; Hellman et al, 2000; Herman and Fahnlander, 2003; An et al, 2008; Abrams et al, 2008; Prokhorov et al, 2009) with a total of 1594 participants met the inclusion criteria. These studies were conducted between 2000 and 2009 in colleges and universities in the United States. The characteristics of these studies are presented in Table 1. The principals characteristics of the participants of the six studies included are (n=1243):

- The mean age in the intervention group was 20.9 and the participants in the control group had a mean age of 21.0.
- The average number of cigarettes smoked daily was 8.52 in the intervention group, and 8.07 in the control group.
- Female participants represented 73.1% of the population in the intervention group, and 72.3% in the control group.
- Prochaska’s Stages of Change (Prochaska and DiClemente, 1983), 57.0% of participants in the intervention group and 56.4% of participants in the control group were in the contemplation phase. Figure 2 illustrates the incidence of smoking cessation for the intervention. Publication bias was not evident according to Begg’s Correlation Model (Tau=1.13; p=0.26), or to Egger’s Regression Model (a=0.36; p=0.58).

RESULTS

This meta-analysis was conducted according to the PRISMA Statement. A systematic search (PubMed, CINALH, PsyCINFO (OVID), ISI Web of Knowledge, Cochrane Plus, Cochrane Tobacco Addiction Group, and CUIDEN) was performed to identify eligible articles. The reference list of identified studies was also examined. Randomized controlled trials (RCT) and quasi-randomized trials (QRT) comparing a smoking cessation program for college student versus traditional approach. The studies were considered eligible if they primary outcome was the incidence of smoking cessation and if they follow-up was longer than 6 month. The selection studies (k= 0.88 (p<0.001)) and the quality of studies (k=1 (p<0.001)) was made independently by 2 authors. Odds ratios (OR) were summarized for each individual study and a pooled OR using the random effects model was estimated. To assess statistical heterogeneity between summary data and a trial level Cochran’s Q statistic (p<0.10), the I2 statistics (I2>50%) and between-study variance (2) were used. Publication bias was assessed using Begg’s Correlation Model test, and Egger’s Regression Model.

Table 1. Summarized characteristics of the seven studies included in the meta-analysis.

<table>
<thead>
<tr>
<th>Study</th>
<th>Type of Cessation Program</th>
<th>Control</th>
<th>Follow-up</th>
<th>Start of Program</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prochaska, J.O., DiClemente, C.C. (1983)</td>
<td>Motivational Interview</td>
<td>Group 1</td>
<td>Group 2</td>
<td>Mean age 20.9</td>
<td>n=250</td>
</tr>
<tr>
<td>Herman, K.C., Fahnlander, B. (2003)</td>
<td>Motivational Intervention</td>
<td>Group 1</td>
<td>Group 2</td>
<td>Mean age 21.0</td>
<td>n=250</td>
</tr>
<tr>
<td>Thompson, L., Prochaska, J.O., DiClemente, C.C. (1983)</td>
<td>Motivational Interview</td>
<td>Group 1</td>
<td>Group 2</td>
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CONCLUSION

This meta-analysis suggests that programs specifically designed for college students are more effective than traditional tobacco cessation programs.

Further high-quantity intervention studies are needed (Brown, 2013). To reduce bias and heterogeneity among studies, power calculation, an adequate follow-up (at least, 6 months), and cotinine as biochemical validation, should be included. To generalize our results more interventions should be tested in other countries.

REFERENCES


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