Absence from school related to children’s and parental smoking habits

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Abstract

A sample of 2885 children aged 12 and 13 who completed a questionnaire survey in school in January 1987 were given a second questionnaire on a specified date in May 1987. The smoking habits, parental smoking habits, sex, and social background of the children who were present on both dates were compared with those of the children who were absent on the second occasion. Regular smoking was significantly more common among those absent for the second questionnaire: among boys 181/877 (21%) who never smoked, 109/486 (22%) who sometimes smoked, and 21/45 (47%) who regularly smoked were absent, and among girls the figures were 157/947 (17%), 117/487 (24%), and 17/43 (40%) respectively. Thus the odds ratio for those who sometimes smoked was 1.29 and for regular smokers 3.09 against those who never smoked. Whatever the children’s smoking habits, the proportion who were absent was higher when both parents or at least the mother smoked, the odds ratio being 1.39; the proportions absent were 203/1180 (17%) if neither parent or only the father smoked v 135/644 (21%) if both parents or only mother smoked for children who never smoked; 105/529 (20%) v 121/444 (27%) for both parents or only mother smoked for children who never smoked; 10/27 (37%) v 28/61 (46%) for those who regularly smoked. Sex and social background had little effect, though there was an overall higher rate of absence among boys from industrial areas.

The findings show a higher rate of minor ailments in children who smoke and in children whose mother smokes. If children are having frequent days off school for minor ailments possibly they or their parents would benefit from advice and help in stopping smoking.

Introduction

Over the past two decades evidence has accumulated not only that adults who smoke damage their health but also that children who smoke have various health problems. Many studies have shown associations between parental smoking and increased health problems in children, but many of these focused on children who did not themselves smoke. A few looked at the effects of smoking by both children and parents—for example, on respiratory diseases and on lung cancer in later life.

We investigated whether absence from school for various reasons including minor ailments, such as colds, influenza, tonsillitis, and digestive disorders, of children aged 12 and 13 could be predicted on the basis of their own and their parents’ smoking habits four months earlier.

Subjects and methods

As part of a study funded by the Cancer Research Campaign on the uptake of smoking we studied a random sample of 29 schools in Cumbria and Tyne and Wear. All the second year classes in these schools—namely, pupils aged 12 and 13—were included. The pupils were given two questionnaires: the first was administered during 12-16 January, and a second, identical questionnaire was completed by the same pupils during 18-22 May. The questionnaires were completed by the children under examination conditions supervised by their class teachers. This method has been shown to elicit the highest, and therefore presumably the most accurate, self reporting of smoking by adolescents. The children then sealed the anonymous questionnaires in plain envelopes to ensure confidentiality. The first and second questionnaires were matched by means of birth dates, information on school classes, and family data.

The children were asked to indicate their smoking habits by ticking one out of six possible replies. The six categories were: I have never smoked a cigarette; I have tried a cigarette once; I used to smoke but I don’t smoke now; I smoke occasionally but not as much as one cigarette a week; I smoke between one and six cigarettes a week; and I usually smoke more than six cigarettes a week. To check the accuracy of the
reporting each child was asked how many cigarettes he or she had smoked during the previous day and the previous week. A computer check was run for discrepancies between the answers to these questions, and the small number (less than 1%) whose answers were impossible were excluded—for example, those who claimed never to have smoked and then said that they had smoked a cigarette during the past day or week.

A total of 2885 respondents (1408 boys and 1477 girls) who were present for the first questionnaire and either present or absent for the second one were included in the analysis. Of these 2885, 589 (20%) were absent on the second date for reasons other than activities organised by the school. This 20% rate of absence served as the basis of the analysis. Exclusions were those whose questionnaires were invalid as detailed above (<1%); a few whole classes or groups who were absent on the second date owing to activities arranged by the school; and respondents whose questionnaires were incomplete in respect of the variables to be analysed (2%).

The teachers were asked to list the main reasons for children being absent at the time of the second questionnaire. The most common ones were colds, bilious attacks and stomach upsets, influenza, headaches, other minor ailments, and infectious diseases. The week of the test preceded half term so family holidays increased the absences. Other reasons for absence were dental and medical appointments, truancy, suspension, helping at home, oversleeping, and bad weather.

The variables considered in relation to absence from school were sex, respondents' reported smoking habits, and respondents' parents' smoking habits. The catchment area of each school was also included as social and environmental background may exert a considerable effect on school attendance. Respondents' smoking habits were grouped into three categories: never smoked; sometimes smoked, which included those who had tried a cigarette once, who used to smoke but did not do so at the time of the survey, and who smoked less than one cigarette a week; and regular smokers, who smoked at least one cigarette a week, which is the accepted definition of regular smoking for children. Parental smoking was defined as neither parent smoked, only father smoked, only mother smoked, or both parents smoked. Cross tabulations of the variables were obtained with the statistical package for the social sciences (SPSS). A step forward logistic regression was carried out with the generalised linear interactive modelling (GLIM) package to determine which of the four variables were significantly related to rates of absence and to develop a model to predict these rates.

Results

Three per cent of the children said they were regular smokers, and a further 34% claimed to have smoked at some time or to smoke occasionally. There were 1252 (45%) children who had parents who did not smoke and 652 (23%) who had parents who both smoked. For 497 (17%) only their mother smoked, and for 484 (17%) only their father smoked. Children of parents who smoked were more likely to be smokers than those of parents who did not smoke, the odds ratio being 1:97 (95% confidence interval 1:5 to 2:1).

Table I shows the results of the step forward logistic regression analysis with the odds ratios and 95% confidence intervals estimated from the final model. Children who smoked were more likely to be absent than those who did not (table II), and having a mother who smoked considerably increased this risk of absence whatever the child's smoking habits (table III). Children's exposure to their own smoking or that of their parents was, in all cases, more closely related to absences than was social background, even in boys from industrial areas, whose overall rate of absence was higher than that of all other sex and sociogepgraphic groups.

Discussion

The proportion of children absent increased as the children's smoking habits rose from never smoked to smoked sometimes and to smoked regularly. Within each of these categories the chance of absence was increased if the mother or both parents smoked. These observations raise several considerations from the point of view of the association of the child's and the parents' behaviour. With regard to the child's smoking, whether this increased likelihood of absence is due to genuine health problems or to a generally negative attitude to school in children who take up smoking, in which case it could be due to lack of commitment, is unclear. Smokers tend to be "fed up with school" and are often underachievers. Children who are less able academically or who consider themselves to be inferior in, or bored with, schoolwork are likely to take up smoking to boost their self esteem. This view is further borne out by the finding that most smokers leave school at the end of the fifth year (aged 16).

Our findings suggest that children who smoke and whose parents smoke are more likely to be absent from school for minor ailments. Their schoolwork would then suffer and they might be underachievers because of their smoking and their families' smoking rather than smokers because of their underachievement. A mother's smoking during pregnancy, while breast feeding, and during a child's early infancy can cause considerable health risks to the child long before

**TABLE I**—Factors significantly related to absence from school in order of entry into logistic regression model

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable added to model in step forward logistic regression</th>
<th>χ²</th>
<th>Degrees of freedom</th>
<th>p Value</th>
<th>Variable</th>
<th>Odds ratio</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Child smoked</td>
<td>32:16</td>
<td>2</td>
<td>&lt;0.001</td>
<td>Child sometimes smoked</td>
<td>1:29</td>
<td>1:07 to 1:56</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Child regularly smoked</td>
<td>3:09</td>
<td>1:95 to 4:82</td>
</tr>
<tr>
<td>2</td>
<td>Parent smoked</td>
<td>12:84</td>
<td>3</td>
<td>&lt;0.005</td>
<td>Mother smoked</td>
<td>1:39</td>
<td>1:15 to 1:67</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Boy in industrial area</td>
<td>1:36</td>
<td>1:12 to 1:65</td>
</tr>
<tr>
<td>3</td>
<td>Area and sex</td>
<td>9:84</td>
<td>3</td>
<td>&lt;0.025</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
that child has started smoking. If the child thus starts school already with an increased risk of absences failure to keep up with his or her peers could begin immediately, paving the way for underachievement and a negative attitude to school early in his or her educational career and leading to an increased risk of smoking.

Some of the classic studies on the effects on children of their mothers' smoking in pregnancy suggested that they made less academic and developmental progress than children of mothers who did not smoke during pregnancy.23 Although other associated factors have subsequently been considered perhaps to be more influential, our study suggests that absences owing to related health problems could be one of these factors. Passive smoking at home causes many of the special health problems in older children,24,25 and probably this is one of the most important factors in causing absence for such minor ailments as the teachers listed, plus other more serious ones.

The question arises whether mothers who smoke are more likely to keep their children away from school. Mothers who bring up their children alone are more likely to smoke and may be more likely to keep older children at home to help with younger ones or with other household needs.26 These mothers are perhaps more likely to be under stress and to need the support of their young teenage children at home. Possibly they are also less committed to academic achievement in their children because they themselves were underachievers as children, and thus the spiral is continued.

Finally, our study makes it clear that unless absentees are always followed up in surveys on the prevalence of smoking an underestimate will probably be recorded.

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