Cigarette smoking and the young: a national survey

J.A. HANLEY, PH D; J.C. ROBINSON, PH D

Cigarette smoking behaviour among the young was examined in the light of the responses of over 78 000 students to a 1972 questionnaire survey of Canadian schools. As few as 2% (8-year-old girls) and as many as 60% (16-year-old boys) were smoking one or more cigarettes per week. The prevalence of smoking was higher than that reported in earlier studies. Students, particularly girls, were beginning to smoke at progressively earlier ages. Some differences in smoking behaviour were found between regions, language groups and groups of children whose parents did or did not smoke. Recognition of immediate rather than long-term effects of smoking on health was reported as an important consideration in not smoking.

Le comportement des jeunes devant la cigarette a été étudié à l'aide des réponses de plus de 78 000 étudiants à un questionnaire distribué en 1972 dans les écoles canadiennes. Aussi peu que 2% (chez les fillettes de 8 ans) et autant que 60% (chez les garçons de 16 ans) fumaient une cigarette ou plus par semaine. La prévalence des fumeurs a été plus élevée que celle qui a été signalée dans des études antérieures. Les étudiants, particulièrement les filles, ont commencé à fumer à des âges progressivement plus jeunes. Quelques différences dans les habitudes de fumer ont été observées entre les régions, les groupes de langue et les groupes d'enfants dont les parents fumaient ou ne fumaient pas. On a noté que la connaissance des effets immédiats de l'habitude de fumer sur la santé, plutôt que les effets à long terme, avait une importante influence sur le fait de ne pas fumer.

From the statistical laboratory, State University of New York at Buffalo, and the department of statistics, University of Waterloo, Waterloo, Ont.

Reprint requests to: Dr. J.A. Hanley, Statistical laboratory, State University of New York at Buffalo, 4230 Ridge Lea Rd., Amherst, NY 14226

In recent decades much evidence has accumulated implicating cigarette smoking in the development of lung cancer, heart disease, emphysema and other related diseases.[1-7] Health authorities and numerous other concerned groups are attempting to reduce the health hazards attendant on cigarette smoking. Smoking-related mortality and morbidity can be reduced either by manufacturing cigarettes that are less harmful or by persuading established smokers to discontinue smoking and encouraging potential smokers not to begin. This preventive approach is most often directed at those in the first 2 decades of life because it is known that most smokers begin smoking before age 20 and are seldom able to discontinue the habit,[8-14] while those who have not smoked by this age are unlikely to begin.[15,16]

Since school populations form a natural and readily accessible target for antismoking education, the Canadian Home and School and Parent-Teacher Federation is in a unique position. As part of its effort to promote the welfare of children and youth, it conducts a substantial program aimed at alerting young people to the dangers of cigarette smoking and dissuading them from adopting the cigarette habit.

Until now there has been little unified documentation of the smoking behaviour of the Canadian school population. Previous studies tended to be local rather than national in scope and differed widely in their objectives, methods, classifications of smoking behaviour and general applicability.[8-12,16,17] The present report attempts to remedy these shortcomings by presenting the results of a survey administered nationally in a uniform manner.

Study objectives

The objectives of the study may be summarized as follows:

1. To provide a national baseline for the prevalence of cigarette smoking in Canada's school population.
2. To examine recent trends in the development of the cigarette smoking habit in the different age groups.
3. To examine factors that influence children to adopt and subsequently maintain the smoking habit.
4. To assess the attitudes of youth toward the health hazards of cigarette smoking.
5. To measure the effect of publicity concerning these health hazards on an individual's propensity to smoke.
6. To establish guidelines for antismoking programs and projects designed to persuade students not to begin smoking.

Design and conduct of study

Target population

The survey was designed to determine the cigarette smoking behaviour of a representative sample of students in grades 3 to 13.

Information sought

Information was obtained from self-reported responses to a questionnaire comprising 19 questions concerning age, sex, grade, smoking history, parental and sibling smoking habits, and attitudes concerning the health hazards of smoking. A number of the questions had been asked in the questionnaire study of Winnipeg school division pupils conducted in 1963.[12]

Questionnaire

The questionnaire was designed so that answers could be machine-read directly by means of the OMR (optical mark recognition) feature of the IBM computer facility of the University of Waterloo. Each questionnaire was printed on a computer-readable card containing 19 questions, with spaces for the appropriate answers. Students indicated their responses by darkening the relevant answer boxes with a regular lead pencil. The laborious process of recoding, keypunching and verifying that usually accompanies surveys of this nature was thus obviated and the relative ease with which large numbers of questionnaires could be directly machine-read and translated allowed for a much larger sampling fraction than might otherwise have been feasible. (The 78 617 returns represented 1.75% of the population aged 8 to 18 years in 1966 [estimated from Statistics Canada census figures for 1966].)

Sampling scheme and administration of survey

The study was conducted by the Canadian Home and School and Parent-Teacher Federation in cooperation with Health and Welfare Canada and the department of statistics at the University of Waterloo.

Schools from each of the 10 provinces and from the Yukon and Northwest Territories were selected for inclusion in the survey. The number of questionnaires allocated to each province was generally proportional to the size of its school population, although the smallest provinces and the territories received proportionally larger allocations. A strict probability sampling scheme, in which each member of the target population had a measurable probability of being included in the sample chosen, was not possible since the survey was to be carried out on a voluntary basis and depended on the good will of the local school authorities and the school principals.

The Home and School and Parent-Teacher Federation distributed the questionnaires and accompanying instructions to the schools through the members of its affiliated provincial federations. The federation personnel in each province and territory were instructed to ensure that the schools chosen for inclusion in the sample accurately represented the rural/urban population ratio as well as the prevailing economic and social structure. A French version of the questionnaire was distributed in appropriate numbers in Nova Scotia, New Brunswick, Quebec, Ontario and Manitoba.

The ratio of students sampled in grades 3 through 8 to those in grades 9 through 13 (or appropriate upper grade) was approximately 2:1 so that the lower grades would be investigated more extensively. For the most part, entire schools were surveyed as clusters, but in very large schools, classrooms were selected from the entire school population.

The survey was conducted during the period December 1971 to May 1972. Questionnaires were administered by the teacher in each classroom. The questionnaire cards did not carry any identifying codes and students were assured that their responses would remain anonymous.

Results and discussion

Classification of respondents' smoking behaviour

The extent of each respondent's cigarette smoking behaviour was classified as follows:

- "Never" — respondent had never smoked.
- "Tried" — respondent had tried smoking but had not smoked in the last 4 weeks.
- "Casual" — respondent smoked less than one cigarette per week.
- "Serious" — respondent smoked one or more cigarettes per week.

In this report cigarette-smoking behaviour (henceforth simply referred to as smoking) is discussed in terms of this four-way classification unless otherwise indicated. This definition of serious smokers is similar to that used by others.[8,11,12,18-20] It is difficult to define a level of cigarette consumption that would be considered equally serious for all students aged 8 to 18 and, therefore, the adopted division point is arbitrary.

National prevalence of smoking behaviour

The proportions of the four types of smoking behaviour in the different age groups are displayed, for males and females separately, in Table I. Among boys the percentage who reported no smoking experience varies from 68% in 8-year-olds to 18% in 18-year-olds. For girls the percentages at these ages are 82 and 27, respectively, but are smallest in the 15- and 16-year-old groups. It seems that boys are most likely to first experiment with cigarettes between the ages of 12 and 16 and that girls begin slightly later but at a faster rate. (These differences between age groups must be interpreted with caution. There is no guarantee, for example, that current 9-year-olds will, in 4 years, behave like current 13-year-

Table I—Respondents' smoking behaviour

Age (yr), sex	Total no.	Smoking behaviour* Never (%)	Tried (%)	Casual (%)	Serious (%)	% who smoke daily	Grade	Total no.	Serious smokers (%)
8									
Male	1 612	68	23	4	5	1	3	2 230	7
Female	1 669	82	14	2	2	1		2 056	2
9									
Male	2 923	62	28	5	6	1	4	3 655	8
Female	2 996	79	16	3	2	1		3 444	3
10									
Male	3 877	57	30	5	8	2	5	4 336	11
Female	3 866	73	21	3	3	1		4 155	5
11									
Male	4 636	48	37	5	10	3	6	4 969	14
Female	4 519	65	26	4	5	1		4 728	8
12									
Male	5 270	40	39	6	15	6	7	5 527	22
Female	4 878	53	31	5	12	4		4 920	17
13									
Male	5 061	32	38	6	24	12	8	5 178	29
Female	4 288	37	31	8	25	12		4 186	27
14									
Male	4 588	25	32	7	37	24	9	4 339	42
Female	3 535	28	28	6	37	22		3 374	41
15									
Male	4 272	22	27	5	46	35	10	4 282	50
Female	3 260	24	25	6	45	31		3 387	47
16									
Male	3 534	20	23	5	52	42	11	2 924	48
Female	3 061	24	24	6	46	34		2 714	44
17									
Male	2 627	21	22	5	53	44	12	2 229	49
Female	2 360	26	23	7	45	33		2 116	40
18									
Male	1 252	18	20	4	58	48	13	241	42
Female	883	27	22	5	46	33		239	33

*Definitions: Never — respondent had never smoked. Tried — respondent had tried smoking but had not smoked in the last 4 weeks. Casual — respondent smoked less than one cigarette per week. Serious — respondent smoked one or more cigarettes per week.

olds, or conversely, that the current 13-year-olds began smoking in the last 4 years.)

However, a single incident of cigarette smoking does not necessarily lead to serious smoking. Although many students had had some smoking experience, a sizable percentage reported that they did not currently smoke. For example, though 68% of 13-year-old boys reported some smoking experience, 38% (or 55% of the 68%) did not currently smoke. Of course, some of these younger students may well become smokers at a later date.

The proportion of casual smokers does not vary greatly from one age–sex group to another, but remains at between 2 and 8% of the group. Meanwhile, the percentages of serious smokers contain some features of note:

- The proportion of serious smokers in the age groups 12 to 16 increases rapidly for both sexes, a phenomenon that may coincide with the earlier years in the high school system.
- With the exception of 13- and 14-year-olds the percentage of serious smokers is higher among boys. (The reversal in the 13- and 14-year-old age groups is due in part to the concentration of smokers about the chosen division point and is not apparent if a more stringent division point such as 10 cigarettes per week is adopted.)
- The proportions of serious smokers among girls increase little beyond age 15; the seemingly higher proportion of smokers among younger girls may reflect recent trends towards greater use of cigarettes among women.

Daily smoking

The responses to the question Do you usually smoke every day? (answered by those who reported having smoked in the last 4 weeks) are summarized in Table I. These responses are a useful measure of the seriousness of a smoker's habit; daily smoking is the criterion used by Health and Welfare Canada in assessing the extent of regular smoking in the adult population (15 years of age and older).

Though the percentages of respondents who smoke daily are generally lower, they follow the same general pattern as those of serious smokers, as considered above. Among boys, the percentage of those who smoke daily is higher in each successive (older) age group, while the corresponding percentages for girls are highest in 16-year-olds. The extent of daily smoking can be briefly summarized as follows:

- In the 13-year-old age group more than 10% of both boys and girls reported that they smoked daily.
- In the 14-year-old age group more than 20% of both boys and girls reported that they smoked daily.
- In the 15-year-old age group more than 30% of both boys and girls reported that they smoked daily.

In fact, if one considers those aged 12 to 14 the proportion of daily smokers in each of these age groups is approximately double that of the group 1 year younger.

Smoking behaviour in each school grade

School grades represent recognizable subgroups for those charged with implementing antismoking programs. As can be seen in Table I, the percentage of cigarette smokers is greater in each successive grade until grade 10, then decreases somewhat in grades 11 and 12 (and 13 in Ontario). The decreasing percentage of smokers after grade 10 possibly reflects the more select, more successful group of students who have remained in the school system.

Interestingly, this pattern does not entirely agree with that evident when the students are classified by age — that is, it is not possible to recognize any particular grade as corresponding to a particular age, or vice versa. Although grade 3 corresponds to age 8, grade 4 to age 9 and grade 12 to age 17, the maximum smoking prevalence found in grade 10 does not have a corresponding peak at age 15. This is not completely unexpected, since some students drop out or fall behind and this may inflate the proportion of smokers in the grades in which they remain.

Smoking in various subgroups

Since the participation of schools in the survey was voluntary, the extent to which smoking behaviour was influenced by the wide geographic sampling, by ethnic, religious and cultural differences, by proximity to centres of high population density and by the general heterogeneity of the Canadian population is difficult to assess. However, any distortions introduced by the nonrandom sampling scheme should tend to cancel each other if only large groupings are considered.

Smoking behaviour in English and French schools: For both sexes serious preteen smokers were more frequent in English schools, whereas serious teenage smokers were more frequent in French schools (Table II). And in all age groups and for both sexes a greater percentage of students in English schools reported having tried smoking. This suggests that initial experience with cigarettes is not the sole factor influencing the adoption of a permanent smoking habit.

Smoking behaviour in rural and urban schools: In most age groups there were more serious smokers among boys from rural than from urban schools; among girls there was less rural–urban variation (Table III). In general, more students from rural schools had had

Table II—Smoking behaviour in English and French schools

Age (yr), language	Total no.	Smoking behaviour: Never (%)	Tried (%)	Casual (%)	Serious (%)
8 - 10		*Boys*			
English	6 270	59.0	29.2	4.7	7.1
French	2 155	66.2	24.0	3.8	5.9
11 - 13					
English	11 399	37.7	39.9	6.0	16.5
French	3 734	43.8	33.6	5.4	17.3
14 - 16					
English	8 597	22.4	29.4	6.3	41.9
French	3 815	23.3	23.4	4.0	49.4
17 - 18					
English	2 860	19.3	23.3	4.7	52.8
French	1 019	20.6	15.2	3.7	60.5
8 - 10		*Girls*			
English	6 437	75.1	19.3	2.8	2.9
French	2 155	80.1	15.8	2.2	1.9
11 - 13					
English	10 854	49.7	30.9	5.8	13.6
French	2 977	56.5	25.7	4.8	13.0
14 - 16					
English	7 907	25.3	27.1	6.3	41.3
French	1 968	25.9	21.6	5.6	46.9
17 - 18					
English	2 541	26.1	23.0	6.6	44.3
French	702	26.6	19.8	5.0	48.6

Table III—Smoking behaviour in rural and urban schools

Age (yr), location	Total no.	Smoking behaviour: Never (%)	Tried (%)	Casual (%)	Serious (%)
8 - 10		*Boys*			
Rural	1 720	56.2	28.7	5.4	9.8
Urban	5 561	62.5	27.5	4.1	6.0
11 - 13					
Rural	3 041	34.4	38.4	7.2	20.1
Urban	9 203	42.6	36.3	5.5	15.7
14 - 16					
Rural	2 635	21.0	26.8	6.1	46.1
Urban	5 686	24.6	26.7	5.0	43.8
17 - 18					
Rural	734	18.4	20.8	4.8	56.0
Urban	1 438	20.6	18.4	4.4	56.7
8 - 10		*Girls*			
Rural	1 748	72.0	21.4	3.8	2.8
Urban	5 725	78.5	16.7	2.3	2.5
11 - 13					
Rural	2 833	48.8	30.1	6.7	14.4
Urban	8 218	53.2	28.4	5.3	13.1
14 - 16					
Rural	2 418	23.3	26.3	7.2	43.2
Urban	3 993	25.8	23.4	5.6	45.3
17 - 18					
Rural	685	21.9	25.0	6.3	46.9
Urban	977	24.0	21.7	6.2	48.1

some experience with smoking than their urban counterparts.

Provincial variations in smoking behaviour: Certain provinces — Ontario, Manitoba and (for boys) British Columbia — had consistently lower smoking rates for most age groups; others — notably the Maritimes — displayed rates that were generally higher than the observed national rates. However, the fact that there was also much variation within provinces and the fact that the schools were selected by each provincial authority make definitive comparisons impossible.

Cigarette consumption patterns

The above discussion of serious smokers tends to obscure the actual cigarette consumption in this broad category of students, especially since it is difficult to give definitions of heavy and light smoking that apply to respondents of all ages. Therefore, the separate consumption patterns for four age groups are shown in Fig. 1.

Comparisons with other studies

The findings in comparable studies are shown in Table IV. The percentages of serious smokers in each age–sex category are generally highest in the present study. The increasing prevalence of smoking is also borne out by a recent study of the Ontario Addiction Research Foundation.[21] The increasing prevalence of smoking in the student population in Canada, as in the United States,[22] may be attributed to at least three factors:

1. Greater truthfulness in reporting, as a result of the anonymous answer card.
2. A more permissive attitude towards smoking on the part of parents and teachers, allowing children to openly admit they are smoking.
3. A genuine increase in numbers of students who are smoking.

This third explanation must be considered as real, especially in the light of the greater increases among girls, a fact that cannot be selectively ex-

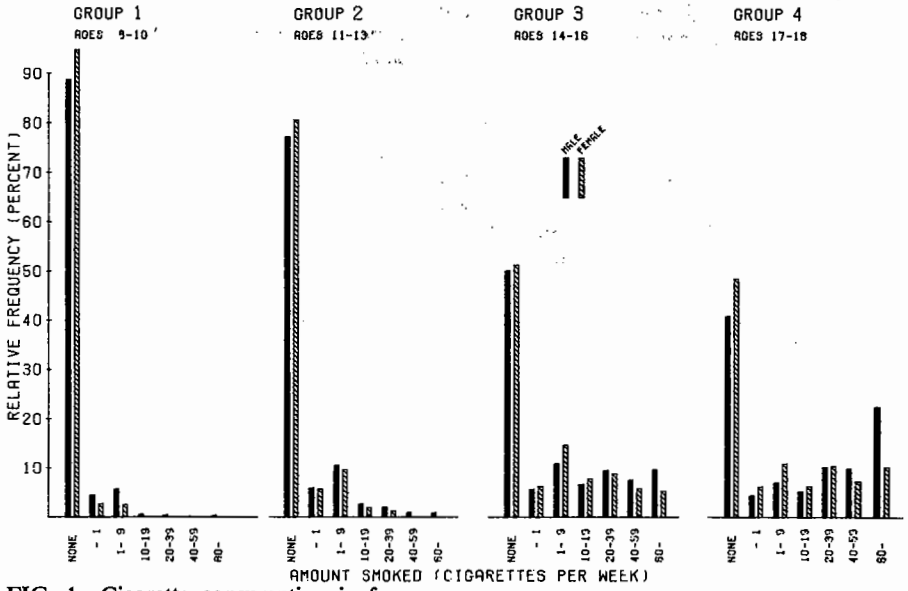

FIG. 1—Cigarette consumption in four age groups.

Table IV—Percentage of serious smokers in this and other studies

	Age (yr)												
	8	9	10	11	12	13	14	15		16		17	18	19
Study, sex	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)		(%)		(%)	(%)	(%)
Britain, Todd,[19] 1965-66														
Male			0.0	5.0	4.0	5.0	16.0	31.0	22.0* 47.0†					
Female			1.0	2.0	3.0	9.0								
Britain, Todd,[19] 1968														
Male			1.0	4.0	2.0	7.0	14.0	28.0	18.0* 17.0†	42.0	28.0* 48.0†			
Female			—	1.0	—	4.0	8.0	20.0	13.0* 32.0†	30.0	15.0* 36.0†			
Britain, Bynner,[20] 1968														
Male				4.0	9.0	17.0	27.0	38.0						
Winnipeg, Morison et al,[11] 1961														
Male		3.4	1.1	4.3	5.9	13.7	24.4	36.8		46.8		50.2	55.2	56.1
Female			0.4	0.9	3.1	7.8	18.5	24.6		32.9		32.9	30.4	23.1
Winnipeg, Morison et al,[12] 1964														
Male				Grades 5-6: 6.0				7-9: 29.0		10-12: 41.0				
Female					2.0			20.0		29.0				
Winnipeg, Morison, ‡ 1968														
Male			6.5	8.5	13.0	21.5	30.0	45.0		50.0		49.0	51.5	67.0
Female			3.0	4.5	11.0	23.5	32.0	38.0		44.0		44.0	45.0	39.0
Kenora, Playfair, ‡ 1968														
Male		3.9	7.0	10.6	15.9	21.4	36.9	41.9		50.5		49.3	49.7	50.0
Female		1.2	2.3	5.2	7.8	14.6	25.3	36.0		37.0		40.7	41.0	37.2
Canada, this study, 1971-72														
Male	4.8	5.8	8.4	10.2	15.4	24.4	36.5	46.3		52.0		53.3	58.0	55.5
Female	1.9	2.2	3.4	5.2	11.6	24.7	37.1	45.2		45.8		45.0	45.9	47.6

*Still at school at the time of the study.
†Not at school.
‡H. Colburn, personal communication.

plained by either of the first two factors.

Onset of smoking

The pattern of increasing prevalence of smoking in successive age groups from 8 to 18 does not necessarily represent the natural course of the cigarette smoking habit in any one group of 8-year-olds followed until age 18. The pattern in Table I is merely an instantaneous measurement for a cross-section of the school population, and represents each cohort at a different time-point in its history.

However, with the retrospective information provided by each respondent it is possible to describe the development of the smoking habit within each cohort. Comparisons within a particular cohort are unaffected by temporal trends, while any temporal trends will themselves become evident as differences between cohorts.

First smoking experience: Respondents who reported having had some smoking experience were asked when they had smoked their first cigarette. The replies for six cohorts are shown in Figs. 2 and 3 by means of "accumulated incidence" curves, whose height at any age represents the percentage of the cohort who reported having smoked their first cigarette by that age. For example, 21.6% of 16-year-old boys had smoked their first cigarette by age 9 and 39.3% had done so by age 11. Each curve necessarily increases because it accumulates those who have been recruited in each successive year until the time of the survey; the uppermost point of the curve represents all recruits as a percentage of the total number of respondents.

In each cohort, boys smoked their first cigarette at an earlier age than did girls. For each sex successive (younger) cohorts had more smoking experience and reported that their first experience with cigarettes occurred at earlier ages. For example, while 39.3% of 16-year-old boys had smoked by age 11, 40.8% of 12-year-old boys had smoked by age 10. The trend toward earlier experience with cigarettes is much more pronounced in girls and depicts the growing acceptance of and earlier experience with cigarette smoking among successive cohorts of females.

Onset of serious smoking: Those who reported serious smoking were asked when they began smoking at this rate. The responses for six cohorts are summarized in Figs. 2 and 3. The closeness of the recruitment patterns for all six cohorts of boys contrasts with the wider cohort differences in girls. Again, it is clear that while recruitment to serious smoking remains stable among boys, successively younger girls are commencing serious smoking at progressively earlier ages. It could be argued that the apparent precocity of those in younger age groups is due in part (a) to errors of recall on the part of older respondents and (b) to selection and attrition in these older cohorts. However, the more pronounced cohort differences among girls are unlikely to have been selectively caused by these two factors. It must therefore be concluded that recruitment to the smoking habit is indeed becoming more widespread in younger females.

Effect of early smoking on subsequent smoking behaviour: Approximately 80% of 18-year-olds had smoked cigarettes at some time. However, the percentage of this subgroup who are now classified as serious smokers did not depend on the age at which the respondents first smoked. In summary, among 18-year-olds (in whom further recruitment is least) 70.4% of the boys and 62.6% of the girls who had ever smoked now do so at the rate of one or more cigarettes per week. These findings may be compared with Russell's[14] observation, based on the data of McKennell and Thomas,[15] that "only 15% of those who have had more than 1 cigarette avoid becoming regular smokers".

Smoking habits of respondents in relation to those of their parents

From the 73 788 usable answers a summary of reported parental behaviour is presented in Table V. Approximately 60% of the fathers and over 40% of the mothers were reported as smokers, with a large degree of concordance between parents. The responses of the 38 982 boys and 34 806 girls concerning their own smoking behaviour are also given for each of the nine groups of respondents, irrespective of age.

In many instances the groups in which the children could not report

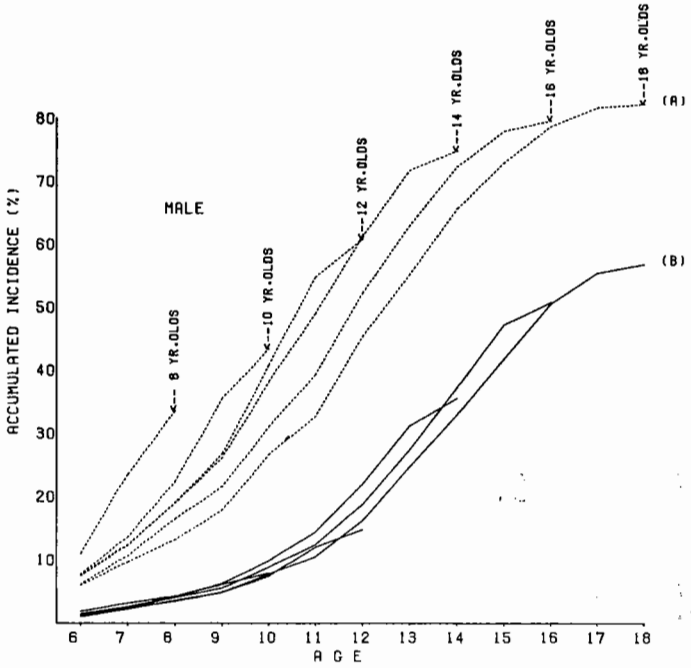

FIG. 2—Accumulated incidence of smoking experience in boys. The height of a curve at any age represents the percentage of the cohort who reported having smoked their first cigarette (dotted line) or having begun to smoke seriously (solid line) by that age.

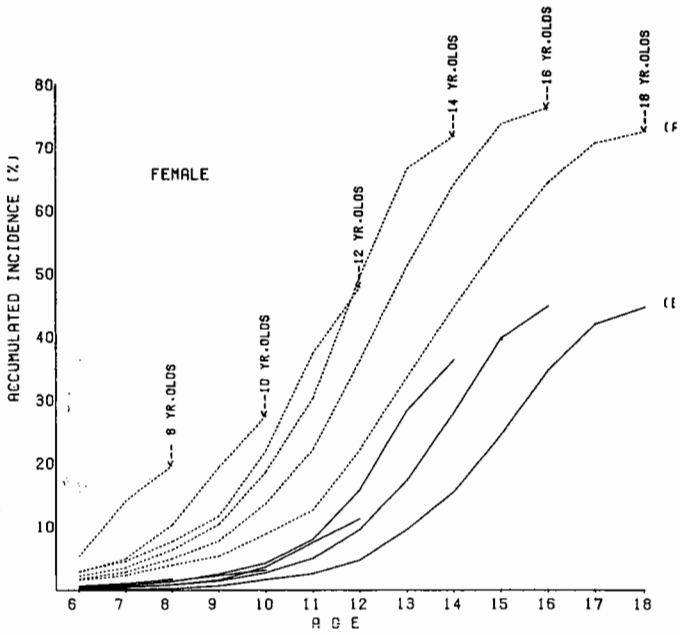

FIG. 3—Accumulated incidence of smoking experience in girls. Interpretation of curves as in legend to Fig. 2.

parental smoking behaviour (because they were living with one parent, as in cases of divorce, separation, death or other family circumstances) show a high rate of serious smoking in the children. In the remaining 95% of respondents, smoking was most common (31.0%) among the boys whose parents both smoked, followed by the boys whose father alone smoked (28.6%) and the boys whose mother alone smoked (26.9%); smoking was least frequent among the boys whose parents both were nonsmokers (20.1%). The major determinant appears to be whether at least one parent smokes; the effect of a second smoking parent is not nearly as important. Generally girls seem to be influenced more by their mothers' smoking habits and boys by those of their fathers.

Smoking and academic achievement

Students in grades 7 and higher were asked to record their academic standing. In this 12- to 18-year-old age group approximately 9000 (20%) considered themselves "above average", 28 000 (70%) reported "average" grades, while only 4000 (10%) considered their grades "below average". Smoking behaviour varied widely among these three categories. For example, in those aged 12 to 16 the percentages of serious smokers among those reporting "below average" grades were consistently greater than the percentages among those reporting "above average" grades by a factor of 2 or more.

This inverse relation between smoking behaviour and academic achievement confirms the findings of many studies.[23-27] However, various authors[20,23,28-31] have found it difficult to unravel the complex relations between intelligence, motivation, social and family environment, psychological factors and smoking behaviour.

Attitudes and beliefs concerning the health hazards of smoking and the relation of those beliefs to smoking behaviour

Beliefs regarding smoking and lung cancer: Responses to the question Do you believe smoking causes lung cancer? may be summarized as follows:

- Approximately 70% answered Yes.
- Fewer girls than boys answered Yes.
- For both sexes the percentage who said they believe there is a lung cancer hazard decreased as cigarette consumption increased.
- For both sexes there were fewer Yes responses in the older age groups. Among 14- to 18-year-olds less than 50% of those smoking one or more cigarettes per week said they believe there is a link between smoking and lung cancer.

Beliefs regarding smoking and other harmful effects: The responses to the question Do you believe smoking has harmful effects on health (other than lung cancer)? were somewhat different in pattern. In all age groups and for both sexes a majority reported that they believe smoking has other harmful effects on health. Again, there were fewer Yes responses among those with greater smoking experience, but the acknowledgement of other dangers increased in older students.

Effect of publicity on a student's inclination to smoke: While many smokers (two of every three) admitted that smoking can have harmful effects, relatively few (one of every three) said that the publicity on these hazards had reduced their inclination to smoke. Meanwhile, approximately half the nonsmokers gave the publicity concerning these hazards as a reason for not smoking.

Table V—Smoking behaviour of students and their parents

No. (and %) of students	Students' response to question:		Smoking behaviour of students			
	Does father smoke?	Does mother smoke?	Never (%)	Tried (%)	Casual (%)	Serious (%)
			Boys			
187 (0.5%)	CA	CA	36.4	33.2	3.2	27.3
549 (1.4%)	CA	No	33.9	29.9	4.7	31.5
743 (1.9%)	CA	Yes	33.0	31.1	5.9	30.0
142 (0.4%)	No	CA	38.0	26.1	5.6	30.3
438 (1.1%)	Yes	CA	29.2	35.6	4.3	30.8
10 079 (25.9%)	No	No	42.0	32.5	5.3	20.1
3 636 (9.3%)	No	Yes	36.8	30.9	5.5	26.9
10 721 (27.5%)	Yes	No	35.3	30.6	5.5	28.6
12 487 (32.0%)	Yes	Yes	34.6	29.2	5.2	31.0
			Girls			
121 (0.3%)	CA	CA	62.8	15.7	4.1	17.4
589 (1.7%)	CA	No	45.5	26.1	6.1	22.2
716 (2.1%)	CA	Yes	39.8	26.7	6.3	27.2
84 (0.2%)	No	CA	47.6	31.0	2.4	19.0
339 (1.0%)	Yes	CA	43.7	21.8	6.8	27.7
9 180 (26.4%)	No	No	55.8	24.0	4.6	15.6
3 288 (9.4%)	No	Yes	43.0	27.0	5.0	24.9
9 352 (26.9%)	Yes	No	48.4	24.6	5.5	21.5
11 137 (32.0%)	Yes	Yes	43.6	24.8	5.2	26.4

CA = cannot answer.

Conclusions and recommendations

This survey has examined smoking behaviour in the context of many concomitants in what is a reasonable cross-section of the Canadian school population. Regardless of any slight biases introduced by the voluntary nature of the study, a number of findings, beyond dispute, have broad implications for the health and well-being of future adults.

Many students have had some experience with cigarette smoking, and at very early ages. Viewed against previous, though localized, studies, the prevalence of smoking is increasing. This trend cannot be dismissed as merely greater experimentation: of the older respondents questioned, approximately two of every three who had experimented were currently smoking.

A second cause for concern is the increasing prevalence of smoking among girls and their tendency to begin smoking at progressively earlier ages.

The study confirms the findings of many others that parental attitudes and smoking behaviour influence a child's propensity to smoke.

It is clear that smoking education must begin in the preteen years, and that the large-scale adoption of the cigarette habit that occurs in the early teens must be reduced. The prevailing social climate surrounding today's teenager is the product of many complex factors. The strong relation between smoking behaviour and academic achievement portrays a one-dimensional picture of what is in reality a multifactorial phenomenon. The social environment must be gradually altered so that it no longer implies that smoking is a prerequisite for social acceptance among one's peers, and so that it is no longer a sign of sophistication, glamour or manliness. "No smoking" should become a family affair, in view of the fact that young people are much less likely to smoke when neither parent does. Antismoking programs for youth are more likely to succeed if, in addition to the less immediate risks of lung cancer, heart disease and emphysema, they focus on the more immediate personal risks (e.g, shortness of breath, poor appetite, cough, poor physical condition) and stress the health hazard to nonsmokers who passively inhale cigarette smoke.

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