Cigarette Smoking: Surveys and a Health Education Program in Winnipeg, Manitoba

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The increasing evidence, particularly during the past ten years, connecting smoking with various diseases, has led to considerable examination of smoking habits and attempts to influence these habits.

The tobacco sales figures have shown steady increases in tobacco smoking since the turn of the century, with increasing emphasis on cigarettes. These increases have been more rapid during the periods of stress during the two World Wars.

This growth continues in spite of increasing publicity concerning the evidence against tobacco, and particularly the evidence in relation to lung cancer. Cancer is one of our most dreaded diseases, and yet the general population has not really accepted this evidence. There were noticeable drops in tobacco consumption in Britain at the time Doll and Hill published their first reports, but this decline was very transient. The same occurred in the United States after the reports of Hammond and Horn.

Cartwright published the results of an intensive campaign during 1958-59, to reduce the incidence of smoking in Edinburgh. This was an intensive campaign utilizing paid press advertisements, editorials, billboards in public areas, and posters in offices, clubs, clinics, consulting rooms, libraries, and in every bus. Thirty thousand booklets were distributed and 150,000 leaflets. A forceful letter from medical officers of health was sent to every household. Twenty-four meetings were held for 2,600 teachers addressed by doctors and using visual aids. Meetings were held for secondary school students and for home and school members. Studies were made before and after this intensive program. These surveys failed to show any alteration in the smoking habits of the citizens of Edinburgh, or even an increase in the belief that smoking was a cause of lung cancer; but more respondents did think that it was undesirable for young people to start smoking. Most authorities now urge that efforts be made to discourage smoking in children and youths.

In 1959, the City of Winnipeg Health Department decided that it must take a stand on the problem. Our most logical course of action was to direct our program to school students, and of course, it was hoped that we would reach a substantial group of adults through their children.

It was felt that a study of the smoking habits of Winnipeg school children should precede the

onset of the educational program. This would give some indication of where to direct our program and would also serve as a baseline standard against which to measure our program. We also felt this would give us an opportunity to try to measure one facet of health education.

In the spring of 1960, the City Health Department, with the assistance of the Winnipeg School Division, carried out a survey of 21,884 school students from the fifth grade up. Other studies were confined to high school or equivalent levels. Many students are already smoking at this age, so it was decided that a questionnaire at the fifth-grade level might reveal the onset patterns.

FINDINGS OF THE SURVEY

The results of our survey were published in the Journal of the Canadian Medical Association of May 6, 1961. Some of our observations are as follows:

Table I shows the smoking habits of Winnipeg school children, Grades 5 to 12 inclusive, in May, 1960. Students are divided into three groups, those who have never smoked a cigarette in their life, those who are smoking regularly at the time of the survey, and all remaining students are classified as experimenters. The last group includes those who have smoked a cigarette, but were not smoking at the time of the survey. This could, of course, include some who had been regular smokers, but had since ceased. It is seen that boys smoke more than girls in all grades, and that they smoke more heavily than girls. In the elementary grades, smoking is very light, although present, and 41% of the boys and 19% of the girls had smoked their first cigarette by junior high, grades 7, 8, and 9. Smoking was quite common, 25% of the boys and 15% of the girls smoked regularly. In high school, 45% of the boys and 28% of the girls stated that they smoked regularly. Only 25% of the boys in high school and 41 % of the girls had never smoked a cigarette.

TABLE I-SMOKING HABITS OF WINNIPEG SCHOOL CHILDREN, GRADES 5 TO 12 INCLUSIVE, MAY 1960

	Boys			Girls		
Grades	5, 6	7,8,9	10,11,12	5,6	7,8,9	10, 11, 12
Total	3,544	4,897	2,737	3,497	4,702	2,332
Never Smoked	59%	38%	25%	81%	57%	41%
Experimenters	35%	37%	30%	17%	28%	31%
Regular Smokers	6%	25%	45%	2%	15%	28%
(a) 1 to 19 /wk	5%	9%	7%	2%	7%	9%
(b) 20 plus/wk	1%	16%	38%	Trace	8%	19%

Students who smoke more than one cigarette a week were classified according to age and sex. Smoking was negligible before 11 years of age and the most rapid recruitment occurred between

12 and 16 years of age; at age 10, 1% of the boys and 0.4% of the girls; at 11 years, 4% of the boys and 1% of the girls; at 12 years, 6% of the boys and 3% of the girls; and at 13 years, 14% of the boys and 8% of the girls.

Similarly, the data showed that at 14 years of age, 24% of the boys and 18% of the girls smoked more than one cigarette a week; at 15 years, 37% of the boys and 25% of the girls were thus recorded.

In the age group of 16, 47% of the boys and 33% of the girls were similarly recorded. At 17 years of age, 50% and 33% of boys and girls respectively were recorded and at 18 years, 55% and 30%.

Table II shows the relationship between smoking habits of students and those of their parents. Boys smoked more if either parent or both parents smoked. This is true for girls also, but they were more closely related to the smoking habits of their mothers, and also, the parental habit had a greater influence on girls than on boys.

TABLE II-RELATIONSHIP BETWEEN SMOKING HABITS OF STUDENTS AND THOSE OF THEIR PARENTS

	Boys				Girls			
Parental smoking	Father	Mother	Both	Neither	Father	Mother	Both	Neither
Total	3,536	994	4,518	2,055	3,241	876	4,398	1,909
Never smoked	40.1%	39.6%	41.1%	45.4%	63.5%	57.8%	58.2%	69.0%
Experimenters	31.9%	31.6%	29.5%	33.8%	21.7%	22.5%	22.2%	19.9%
Regular smokers	28.0%	28.8%	29.4%	20.8%	14.8%	19.7%	19.6%	11.1%

An attempt was made to relate smoking to academic achievement by the use of a "comparative smoking index". The proportion of smokers for each sex and each age group was calculated for all students irrespective of academic grouping. These figures were then applied to each academic group separately, broken down into age and sex, to give an expected number of smokers on the hypothesis that the variation of the number of smokers in each group was attributed solely to the variation in the age composition. The observed number of smokers as obtained from the results of the questionnaire was then compared with the expected number of smokers. The 11 comparative smoking index" was obtained by dividing the observed number of smokers by those expected; i.e., the "comparative smoking index" was equal to the observed number of smokers divided by the expected number of smokers. Unity would indicate that the proportion of smoking in that academic group was the same as for all students combined. That is, unity represents an average smoking rate. The values greater than unity indicate a smoking rate greater than average, and values below unity indicate a smoking rate less than average.

TABLE III-COMPARATIVE SMOKING INDEX By ACADEMIC STANDARD, WINNIPEG SCHOOL STUDENTS, GRADES 5 TO 12 INCLUSIVE, MAY 1960		
Type of Class	Boys	Girls
Honours	0.34	0.33
Major work	0.50	0.39
Above average	0.62	0.57
Average	1.00	1.00
Below average	1.25	1.36
Slow learners	1.50	1.96
Ungraded	1.04	1.59

Table III shows that the lower the academic achievement, the greater the tendency to smoke, with the exception of the ungraded group where the figures were too small to be of significance. Other points revealed in the survey were that 565 students had smoked their first cigarette by six, and an additional 975 by eight years of age.

PROGRAM OF HEALTH EDUCATION

The plan was to select a segment of the school system to carry on a health education program, leaving the remainder of the schools as a control. Two of the nine city high schools were selected as they were considered to have a good cross section of the school population. All elementary and junior high schools that normally finished students to these high schools were also included in the program. This represented a little over 15% of the total school population. A study of the questionnaires from these schools showed that this group of students conformed to the general pattern of smoking habits.

In the fall of 1960, a committee was appointed to plan the program of education on smoking. The superintendent of secondary schools acted as chairman. The supervisor of physical and health education for the school system was the second member of the administration staff on the committee. Principals of schools in the test area also sat on the committee. The deputy health officer of the City of Winnipeg and the consultant in child health services were the remaining members of the committee.

The committee decided the primary responsibility for instruction of the students would rest with the teachers. The medical members of the committee agreed to serve as resource people and to speak when asked, or to assist in obtaining speakers.

The central committee met periodically, two to three times a year, at the call of the chairman. It planned the major approaches, and reviewed pamphlets, books, films, etc., which might be of use. Information gathered from popular media, as well as educational and medical journals was

gathered, digested, and sent out to all schools in the project areas in the form of a "health education newsletter".

In the fall of 1960, a panel consisting of the professor of paediatrics and consultant in child health services for the city, the director of the child guidance clinic, a cancer research worker, and the deputy health officer, met all teachers in the project area in small groups. The filmstrip To Smoke or Not To Smoke, supplied by the Manitoba Division of the Canadian Cancer Society, was shown at this time, and the panel discussed all aspects of the problem with the teachers. Each teacher then received a copy of the booklet Smoking and Lung Cancer prepared by the New York State Health Department.

The various schools were encouraged to develop their own programs on the basis of the information and teaching aids supplied. It was generally agreed that education at the elementary level should be casual and informal and that the chief approach should be to the teachers and to the parents.

The main direct approach was to be in the junior high schools, but the program continued through high school. All students saw the filmstrip To Smoke or Not To Smoke, and this was followed by discussion. Sometimes this was with the science teacher or guidance teacher. Occasionally the same panel that had met with the teachers met with the student bodies.

In the fall of 1961 the Manitoba Department of Health supplied us with the motion picture, Time Pulls the Trigger. When the Report of the Royal College of Physicians of London on Smoking and Health became available, copies were supplied to each school in the project area.

The importance of parental example has been shown in our study as well as in many others, yet most of our attempts to involve parents met with indifference. The panel that met with the teachers in the first year provided the program at one home and school meeting and ten parents showed up, representing eight families out of three or four hundred. At another specially organized meeting in a high school about 3,000 invitations were sent out to hear the panel consisting of a prominent cancer surgeon, a professor of paediatrics, a deputy health officer; again only about ten persons showed up. On one occasion only a home and school meeting was packed to standing capacity. On this occasion the panel was joined by a star halfback of the Winnipeg Blue Bombers and possibly this helped draw the crowd. It was also obvious that we had an enthusiastic, energetic, and well organized home and school executive whose members had written and telephoned every parent in the district.

Attempts to involve community club organizers and minor sports coaches failed completely due to obvious indifference. The leaders in these groups felt that the issue was outside their responsibility. We met with the student council in one of the high schools on two occasions, and there was considerable interest and discussion. In the second high school, medical speakers addressed the entire student body in two groups. In one school where the filmstrip Smoking and Lung Cancer was shown to each class several times by the guidance teacher, it was noted that interest was highest in the poorer classes, in converse to the usual pattern. This was interesting in light of the fact that the incidence of smoking had been shown to be higher in these classes of

lower academic achievement.

SURVEY REPEATED IN 1963

In general the results of the survey of the spring of 1963 showed the same pattern of smoking as in the first survey, with some indication of mild success in the project areas. Throughout the city, but more in the project area there were fewer students who had never smoked a cigarette, and possibly this indicates that the publicity on smoking had aroused the curiosity of non smokers to the extent that they had tried it.

Three subjective questions were added to the questionnaire in 1963. These questions were: "Do you believe smoking causes lung cancer?" "Do you believe smoking has other harmful effects on health?" "Has the publicity on the possible harmful effects of smoking decreased your tendency to smoke?" In each question the number of affirmative answers decreased with age, and more affirmatives were obtained in test schools than in control schools. Girls gave more affirmative answers than boys. In general, the second question was more readily acceptable than the first, and the last question was least accepted, as shown in Table IV.

TABLE IV-RESPONSE TO SUBJECTIVE QUESTIONS, 1963, SHOWN AS PER CENT ANSWERING "YES"

	Boys % answering yes	Girls % answering yes
Do you believe that smoking causes lung cancer?	91.2	90.3
Do you believe smoking has other harmful effects on health?	84.2	84.9
Has the publicity on the possible harmful effects of smoking decreased your tendency to smoke?	55.4	62.2

SOME OBSERVATIONS ON THE RESULTS OF THE PROGRAM

During our studies connected with the project, we were unable to find any real, fundamental research into the psychology of the smoking habit. It would seem that this should be basic, and that someone should have studied this peculiar habit that has spread around the world and involved so many people, that at the same time is so unnatural and does not appear to have any relationship to any normal function of life.

The most generally accepted statement is that we must concentrate our educational efforts on school children. We do not accept this, as any public health measure must be directed to all persons who might benefit from such education. This also ignores the fact that the only groups where a really significant decrease in smoking habits has been shown, are doctors in the United Kingdom and in Massachusetts. These groups, and I suspect doctors elsewhere, have probably

been influenced by repeated factual evidence which they understand and respect, and also a sense of responsibility to their image as examples. Our efforts must, and are, being directed towards spreading this acceptance of this responsibility for leadership image to other leaders of youth whether academic, sports, recreational, or parents. It is quite possible that cigarette smoking is taken up by most school students as a readily obtainable symbol of maturity, and will always serve this function as long as the majority smoke and accept smoking as a fashionable habit.

There is a need for a regular bulletin or manual in lay terms for teachers and youth leaders illustrating the accumulating data and suggesting teaching techniques. A new Medical Bulletin on Tobacco, published by the American Public Health Association, American Heart Association, American Cancer Society, and the National Tuberculosis Association of the United States is a start in this direction, but we should have a similar bulletin in Canada. We should develop new filmstrips or movies based on Canadian data and experience, and adapted to various audiences and age groups.

Probably our goal should be to make cigarette smoking no longer fashionable. Fashions are changeable, but the new pattern must be widely publicized, and must appear smart. There is just some evidence that this may be occurring in certain groups with regard to cigarette smoking. The celebrated Royal College Report helped to start this trend. Popular journals have, of late, been publicizing the problem. Wider publicity to non-smoking habits of prominent and successful personalities would help counteract the cigarette advertiser's use of smoking as a success symbol.

In conclusion, public health persons, themselves, must face their moral obligation to set an example in practising what they preach, and by giving up smoking or at the very least, by refraining from smoking in public or in the exercise of their duties.