

Lack of sustainable prevention effect of the “Smoke-Free Class Competition” on German pupils

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Abstract

Background. This study examines the effectiveness of the school-based campaign “Smoke-Free Class Competition” as a means of preventing young non-smokers from taking up smoking.

Methods. Based on two measurements of the Heidelberg Children’s Panel Study (1998 and 2000), a longitudinal sample of 1704 pupils was examined: 948 in the intervention group and 756 in the control group. In order to evaluate the effects of the intervention, we compared the smoking behavior in the intervention and the control group at two points in time, shortly before, and 18 months after the intervention, on an individual case basis.

Results. (1) Stabilization of never-smoking rates: the proportion of pupils remaining a never-smoker at the follow-up is 62.1% in the intervention group and 61.5% in the control group (OR 1.02, 95% CI: 0.83–1.24); (2) Lowering of relapse rates among ex-smokers: the proportion of former smokers who had not started smoking again in the follow-up is 45.1% in the intervention group and 41.4% in the control group (OR 1.07, 95% CI: 0.77–1.49).

Conclusion. The “Smoke-Free Class Competition” did not prevent smoking among adolescents and does not appear to be an effective substitute to the complete ban of tobacco advertising, the abolition of vending machines and the creation of smoke-free environments in German schools. © 2005 Elsevier Inc. All rights reserved.

Keywords: Smoking; Smoking prevention; School-based intervention; Adolescents; Youth; Competition

Introduction

Smoking is the leading cause of numerous serious chronic diseases, of premature deaths and of costs amounting to billions of Euros [1–3]. Although in most developed countries prevalence rates among adults, especially among men, have declined in recent decades [4–6], the smoking prevalence among adolescents remained stable or even increased in the United States and Europe during the 1990s [7–9]. In Germany, for instance, in the year 2004, more than 41% of 12- to 15-year-old adolescents had already smoked and 16% of them were current smokers [10]. Compared to a smoking prevalence in this age group of 10% in 1989, this represents an increase of 60% [11]. The average age of German youths starting smoking today is below 14 years and more than 80% of the 12- to 25-

year-olds have their first experiences of smoking before their 16th birthday [10,12]. This is distressing as it is well known that people who start smoking early in life are more likely to develop a smoking-related disease and to become heavy smokers [13–15]; they also have a lower cumulative probability of quitting smoking [16–18]. Therefore, smoking prevention should target young people before they start consuming tobacco products in their early adolescence.

This circumstance has given rise to a great variety of tobacco-specific prevention programs for adolescents in the last decade, exploiting in particular educational opportunities available through the school system [19–21]. Primary goals of school-based intervention programs are to enable never-smokers and ex-smokers to abstain from any tobacco use, and to enable and encourage young people who have experimented with smoking, or who are regular tobacco users to cease this use as soon as possible [22]. The stabilization of never-smoking among lifetime non-smokers (1) and the lowering of

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relapse rates among ex-smokers (2) are crucial points for the present study.

The “Smoke-Free Class Competition” is the biggest single school-based and tobacco-related prevention program to pursue these aims in Germany in recent years: more than 780 classes from 420 schools entered the competition in the school year of 1998/99. This amounts to a turnout of more than 12,000 pupils; in subsequent years, there was even an increase in participation [23]. One major part of the 1998/99 competition in Germany took place at schools in the Rhine-Neckar region, which consists of Heidelberg, Mannheim and the Rhine-Neckar County. Schools in that area had already been included at this time in the Heidelberg Children’s Study, which had raised questions about the health habits of youths. In the framework of this *panel study*, the effectiveness of the “Smoke-Free Class Competition” can be analyzed with regard to two central intervention goals formulated above (stabilization of never-smoking, lowering of relapse rates among ex-smokers).

In a number of publications, the German initiators of the campaign have concluded that the intervention is effective in preventing or delaying the uptake of smoking among young people on the basis of a 6-month follow-up study [24–26]. These studies mostly use a cross-sectional approach and compare smoking prevalence at three points in time (pre-test, 1-month and 6-month follow-up). The aim of our study is to evaluate the effectiveness of the “Smoke-Free Class Competition” after 18 months with a longitudinal approach on an individual case basis. However, we only want to assess the effect of the program in total and not of specified features of its course, since we assume that only a comprehensive analysis of this intervention program can give us an impression of its effectiveness under conditions of every day life.

Material and methods

Intervention

The “Smoke-Free Class Competition” (named “Be smart—don’t start” in Germany) is a school-based smoking prevention program for pupils from grades 6 to 8 (aged between 11 and 15 years), which primarily intends to prevent the smoking onset among adolescents. This program, which has been implemented in several countries, has been facilitated by the European Commission as part of the EU action plan “Europe against Cancer”. It consists of a competition and a curricula aiming at preventing smoking among the pupils [27].

The *competition* is based upon some general rules, which are the same in each participating country: (a) the school classes decide to be a non-smoking class for a period of six months; (b) the school classes monitor their (non)smoking behavior and report it regularly to the organizers of the competition; (c) as long as less than 10% of its pupils are smoking, the class can still participate in the competition [28]. Classes which do not achieve this goal are excluded from the competition. Those classes who remain non-smoking for a 6-month period take part in a national and an international draw to win a number of attractive prizes.

The *intervention* consists of weekly curricula comprising information about the health effects of smoking, how to quit smoking, how to deal with peer pressure and the strategies of the tobacco industry. These topics can easily be integrated in various educational subjects by the teachers. The teachers who are responsible for carrying out the intervention in their class were invited to attend an information session before the start of the program. Additionally, they received brochures informing them about the rules of the competition and giving suggestions and recommendations for measures to help prevent smoking among their pupils. Detailed descriptions of the rules of the competition can be found elsewhere [27–29].

Study design

In this study, the evaluation of the intervention is conducted using data from the Heidelberg Children’s Panel Study carried out by the German Cancer Research Center in Heidelberg, Mannheim and the Rhine-Neckar County. The basis for the baseline survey was a total selection of all classes of the 7th grade in Heidelberg, as well as a random sample of schools of Mannheim and the

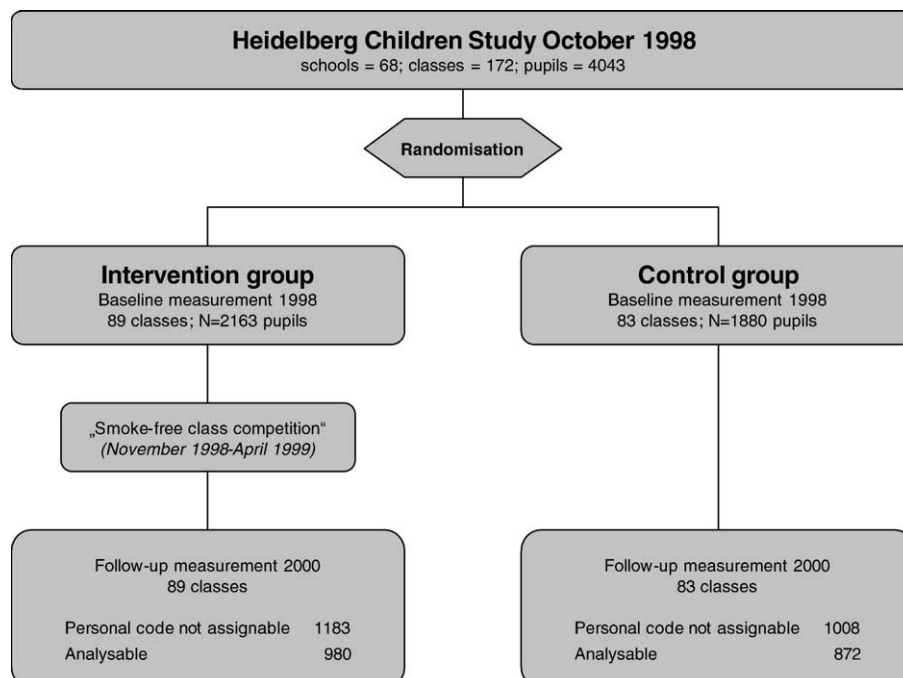


Fig. 1. Experimental study design of the “Smoke-free Class Competition” in the Rhine-Neckar region 1998–2000 (Heidelberg, Mannheim and the Rhine-Neckar County).

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