

Are school meals associated with smoking?

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The link between the smoking habit and other behaviours has been so extensively studied that new links may be hard to find. However, the authors suggest that pupils having the option of a cash cafeteria as against a set lunch provision may have greater opportunity to spend money on cigarettes. It is already known that there are strong links between smoking behaviour and the kind of lunch option selected by pupils.

The publication of the latest OPCS report on smoking in teenagers showed that almost one in three 15-year-olds were smoking regularly and that smokers in the 11-16 year age range were consuming £6-million worth of tobacco each year (1). This report caused some consternation among health educators, who had hoped that their efforts to prevent young people taking up the habit had had some success. Indeed, primary-school projects like the HEC My Body project have been shown to halve the uptake of smoking in 10-11 year old pupils (2). Approaches to deal more effectively with smoking prevention in the secondary school setting are now being developed (3, 4). Their content and style has been influenced by research in this field which has revealed many of the factors associated with smoking in adolescence. These include, among others, peer pressure, teacher and parental smoking (5), stress and worries (6), and cigarette advertising (7).

This paper describes the possible association of an as yet unrecognised

factor in smoking in youngsters – school meals!

Method

The sample of pupils comprised all 14-year-olds from three state schools in the city of Nottingham in 1986. Two of these schools offered a cash cafeteria system of school meals (197 pupils surveyed), and these were matched with a school having a fixed menu system (135 pupils surveyed), and these were matched with a school having a fixed menu system (135 pupils surveyed). The schools were matched on the basis of type, size, and socio-economic complexion of their catchment areas. During data analysis pupils were also asked about their fathers' occupation, and comparison of findings between schools revealed their similarity with respect to social class (Table 1) and pupils' income from Saturday and evening jobs (Table 2).

Data were gathered using a self-completed anonymous questionnaire (8), administered by teachers in the classroom.

Table 1. Pupils' reports of social class by school. (Percentage of pupils within each system - 280 respondents.)

Social class	Cash cafeteria system	Fixed menu system
I	6	10
II	23	31
III	56	47
IV	11	9
V	3	3

Table 2. Pupils' earnings by school. (Percentage of pupils within each system - 253 respondents.)

Amount	Cash cafeteria system	Fixed menu system
Nil	38	40
£1.00-£2.49	11	13
£2.50-£4.99	25	25
£5.00-£7.49	17	16
£7.50 +	9	7

Although all the pupils answered the questionnaire, not every pupil responded to every question.

Findings

Overall, 16% of the sample were regular smokers (16% of boys and 17% of girls), and when smoking behaviour was analysed by school the prevalence level was found to be significantly higher in the cash cafeteria schools compared with the fixed menu school (Table 3). This finding was observed for both boy smokers (19% in cash cafeteria school, 13% in fixed menu school) and girl smokers (22% and 4% respectively), although only in the case of the girls was the difference statistically significant.

Further analysis by the amount of pocket money the youngsters reported receiving every week revealed that there were more smokers in the cash cafeteria schools both above and below the average level of pocket money reported. Although the results did not quite reach statistical significance (probably due to small

numbers) the trend is clear. The sample size was, unfortunately, too small to assess smoking by school meal system after controlling for the effect of pocket money. However, a significantly greater proportion of pupils from the cash cafeteria system reported having a higher level of pocket money than those in the fixed menu system. This would be consistent with parents giving them additional money to spend as they liked at lunch, as opposed to a sum of money to be paid into the school for meal tickets (Table 4).

Discussion

This is a small study, and it is fair to say that the intriguing finding that smoking prevalence may be associated with the school meal system offered could have arisen by chance. The data presented here would, however, suggest that there may be an aspect of the cash cafeteria system which encourages smoking.

Given that the schools were well-matched in the important aspect of socio-economic class and money available to pupils from casual work, it would appear that the major difference between schools lies in the availability of what the teenagers term 'pocket money' (i.e., money given to them by their parents). The cash cafeteria system offers youngsters the opportunity to decide how to spend their lunch money - that is, on which foods. The fixed menu system in this particular school (as is usual), is operated on a pre-payment ticket basis to assist meal planning by the school catering staff. One tentative conclusion that might be drawn is that teenagers in the cash cafeteria system are spending their lunch money, or part of it, on cigarettes rather than on food. This

Table 3. Smoking by school. (Percentage of pupils within each system - 310 respondents.)

Type of smoker	Cash cafeteria system	Fixed menu system
Regular	21	9
Non-smoker	79	91

Table 4. Pocket money and smoking, by school meal type. (Percentage of pupils within each system - 292 respondents.)

Type of smoker	Pocket money < £3.00		Pocket money £3.00 +	
	Cash cafeteria	Fixed menu	Cash cafeteria	Fixed menu
Regular	15	7	30	7
Non-smoker	85	93	70	93

suggestion is strengthened by the fact that pupils from these schools were more likely to go out of school for lunch (8), and presumably have more opportunity to buy and smoke cigarettes.

Setting aside the debate about the 'nutritional' value of school meals (9), this could be an unforeseen hazard of the cash cafeteria system. Clearly this area requires further research. If the finding were to be confirmed, however, it would have implications for health education strategy, emphasising the need for approaches which help young people make 'healthy' decisions about the way in which they spend their money in a 'permissive' environment.

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Postscript - a note from the 1986 databank

The suggestion in this article that smoking prevalence may be linked to pupils having the money and opportunity to purchase cigarettes during the lunch break raises interesting issues.

We searched through the extensive database derived from schools' use of the Health Related Behaviour Questionnaire, to try to make an analysis of our sample that was similar to the one carried out by Buckley and Gillies. However, the very small proportion of schools offering a 'set lunch only' provision made it impossible to achieve a sufficiently good

sample to permit confidence in the results.

However, the link between smoking habits and the type of lunch provision selected by the pupils is well documented in our database, and this offers another dimension worth exploring. If the cafeteria system, as claimed by the authors, 'offers youngsters the opportunity to decide how to spend their lunch money', then other alternatives, such as buying lunch from a shop in town, may offer them still more freedom of choice.

We divided the 2018 4th-year boys and the 2008 4th-year girls in our 1986 database into 'smokers' and 'non-smokers' (16.4% of the boys and 23.4% of the girls were smokers), and then computed the percentages of each group who gave the following answers to the 'lunch' question in the Questionnaire:

What sort of lunch did you have yesterday?

- In school - served over the counter*
- In school - your own packed lunch*
- Outside school - e.g. fish & chips, burger from shop*
- Outside school - your own packed lunch from home*
- At home*
- Did not have any lunch*

The results are shown in Table 5, and the following observations may be made.

School lunch There is not a large difference between the proportion of smokers and non-smokers taking a school lunch, although the percentage of non-smokers is slightly higher.

Packed lunch in school. There is a marked difference, with 19.7% of non-smoking boys and 25.7% of non-smoking girls

Table 5. The lunch choices made by 4th-year smokers and non-smokers. (Percentage of each group of pupils selecting the different options – approximately 4000 respondents.)

	Boys		Girls	
	Smokers	Non-smokers	Smokers	Non-smokers
School lunch	26.7	30.3	23.2	25.0
Packed lunch in school	11.2	19.7	12.8	25.7
Bought at shop or takeaway	21.8	11.0	14.4	8.3
Packed lunch outside school	3.0	6.3	6.3	7.4
Went home for lunch	24.8	28.1	25.3	26.2
Had no lunch	12.4	4.6	18.1	7.2

eating a packed lunch in school, compared with 11.2% and 12.8% of smoking boys and girls respectively.

Takeaway or similar Here the smokers are in the majority, with 21.8% of smoking boys and 14.4% of smoking girls using them, compared with 11.0% and 8.3% of non-smoking boys and girls respectively.

Own packed lunch outside school and Lunch at home These categories of response do not show large differences between smokers and non-smokers.

No lunch This perhaps worrying category contains a higher percentage of smokers – 12.4% of smoking boys and 18.1% of smoking girls, compared with 4.6% and 7.2% of non-smoking boys and girls respectively.

It is therefore seen that more smokers than non-smokers either select, or have selected by their parents, either no lunch provision or the use of a shop outside school. Altogether, 34.2% of smoking boys and 32.5% of smoking girls come into these categories, compared with 15.6% and 15.5% of non-smoking boys and girls respectively.

The fact that smokers and non-smokers tend to have different dietary styles is well-known. A study of 4th-year pupils in 1984-5, demonstrating that smokers tend to miss breakfast and eat less substantial and nutritious meals during the day, has recently been published (10). All the available evidence suggests that a school intending to tackle 'smoking

education' as late as the 4th year will find that they are seeking to change not just an isolated habit but a well-established lifestyle, the intertwining strands of which are beyond unravelling.

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