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The demographics of help-seeking for smoking cessation in California and the role of the California Smokers' Helpline

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Abstract

Objective **– To investigate and compare the demographics of California smokers seeking assistance to quit and those of smokers who called the California Smokers' Helpline, a large scale statewide smoking cessation service.**

Data sources **– The 1990, 1992, and 1993 California Tobacco Surveys, and screening interviews conducted with callers to the California Smokers' Helpline in its first 30 months of operation.**

Design **– For the California Tobacco Surveys, random digit dialled surveys of 24296 California adults in 1990, 8224 in 1992, and 30716 in 1993 were conducted, which included measures of smokers' attitudes toward their smoking and of their help-seeking behaviour for smoking cessation. In the California Smokers' Helpline, 23346 adult callers from August 1992 to January 1995 were surveyed. Demographic information was obtained on all surveys.**

Main outcome measure **– Seeking assistance to quit smoking.**

Results **– In the general smoking population, males were less likely to seek help in quitting smoking than females. The youngest group of adult smokers (18–24 years) was least likely to seek help. Hispanic, black and Asian smokers in California were only 40% as likely as white smokers to seek assistance. However, an ethnic breakdown of callers to the California Smokers' Helpline shows that Hispanics were as well represented in that programme as in the smoking population of the state. Blacks were actually overrepresented by a factor of 2. The Helpline also attracted younger smokers than those who sought assistance in general. Smokers from rural counties were as likely to call the Helpline as those from urban counties. The former were usually referred by health care providers, whereas the latter most often heard about the Helpline through the mass media.**

Conclusions **– The California Smokers' Helpline reached an ethnically and geographically representative sample of smokers. It appears suitable as a model for future programmes providing accessible smoking cessation service on a large scale.**

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Keywords: smoking cessation; self-help; California Smokers' Helpline; demographics

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Introduction

Studies have consistently shown that smokers who achieve long term cessation significantly reduce their risk of disability or early death and lower the health care costs to the community.[1] However, stopping smoking is an arduous process characterised by high recidivism.[2–4] With some assistance, smokers can improve their chance of success.[5,6] Therefore, a strong rationale exists for public funding of interventions that help smokers quit.[7]

Such public funding became available in California in 1989 with the passage of a voter sponsored initiative which increased the tobacco excise tax by 25 cents per pack. A portion of the revenues is channelled through the California Tobacco Control Program to fund a health education campaign to reduce the prevalence of cigarette smoking in the state.[8] Besides discouraging non-smokers from picking up smoking, the campaign encourages those who are already addicted to stop. Toward this end, the campaign funds a variety of smoking cessation programmes in diverse settings.[9]

Recognising that the majority of smokers who want to quit do not seek assistance to do so,[10,11] the Tobacco Control Program has taken creative approaches in making help more accessible. One such approach was the California Smokers' Helpline, which has been promoted within the on-going statewide anti-smoking media campaign. A principle guiding the design of the helpline was to make it as accessible as possible. This can be seen in three ways. First, the helpline does not charge the user for any of its services. Second, the helpline provides information through the mail and counselling over the telephone, eliminating the scheduling and transportation difficulties associated with traditional smoking cessation clinics. Third, access can be gained to the helpline not only in English but also in Spanish, Chinese, Vietnamese, and Korean, thus encouraging segments of the population

who might not use an English-only programme to seek help.

Patterned after an earlier randomised trial in San Diego County which showed the efficacy of telephone counselling for smoking cessation,[12] the California Smokers' Helpline was established in August 1992 to provide the following services statewide. (1) Callers who are ready to quit smoking receive individual telephone counselling. (2) Those who prefer to quit by themselves receive self-help kits. (3) Those who are merely contemplating quitting receive motivational materials. (4) All callers receive a list of other cessation programmes available in their county of residence. All of these services can be accessed with a single 1–800 number for each of the five languages mentioned above.

In this paper, we analyse the demographic characteristics of smokers who called the helpline during its first 30 months in operation and compare them with those of California smokers in general who sought assistance to quit smoking, as one way of evaluating the helpline's success in making cessation services more accessible. Of particular concern was the low utilisation of cessation assistance by ethnic minority smokers, which national population studies have highlighted.[10,13] As background information useful for determining public health needs, survey data concerning California smokers' attitudes about smoking and quitting smoking are also presented.

Methods

DATA SOURCES

California Tobacco Surveys (CTS)

These surveys were conducted in 1990, 1992, and 1993 and were all statewide random digit dialled surveys designed to assess smoking prevalence and gain information regarding a wide range of smoking behavior and attitudes. Detailed descriptions of the surveys, their designs, analytical methods and results are presented elsewhere.[14–18] Household response rates ranged from 70% to 75%. All surveys made use of a screener interview to enumerate household members. The 1990 and 1992 surveys interviewed all smokers and former smokers who quit smoking within the last five years as well as a randomly selected 28% of non-smokers. Response rates for the extended interview were 75% in 1990 and 71% in 1992. The 1993 survey interviewed the person providing the screening information for a response rate of over 99%. The numbers of persons interviewed in depth were 24296 in 1990, 8224 in 1992, and 30716 in 1993.

From the 1990 and 1992 CTS, we used data on the attitudes of current smokers toward smoking and smoking cessation. From the 1993 CTS, we used data on the help-seeking behaviour of current and former smokers. In this survey, subjects were asked whether they had been smoking a year before the interview. All those who said yes were asked for the dates and duration of any attempts to quit smoking lasting at least a day which they made during the year; concerning their most recent attempt, they were asked "Did you use counselling advice or self-help materials to adjust to life without cigarettes?", and "Did you use a prescribed medication or a nicotine patch to help you in your most recent quit attempt?" We classified all who gave an affirmative answer to either of these questions as having sought assistance to quit smoking during their most recent 24 hour attempt. Given the phrasing of the first question, it is not possible to distinguish between "counselling advice" and "self-help materials." Our definition of assistance, then, is necessarily broad. Current smokers were also asked how many cigarettes they smoked each day on average.

California Smokers' Helpline

The California Smokers' Helpline is operated by the Cancer Center of the University of California, San Diego. Since August 1992, the programme has provided services in English and Spanish. In March 1994, the helpline expanded to provide the same services in Chinese (both Mandarin and Cantonese dialects), Vietnamese, and Korean. Before that time, Asian language services were provided by a separate agency whose data are not included in this analysis. The results presented in this paper were derived from data from the helpline's first 30 months of operation, August 1992 to January 1995.

The helpline has been promoted in many different ways. Foremost is the method of appending the helpline's toll-free numbers to selected advertisements in the ongoing statewide media campaign, including television, radio, billboard, and newspaper ads. The helpline is also promoted through local health departments and various tobacco control projects funded by the Tobacco Control Section of the California Department of Health Services. The promotional activities have been so various that it is not possible to describe them all here. One particular time related effort by Los Angeles County, however, figures prominently among all the promotional activities in the state. That county, by far the most populous in California, has its own tobacco control media campaign budget. For the first six months of 1993 it conducted a media campaign specifically for the helpline. An analysis of the data both including and excluding this period follows, in order to suggest how such a large urban campaign may have affected the demographics of the statewide programme.

Every caller to the helpline first receives a six minute screening interview assessing smoking history, dependence, self efficacy, and readiness to quit, in order to determine what service would be most suitable. Demographic information is gathered at that time as well, including gender, age, education, ethnicity, and county of residence. How the caller heard about the helpline is also ascertained. From August 1992 to January 1995, the helpline obtained such information on 23346 callers who were at least 18 years old.

The 58 counties of California are grouped

into four categories, the first three of which are rural, mixed, and urban. With nearly a third of the state's population and an enormous share of state funding for tobacco control, the county of Los Angeles occupies a class by itself. We use the classification developed by the California Senate Committee on Local Government.[19]

STATISTICS

Respondents to the CTS surveys were given base weights reflecting their probability of being selected for an interview. These weights were further adjusted using census data to reflect the population of the state. With these weights, population estimates were made which were then used to establish the percentage of California smokers who belonged to various groups by age, gender, education, ethnicity, and geographical location.

The 95% confidence intervals for all percentages calculated from the CTS data were derived using variance estimates obtained with a Jackknife procedure[20]; χ^2 and design corrected *t* tests were performed using a procedure that was based on the Jackknife method.[21] Logistic regression was used to identify the independent demographic predictors of assistance seeking; we report adjusted risk ratios and 95% confidence intervals, again derived with a Jackknife procedure.

Table 1 Smokers' attitudes regarding smoking and smoking cessation

	1990 CTS % (95% CI)	*1992 CTS % (95% CI)*
n	9904	4681
I believe I am addicted to cigarettes		
agree	77.6 (1.4)	80.3 (3.0)
disagree	20.7 (1.5)	18.7 (2.8)
no opinion	1.6 (0.3)	0.9 (0.5)
My smoking is harming my health		
agree	84.4 (1.5)	85.9 (2.0)
disagree	12.4 (1.2)	11.8 (1.9)
no opinion	3.2 (0.7)	2.4 (0.5)
Helping smokers to quit is important		
agree	85.9 (1.1)	
disagree	9.7 (0.7)	
no opinion	4.4 (0.8)	

From the 1990 and 1992 California Tobacco Surveys. The last item was not included in the 1992 CTS.

Results

ATTITUDES REGARDING SMOKING AND SMOKING CESSATION

Table 1 presents results from the 1990 and 1992 California Tobacco Surveys regarding smokers' attitudes about their smoking. In both surveys, about 85% of smokers agreed that smoking was harming their health. More than three quarters of the smokers said they were addicted to cigarettes. In the 1990 survey, 86% of smokers agreed that "helping smokers to quit is important."

WHO SEEKS ASSISTANCE TO QUIT SMOKING?

In the 1993 California Tobacco Survey, 51.0% of the respondents who were smoking a year before the survey reported that they had made at least one quit attempt during the previous year. However, only 18.7% of those who did so sought any assistance to help them with their most recent attempt. This included 8.5% who only used nicotine replacement, 6.4% who only used counselling or self-help materials and 3.8% who used both nicotine replacement and counselling or self-help.

Table 2 presents results from the 1993 CTS regarding help-seeking behaviour. In the first column, the percentages of current and former smokers who sought assistance with their most recent attempt to quit are broken down according to gender, age, education, ethnicity, and type of county. In the second column, odds ratios based on these percentages show the relative likelihood of help-seeking for the demographic subgroups. In the third column, odds ratios adjusted for the number of cigarettes smoked per day are given, since a preliminary analysis showed that consumption was positively correlated with help-seeking. The odds ratios in the third column were based solely on current smokers at the time of the

Table 2 Demographics of help-seeking for smoking cessation in California

		Sought assistance % (95% CI)	*OR (95% CI)*	*OR (95% CI) adjusted for consumption*
n		3425	3425	2312
Gender	Male	15.2 (2.3)	1.0	1.0
	Female	23.4 (2.7)	1.54 (1.18, 2.01)	2.14 (1.54, 2.95)
Age (years)	18–24	8.2 (3.5)	1.0	1.0
	25–44	18.1 (2.5)	2.36 (1.58, 2.01)	2.37 (1.42, 3.97)
	45–64	28.9 (4.3)	4.04 (2.58, 6.32)	3.53 (2.11, 5.88)
	65+	23.7 (6.1)	3.00 (1.72, 5.22)	2.71 (1.35, 5.44)
Education (years)	< 12	13.2 (4.0)	1.0	1.0
	12	18.5 (2.4)	1.12 (0.71, 1.76)	1.14 (0.68, 1.92)
	13–15	21.3 (3.4)	1.27 (0.79, 2.02)	1.39 (0.86, 2.26)
	16+	23.9 (4.6)	1.45 (0.87, 2.41)	1.68 (0.92, 3.08)
Ethnicity	White	23.3 (2.2)	1.0	1.0
	Hispanic	8.4 (3.2)	0.38 (0.24, 0.58)	0.55 (0.34, 0.89)
	Black	9.9 (6.9)	0.36 (0.21, 0.63)	0.48 (0.24, 0.95)
	Asian	9.7 (7.2)	0.39 (0.21, 0.70)	0.58 (0.24, 1.45)
	Others	36.2 (19.8)	1.93 (0.68, 5.44)	2.05 (0.67, 6.27)
Type of county	Rural	26.8 (6.0)	1.0	1.0
	Mixed	22.1 (4.2)	0.87 (0.57, 1.34)	0.94 (0.57, 1.54)
	Urban	18.1 (2.1)	0.73 (0.51, 1.03)	0.67 (0.42, 1.09)
	Los Angeles	15.9 (4.0)	0.82 (0.51, 1.32)	0.84 (0.46, 1.54)

From the 1993 California Tobacco Survey. Column 2 ORs are for former and current smokers. Column 3 ORs are for current smokers only and are adjusted for cigarette consumption: relative to under 15 cigarettes a day, the ORs are 2.18 for 15–24 cigarettes and 3.28 for 25+ cigarettes.

survey, since the previous dependence level of former smokers was not ascertained.

The odds ratios in the second column show that female smokers were 54% more likely than male smokers to have sought assistance with their most recent attempt to quit. Moreover, the odds ratios in the third column show that, after adjusting for their lower average consumption, female smokers were more than twice as likely to have sought assistance.

Smokers at least 25 years old were more likely to have sought help than younger adult smokers. Even after adjusting for their lower consumption, younger adult smokers were less than half as likely to have sought help than older smokers.

Education seemed to be positively correlated with help-seeking, but the overlapping of confidence intervals for the odds ratios in both columns shows that this result was not statistically significant.

Smokers of ethnic minority backgrounds were less likely to have sought assistance than white smokers. The odds ratios in the second column show that Hispanic, black, and Asian smokers were less than 40% as likely as white smokers to have sought help. Even after adjusting for their lower level of cigarette consumption, Hispanic smokers were 55% as likely as whites to have sought assistance, and black smokers were only 48% as likely. The adjusted odds ratios for Asian smokers appeared similarly low, but did not reach statistical significance due to the small sample size of the group.

Smokers in rural counties appeared more likely to have sought assistance than smokers in more urban counties. The differences were not statistically significant, however, as indicated by the overlapping confidence intervals for the odds ratios in the second and third columns.

Table 3 Percentages of smokers in California, smokers who sought assistance in California and smokers who called the California Smokers' Helpline, by gender, age and education

		Smokers in California (%)	*Sought assistance* % (95% *CI*)	*Called the helpline* % (95% *CI*)
n		4078306	3425	23346
Gender	Male	56.5	46.9 (6.0)	48.1 (0.6)
	Female	43.5	53.1 (6.0)	51.9 (0.6)
Age (years)	18–24	14.2	8.5 (4.0)	13.8 (0.4)
	25–44	52.0	52.4 (5.3)	62.0 (0.6)
	45–64	25.6	31.1 (4.8)	21.1 (0.5)
	65+	8.3	8.0 (2.4)	3.1 (0.2)
Education (years)	< 12	25.8	16.6 (4.7)	15.9 (0.5)
	12	40.1	37.8 (4.8)	27.9 (0.6)
	13–15	21.9	28.1 (4.2)	37.2 (0.6)
	16+	12.2	17.5 (3.0)	19.0 (0.5)

From the 1993 California Tobacco Survey and the California Smokers' Helpline. Percentages for the state of California are estimated from the smoking prevalence rates at the time of the 1993 CTS.

Table 4 Percentages of smokers in California, smokers who sought assistance in California and smokers who called the California Smokers' Helpline, by ethnicity

	Smokers in California (%)	*Sought assistance* % (95% *CI*)	*Called the helpline, 8/92–1/95* % (95% *CI*)	*Called the helpline, excluding 1/93–6/93* % (95% *CI*)
n	4078306	3425	23346	13129
White	67.4	78.9 (4.9)	60.9 (0.6)	65.9 (0.8)
Hispanic	18.5	9.4 (3.4)	18.0 (0.5)	14.0 (0.6)
Black	7.0	4.3 (3.0)	14.2 (0.5)	12.8 (0.6)
Asian	5.0	2.6 (1.9)	2.5 (0.2)	2.5 (0.3)
Others	2.0	4.8 (3.5)	4.4 (0.3)	4.8 (0.4)

From the 1993 California Tobacco Survey and the California Smokers' Helpline. Percentages for the state of California are estimated from the smoking prevalence rates at the time of the 1993 CTS.

CALLERS TO THE CALIFORNIA SMOKERS' HELPLINE

The California Smokers' Helpline interviewed 23849 smokers from across California from 1 August 1992 to 31 January 1995, 23346 of whom were at least 18 years old. For the sake of comparability with the California Tobacco Surveys, which only interviewed adults, the 503 callers under 18 were excluded from this analysis.

Table 3 allows a comparison by gender, age, and education of California smokers who sought assistance to quit and those who called the helpline. The first column gives an estimated demographic breakdown of the entire adult smoking population in California, based on the smoking prevalence rates for the demographic groups obtained in the 1993 CTS. The second column shows the percentages for California smokers who sought assistance with their most recent quit attempt. The third column gives the same breakdown for smokers who called the helpline.

The table shows that the gender distribution of helpline callers was similar to that of the general population who sought help in California. The helpline participants tended to be younger, however, with higher proportions in the 18–24 and 25–44 year age groups than those in the general help-seeking population. The mean age for helpline callers was 37.1 (SD 12.0) years while the mean age for those who sought help in general was 39.4 (14.5) years ($p < 0.001$). Helpline callers were more likely to have had some college education than those in the general population who sought help to quit smoking.

ETHNIC COMPOSITION OF HELPLINE CALLERS

Table 4 continues the demographic comparison between those who sought help to quit smoking in general and those who called the California Smokers' Helpline. It presents an ethnic breakdown of both of these populations and of the state's entire smoking population. The first column gives the percentage of smokers who belonged to each ethnic group in California according to the 1993 CTS. The second column focuses on those who at the time of the 1993 CTS had sought assistance to quit smoking. The third column focuses on callers to the helpline.

The first two columns of table 4 show that minorities were underrepresented among smokers who sought assistance to quit. Hispanics accounted for 18.5% of the smokers in California, but only 9.4% of those who sought assistance. For blacks and Asians, the percentages were 7.0% and 5.0% of smokers versus 4.3% and 2.6% of those who sought assistance, respectively.

Comparison of the first and third columns shows that the California Smokers' Helpline

Table 5 Percentages of smokers in California, smokers who sought assistance in California and smokers who called the California Smokers' Helpline, by type of county

	Smokers in California (%)	*Sought assistance* % (95% CI)	*Called the helpline, 8/92–1/95* % (95% CI)	*Called the helpline, excluding 1/93–6/93* % (95% CI)
n	4078306	3425	23346	13129
Rural	7.2	10.3 (2.5)	10.7 (0.4)	14.1 (0.6)
Mixed	17.5	20.6 (4.5)	13.5 (0.4)	19.8 (0.7)
Urban	45.3	43.8 (4.7)	30.4 (0.6)	41.5 (0.8)
Los Angeles	29.7	25.3 (5.3)	45.4 (0.6)	24.4 (0.7)

From the 1993 California Tobacco Survey and the California Smokers' Helpline. Percentages for the state of California are estimated from the smoking prevalence rates at the time of the 1993 CTS.

Table 6 How callers to the California Smokers' Helpline heard about the program, by type of county

	Rural (%)	*Mixed* (%)	*Urban* (%)	*Los Angeles* (%)
n	2488	3138	7070	10550
Mass media	14.9	34.7	59.1	84.6
Healthcare provider	52.8	40.2	16.9	2.2
Family/friend	14.5	12.3	10.4	7.3
Other	17.4	12.3	12.8	5.5
Don't remember	0.4	0.5	0.8	0.5

From the California Smokers' Helpline.

achieved a better representation of minorities. The percentage of Hispanics among helpline callers, 18.0%, approached that of Hispanics among the smoking population, 18.5%. The representation of black smokers was more than twice as high among helpline callers as in the smoking population, 14.2% versus 7.0%. Asians were still underrepresented.

The percentages of Hispanic, black, and Asian smokers combined were 30.5% among the general smoking population but only 16.3% among those who sought assistance. Among Helpline callers the percentage was 34.7%.

Los Angeles County waged a large media campaign for the helpline from January to June 1993. To examine whether this campaign was responsible for the high rate of participation by minority smokers, the ethnic breakdown of helpline callers excluding the data from this period is given in the fourth column of table 4. Without the data from these six months, the representation of Hispanic and black smokers dropped somewhat. However, the overall representation of ethnic minority smokers still reached 29.7%, nearly the same as among California smokers.

GEOGRAPHIC DISTRIBUTION OF HELPLINE CALLERS

Table 5 continues the comparison between California smokers who sought help to quit and those who called the helpline, with regard to the urbanisation of their county of residence. The first column shows the percentage of California smokers in each type of county. The second column gives the percentages for those who sought help in general. The third and fourth columns give the percentages for callers to the helpline. As in table 4, the fourth column of table 5 excludes data from January to June 1993, when Los Angeles County ran a large promotional campaign for the helpline.

Comparison of the first two columns in table 5 shows that smokers in rural and mixed counties were somewhat better represented among those who sought assistance than smokers in urban counties and Los Angeles.

Comparison of the first and third columns shows that Los Angeles County accounted for a proportion of helpline callers that was much higher than its proportion of the state's smokers (45.4% versus 29.7%). The proportion of rural smokers, however, remained high (10.7% versus 7.2%). When the data taken during the Los Angeles County campaign were excluded, as shown in column 4, the share of Los Angeles dropped to 24.4%, while that of rural counties increased to 14.1%.

HOW CALLERS HEARD ABOUT THE CALIFORNIA SMOKERS' HELPLINE

Table 6 shows how callers from each of the four types of counties heard about the Smokers' Helpline. The sources are divided into four main categories: the mass media (TV, radio, billboards, and newspapers), health care providers, friends and family, and "other," which includes county health departments and non-profit or community organisations.

Comparison of the columns in table 6 shows that callers from Los Angeles and other urban counties heard about the helpline mostly through the mass media, while callers from mixed or rural counties were more likely to have heard about it from health care providers or from family and friends. The proportion of callers who heard about the helpline through the mass media ranged from a high of 84.6% in Los Angeles to a low of 14.9% in the rural counties. Conversely, the proportion of callers referred by their health care providers ranged from a low of 2.2% in Los Angeles to a high of 52.8% in the rural counties. Referral by family or friends showed the same trend, from 7.3% in Los Angeles to 14.5% in the rural counties.

Discussion

The 1990 and 1992 CTS showed that most smokers were worried about the effect of smoking on their health and many were indeed trying to quit. At the same time, a majority of them believed they were addicted to cigarettes. Thus it is not surprising that 86% of them thought it was important to help smokers quit.

However, the 1993 survey showed that only 18.7% of those who tried to quit smoking sought assistance. Furthermore, the demographic differences in help-seeking were notable. Male smokers were significantly less likely to seek help than female smokers. Younger smokers were less likely than older smokers. Less educated smokers also appeared less likely than more educated smokers.

Especially significant was the fact that ethnic minority smokers were less than 40% as likely to seek help as white smokers. The disparity remained even after adjusting for the lower consumption of cigarettes by minority

smokers. Correcting for the level of consumption, minority smokers were still less than 60% as likely to seek help as white smokers.

The California Smokers' Helpline was intended to help address this disparity. Funded by the Tobacco Control Section of the California Department of Health Services, the helpline was designed to make help for smokers as accessible as possible. In operation since August 1992, all of its services are offered free of charge and are accessed by telephone. Help is available in five languages, each with its own toll-free number. Services are provided which suit the caller's readiness to quit, including motivational literature, self-help quit kits, individual telephone counselling, and referral to local cessation programmes. Also, for those who receive counselling and wish to receive nicotine patches through Medi-Cal or other insurers, the helpline provides proof of enrollment. All a smoker has to do to gain access to these services is to call.[22]

Given the ethnic disparities in help-seeking among the state's smoking population, it is encouraging that during its first 30 months in operation, the helpline saw active participation by minority smokers. Ethnic minorities overall were as well represented among helpline callers as among the state's smokers. This was true even after excluding data gathered during a six month period when Los Angeles County, which has a high proportion of ethnic minority smokers, mounted an aggressive media campaign for the Helpline. In fact, including the data from this period actually caused minority smokers to be overrepresented among helpline callers. The large sample of smokers calling from different geographic areas gives confidence that the active participation of minority smokers was not accidental.

Offering a choice of languages certainly contributed to the helpline's success in recruiting minority smokers. Three quarters of the Hispanic callers used the Spanish line. The late addition of Asian-language services to the helpline (19 months into the 30 month period being considered) partly explains the low participation of this group. During the time before it was incorporated into the California Smokers' Helpline, the Asian helpline served over 1700 callers,[23] who were not included in this analysis.

There is no doubt that a statewide promotional effort was mostly responsible for the helpline's success in reaching a representative segment of the state's smoking population. Many of the state's and counties' advertisements for the helpline were targeted to minorities; some were in Spanish. Although no comprehensive data about these promotional efforts are available for analysis, since the media campaign was waged on different levels by different agencies, the self report of helpline callers gives some indication of their extent. Overall, 63% of the helpline's callers said that they heard about it through the mass media.

There were, however, some interesting geographical differences in how callers heard about the helpline. There was a strong correlation between the urban or rural character of the state's counties and how callers learned of the helpline. Most callers from urban counties were responding to mass media advertisements. The majority of callers from rural counties, on the other hand, were referred by health care providers. Appropriately for counties where the prevalence of smoking is higher than the state's average and where programmes are few, rural health care professionals have been playing an important role in directing smokers to accessible help.

While the helpline achieved a good representation of minority and rural smokers, it also attracted a younger group of smokers compared to those who sought help in general. Why this was so is difficult to ascertain. It could be that younger people in general are more comfortable using 1–800 services, or that the campaigns advertising them appeal more to younger people, or both. For example, one study of the 1–800 Cancer Information Service found that when advertised by a media campaign, the service attracted a younger segment of the smoking population.[24] In any case, from a public health perspective the optimal age to quit smoking is as early as possible. Smokers who quit when they are young are much less likely to experience health problems than those who wait till later.[1]

On the whole, callers to the helpline are more educated than the general smoking population. Given the greater prevalence of smoking among the less educated, however, greater efforts are needed to reach this part of the population.

The telephone has been considered by many to be a promising alternative medium for providing assistance with smoking cessation.[25–29]

The success of the statewide California Smokers' Helpline in reaching an ethnically and geographically representative group of smokers points to its potential to serve as a model for future publicly funded programmes that help smokers quit.

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