

Smoking prevalence, quit attempts and successes

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Abstract

Objectives

This article provides a brief overview and update of Canadian smoking trends since 1966. It presents the characteristics of daily smokers who have successfully quit as well as those who have tried to quit but continue to smoke daily.

Data sources

The time series smoking data are from a variety of surveys. The analyses pertaining to individuals who tried to quit smoking and those who successfully quit are based on a Health Canada-sponsored supplement to the 1994/95 National Population Health Survey (NPHS).

Main results

In contrast to the overall trend, smoking rates among teens have been rising in the 1990s. Approximately 16% of daily smokers reported that they had recently stopped smoking. The majority of former daily smokers indicated that their main reason for quitting was concern about their future health. The vast majority reported that they had gone cold turkey. About four in ten daily smokers reported that they had tried, unsuccessfully, to quit smoking in the 12 months before their NPHS interview.

Key words

smoking prevalence, amount smoked, smoking quit-attempts, smoking cessation, smoking quit-method, smoking quit rates

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Smoking is widely acknowledged as one of the most important yet preventable causes of illness and death. The World Health Organization estimated that in 1995, 2.1 million people in industrialized countries would die from tobacco-related diseases.¹ In Canada, approximately 45,000 deaths were attributable to smoking in 1991. This number is projected to increase to almost 47,000 deaths in the year 2000.² Consequently, the development of public-health programs aimed at reducing the current smoking rate and preventing the initiation of new smokers has become a focus of concern for both governmental and non-governmental agencies.³

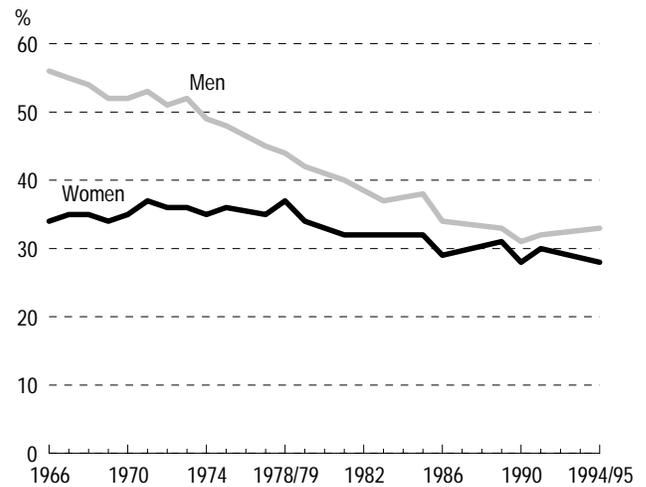
This article provides a brief overview and update of Canadian smoking trends since 1966 based on data from a variety of surveys. Using data from the 1994/95 National Population Health Survey (NPHS), it presents new information on the characteristics of daily smokers who have successfully quit, as well as those who have attempted to quit but continue to smoke daily (see *Methods* and *Definitions*).

Although there have been several studies of smoking cessation based on non-random or small sample populations,⁴ the 1994/95 NPHS was one of the first national surveys to explore the quit attempts and successes of smokers. (The Survey on Smoking in Canada, sponsored by Health Canada and conducted by Statistics Canada in 1994/95, also included detailed questions on smoking cessation.)

Current smoking rate down overall, up among teens

The proportion of Canadians who currently smoke has decreased considerably since the mid-1960s. In 1966, 45% of those aged 15 and older were smokers (daily and occasional combined). Almost three decades later, this percentage had dropped to 31%.

Chart 1
Prevalence of current smoking, by sex, population aged 15 and older, provinces, 1966 to 1994/95



Data sources: Various surveys (see Methods)

Methods

Data sources

The time series smoking data in this article are from the Canadian Smoking Habits Surveys (1966 to 1977, 1979, 1981 and 1983),^{5,6} the Canada Health Survey (1978/79),⁷ the General Social Survey, Cycle 1 (1985),⁸ the National Alcohol and Other Drugs Survey (1989),⁹ the Health Promotion Survey (1990),¹⁰ the General Social Survey, Cycle 6 (1991),¹¹ and the National Population Health Survey (1994/95)¹² (see *Appendix*).

The 1994/95 National Population Health Survey (NPHS) provincial, non-institutional sample consisted of 27,263 households, of which 88.7% agreed to participate. After the application of a screening rule, 20,725 households remained in scope.

One knowledgeable person in every participating household provided general socio-demographic and health information about each household member. In total, data pertaining to 58,439 individuals were collected. (The data base containing this information is called the General file.)

In addition, one randomly selected person in each of the 20,725 participating households was chosen to provide in-depth information about their own health. In 18,342 of these households, the selected person was aged 12 or older. Their response rate to these in-depth health questions was 96.1%, or 17,626 respondents. (The data base containing in-depth health information as well as data from the General file pertaining to these respondents is called the Health file.) In the remaining 2,383 participating households, the randomly selected respondent was younger than age 12. In-depth health

information was collected for these individuals as part of the 1994/95 National Longitudinal Survey of Children and Youth.

Of the 17,626 randomly selected respondents aged 12 or older, 14,786 were eligible members of the NPHS longitudinal panel. These respondents were also eligible for the Health Canada supplement. The response rate to the Health Canada-sponsored questions was 90.6%. (The data base containing information from the Health Canada supplement as well as data from the General and Health files pertaining to these respondents is called the Supplement file.)

The remaining 2,840 of the 17,626 randomly selected respondents aged 12 or older were sponsored by provincial governments that elected to enlarge the sample size in their province. These respondents will not be followed-up and were not eligible for the Health Canada supplement.

Limitations

Because estimates of smoking prevalence were derived from several surveys, the resulting time series should be considered with caution. Each survey has a unique design, question order, wording, coverage, and response rate. Therefore, the time series is subject to variability that may relate to these factors and not simply to changes in smoking behaviour (see *Appendix*).

Quit attempts may be overestimated because some NPHS respondents may have provided what they perceived to be a socially desirable response. That is, they may have indicated that they attempted to quit when they had not.

According to the NPHS, there were approximately 6.9 million current smokers aged 15 and older in 1994/95.

The decline in the prevalence of current smoking was more pronounced among men than women (Chart 1). As a result, the gap in smoking prevalence by sex has narrowed. In 1966, the current smoking rate for men exceeded the rate for women by 22 percentage points. By 1994/95, this gap was reduced to 5 percentage points.

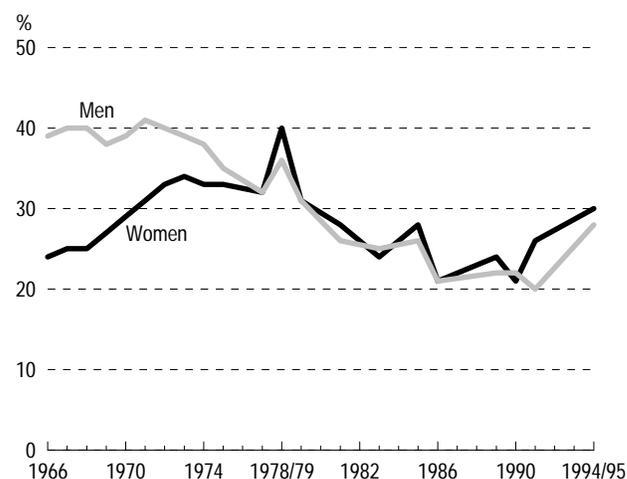
The prevalence of smoking among teens is to some degree a harbinger of future smoking rates. By 1990, the prevalence of current smoking among 15- to 19-year-olds had fallen to 21%—the lowest rate recorded for this age group since 1966. The following year, the rate began to rise and by 1994/95 was 28%. Teen smoking rates increased among both sexes in the 1990s, but the trend was slightly more pronounced among females. This reversed the situation in the late 1960s and early 1970s when smoking among young men had exceeded the rate for young women (Chart 2).

Smoking heaviest in Quebec and P.E.I.

In 1994/95, daily smoking was more prevalent in some provinces than in others. The amount smoked per day also varied slightly by province. For example, in Quebec and Prince Edward Island, a high percentage of the population smoked daily (Chart 3). Moreover, they tended to be somewhat heavier smokers, smoking 20 cigarettes per day on average. By contrast, British Columbia had a notably lower prevalence of daily smoking, and their average daily cigarette consumption was also comparably lower.

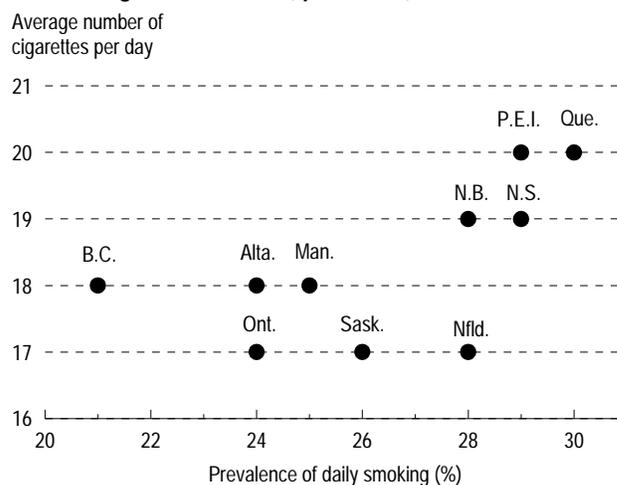
Although trends in provincial smoking rates are difficult to interpret, certain patterns are clear. Since 1966, the current smoking rate in Quebec has always been above the national average and, for the most part, has been the highest of all the provinces. The provinces west of Quebec have generally had current smoking rates below the national average. In particular, British Columbia has had one of the lowest current smoking rates in Canada since the late 1970s (data not shown).

Chart 2
Prevalence of current smoking, by sex, population aged 15 to 19, provinces, 1966 to 1994/95



Data sources: Various surveys (see Methods)

Chart 3
Prevalence of daily smoking and amount smoked by daily smokers aged 15 and older, provinces, 1994/95



Data source: 1994/95 National Population Health Survey, Health file

About one in four Canadians is a former daily smoker

The benefits of smoking cessation have been extensively documented. According to the U.S. Department of Health and Human Services, within a year of quitting, a person's risk of developing heart disease drops to half that of a smoker.¹³ Between

five and fifteen years after quitting, the chance of developing lung cancer decreases by almost half, and the risk of dying from cancer is similar to that of someone who has never smoked.¹³

In 1994/95, nearly one in four Canadians was a former daily smoker. The quit rate, that is, the number of former daily smokers as a proportion of all people who smoke daily or who have ever smoked daily, was 47%.

Approximately 16% of smokers reported that they had recently quit (Table 1). Recent quit rates were highest among those aged 65 and older. Because the 1994/95 NPHS asked former daily smokers their age when they had quit smoking and not the date when they had quit, the terms “recent” and “recently” refer to a difference in ages, as opposed to a period of time. In this article, recent quitters are former daily smokers who reported that

they had quit when they were one to five years younger; that is, the difference between their age at the time of their interview and their age when they had quit equals one to five inclusively (see *Definitions*).

Majority of quitters go cold turkey

The majority of former daily smokers cited concern about future health as their main reason for quitting (55%). This is consistent with results from other surveys. The 1975 Smoking Habits Survey indicated that the majority of smokers who had quit successfully (62% of males and 56% of females) reported that they gave up smoking for health reasons.¹⁴ Similarly, the 1994/95 Survey on Smoking in Canada found that the most commonly cited

Table 1
Recent quit rate, by province and by sex and age group, daily and former daily smokers aged 15 and older, 1994/95

	Recent quitters†	Daily smokers	Total	Recent quit rate
	'000	'000	'000	%
Total	1,151	5,832	6,983	16
Newfoundland	28	117	145	20
Prince Edward Island	6	31	37	15
Nova Scotia	31	208	239	13
New Brunswick	35	162	197	18
Quebec	307	1,762	2,069	15
Ontario	404	2,043	2,446	17
Manitoba	49	209	258	19
Saskatchewan	43	194	237	18
Alberta	102	510	613	17
British Columbia	145	596	741	20
Males	595	3,046	3,642	16
15-24	--	438	482	--
25-44	310	1,564	1,874	17
45-64	158	841	999	16
65+	84	202	286	29
Females	556	2,786	3,341	17
15-24	96	497	593	16
25-44	270	1,403	1,673	16
45-64	127	697	824	15
65+	62	189	251	25

Data source: 1994/95 National Population Health Survey, Supplement file

Note: Because of rounding, detail may not add to totals.

† Former daily smokers who recently quit

-- Cell size is too small to provide a reliable estimate.

Definitions

To classify smokers, the NPHS asked following questions:

Q1. “At the present time do/does...smoke cigarettes daily, occasionally or not at all?”

Q2. “Have/has you/he/she ever smoked cigarettes at all?”

Q3. “Have/has you/he/she ever smoked cigarettes daily?”

Daily smokers are those who answered “daily” to Q1.

Occasional smokers are those who answered “occasionally” to Q1.

Current smokers include both daily and occasional smokers.

Former daily smokers are those who answered “not at all” to Q1, “yes” to Q2, and “yes” to Q3.

To examine recent smoking cessation attempts and successes, new concepts were developed for this analysis, based on the following questions:

Q4. “Have you tried to quit smoking in the last 12 months?”

Q5. “At what age did you quit smoking daily?”

The *rate of quit attempts* is the number of daily smokers who answered “yes” to Q4 as a proportion of all daily smokers.

Recent quitters include former daily smokers whose reported age at the time of their NPHS interview, less the age reported for Q5, equals one to five inclusively. Because there is a high recidivism rate, smoking cessation was defined as having quit when at least a year younger.

The *recent quit rate* is the number of recent quitters as a proportion of all daily smokers and recent quitters combined.

reason for quitting was concern about future health (32%), followed by concern about current health (25%).¹⁵

The use of treatments that help to relieve withdrawal symptoms, such as nicotine patches or chewing gum, was not common among former daily smokers. The vast majority of them reported that they had gone cold turkey (89%). Again, this is in line with previous studies. According to the 1975 Smoking Habits Survey, 75% of successful male quitters and 77% of successful female quitters reported that they had used “no aid” in their smoking cessation.¹⁴ The 1994/95 Survey on Smoking in Canada indicated that 89% of all former

smokers reported that they had quit cold turkey.¹⁵ A literature review of smoking cessation research confirmed that over 80% of people who managed to successfully quit smoking did so without the help of formal treatment or special programs.⁴

Four in ten daily smokers attempted to quit in previous year

Although not all smokers are successful in their attempt to quit, many reported that they had tried. About four in ten (41%) current smokers—2.4 million—reported that they had tried unsuccessfully to quit in the 12 months before their NPHS interview (Table 2).

The rate of quit attempts was higher for teens and young adults than for older smokers. There were also differences by sex. At younger ages, a greater proportion of female smokers reported that they had tried to quit in the previous year. At age 25 and older, differences by sex in the rate of quit attempts were less notable.

Similar to the recent quit rates, smokers in Quebec had the lowest rate of quit attempts, and smokers in British Columbia had the highest. Interestingly, although Nova Scotians had a high prevalence of daily smoking and a low recent quit rate, the province ranked second in the rate of quit attempts.

Concluding remarks

The process of quitting smoking is decidedly complex. For example, “The Stages of Change Model” proposes that there are five stages to quitting: precontemplation, contemplation, preparation, action, and maintenance.⁴ NPHS data indicate that many Canadians have progressed through the first four and are currently in the maintenance stage. In 1994/95, nearly one in four Canadians was a former daily smoker. However, many smokers have not yet managed to successfully quit, but have tried to do so and are likely in the contemplation, preparation, and/or action stages. In 1994/95, four in ten daily smokers reported that they had tried to quit during the 12 months before their NPHS interview.

Table 2
Rate of quit attempts, by province and by sex and age group, daily smokers aged 15 and older, 1994/95

	Attempted to quit†	Daily smokers	Rate of quit attempts
	'000	'000	%
Total	2,376	5,832	41
Newfoundland	48	117	41
Prince Edward Island	13	31	42
Nova Scotia	95	208	46
New Brunswick	67	162	41
Quebec	626	1,762	36
Ontario	847	2,043	41
Manitoba	85	209	40
Saskatchewan	86	194	45
Alberta	223	510	44
British Columbia	286	596	48
Males	1,162	3,046	38
15-19	91	213	43
20-24	97	226	43
25-44	609	1,564	39
45-64	316	841	38
65+	51	202	25
Females	1,214	2,786	44
15-19	143	210	68
20-24	186	287	65
25-44	559	1,403	40
45-64	268	697	39
65+	57	189	30

Data source: 1994/95 National Population Health Survey, Supplement file
Note: Because of rounding, detail may not add to totals. Because of non-response to the supplemental question about quit attempts, the rate of quit attempts may be underestimated in Quebec and Alberta. For the same reason, the rate may also be underestimated for men aged 20-24 and women aged 25-44.

† Daily smokers who reported that they tried to quit smoking during the 12 months before their interview

This article provides an overview of successful quitters and of smokers who have tried to quit but continue to smoke. However, it does not address the many factors that affect smokers' decisions to quit and their chances of success. Analysis of the 1994/95 NPHS shows that the majority of smokers start in adolescence, and that this affects the amount that they will smoke and their odds of quitting later in life (see *Age of smoking initiation: Implications for quitting* in this issue).

Acknowledgement

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Appendix

Canadian Smoking Habits Survey: 1966-1977, 1979, 1981, 1983

The Canadian Smoking Habits Survey (CSHS) was conducted annually between 1966 and 1977, and biannually between 1977 and 1983. The survey was implemented by Statistics Canada on behalf of the Department of Health and Welfare and carried out as a supplement to Statistics Canada's Labour Force Survey.

The CSHS surveyed between 21,000 and 40,000 Canadians aged 15 and older, depending on the survey year. The sample population did not include people living in institutions, members of the armed forces, people living on Indian reserves, or residents of the Northwest Territories or the Yukon. Data were collected primarily by telephone interviews, and proxy respondents were accepted.

Much of the CSHS data is based on proxy reports as opposed to self-reported data. It is impossible to determine what proportion of the data came from proxy respondents in the early years of the survey,

but in 1983, the figure was 51%. The proportion of proxy reports was particularly high for those aged 15 to 19. Some parents responding on behalf of their children may have been unaware of their children's smoking behaviour. Consequently, this survey may underestimate smoking prevalence among teens.

Canada Health Survey, 1978/79

The Canada Health Survey (CHS) was conducted jointly by Health and Welfare Canada and Statistics Canada. It covered the non-institutionalized population, but excluded people living in the Northwest Territories, the Yukon, and on Indian reserves. Smoking data were collected through the Lifestyle and Health Questionnaire, which was completed by respondents aged 15 and older. The total sample size was 20,726, and the response rate was 87%.

The charts presented in this article highlight the fact that CHS data differ substantially from other smoking data collected around 1978/79. Part of the difference in smoking prevalence may result from an underestimation of smoking prevalence stemming from the use of proxy reporting in the CHS. This difference may also reflect the fact that CHS respondents were asked to complete the questionnaire on their own, rather than through a telephone interview.

General Social Survey (Cycle 1), 1985

Statistics Canada's General Social Survey (GSS) collected information on the non-institutionalized population with the exception of residents of the Northwest Territories and the Yukon. Households were selected using random digit dialling and respondents between the ages of 15 and 64 were surveyed over the telephone. Respondents aged 65 and older were interviewed in person. The total sample size was 11,200 respondents. The response rate was 83% for telephone interviews and 87% for personal interviews. Proxy reporting was not accepted.

National Alcohol and Other Drugs Survey, 1989

The National Alcohol and Other Drugs Survey (NADS) was conducted by Statistics Canada on behalf of Health and Welfare Canada. The survey covered the non-institutionalized population with the exception of residents of the Northwest Territories and the Yukon. Data were collected through telephone interviews with 11,634 respondents aged 15 and older. The response rate was 79%. Proxy reporting was not accepted.

Health Promotion Survey, 1990

The Health Promotion Survey was conducted by Statistics Canada and sponsored by Health and Welfare Canada. The survey covered the non-institutionalized population with the exception of residents of the Northwest Territories and the Yukon. Random digit dialling was used to select households from which the sample of 13,792 respondents aged 15 and older was drawn. The response rate was 78%. Proxy reporting was not accepted.

General Social Survey (Cycle 6), 1991

The 1991 GSS target population was comprised of non-institutionalized Canadians aged 15 and older, living in the ten provinces. Random digit dialling was used to select a sample of 11,924 respondents that included an over-sampling of people aged 65 and older. The response rate was 80%. No proxy reporting was accepted.