Quitting smoking: why, how, and what might help

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Abstract

Objective—To examine reasons for quitting smoking, methods used in quitting, reasons for continuing smoking and potential aids to quitting in the population of Ontario, Canada.

Design—Two population-based, telephone interview surveys, conducted by random-digit dialing.

Subjects—Adults aged 18 years of age and older in 1983 (n = 1383) and 1991 (n = 1421).

Main outcome measures—Information was obtained from former smokers on why and how they quit smoking, and from continuing smokers on why they smoked and what might help them quit.

Results—The proportion of current smokers in the population decreased from 35.5% in 1983 to 27.2% in 1991. In both surveys, former smokers cited a variety of reasons for quitting, including personal health concerns, social and environmental factors, personal attitude factors, cost, and health education messages. Responses concerning the most important reason also revealed a range of factors; "advice of a physician" was not prominent among them. When questioned about methods used in quitting, most former smokers in both surveys responded that they "just decided to quit". Very few reported using other aids such as cessation clinics or nicotine gum. More smokers in 1991 than in 1983 reported that they continued smoking for enjoyment, to satisfy a craving or addiction, and for relaxation. With regard to what might help them quit, continuing smokers in both surveys cited a wide variety of potential aids, including information on harmful effects, more restrictions on smoking and on sales, cessation clinics, programmes on radio/TV, and higher taxes.

Conclusions—These findings support a multifaceted approach to tobacco control.

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Keywords: smoking cessation; current smokers; former smokers

Introduction

In both the United States and Canada, there has been a substantial reduction in the prevalence of smoking in all age groups in the past 25 years.¹⁻⁹ Much of this reduction is accounted for by the large number of smokers who have quit. Most people who quit smoking do so on their own, without the aid of special programmes or treatments; it has been estimated that more than 80% of those who are

successful quit without formalised treatment.¹⁰⁻¹² However, relatively little information is available on how this process is accomplished, particularly information that might be useful in determining programming and policy interventions. In addition, information on continuing smokers' beliefs about what would help them quit is limited. The purpose of the secondary data analyses reported here is to provide population-based information on individuals who have quit smoking and on individuals who continue to smoke, and changes in both groups over time.

WHO QUILTS, HOW, AND WHY?

In both large-scale interventions and population surveys, factors that have been consistently related to successful abstinence are: being male, being less dependent on nicotine, older age, having higher socioeconomic status or educational achievement, previous quit attempts, and health concerns or problems.¹³⁻²⁰ Some individuals have reported use of nicotine replacement therapy^{13 21} or physician advice²² but most individuals indicate they "just decided to quit" and did so on their own.¹⁰⁻¹²

Although the attributes of smokers that predict smoking cessation have been investigated, fewer investigations have focused on the relationships between the reasons stated for quitting and long-term abstinence.^{12 14 15 23 24} After adjustment for sociodemographic variables, Gilpin *et al*¹⁵ found that health, social, and cost reasons were all related to successful cessation in a cross-sectional general population survey. Individuals who responded that they quit for both health and social reasons combined were the most likely to quit. Health concerns appear to motivate cessation. Derby *et al*²⁴ found that successful cessation was associated with efforts to increase exercise in both women and men. In a study of nurses, Swenson and Dalton²³ found that health reasons were given most often by those nurses who had successfully quit smoking, followed by social reasons.

Halpern and Warner¹⁴ found that successful cessation was associated with having personal concerns about the health effects of smoking and with wanting to set a good example for children. Surprisingly, the cost of tobacco, the effect of smoking on the health of others, and pressure from family and friends to quit were not associated with likelihood of cessation in this study. In an analysis of the "1994 Smoking of Canadians Survey," Stephens and Stephens¹² found that concern about present health was cited by older individuals, whereas the cost of tobacco was cited by those in

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younger age groups. Less than 5% of the quitters cited pregnancy, social pressure, and doctor's advice as motivation for quitting. The apparent inconsistency in the results of this latter study with those of Halpern and Warner¹⁴ is probably due, in part, to differences in taxation levels between the United States and Canada, with Canada having relatively higher taxes on cigarettes.

WHO CONTINUES TO SMOKE AND WHY?

A variety of constructs has been used to explain why people continue with a behaviour they know is harmful to their health and the health of those around them.²⁵⁻²⁶ Among the explanations are those dealing with smoking as an addiction, a relaxant, a stimulant, and a strong habit with innumerable repetitions. Some individuals smoke to control their weight; weight gain following cessation has been well documented, although it is not clear whether this is the result of increased energy consumption, changes in metabolic rate, or both.²⁶ Further, the importance of weight concerns as a determinant of continuing smoking at the population level is not clear. Indeed, in a recent population-based study,²⁷ it was found that weight concerns and dieting efforts did not appear to inhibit smoking cessation or increase relapse in adults.

Many studies have examined factors related to continuing to smoke. Among the demographic characteristics found are lower socioeconomic status and, in some studies, being female.¹⁴⁻¹⁹⁻²⁸ With regard to smoking history, greater level of addiction or dependence has been consistently reported to be related to continued smoking.¹⁴⁻²⁹ Among those factors considered to be psychosocial in nature, low self-efficacy, history of depression, low self-esteem, concern about weight gain, and less concern about health risks have all been found to be characteristic of continuing smokers.³⁰⁻³⁴ The relationships are consistent regardless of whether the studies were evaluations of interventions or population-based surveys.

Relatively few studies have examined the relationships between the reasons given for smoking and continued smoking. Swenson and Dalton,²³ in the study of nurses cited above, found that enjoyment and tension reduction were the most frequently reported reasons for continuing to smoke. Stephens and Stephens¹² found that relaxation was the most frequently reported reason for resuming smoking after a quit attempt. Smoking to alleviate withdrawal and craving are often cited as reasons for continuing to smoke and are reported frequently in conjunction with failed quit attempts.³⁵ Having other smokers in one's social network also appears to be related to continuing to smoke.¹²⁻¹³⁻¹⁷⁻³³⁻³⁵⁻³⁷

WHAT IS NEEDED?

What has not been adequately addressed in the literature are questions concerning methods that continuing smokers perceive would be helpful to them in quitting. In addition, very

little is known about how those individuals who have achieved and maintained abstinence have done so. Little is known about whether changes have occurred in the reasons for and methods of quitting in a context of decreasing social acceptability of smoking and increasing restrictions on where smoking is permitted.

In this paper we report findings from two population-based surveys in the province of Ontario, Canada.¹⁻³⁸ Despite some variation in the wording of one of the questions, it was possible to reach conclusions regarding why and how people quit smoking and why smokers continue to smoke, along with their suggestions concerning what would be helpful to them in quitting. Possible changes that may have occurred in these variables between 1983 and 1991 because of the increased restrictions on smoking in public places and workplaces,³⁹ and the stronger social sanctions against smoking in general, were also of interest.⁴⁰

Methods

Similar methods were used for both the 1983 and 1991 surveys, with one exception in the wording and presentation of the question concerning why individuals quit smoking (see tables 1 and 2). The design and methodology of the surveys have been described fully elsewhere.¹⁻³⁸ Briefly, a three-stage sampling design was used. The primary sampling units were census subdivisions, which were stratified for the level of municipal smoking restrictions in effect in 1983 and urban/rural residence. In the second sampling stage, the sampling units were households with active telephone numbers, selected using random-digit dialing. These households comprised 97% of the target population,⁴¹⁻⁴² which was all residents of the province 18 years of age and older. The third and final stage involved the selection of one respondent within each household.

The data were collected during a 20-25-minute telephone interview that included questions about knowledge of health effects, attitudes toward a variety of restrictions on smoking, and sociodemographic information. For current and former smokers, items about smoking behaviour included were: reasons for and methods of quitting; reasons for smoking; and techniques used or potentially useful for quitting.

For the purposes of statistical analysis, the information was tabulated as percentages. Observations were weighted in these calculations according to the sample design. Ninety-five per cent confidence intervals were calculated in each survey using Fleiss' small-sample method,⁴³ with adjustments for the complex sampling design.⁴⁴ Non-overlapping confidence intervals were considered to be evidence of significant changes between 1983 and 1991, which effectively tests at approximately $P = 0.005$. The SAS statistical package was used in the analyses.

Several of the items allowed for responses other than those specified. Responses to the "other" category were incorporated into

Table 1 Reasons for quitting smoking reported by former smokers†

Reason	1983 (n=311) %	95% CI	1991 (n=396) %	95% CI
Personal health reason				
Health problem	37.2	28.5–40.5	35.7	31.1–40.2
Physical fitness	5.9	3.5–9.5	46.6	41.0–52.4*
Advice of physician	6.8	4.2–10.7	14.0	10.5–18.4
Pregnancy	6.8	4.0–11.3	3.7	1.7–7.5
Social environment				
Relatives encouraged	11.6	8.3–16.0	34.3	29.0–40.5*
Example for children	5.7	3.5–8.9	33.0	27.0–39.7*
Illness of friend	3.6	2.1–6.0	11.4	8.1–16.2*
Personal attitude				
Test willpower	4.7	2.2–9.4	31.8	25.0–39.2*
No longer enjoy	22.3	15.1–31.5	10.8	7.7–15.4
Cost of tobacco	12.7	9.0–18.2	40.7	34.9–46.5*
Advertising about health effects	9.5	6.2–14.3	28.5	22.3–35.3*
Other‡	6.3	3.7–10.4	9.1	6.6–13.4

* Significant change, P < 0.005.
† 1983 Question: “Why did you quit smoking? Any other reasons?”; 1991 Question: “I am going to read you a list of reasons why people quit smoking. For each, please tell me if it was a reason why you quit smoking. Was there another reason you quit smoking?”
‡ For 1991 the “other” category includes: religious convictions, concerns over environmental tobacco smoke, and aesthetics.
95% CI = 95% confidence interval.

Table 2 Most important reason for quitting smoking reported by former smokers†

Reason	1983 (n=311) %	95% CI	1991 (n=396) %	95% CI
Personal health reason	41.2	36.6–46.9	38.8	33.4–44.3
Health problem	29.7	23.6–36.5	22.8	17.8–28.6
Physical fitness	3.9	1.9–7.8	11.3	7.8–16.0
Advice of physician	2.4	0.9–5.8	0.9	0.2–3.2
Pregnancy	5.7	3.1–10.1	3.8	1.9–7.1
Social environment	14.6	10.8–19.5	20.1	16.0–24.9
Relatives encouraged	8.6	5.3–13.5	8.7	5.7–13.1
Example for children	3.1	1.4–6.8	6.6	4.0–10.6
Illness of friend	2.9	1.2–6.5	4.8	2.6–8.4
Personal attitude	21.5	16.4–27.6	17.6	13.2–23.0
Test willpower	2.8	1.2–6.4	6.2	3.7–10.1
No longer enjoy	18.7	13.7–24.9	11.4	7.9–16.1
Cost of tobacco	6.6	3.8–11.1	8.8	5.7–13.1
Advertising about health effects	4.9	2.5–9.04	5.6	3.3–9.4
Other	10.7	7.89–14.3	9.2	7.0–12.0
Other‡	4.9	2.6–9.1	8.7	5.7–13.0
Don't know	5.8	3.2–10.1	0.5	0.1–2.7*

* Significant change, P < 0.005.
† 1983 Question: If respondent gave more than one reason, ask: “Of these reasons that you mentioned, which was the most important?”; 1991 Question: If respondent gave more than one reason, read out list and ask: “Of these reasons that you mentioned, which was the most important?”
‡ For 1991 the “other” category includes: religious convictions, concerns over environmental tobacco smoke, and aesthetics.
95% CI = 95% confidence interval.

existing categories when possible; otherwise they were left as “other” in the analysis.

Results

There were 1383 and 1421 eligible respondents in the 1983 and 1991 surveys, respectively. The response rates, adjusted for distributions of potential respondents and ineligibles among the non-contacts, were 75% and 78% for the two years. Comparison of the 1991 survey respondents to those in 1983 showed no significant differences in the age–sex distribution. Consistent with changes in the provincial census populations, the 1991 respondents had higher levels of education and were more likely to have never married.¹ Respondents in both surveys over-represented high school graduates. The finding of higher levels of education among survey participants has been reported by others.⁴⁵ Overall, 42.0% of the 1983 sample and 44.8% of the 1991 sample reported never having smoked. Former smokers, abstinent for at

least six months, comprised 21.3% and 24.7% of the 1983 and 1991 samples, respectively, and those abstinent for less than six months were 1.2% of the sample in 1983 and 3.2% in 1991 (total quitters in 1983 = 311, in 1991 = 396). The percentage of current smokers decreased from 35.5% to 27.2% between the two time periods. Former smokers and current smokers in the 1991 survey were similar to their counterparts in 1983, with respect to the distributions of age, sex, marital status, and education (n = 381 current smokers in 1983, n = 297 in 1991).

FORMER SMOKERS

Table 1 presents the reasons for quitting smoking given by former smokers in each survey. In 1983, this question was asked as an open-ended one. In 1991, it was presented as a closed (aided) question in which a response was required for each reason. As a result, individuals gave more reasons for quitting in 1991 than in 1983, and it is not possible to determine for the specific reasons whether the statistically significant increases between 1983 and 1991 reflect the different way in which the question was presented or true increases in the relevance of the reason to the quit-smoking decision. Nonetheless, in both surveys a variety of reasons were cited, including those related to: personal health concerns, social and environmental factors, personal attitudes, cost, and health education. Although personal health problems clearly predominated in the unaided responses obtained in 1983, the aided 1991 responses mentioned many more factors from several domains almost as often or more often. In both surveys, individuals who provided more than one response were asked to indicate their most important reason among the ones they had given. Their responses were tabulated with those individuals who provided only one reason (table 2). Personal health reasons, and specifically health problems, provided the greatest impetus for achieving abstinence in both surveys. A borderline statistically significant increase occurred in physical fitness as the most important reason for cessation. None of the other categories approached significance with the exception of the “don’t know” response, which decreased over time.

When former smokers were asked how they quit (table 3), the majority in both years reported that they “just decided to”; however, there was a reduction in this response category from 1983 to 1991. A significant increase in the “other” category, reflected some new techniques that became available in the intervening years. Other methods for quitting were infrequently mentioned in both surveys.

CURRENT SMOKERS

The proportion of current smokers who reported enjoyment, craving/addiction, and relaxation as reasons for smoking increased significantly between the two surveys (table 4). In 1991, these four reasons were cited by a clear majority of current smokers. Habit as a

Table 3 Methods used for quitting reported by former smokers†

Methods	1983 Estimates (n=311) %	95% CI	1991 Estimates (n=395) %	95% CI
Just decided	93.9	89.9–96.4	80.5	76.7–85.0*
Cessation clinic	0.5	0.0–2.6	2.8	1.5–5.1
Nicotine gum	2.0	0.7–4.8	1.9	0.8–4.1
Hypnotist	0.6	0.1–2.3	1.1	0.3–2.7
“How to” books	0.0		0.1	0.0–0.8
Other‡	2.8	1.4–5.5	13.3	10.2–16.5*

* Significant change, $P < 0.005$.
† 1983 and 1991 Question: “How did you quit smoking? Anything else?”
‡ For 1991 the “other” category includes: laser, computer, acupuncture, gradually reduced, religious conviction, smoking prevented by illness/health, social/peer support, and oral substitute.
95% CI = 95% confidence interval.

Table 4 Reasons for smoking reported by current smokers†

Reason	1983(n=490) %	95% CI	1991(n=387) %	95% CI
Habit	70.8	65.8–75.3	81.5	75.2–86.5
Enjoy	65.8	60.5–71.0	79.0	73.6–83.4*
Craving/addiction	43.8	38.1–49.7	73.3	67.9–77.8*
Relaxation	52.4	47.2–57.6	72.4	67.1–77.0*
Weight	18.0	14.6–22.0	24.6	19.0–31.5
Peps me up	7.4	5.7–9.6	11.3	7.8–15.7
Other‡	5.0	2.7–9.1	21.1	16.5–27.4*

* Significant change, $P < 0.005$.
† 1983 and 1991 Question: “I am going to read you a list of reasons that people give for smoking. For each one, please tell me if it is a reason for your smoking. Any other reason?”
‡ For 1991 the “other” category includes: others also smoke, keep occupied, while drinking, and don’t know.
95% CI = 95% confidence interval.

Table 5 What would help you quit?: Current smokers who want to quit†

Method	1983 (n=381) %	95% CI	1991 (n=297) %	95% CI
Health concerns				
Information about harmful effects	37.8	30.9–45.2	33.8	27.8–40.0
Legislative				
Restrictions on smoking	29.6	25.0–34.7	27.9	22.4–34.3
Restrictions on sales	22.4	17.2–28.7	22.5	16.7–29.1
Less advertising	15.5	11.8–20.1	9.8	6.4–14.5
Higher taxes	12.3	9.3–16.1	18.6	13.0–25.5
Cessation aids				
Cessation clinic	21.1	17.0–25.8	21.8	16.7–28.3
Self-help books	13.0	9.8–17.0	11.8	7.0–17.6
Programme on radio/TV	21.5	17.2–26.5	19.2	13.9–24.3
Other‡	3.4	1.9–5.6	50.2	39.6–54.9*

* Significant change, $P < 0.005$.
† 1983 and 1991 question: “I am going to read you a list of ways that have helped people quit smoking. For each one, tell me if you think it would help you quit. Anything else you can think of?”
‡ For 1991 the “other” category includes: will power, medical problems/pregnancy, others also quit, relief of stress, acupuncture, hypnosis, laser, and Nicorette.
95% CI = 95% confidence interval.

reason also appeared to increase, with only a slight overlap in the confidence intervals. The percentage of individuals who claimed that smoking prevents weight gain and “peps me up” increased in 1991 compared with 1983, but these changes were not statistically significant. There was a significant increase in the “other” category, which included answers such as “others also smoke”, “to keep busy”, “while drinking”, and “don’t know”.
Among the current smokers who want to quit (approximately 75% in each survey), information on harmful effects, legislative measures including restrictions on smoking and sales, and cessation clinics were the most frequently mentioned as being possible aids for quitting smoking (table 5). With the exception of the “other” category, which in 1991 included a wide variety of techniques such as willpower, medical problems, others also quit,

relief of stress, acupuncture, hypnosis, laser, and nicotine gum, there were no differences between 1983 and 1991 in reports of current smokers about what would help them quit.

Discussion

These findings should be interpreted with caution. Because the samples as a whole were not completely representative, bias is possible.^{1 38} A comparison with provincial census data revealed differences in the sex ratio in some age categories and in certain educational and occupational groups. Although it is possible that these differences could have biased some of the findings, this would only be the case if non-responding current or former smokers gave different reasons for their behaviour than those who did participate in the survey. In addition, our study did not include objective validation of smoking status and, consequently, misrepresentation of status may have occurred; this may be more of an issue in the 1991 survey than the 1983 survey because of the increasing social unacceptability of smoking. The consequences of misrepresentation would likely be more misclassification of current smokers as former smokers in the second survey. If this were the case, it is not clear whether the differences would have been even greater or whether the same magnitude of differences would have been found.

Among the reasons provided by those who quit smoking, concern for personal health was one of the major motivators for cessation in 1983 and 1991, regardless of the format of the question. Thus it is noteworthy that “advice of a physician” was not prominent among the reasons for quitting, even in the aided 1991 question. However, in randomised controlled trials, physician advice has been shown to be effective in increasing cessation in patients seen in family practice and other healthcare settings.^{46 47} Programmes designed to increase the effectiveness of physicians and other health professionals with regard to smoking cessation have now been implemented and are being evaluated.^{48 49}

The responses to the 1991 aided questions indicate that many factors may contribute to individual decisions to quit smoking. Besides personal health problems, concerns about physical fitness, encouragement from relatives, setting an example for children, and cost of tobacco were all cited by a third or more of respondents. Responses concerning the most important factor for quitting also indicate that a range of factors are involved. The multifaceted approach to tobacco control that has characterised the combined efforts of government, the voluntary health associations, and non-smokers’ rights groups during the 1980s is consistent with such a multifactorial model of smoking cessation on a population basis. With regards to the strategies former smokers say they use to quit, it is noteworthy that most say they “just decided to quit” and did so. In all likelihood, this is a simplification of the process, as media messages, health effects, social unacceptability, and other factors probably play some role in the decision. What

exactly is involved in reaching this decision is an important subject for future research in this area, particularly in qualitative studies. Even in 1991, few quitters report using cessation clinics or other aids such as Nicorette gum. In the future, research efforts focusing on the underlying mechanisms for progression through the “stages of change”⁵⁰ may provide insight into intervention approaches that would facilitate cessation, along with investigations aimed at improving the effectiveness of already existing cessation aids.

Although it is encouraging that the proportion of current smokers has decreased between the two time periods, our results suggest that the 1991 group of smokers was quite different than their 1983 counterparts. In 1991, current smokers were much more likely to report craving as a reason for smoking, and they continue to smoke despite the overwhelming and continually growing evidence on the detrimental health effects of active and passive smoking. Hence, it is not unreasonable to conclude that, as a group, they may have been more addicted than smokers in the early 1980s. Further, this suggests that a sizable proportion of people who try to quit in the 1990s may experience more difficulty quitting than those who made these attempts in the 1980s,^{51,52} implying that other methods besides “just doing it” will be needed. In addition, a sizable percentage reported weight concerns as a reason for continuing to smoke, suggesting that at least for some smokers, strategies to control weight gain should be incorporated into cessation programming.

The potential importance of legislative measures in cessation can be found in the responses of current smokers. Frequently cited reasons for or aids to quitting were legislated measures: restrictions on smoking in public places, restrictions on sales, less advertising, and higher taxes. In addition, other findings from these two provincial surveys,^{1,53,54} reveal that both smokers and non-smokers support such regulation of smoking, providing a strong basis for restrictive interventions. Although support for legislative measures is stronger among non-smokers than among smokers, the growing support among smokers provides ample justification for the continuation of such efforts.

In conclusion, the findings strongly suggest the continuing need for multifaceted tobacco control programmes. Educational efforts should be accompanied by a deterrent taxation policy, other restrictive measures, and preventive and cessation services.

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Smokes in the movies. The October 1996 issue of *Movieline* magazine carried three pictures of actors smoking, either in or outside movies: Sean Penn (bottom right), in an article entitled 'Who's the best actor in Hollywood?'; Brad Pitt (top right), who plays the assistant district attorney in *Sleepers*; and Denzel Washington (left), with Delroy Lindo in *Malcolm X*.