Short Reports

An evaluation of a smoking prevention programme with children from disadvantaged communities

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Abstract

This study examined the effect of a novel smoking prevention programme on children in primary schools in disadvantaged areas. The programme included integration with other school subjects as well as parental involvement and visits by Health Board personnel. Compared to matched control groups the classes in which the programme was piloted, showed less positive attitudes towards smoking and greater awareness of the dangerous consequences of smoking. The results are considered in the context of the need for approaches to smoking prevention that include both education and the restriction of access.

Introduction

Surveys of smoking in Ireland have shown that smoking rates among primary and postprimary school pupils are high by international standards and has changed little from the 1960s.[1,2] Overall, just two-thirds of the young people taking part in these surveys had smoked at some time in their lives. The time between ages 10 and 13 years was especially important as indicated by the fact that over 60% of those who smoked, began during these years.

Many of the approaches to smoking prevention are based on the influences that are known to be associated with initiation to smoking. There is a strong association between smoking by young people and that of their immediate peers and between smoking and beliefs about smoking consequences. However, it has been established that knowledge of itself (on which the earlier programmes depended) does not exert a major influence on the beliefs and attitudes that are relevant to smoking. In fact there is evidence that miseducation (exaggerating the negative consequences of smoking) may in fact be counterproductive.[3]

Those approaches that are successful have three characteristics; (i) an emphasis on short-term consequences, (ii) a focus on social-skills that help withstand peer and media pressure to smoke, and (iii) supportive links between the school and community.[4]

The results of the evaluations of school programmes have been rather mixed. The Minnesota smoking prevention programme and the Norwegian Family smoking prevention project have both been shown to bring about lower levels of smoking uptake.[5] However, a British evaluation of these programmes showed that they failed to deter the onset of smoking (either singly or in combination) among first year postprimary students." The present study is concerned with bringing together all of the components that have been shown to be related to effectiveness of previous programmes and with a younger age group.

Method

The 'Smokebusters' club is aimed at building a strong peer group norm of non-smoking among children. Children can join only if they pledge to remain nonsmokers. The activities include

This article is a reproduction of that published in: *Irish Medical Journal*, March/April 1994, 87(2), pp. 56-57.
Pagination may not match that of the original.

information on smoking and health and a range of projects conducted by the children themselves. In the present study the following features were added to the programme: (i) involvement of parents through parents' day, (ii) visits by Health Board personnel, (iii) newsletter to club members, (iv) symbolic rewards for commitment to the club, and (v) integration of the programme into other aspects of the curriculum, especially artwork, creative writing and mathematics.

The programme was implemented in two primary schools in relatively disadvantaged areas in Dublin's North side. In each school a second class and a fifth class were involved.

The outcomes of the Smokebusters' pilot programme were evaluated by comparison with two control groups. One such control group was within the experimental schools, i.e. another class in the same school (same age, gender and social background) but who were not exposed to the programme. A second control group consisted of a class from a comparable school (matched on social background, size, gender balance) and whose school did not have a specific anti-smoking programme.

Evaluation was conducted by means of a post-programme questionnaire. In fifth class, the questionnaire consisted of 19 items, designed to measure attitudes and beliefs related to smoking, knowledge of the facts about smoking and smoking behaviour. Attitudes and beliefs were measured on the basis of children's agreement or disagreement with statements about smoking. Knowledge about smoking was assessed on the basis of children's judgements of the truth of statements about the consequences of smoking. In order to control for the tendency to attribute all potential negative consequences to smoking, a number of false statements about the effects of smoking were included. Finally, questions on pupils' smoking behaviour focused on previous smoking, current smoking behaviour and their intention in relation to smoking in the future.

The simpler format for second class involved initially, a twenty item list of statements to which children replied 'true' or 'wrong'. The first 12 of these items were designed to measure attitudes and the remainder were factual statements which related to smoking. A further eight items were designed to evaluate attitudes to smoking as well as the child's future intentions in relation to smoking.

Results

Computation of Indices: With a complex behaviour like smoking no single outcome measure can be regarded as 'THE' correct measure. Consequently, in order to gauge the effectiveness of the programme the following indices were computed in accordance with the procedures described below:

(i) Attitude to smoking: This measure was computed on the basis of the items which measure the children's overall evaluation of smoking. Since the items are on a five point scale, the measure taken is the average of the items aimed at measuring attitude.
(ii) Beliefs about the consequences of smoking: The beliefs about the bad consequences of smoking like wasting money and ill health vs. the 'positive' consequences like being popular.
(iii) Knowledge of smoking effects: Knowledge of the effects of smoking (on health etc.).
(iv) Recent smoking behaviour: The report of the respondents on whether or not they themselves had smoked in the recent past (within the last week).

Table 1 – Comparison of fifth class pilot and control groups

Measure	Pilot Classes	Control same School	Control Different School	Signif.
Attitude to smoking*	1.3 (49)	1.9 (53)	2.2 (64)	p<.001
Beliefs about consequence of smoking**	4.8 (50)	4.4 (53)	4.2 (63)	p<.001
Knowledge of smoking effects**	5.6 (50)	3.9 (53)	4.0 (64)	p<.001
Recent smoking behaviour	1.3 (50)	1.4 (52)	1.3 (63)	n.s
Likelihood of smoking when grown up	1.2 (50)	1.2 (52)	1.4 (64)	n.s

Main entries are means for each condition and numbers of respondents for each item are shown in parentheses. Missing date on some items accounts for the differences in the number of subjects in each analysis. Statistical test is the analysis of variance and F value significance is reported above

* = desired outcome is a decrease in score. ** = desired outcome is an increase in score

Table 2 – Comparison of second class pilot and control groups

Measure	Pilot Classes	Control same School	Control Different School	Signif.
Attitude to smoking*	3.3 (54)	4.7 (51)	5.1 (51)	p<.001
Beliefs about consequence of smoking**	5.6 (530)	4.6 (523)	4.7 (51)	p<.05
Likelihood of smoking when grown up	1.2 (54)	1.1 (52)	1.2 (51)	n.s

Main entries are means for each condition and numbers of respondents for each item are shown in parentheses. Missing date on some items accounts for the differences in the number of subjects in each analysis. Statistical test is the analysis of variance and F value significance is reported above

* = desired outcome is a decrease in score. ** = desired outcome is an increase in score

(v) Likelihood of smoking when grown up: The Likelihood that the respondents would smoke when they grew up.

All of these indices were computed for fifth class while for second class indices (i), (ii) and (v) were calculated by a procedure that was almost identical to that for the older children.

Fifth class: Table 1 below shows the means for each variable in the pilot and two control classes. For each dependent variable (calculate as shown above) a one-way analysis of variance was carried out and the Significance of the F value associated with each Anova is also shown in the table.

A number of points about Table 1 are worth noting. Firstly, of the five measures, three show statistically significant differences. Furthermore, these three measures are those that are likely to have important effects in the long-term (as opposed to the short-term). A second noteworthy point is that the control group within the pilot school tended to score rather better (show less favourable attitudes to smoking) than the control group from outside the school. This is a common outcome of studies of this kind and suggests that there were effects within the school that are not confined to a class in addition to specific effects on classes involved in the programme.

Second Class. The results for the second class are shown in Table 2 below (means for each condition and the F value associated with the ANOVA). Again, the relevant comparison is between the second class in the pilot school and the control classes matched on age and other relevant factors from the pilot school and from a comparable school. In general, the results for the second class are strikingly similar to the outcomes for fifth class. In the first place, the programme had a strong and statistically significant effect on attitudes. Furthermore, there was also a significant (but less strong) effect on beliefs about consequences. Specifically, in the context of the present work, the pilot class tended to be more likely to believe that negative consequences were likely to come about as a result of smoking. Finally there was no significant effect on likelihood of smoking as a grown-up. As in the case of the fifth class children, this seemed due to the very low likelihood of smoking, regardless of whether they were in the experimental or control group.

Discussion

A number of conclusions are warranted on the basis of the present report. Firstly, it is clear that the Smokebusters programme (as implemented in the work described here) has great potential in the prevention of initiation to smoking. The results also indicate the feasibility of making a concerted effort to prevent/delay the onset of smoking in an Irish context. This success was achieved in a disadvantaged community where smoking patterns have been especially hard to modify.

It is however, appropriate to draw attention to the limitations of the present study. The most significant limitation is that the experimental condition (the Smokebusters programme) was implemented in only four classrooms. While the total number of respondents involved in the study was over 300, the fact that the intact classes were assigned to conditions lessens the generalisability of the findings. Another limitation is that the effects observed were in relation to attitudes/beliefs etc. rather than on smoking behaviour per se.

With regard to the size of the experimental group, our decisions were made on grounds relating to deployment of resources and that precision with which we could guarantee the implementation of the programme, rather that reflecting an unawareness of the importance of sample size. Therefore, it was decided to implement all the necessary features that have been shown to be worthwhile in one package and to monitor the implementation, thus taxing the available resources to the utmost. We feel that the significant differences observed justify this strategy. However, we are keenly aware of the need to monitor the effects of extensions of the programme on a broad basis.

It has to be recognised that the success of the programme owes a great deal to the team effort that was evident. Thus, the Smokesbusters programme as implemented in the pilot schools involved not only classroom teachers, home-school liaison teachers and parents, but also had the support of the visiting Health Board personnel. Furthermore, the approach taken was a broad one and did not rely on any single approach to changing behaviour and beliefs.

However, we feel that education alone (and school-based programmes in particular) cannot provide a complete answer to the prevention of smoking onset. In our view there is a need for the implementation of measures to restrict access to cigarettes. The combination of measures to reduce supply and demand is, in our view, the most likely to bring about success in preventing the development of smoking behaviour among young people.

Acknowledgements – Thanks are due to N. Kelly, A. McGrath, S. Gillespie, N. Egan, (teachers in Area 8), M. Laffoy, C Hayes (doctors in Area 8), S. Boyle, P.J. Hanrahan, P. O'Keeffe, J. O'Donoghue (teachers in Area 7) A. Gillat and E. O'Rourke (Irish Cancer Society).

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