

THE CIGARETTE-SMOKING HABIT AMONG PREUNIVERSITY STUDENTS IN HAVANA, CUBA, IN 1980¹

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The apparently increasing prevalence of teenage cigarette-smoking in Cuba in recent years prompted a survey of teenage smoking patterns at two high schools in Havana Province. The results of that survey, reported in this article, point to a high prevalence of cigarette-smoking among older students and to associations between the smoking habit and various other factors.

Introduction

Historical analysis of Cuba's mortality statistics points up the rising importance of diseases associated with smoking cigarettes. As of 1978, deaths caused by ischemic heart disease; cancer of the lungs, larynx, mouth, and pharynx; chronic bronchitis; emphysema; and bronchial asthma were responsible for nearly a third (31.3 per cent) of all deaths occurring in the country (1). Furthermore, there is evidence suggesting that smoking is becoming increasingly prevalent among young people, precisely those who should be the prime target of actions designed to limit the spread of this harmful habit.

Because of these trends, a survey was conducted among senior high school students (grades 10 through 12) for the purposes of (1) determining the prevalence of the cigarette-smoking habit by age and sex, (2) describing some characteristics of that habit, (3) identifying probable associations between the smoking habit and certain characteristics of the smokers' households, and (4) searching for correlations between smoking on the one hand and academic standing, school absenteeism, athletic performance, and respiratory problems on the other. This survey was the subject

of a thesis presented by one of the authors (Sarmientos) for a degree in epidemiology.

Methodology

Definitions

Several basic terms used in the study were defined as follows:

- A *smoker* was defined as a person who habitually smokes at least one cigarette per day or seven cigarettes per week.
- An *ex-smoker* was defined as a person who had been a smoker according to the above definition, but who had ceased to be one at least two weeks before being interviewed in connection with this study.
- A *nonsmoker* was defined as a person who had never smoked or had smoked fewer than an average of seven cigarettes per week.

Sample Selection

All the students surveyed were enrolled in the tenth or eleventh grades of the Carlos E. Díaz Camacho School or the tenth, eleventh, or twelfth grades of the Ernesto Guevara School during the 1979-1980 academic year. The former school, located in the urban area of "Havana City" Province, had no boarding facilities; the latter, in the rural area of the same province, had boarding facilities.

A stratified random sample of students,

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proportionately representative by sex and grade, was surveyed at each school. The size of the sample was determined by assuming a constant proportion of smokers in each stratum ($p = 0.40$), employing 95 per cent confidence limits and accepting a standard error of 0.03. In all, 558 of 1,158 students in the tenth and eleventh grades of the Díaz Camacho School and 392 of 605 students in the tenth, eleventh, and twelfth grades of the Guevara School were included, bringing the total number of students surveyed to 950.

Data Collection and Analysis

Survey information was collected on a pre-coded questionnaire, which was completed in the course of personal interviews conducted by one of us (Sarmientos) with each of the selected students. This field work was carried out between 28 January and 20 May 1980. None of the students in the sample refused to be interviewed.

Subsequent separate tabulation of some data for each school revealed that the data from the two institutions were very similar. The data were therefore combined for analytical purposes, the two schools being treated together as a single unit. Likewise, because data on male and female students did not differ significantly with regard to smoking patterns and the other variables being considered, except in the first part of Table 1 the data for the two sexes have been combined.

Results

The Prevalence of Cigarette Smoking

As Table 1 shows, the survey found that 252 of the survey students were smokers, 43 were ex-smokers, and 655 were nonsmokers. Almost one in three male students and slightly more than one in five female students were smokers. Another 3.6 per cent and 5.2 per cent of the male and female students, respectively, had been habitual smokers but had not smoked for at least two weeks before the interview. The overall prevalence of habitual smoking among both sexes combined was 26.6 per cent.

These findings are fairly similar to those reported previously by surveys in Latin America, Europe, and the United States (2-4). One U.S. survey (5) has been conducted that yielded considerably lower figures; however, the fact that this latter survey was performed almost 10 years ago, used a different methodology, and sampled student groups with a somewhat different age distribution could account for the disparity.

Our survey also found that the smoking habit's prevalence rose quickly with the age of the students, being almost three times greater among those 18 and over (44.4 per cent) than among those 15 years of age (16.2 per cent). This pattern has also been reported by other studies (4, 5).

Another pattern indicated in the literature

Table 1. Prevalence of cigarette smoking among the students surveyed, by sex and age.

Sex and age of subjects	Smokers		Ex-smokers		Nonsmokers		Total	
	No.	%	No.	%	No.	%	No.	%
Males	135	32.6	15	3.6	264	63.8	414	100
Females	117	21.8	28	5.2	391	73.0	536	100
14 years	2	20.0	—	—	8	80.0	10	100
15 years	38	16.2	9	3.8	188	80.0	235	100
16 years	119	26.1	18	3.9	319	70.0	456	100
17 years	73	35.8	14	6.9	117	57.3	204	100
≥ 18 years	20	44.4	2	4.5	23	51.1	45	100
Total	252	26.6	43	4.5	655	68.9	950	100

is that a large proportion of Latin American smokers (roughly half the female smokers and a quarter of the male smokers) did not begin smoking cigarettes before age 20. This suggests that the ultimate prevalence of cigarette smoking among Cuban adults is likely to be considerably higher than the prevalence found among even the oldest students interviewed (those at least 18 years of age).

The Degree of Habituation

The length of time most subjects had been smoking clearly suggested that the habit had become assimilated into their behavioral and cultural patterns. Overall, some eight out of every 10 smokers interviewed had been smoking for 12 months or more (Table 2).

The ex-smokers differed from the smokers in that only about half (46.5 per cent) said they had been smokers for 12 months or more. It was not possible to assess this difference precisely, however, because many ex-smokers (28 per cent) could not recall how long they had been habitual smokers.

Various other indicators also showed that the habit had become deep-rooted in a significant share of the smokers (Table 3). Specifically, over a fifth of the student smokers were

consuming 10 or more cigarettes per day; some two-thirds were smoking over half the cigarette; and well over a third were inhaling smoke into their lungs.

The data collected with respect to these indicators suggest that the ex-smokers surveyed had indulged the habit with less intensity than those who had continued smoking. It is possible that this lesser intensity reflected a lower degree of dependency (6, 7), which in turn may have favored abandonment of the habit. However, it is also possible that those who gave up smoking recalled the intensity of their habit less clearly than those who had continued to smoke, and so they reported information indicating a lower degree of habituation.

The survey also showed (Table 4) that those classified as smokers and ex-smokers identi-

Table 4. Beer-drinking patterns reported by students identified as smokers, ex-smokers, and nonsmokers.

	Not accustomed to beer-drinking		Accustomed to beer-drinking	
	No.	%	No.	%
Smokers	184	73.0	68	27.0
Ex-smokers	29	67.5	14	32.5
Nonsmokers	562	85.8	93	14.3

Table 2. Duration of the cigarette-smoking habit reported by smokers and of the former habit reported by ex-smokers.

	≤6 months %	7-11 months %	12-23 months %	≥24 months %	Subject does not recall %	Total interview subjects
Smokers	4.7	4.4	20.6	60.3	10.0	252
Ex-smokers	20.9	4.6	16.2	30.3	28.0	43

Table 3. Indicators of smoking intensity among students identified as smokers and ex-smokers.

	No. of cigarettes smoked per day			Portion of cigarette smoked			Extent of smoke inhalation		
	≤4 %	4-9 %	≥10 %	Under half %	Half %	Over half %	Don't inhale %	Inhale into throat %	Inhale into chest %
Smokers (252)	36.5	41.3	22.2	11.5	23.2	65.3	2.4	58.7	38.9
Ex-smokers (43)	58.1	20.9	20.9	18.4	34.2	47.4	9.3	60.5	30.2

fied themselves as beer-drinkers more often than nonsmokers. This association suggests that student smokers may have a specific personality or behavior pattern inclining them toward both smoking and beer-drinking.

Family Smoking Patterns

The interview data indicated that fathers living with student smokers were slightly more apt to be smokers themselves than were fathers living with students classed as ex-smokers or nonsmokers (Table 5). The proportion of smokers among the mothers living in the home was relatively small, but the percentage of mothers who smoked was considerably higher in the student smokers' families (39.1 per cent) than in those of the ex-smokers (32.5 per cent) and nonsmokers (26.9 per cent).

Much stronger correlations were found between the interviewed students' smoking patterns and those of their brothers and sisters. That is, the student smokers reported that 62.3 per cent of the brothers living with them

smoked, as compared to 33.3 per cent of the brothers living with ex-smokers and 33.6 per cent of those living with nonsmokers; comparable figures for sisters living in the home were 52.3, 36.0, and 22.6 per cent, respectively.

These family smoking patterns, which are similar to those reported by other studies (4, 8), point up the apparent influence of parental and especially sibling behavior upon the initiation and continuation of smoking by those interviewed.

Regarding parental education, the survey indicated that the parents of student smokers and nonsmokers had roughly comparable educational levels, a slightly higher proportion of university graduates being observed among the smokers' parents (Table 6), and a slightly higher proportion of mothers with senior high school education being found among the smokers' mothers. These findings contrast with those of another study which reported an inverse relationship between the smoking habits of students interviewed and the degree of education attained by the heads of those students' households (4).

Table 5. Smokers among the parents and siblings of students identified as smokers, ex-smokers, and nonsmokers.

	Fathers living with students		Mothers living with students		Brothers living with students		Sisters living with students	
	Total	% smoking	Total	% smoking	Total	% smoking	Total	% smoking
Smokers (252)	208	71.6	228	39.1	138	62.3	130	52.3
Ex-smokers (43)	34	58.8	40	32.5	27	33.3	25	36.0
Nonsmokers (655)	561	64.7	606	26.9	372	33.6	314	22.6

Table 6. Levels of education attained by fathers and mothers of student smokers, ex-smokers, and nonsmokers.

	% of fathers with indicated education				% of mothers with indicated education			
	Primary	Junior high ^a	Senior high ^b	University	Primary	Junior high ^a	Senior high ^b	University
Smokers	21.1	31.9	20.3	26.7	32.6	30.2	18.6	18.6
Ex-smokers	20.0	20.0	22.5	37.5	26.2	35.7	9.5	28.6
Nonsmokers	26.0	33.4	20.3	20.2	36.0	34.2	15.3	14.5

^aGrades 7 through 9.

^bGrades 10 through 12.

Academic Performance and Absenteeism

In terms of grades earned the year before the survey, the nonsmoking students outperformed the smokers. That is, the proportion of students with excellent grades (determined by examining their records) was twice as high among the nonsmokers (Table 7), with the ex-smokers occupying an intermediate position. These data do not provide any basis for assuming a direct causative relationship between smoking and poor academic performance. However, it should be noted that students who were habitual smokers tended to have much higher rates of absenteeism than nonsmokers, both when the alleged cause was illness and when another cause was cited. All in all, these observed associations between smoking, poor academic performance, and high rates of absenteeism give grounds for thinking that these variables may be interrelated indirectly, since all of them could be directly related to one or more common factors such as family environment, personality, reference or peer group behavior, and so forth.

Athletic Performance and Respiratory Symptoms

A slightly higher percentage of nonsmokers than smokers categorized their performance in sports as "excellent" (Table 8). As in the case of academic performance, this does not provide a basis for assuming a direct causal relationship between smoking and poor athletic performance. It is noteworthy, however, that a relatively high proportion of smokers (as compared to nonsmokers) reported frequent colds, coughing episodes, and expectoration linked with coughing. These symptoms point strongly toward respiratory problems among the smokers, problems that could be at least partly responsible for the reported difference in athletic performance.

Conclusions

The foregoing results suggest that students may become smokers early—at age 15 or less—and that the prevalence of smoking in-

Table 7. Scholastic performance and school attendance by students identified as smokers, ex-smokers, and nonsmokers.

	Grades during the previous school year			Absent at least one day in the four weeks before the interview		
	Excellent %	Good %	Fair or poor %	Because of illness %	For other reasons %	Total %
Smokers	14.7	74.6	10.7	13.9	12.7	26.6
Ex-smokers	20.9	72.1	7.0	7.0	11.6	18.6
Nonsmokers	29.8	62.0	8.2	9.0	5.5	14.5

Table 8. Athletic performance and respiratory symptoms among students identified as smokers, ex-smokers, and nonsmokers.

	Athletic performance			Respiratory symptoms			
	Excellent %	Good %	Fair or poor %	Frequent colds %	Morning cough %	Afternoon or evening cough %	Expectoration upon coughing %
Smokers	23.8	57.5	18.7	25.4	17.5	27.0	17.1
Ex-smokers	16.3	67.4	16.3	23.2	18.6	18.6	18.6
Nonsmokers	28.1	56.0	15.9	16.0	8.1	13.1	8.4

creases sharply with age, reaching something on the order of 40-50 per cent among preuniversity students 18 years of age or over. Within the whole population surveyed, which consisted mostly of students 15-17 years old, roughly a third of the boys and a fifth of the girls were habitual smokers. Interview data concerning the habit's duration, the number of cigarettes smoked daily, the portion of each cigarette smoked, and the depth of smoke inhalation made it clear that for many the smoking habit was deep-rooted.

The survey found an association between

student smoking and parental smoking patterns, as well as a strong association between student smoking and sibling smoking patterns. The data also indicated an association between cigarette smoking and beer-drinking, but showed comparatively little association between smoking and parental education. By and large, the student smokers appeared to get somewhat poorer grades, to do less well in sports, and to experience a higher incidence of respiratory problems than their nonsmoking counterparts.

SUMMARY

This article describes a 1980 survey of cigarette-smoking practices among teenagers at two high schools in Cuba's "Havana City" Province. The survey was conducted personally by one of the authors (Sarmientos), who interviewed 950 students in the tenth, eleventh, and twelfth grades at these schools.

The results of the survey indicate that while the smoking habit was acquired early by some students, the prevalence of regular smoking increased sharply between ages 15 and 18, with roughly 45 per cent of those 18 or over smoking at least one cigarette a day. Most of the student smokers surveyed were smoking four or more cigarettes daily, and 38 per cent reported inhaling

smoke into their lungs, a clear indication that the habits of many of those surveyed were deep-rooted.

The survey found little association between student smoking and levels of parental education. However, associations were found between smoking and beer-drinking, smoking and parental smoking patterns, and smoking and sibling smoking patterns, the latter association being especially strong. Associations were also observed between smoking and inferior academic standing, absenteeism, poor athletic performance, and respiratory problems. Most of the findings, with certain exceptions noted by the authors, tend to agree with the results of similar surveys in other countries.

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