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EVIDENCE BASED PUBLIC HEALTH POLICY AND PRACTICE

Some doubts about one of the largest smoking prevention programmes in Europe, the smokefree class competition

Jean-François Etter, Paul Bouvier

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With over 600 000 participants in 16 countries, the smokefree class competition is one of the largest smoking prevention programmes in Europe. Participating classes that maintain a smoking prevalence usually below 10% are eligible for a contest and the winner is rewarded with money. There is however no convincing evidence that this competition has any effect on smoking prevalence beyond the short term, and this approach raises serious ethical issues. In particular, the central principle of this competition is to apply negative peer pressure upon teenage smokers. However, promoters of this competition have neglected to report the possible adverse consequences of using negative peer pressure upon smokers. This is a concern, because teenage smokers are more vulnerable than non-smokers, and they are at higher risk of suffering from psychological problems and school failure.

We searched PubMed, PsycInfo, Web of Science, Google.com, and Scholar.google.com, using the terms “class”, “competition” “smoke free”, “smoking”, “smoker” and “be smart—don’t start” (the name of this competition in several countries). We also used the lists of references in published papers and the competition’s web site (<http://www.ift-nord.de/ift/sfc/>). We reviewed studies published in English and German only, but are unaware of any other efficacy study in other languages.

EFFICACY

We found four studies, including two randomised trials, on the efficacy of this competition published in peer reviewed journals.^{3–6} The most recent of these studies is a randomised trial conducted in Germany.³ In this study, a representative sample of classes were randomly assigned to the competition plus weekly lessons or to a control group. The same pupils were followed up after 18 months. There was no impact of the competition on smoking prevalence, smoking initiation, or cessation rates.³ Importantly, the funding of this study was independent from the funding source of the competition.

In another randomised trial conducted in the Netherlands, the efficacy of the competition was tested in 13 years old children with lower educational achievement.⁴ In addition to the competition, all classes in the intervention group received three lessons on social influences, knowledge, and attitudes about smoking. A randomly selected control group of classes did not take part in the competition and did not receive lessons on tobacco. Shortly after the end of the intervention, fewer children had started to smoke in the intervention group than in the control group (10% compared with 14%, odds ratio 0.61, 95% confidence interval 0.41 to 0.90). However, one year after the end of the intervention, this effect was no longer statistically significant, nor were there any effect on smoking prevalence after one year. The authors of this study suggested reinforcing the intervention to extend its impact over time. It is however unclear how this can be done, given that school based smoking prevention programmes have at best a limited efficacy.² In many countries, the classes taking part in the competition do not systematically receive three additional lessons on tobacco, thus the competition should be less effective in these countries than in the Netherlands.

The two other studies were not randomised trials. A comparative study conducted in

Preventing tobacco smoking among young people is a priority. In a few years, the smokefree class competition has become one of the largest smoking prevention programmes in Europe.¹ Over 600 000 children in 28 000 classes in 16 European countries take part in this competition every year (<http://www.ift-nord.de/ift/sfc/>). This competition is supported by the European Union’s “Europe Against Cancer” programme and by each participating country (<http://www.ktl.fi>). The principle of this competition is that participating classes take a collective commitment to remain non-smoker during at least six months. Those who succeed to keep smoking prevalence under a defined threshold, usually below 10%, are eligible for a contest and the winner is rewarded with money. In some cases, but not always, children are given lessons on smoking, in addition to the competition. However, because school based antitobacco education is largely ineffective,² the main mechanisms of this competition are the money prizes and the negative peer pressure. In some countries (for example, Switzerland), a saliva test for cotinine (a metabolite of nicotine) was conducted until 2004 to assess whether children deceived the promoters of the competition.

While we recognise the positive intentions behind this project and its possible beneficial effects for some children in specific contexts, we would like to express some doubts about this competition, notably the scarce evidence for its efficacy and the ethical issues it raises.

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Germany concluded that the competition was effective in delaying smoking initiation.^{6,7} However, this study had serious methodological limitations. Firstly, this was a comparison of classes who volunteered to take part in the competition with classes from another town, that were not invited to take part in the competition. These two groups were not comparable, as motivation to participate is related to teachers' or students' attitude towards smoking. In addition, smoking prevalence at baseline was slightly higher in the control group than in the experimental group, although not statistically significantly so. These baseline differences in motivation and behaviour could partly explain why, at follow up, smoking increased more in the control group than in the experimental group. No baseline data were reported on potential confounders such as levels of motivation to quit smoking or levels of tobacco dependence, and no adjustment were made for these variables. In addition, the follow up rate in this study was unusually low, 49% (2142 of 4372 students), and 56 classes of 187 were lost at follow up. Even though the authors present an attrition analysis, such a high attrition rate can still affect the results. No "intention to treat" analysis was presented, where all subjects having taken part in the baseline survey would have been included in the denominator. Finally, this study was funded by the "Europe against Cancer" programme, which also funded the smokefree class competition in Germany. This may create a conflict of interest.

The fourth study, conducted in Finland, concluded that the competition was effective in delaying the onset of smoking.⁵ This was however not a randomised trial, and the control group was not comparable to the intervention group, as it included twice as many smokers at baseline (11.3% compared with 5.2%, $p < 0.001$). An important limitation of this study was that it compared classes that agreed to take part in the competition with classes that did not want to take part in it. Interest in the competition may be associated with the motivation to quit smoking, this is a potential confounding factor that was not controlled for.

ETHICAL ISSUES

Apart from efficacy concerns, this competition raises at least two other ethical issues: non-voluntary biochemical tests and the use of negative peer pressure as the central mechanism of this intervention.

Non-voluntary biochemical tests

In Switzerland, until 2004, participation in the competition implied a non-voluntary test of saliva cotinine to detect tobacco use. This point is critical and constituted a radical obstacle to the participation of several schools in Switzerland. From an ethical standpoint, these tests are not acceptable because participation in the competition or in the cotinine test is not based on an individual choice, and because these intrusive tests bring no benefit to the children, they are only useful to the promoters of the competition.⁸ In addition, these tests can have detrimental consequences at the individual and collective levels, in particular for children tested positive who declared they did not smoke. In addition, biochemical verification lacks validity in this population, because most biochemical markers cannot detect occasional smoking, a frequent pattern among teenagers.⁹ Furthermore, the use of such tests creates a climate of control and suspicion that may damage the teaching relationships between students and adults in school.

Peer pressure

There is one additional concern about this approach. Because the winner is the whole classroom, not the individual non-smoker, the principle of the competition is to elicit group solidarity, but also group pressure on smokers. The corollary

What this paper adds

This paper is a critical comment about one of the largest prevention programmes in Europe, the smokefree class competition. We underline the serious limitations and risks of this approach.

of this approach is the potential exclusion of those who do not conform with the goal adopted by the group. Using negative peer pressure in an intervention that does not work is particularly objectionable. Even though a maximal rate of 10% of smokers is admitted to prevent negative peer pressure on the part of non-smokers,⁶ this is not a sufficient guarantee that bullying of smokers will not take place. This is a serious problem. In children, smoking is a marker for social, familial, or psychological difficulties, and youthful smokers are a more vulnerable group than non-smokers.¹⁰ The four available efficacy studies reported the impact of the competition on the number of smokers, but they neglected to conduct or report any measure of the potential adverse effects of this competition on smokers. Because children who smoke do not individually choose to take part in the contest, any evaluation of this approach should include rigorous assessments of whether the competition had any detrimental effect, like bullying, exclusion, shame, decreased self esteem, and the consequences of being called a liar if the salivary test is positive. Anecdotal reports from children are not sufficient, and systematic measurements should have been conducted.

The decision to register in the competition is some times taken by the school direction, and it is some times based on a majority decision of each class.⁶ It is not an unanimous decision of all children, thus a minority of children are forced into this competition. This point raises serious concerns, in particular because this competition makes an extremely debatable use of peer pressure. The children who cause their class to lose the competition are likely to be stigmatised by the group. The contest is based on a principle of exclusion: if a few children smoke, the whole class is excluded from the drawing of lots. This constitutes a collective punishment, which is morally unacceptable. Instead of promoting health, this competition has a potential to generate scapegoats. The pressure exerted on pupils may be strong, and the weakest children may not be able to avoid the blame, shame, and settling of scores. All these effects are potentially harmful both to the child and to the group. A recent Swiss study concluded that bullying or rejection of smokers was no more frequent in classes that took part in the competition than in non-participating classes.¹¹ However, this study compared classes that chose to participate with classes that chose not to do so. Thus it is not clear whether these results are attributable to the competition itself or to selection bias. Evidence from randomised controlled trials is needed to report this point.

Because in its core principle, the competition uses peer pressure, it creates a context favourable to the temptation to cheat. The level of suspicion is such that the organisers used non-voluntary biochemical tests, which create the ethical

Policy implications

We suggest to either abandon this competition, or use it as an experimental approach using a randomised study design, in a small group of classes where adverse effects are monitored.

concerns mentioned above. This competition is based on a logic of exclusion, suspicion, and mistrust. Health promotion should, in contrast, rest on values of solidarity, truthful information, and confidence. Rather than using peer pressure, smoking prevention should use mutual support between peers, in such a way as to let the group become a positive influence for health promotion. Of interest, none of the four reports mentioned above included a clear indication of whether or not the competition and the evaluation studies were submitted to and approved by an ethics committee.³⁻⁶ It is doubtful whether these studies would have obtained such approval, had they requested it.

LACK OF A THEORETICAL BASIS

An important problem of this competition is that theory tells us that this approach is unlikely to succeed. The causes of adolescent smoking are multiple, ranging from social, economic and political, to psychological and familial, to biological and genetic.¹² Most teen smokers are occasional (non-daily) smokers, but many young smokers are nevertheless dependent on tobacco.¹³ Yet precisely, the central characteristic of tobacco dependence is the inability to stop smoking despite health risks, social pressure, and quit attempts. This competition fails to take into account the addictive nature of cigarettes and the social, cultural, and economic context in which children live. This approach assumes that smoking is largely the result of individual choices combined with group effects. Whereas it acknowledges the role of group influence, it can stigmatise children without tackling the important societal influences. Meanwhile, the tobacco industry is left largely unchecked in its efforts to recruit young smokers. In this context, using peer pressure seems to be illusory, and even potentially harmful. Finally, rewarding with money to obtain children's obedience is certainly not a viable education strategy. This approach can be therefore considered atheoretical and even naive, in particular for an addictive product as ubiquitously available as cigarettes.

Unfortunately, many other smoking prevention measures targeting youth are also ineffective. In particular, competitions,¹⁴ antitobacco education in schools,² and tobacco dependence treatments have little effect on youth smoking rates.¹⁵ There is some evidence that community interventions and mass media campaigns may have an effect, but overall the evidence supporting the latter two approaches is not strong.^{16, 17} One of the most effective measures to decrease tobacco use among youth remains price increases.¹⁸ Currently available data suggest that smokefree class competitions lack any sustained effects, and their core principle, negative peer pressure, raises serious ethical concerns. At the very least, promoters of preventive programmes should deploy any efforts to avoid as much as possible any potential adverse side effects. In its current format, the smokefree class competition should be abandoned. Preventive efforts should first be concentrated on the creation of smokefree environments in schools. Then, modified versions of this competition should be developed, using the group influence in a positive way. For instance, a non-smoking contest is being developed in Geneva using student's creativity and peer support in the class, so as to develop new approaches for smoking

prevention. Such programmes should be pilot tested in a limited number of classes. Evaluations should use a randomised study design and they should assess the possible adverse consequences of the competition on children who smoke, a particularly vulnerable group. Whereas smoking prevention in school has probably a limited role, it is probably important to continue such efforts in complement to actions at the level of the school environment and society. In any case however, given the risks of negative side effects and of useless interventions, an extreme attention must be given in all prevention programmes to ethical issues. As any of us, youth are extremely sensitive to the respect of their person, their integrity, and autonomy.

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