

Brief Reports

Smoking habits of Winnipeg school students, 1960-80

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In 1960 (1) 1963 (2) and 1968 (3) my associates and I carried out three surveys on the smoking habits of all the students in the Winnipeg School Division who were in grades 5 to 12 inclusive. Between 1960 and 1963 a health education program that involved 17% of the students was instituted in two areas of Winnipeg. In the second study we attempted to evaluate the effects of this program on the smoking habits of these students.

As 1980 marked the 20th anniversary of the first survey we decided to do another one to determine the smoking patterns among Winnipeg students, virtually all of whom were born after 1960.

The 1980 survey included all the students in grades 5 to 12 inclusive in the Winnipeg School Division. The 1960 survey had included 7442 students in grades 5 and 6 (from 62 elementary schools), 10 366 students in grades 7, 8 and 9 (from 22 junior high schools) and 5529 students in grades 10, 11 and 12 (from 9 high schools). The figures for the 1980 study were 5571 elementary students (from 64 schools), 6913 junior high school students (from 17 schools) and 6484 high school students (from 9 schools).

The questionnaire we used was similar to that developed by the London School of Hygiene and Tropical Medicine and has been used in several Canadian studies. In the 1960 questionnaire there was no place for students to indicate they could not answer a question, an alternative that was added to the subsequent questionnaires. Three questions on attitudes towards smoking were included in the 1963 questionnaire but not in the 1968 and 1980 questionnaires.

Results

The overall smoking patterns reported in each survey are illustrated in Table I and Fig. 1. The proportions of students of all ages and both sexes who smoked regularly (i.e., one or more cigarettes per week) increased between 1960 and 1968 and decreased after 1968. The decrease was greater for boys. By 1980 more girls than boys in grades 7 to 12 smoked. Compared with 1960, fewer boys but more girls in all grades smoked in 1980, although the overall proportion of students in all grades who smoked had decreased since 1968.

Table 1—Smoking habits of students in the Winnipeg School Division, 1960–1980

Variables	Students; time of survey							
	Male				Female			
	May 1960	May 1963	November 1968	May 1980	May 1960	May 1963	November 1968	May 1980
Grades 5 and 6								
Total number	3546	3487	3634	1893	3497	3368	3446	1828
% that smoked regularly; no. of cigarettes/wk	6	6	13	4	2	2	7	4
1–19	5	5	11	3	2	2	6	4
20+	1	1	2	1	—	—	1	—
Grades 7, 8 and 9								
Total number	4902	5271	5208	2746	4702	4884	4956	2725
% that smoked regularly; no. of cigarettes/wk	28	29	31	15	15	20	29	23
1–19	14	15	16	8	10	13	20	13
20+	14	14	15	7	5	7	9	10
Grades 10, 11 and 12								
Total number	2738	3621	4272	2075	2332	3055	3726	2095
% that smoked regularly; no. of cigarettes/wk	44	43	46	25	28	29	41	34
1–19	12	12	14	8	14	13	19	11
20+	32	31	32	17	14	16	22	23

Because these findings were so striking, we attempted to evaluate their validity. One of our major concerns was the lower rate of participation, particularly among high school students, in the 1980 survey: 63.4% compared with 91.5% in 1960. We reviewed the responses of the students at each school and found no marked difference in the pattern of participation. In the 1960 and 1963 surveys two high schools and the schools that fed into them were tabulated separately because they both had educational programs on smoking: Churchill High School and all the schools that fed into it were termed area A, and Elmwood High School and all the schools that fed into it were termed area B. All the other schools were analysed collectively. When the data for the three groups in each survey were tabulated, we noted comparable trends for each area, school level and sex.

In the 1980 survey there appeared to be no significant difference between the proportions of students who smoked at the nine high schools.

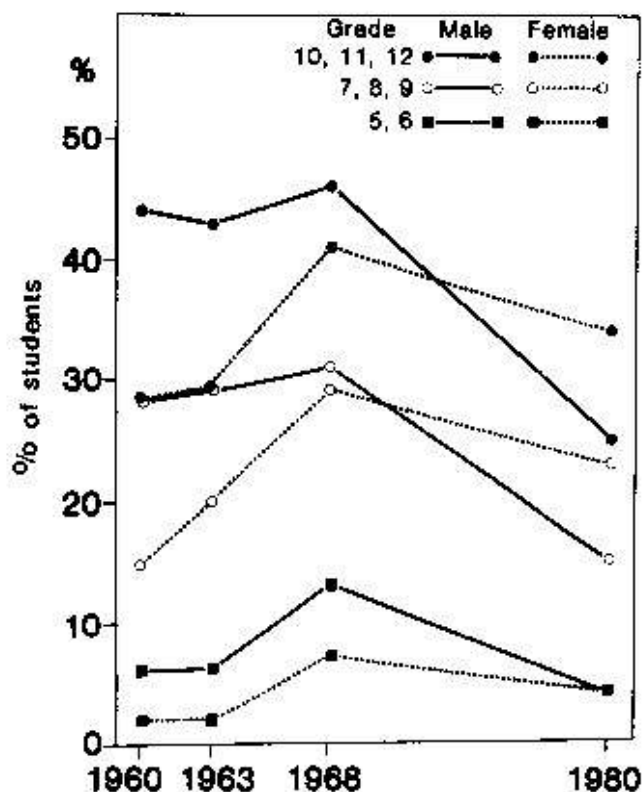


FIG. 1—Proportions of Winnipeg school students who smoked one or more cigarettes per week, 1960–80.

The schools were rank-ordered according to the rate of response and divided into "low" and "high"-participation schools.

Table II shows reported smoking of more than 20 cigarettes per week by sex and grade. The only striking difference in reported smoking was among boys in high school, but even the 19.6% in the schools with a low rate of participation represents a substantial drop from the 32.2% in 1960.

Table III relates the prevalence of smoking to age and sex in 1960 and 1980; the largest increase in prevalence was in students aged 12 to 15 years. In 1980, compared with 1960, fewer boys (except those 10 years of age) but more girls of every age were smoking. Comparable data for 1968 were not available.

Table II—Percentages of students who smoked 20 or more cigarettes per week

Grades	Rate of participation in schools			
	Male		Female	
	Low	High	Low	High
5 and 6	0.7	0.6	0.1	0.1
7-9	7.8	7.6	10.8	10.0
10-12	19.6	13.8	22.5	23.5

Table III—Relation of smoking one or more cigarettes per week to age and sex, 1960 and 1980

Age (yr)	No. of students (and % who smoked)			
	Male		Female	
	1960	1980	1960	1980
10	731 (1.09)	408 (2.45)	803 (0.37)	462 (1.08)
11	1394 (4.30)	869 (3.34)	1485 (0.94)	868 (3.11)
12	1622 (5.86)	902 (5.43)	1731 (3.17)	945 (6.98)
13	1893 (13.68)	918 (10.24)	1725 (7.82)	892 (18.39)
14	1387 (24.44)	907 (16.54)	1406 (18.49)	873 (28.18)
15	1319 (36.84)	912 (22.15)	1218 (24.55)	888 (32.77)
16	1243 (46.82)	785 (26.62)	1193 (32.94)	778 (33.80)
17	971 (50.15)	676 (23.96)	766 (32.90)	673 (35.51)
18	480 (55.21)	422 (27.49)	181 (30.39)	379 (38.26)

We calculated the relative risk of a student's smoking if one or both parents smoked (Table IV). For example, in 1960 if both parents smoked 29.4% of the boys did too, whereas if neither parent smoked 20.8% of the boys did. Thus, the relative risk of a boy's smoking if both parents smoked was 1.41 (29.4% - 20.8%). Although in 1980 the overall proportion of students who smoked was lower, the relative risk of a student's smoking if either parent smoked was somewhat greater than in 1960. In both surveys the influence of maternal smoking appeared stronger than that of paternal smoking, especially for girls.

Of the fathers 73% smoked in 1960, compared with 54% in 1980, and of the mothers 50% smoked in 1960, compared with 41% in 1980.

Table IV—Risk of a student's smoking, related to parental smoking, 1960 and 1980				
Variables	% of students who smoked (and relative risk)			
	Male		Female	
1960				
Neither parent smoked	20.8	—	11.1	—
Both parents smoked	29.4	(1.41)	19.6	(1.77)
Father only smoked	28.0	(1.35)	14.6	(1.32)
Mother only smoked	28.8	(1.38)	19.7	(1.77)
1980				
Neither parent smoked	11.8	—	16.2	—
Both parents smoked	23.4	(1.98)	32.2	(1.99)
Father only smoked	17.6	(1.49)	22.6	(1.40)
Mother only smoked	19.0	(1.61)	28.5	(1.76)

Conclusion

Some of the reduction in the proportion of students who smoked in 1980 may have been due to students' giving the "proper" answer since they were then aware that smoking was less socially and medically acceptable. However, the fact that the responses to the questionnaire were anonymous should have minimized this response bias. Our findings, particularly among the boys, were consistent with those of many recent surveys of the smoking habits of students. Most studies have shown increasing proportions of girls who smoke; more recently these proportions have decreased, although not substantially.

The prevalence of smoking among students is decreasing, particularly in boys. Smoking by a parent, particularly the mother, increases the likelihood of the student smoking more than it did in 1960.

I thank the Manitoba Health Services Commission for providing the data processing services, the Children's Hospital Health Research Fund for financial assistance, Dr. Leslie Roos for valuable assistance in interpreting the data, and the late W.N. "Bill" Donald, associate superintendent of the Winnipeg School Division, for preparing and administering the questionnaires.

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