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**Victorian current and former smokers'
quitting activity, and the impact of
cessation aids, services and anti-
smoking campaigns**

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ABSTRACT

Between 1998 and 2005, the proportion of regular smokers who had made at least one quit attempt in their lifetime increased from 76% to 81%. Among those who had attempted to quit, there was also an increase in the number of smokers who had made multiple quit attempts, from 36% of regular smokers in 1998 to 43% in 2005. Of those smokers who had attempted to quit in the five years preceding the 2005 survey, 69.5% were unsuccessful in their attempt and 30.5% successfully quit smoking. Around two-thirds of both unsuccessful and successful quitters believed that at least one quitting aid or service contributed to their quit attempt. Anti-smoking television commercials were widely perceived as having contributed to the quit attempts of both unsuccessful (37%) and successful quitters (46%); NRT or other medications contributed to 29% of quit attempts; advice from health professionals contributed to 19%; and self-help materials contributed to 12%. When accounting for the quantity and pattern of audience exposure to each different anti-smoking commercial over the past two years, "Sponge" was the strongest performing commercial among those who believed an anti-smoking commercial contributed to their quit attempt. The National Tobacco Campaign's series of health effects ads, and Quit Victoria's "Parents" commercial also performed well. Overall, these results provide strong support for a continued multifaceted approach to tobacco control in Victoria, with a strong focus on airing emotive anti-smoking commercials that alert smokers to the negative consequences of smoking.

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INTRODUCTION

The most effective tobacco control programs adopt a multifaceted approach, combining strategies that range from policy interventions, such as banning smoking in public places, to mass media campaigns that educate about the health effects of smoking.¹⁻⁴ Although these, and other strategies are all capable of independently influencing smoking behaviours, comprehensive approaches to tobacco control are important for ensuring that the attitudes and behaviours of smokers at all stages of the cessation process,¹ and of all demographic groups,² are likely to be affected in some way.

In the state of Victoria, Australia, there has been extensive activity in tobacco control over the past decade. Policy interventions, economic measures, numerous mass media campaigns and the provision of smoking cessation information and services have all played a part in this comprehensive program.⁵ Since 1999, the price of cigarettes has substantially increased,⁵ restrictions on smoking in public places have been extended,⁶ all point-of-sale tobacco advertising has been banned,⁶ and limitations on the display of tobacco products at the point of sale have been implemented.⁶ Over the past ten years, there has also been considerable investment in anti-smoking mass media campaigns. The National Tobacco Campaign (NTC), which ran from June 1997 to 2004, featured a series of six television commercials designed to increase the salience of smoking-related health concerns, to impart the message that “every cigarette is doing you damage,”⁷ and to elicit a fear response among smokers. Several other media campaigns have also been run by Quit Victoria over this period.⁸ While some of these commercials also aimed to educate smokers about the health effects of smoking (“Bubblewrap,” “Nice people,” “Jenny,” “Sponge” and “Cough”), others were designed to highlight the impact of smoking on family and friends in an emotional way (“Parents”). The “Echo” commercials examined some of the common excuses that smokers make for not quitting and then described the consequences of these excuses; and another series of commercials were designed to promote the Quitline as a service for smokers wanting to quit (“Call for help” ads).⁸

The present report examines the extent to which Victorian smokers in recent years have attempted to change their smoking behaviour, and the factors that may have influenced this level of quitting activity. Previous surveys of Victorian smokers, from 1989 through to 1997, have indicated that the yearly proportion of smokers who have made a quit attempt has generally been greater than three-quarters, with 79% of smokers in 1997 having made at least one attempt to quit in their lifetime.⁹ This report will examine the number of Victorian smokers making quit attempts between 1998 and 2005, during which time there has been a considerable amount of tobacco control activity. In our examination of the factors that may have influenced quitting activity, we will specifically focus on smokers’ perceptions of the contribution that anti-smoking television commercials made to their quit attempt, and on the extent to which each of the different commercials are recalled by quitters.

While increasing the number of quit attempts made by smokers is undoubtedly important for reducing smoking prevalence, it is also important that the success rate of these quit attempts is improved, as the majority of smokers who attempt to quit will remain abstinent for only a few weeks.¹⁰ The use of cessation aids and services during quit attempts enhances the likelihood of long-term cessation success, with research demonstrating that individuals assisted by a cessation aid are more than twice as likely to stay quit in the long term, compared with those who quit without assistance.^{11,12} There are several cessation aids and services available for Victorian smokers who are trying to quit, including (among others) over-the-counter nicotine replacement therapies; the Quitline; an interactive quitting website; and advice from healthcare professionals, many of whom are trained in the provision of smoking cessation advice.⁸ The present report will also examine the rate at which these various cessation aids and services contribute to Victorian smokers’ quit attempts, and will compare this rate of use with the contribution made by anti-smoking television commercials, both among those smokers who were unsuccessful in a recent quit attempt and among those who have recently given up smoking.

METHOD

Sample

The data presented in this report are from telephone surveys of randomly sampled Victorian adults (aged 18 years and over) conducted in November and December of 1998 (N=1982), 1999 (N=1986), 2000 (N=1991), 2001 (N=1963), 2002 (N=1995), 2003 (N=3001), 2004 (N=2998) and 2005 (N=2999). These annual population surveys are commissioned by the Centre for Behavioural Research in Cancer (CBRC) and are conducted by a market research company that interviews a representative sample of Victorians by telephone each year. The questions, designed by CBRC, are asked in an eight- to sixteen-minute interview conducted on weekends and weeknights.

The standard tobacco use question¹³ was used to determine smoking status, and respondents were classified as: daily smokers of tobacco products; at least weekly (but not daily) smokers; less than weekly smokers; or non-smokers. Non-smokers who stated that they would have smoked at least 100 cigarettes or a similar amount of tobacco over their lifetime were classed as former smokers.

Survey data from the eight years between 1998 and 2005 was used to examine the quitting activity of Victorian smokers over time. To examine the recent use of quitting aids and services by current and former smokers in Victoria, data from only the 2005 survey was used. Respondents in 2005 were classified as either unsuccessful quitters or successful quitters. The group of **unsuccessful quitters** is comprised of current smokers who had attempted to quit at least once in their lifetime, and whose last attempt ended within the five years preceding the 2005 survey. Because these respondents stated that they are currently smoking, this recent quit attempt is deemed unsuccessful. Current smokers whose last quit attempt ended more than five years ago, and those who had never attempted to quit, were not included in this group of unsuccessful quitters.

The group of **successful quitters** is comprised of former smokers who had quit smoking within the past five years. Former smokers who quit more than five years ago are excluded from this group of successful quitters.

Measures

In each survey year, current smokers were asked to state the approximate number of times that they had tried to give up smoking, and all those who had attempted to quit one, two, three or more times over their lifetime were grouped together as those who had made at least one quit attempt.

Quitting behaviour and use of quitting aids and services

The recency and length of the last quit attempt made by current smokers in 2005 were measured with the questions: "How long ago did your last attempt to quit smoking end?" and "How long did you stop smoking for on your last attempt to quit smoking?" Responses to the first question were used to classify eligible respondents (those whose last attempt had ended within the past five years) as unsuccessful quitters. To examine the use of quitting aids and services by unsuccessful and successful quitters in their recent quit attempts, respondents were asked to state whether various quitting aids and services (nicotine gum, patches, tablets (NRT) or other medications; self-help materials; advice from health professionals; a telephone Quitline; internet sites; anti-smoking television commercials) had "contributed a great deal", "contributed somewhat" or "did not help at all" their attempt to quit smoking.

Demographics

We explored whether success in quitting was influenced by a respondent's demographic characteristics, including their sex, age, education level, region of residence and socio-economic status. The Socio-Economic Index for Areas (SEIFA), developed by the Australian Bureau of Statistics (ABS), was used as our measure of socio-economic status. The SEIFA indices classify respondents into socio-economic

groups based on 2001 Census data of the area in which they live.¹⁴ In these analyses, the Index of Socio-Economic Advantage/Disadvantage (one of five SEIFA indices) was used, which is based on respondents' residential postcodes. This index ranks areas on a continuum of advantage to disadvantage, taking into consideration characteristics that may enhance or reduce socio-economic conditions of the area, such as income, education, occupation and housing (for example). For the purpose of analysis we have grouped respondents into quartiles based on this scale:

1. the first quartile comprises people who live in areas with a SEIFA score in the bottom 25% of Victoria's distribution (this represents a lower level of advantage and a higher level of disadvantage relative to the other three groups);
2. the second quartile includes people whose SEIFA score lies between 26% and 50% of the distribution;
3. the third quartile includes those whose SEIFA score lies between 51% and 75% of the distribution; and
4. the fourth quartile comprises those with a SEIFA score above 75% of the distribution (reflecting a higher level of advantage and a lower level of disadvantage relative to the other three groups).¹⁴

Our measure of daily cigarette consumption refers to the number of cigarettes currently smoked each day by unsuccessful quitters, and the number of cigarettes smoked per day by successful quitters before they quit smoking. We also collected information about the approximate number of hours that respondents spend watching television on an average weekday.

Recall of anti-smoking television commercials

Two questions measured respondents' recall of anti-smoking television commercials. Respondents were firstly asked to describe the anti-smoking television commercial they most remembered from the past two years. They were then given the chance to describe any other anti-smoking commercials they remembered, and interviewers prompted respondents to describe as many commercials as they could remember. Verbatim descriptions were examined by trained coders, to identify the particular commercial or series of commercials being described. Responses were combined into a single measure of recall, such that the total proportion of respondents who mentioned each commercial at any stage of recall is reported. Although all current and former smokers were asked to recall anti-smoking television commercials, we have only reported recall figures from those respondents who also stated that an anti-smoking television commercial contributed to their quit attempt, to allow for an examination of the influence of different commercials on quitting behaviour.

To account for the influence that recency and intensity of audience exposure to a commercial has on recall,¹⁵ data regarding the occurrence of all tobacco-related advertisements on Victorian television, and estimates of audience exposure to these commercials, was acquired from ACNielsen.¹⁶ A combination of television set monitoring devices and self-completion viewing diaries provide ACNielsen with the advertising exposure estimates. The measure of advertising exposure used in this report is Target Audience Rating Points (TARPs), where 100 TARPs equals an average of one potential advertisement exposure in the target audience.¹⁶ TARPs only represent potential average advertisement exposure: actual exposure for any given individual would vary based on the frequency of actual television viewing. Because survey respondents in 2005 were prompted to remember commercials from the past two years, TARPs data from the Melbourne 18 years+ media market was aggregated across 2004 and 2005.

To calculate a performance index for each anti-smoking commercial, the proportion of total 2004–2005 TARPs that was accounted for by each commercial was determined. Percentage of recall for each commercial was then divided by its proportion of total TARPs. The resultant performance index indicates the number of times that each commercial was recalled per share of total TARPs. For instance, a performance index of five indicates that the commercial was recalled five times per share of total TARPs. Separate performance indices were also created for unsuccessful quitters and successful quitters

who reported that an anti-smoking commercial contributed to their quit attempt, using the recall data specific to these groups.

Statistical analysis

A comparison of the sample socio-demographic characteristics with the ABS Census data for the Victorian population,¹⁷ revealed that women and older people were over-represented in the telephone survey samples. To adjust for this, the data from all years were weighted by age and sex according to ABS final estimates of the Victorian population, from the 2001 Census.¹⁷

To report the data, descriptive techniques such as percentages have been used. Chi-square analyses were used to examine the distribution of unsuccessful and successful quitters within each demographic sub-group. Logistic regression analyses were used to test for significant differences in the use of cessation aids (controlling for amount of TV watched per weekday and daily cigarette consumption) between unsuccessful and successful quitters, and to examine changes in quitting behaviours over time. For ease of reading, details of these statistical tests are not included in the report. However, where significant differences or changes over time are reported, the probability of significance is less than 0.01, indicating a less than 1 in 100 probability that the effect was caused by chance. Where trends are reported, the probability of significance is between 0.05 and 0.01. 95% confidence intervals are reported for the number of quit attempts made by current regular smokers each year since 1998.

RESULTS

Quitting behaviour over time, 1998 - 2005

Attempts to quit smoking among current regular smokers have increased in frequency over the past eight years. The proportion of regular smokers who had made *at least* one attempt to quit in their lifetime increased from 76% in 1998 to 81% in 2005. Among those regular smokers who have attempted to quit, there has also been a significant increase in the proportion who have made multiple (three or more) quit attempts, from 36% of regular smokers in 1998 to 43% in 2005 (Table 1). There has also been a corresponding decrease in the proportion of regular smokers who have never attempted to quit smoking, from 24% in 1998 to 19% in 2005 (Table 1).

Table 1:
Number of quit attempts made by regular smokers, 1998–2005

	1998 (n=416) % (±95% CI)	1999 (n=423) % (±95% CI)	2000 (n=386) % (±95% CI)	2001 (n=404) % (±95% CI)	2002 (n=379) % (±95% CI)	2003 (n=492) % (±95% CI)	2004 (n=574) % (±95% CI)	2005 (n=551) % (±95% CI)
Never	24.3 (±4.1)	27.1 (±4.2)	20.7 (±4.0)	20.9 (±4.0)	23.5 (±4.3)	19.3 (±3.5)	16.9 (±3.1)	19.3 (±3.3)
Once or twice	39.3 (±4.7)	33.9 (±4.5)	33.4 (±4.7)	33.0 (±4.6)	33.5 (±4.8)	33.3 (±4.2)	36.1 (±3.9)	37.6 (±4.0)
Three or more times	36.4 (±4.6)	39.0 (±4.7)	45.9 (±5.0)	46.1 (±4.9)	42.9 (±5.0)	47.4 (±4.4)	47.0 (±4.1)	43.1 (±4.1)

Note: Sample sizes do not include those respondents who didn't know, couldn't say, or refused to state how many times they had attempted to quit smoking (the number of missing respondents ranges from five in 1998 to one in 2005). Only the number of quit attempts made by regular smokers (smoke daily or at least weekly) is considered, as quitting behaviour data for all current smokers was not available in all years. See Appendix A for a demographic breakdown of regular smokers who have attempted to quit at least once, 1998–2005.

Quitting behaviour of current smokers and former smokers, 2005

Current smokers

In 2005, all current smokers were asked if they had ever attempted to quit, and 78% (n=465) of these current smokers had attempted to quit at least once in their lifetime (compared with 81% of *regular* smokers in 2005 who had attempted to quit). Around two-thirds (65%) of these current smokers in 2005 were classified as **unsuccessful quitters** (n=385), which includes those smokers who had previously attempted to quit and whose last attempt had ended within the past five years.

Former smokers

In 2005, 28% of Victorian adults were former smokers of tobacco products (n=833). Of these former smokers, 20% had quit smoking within the last five years, 78% had quit more than five years ago and 2% didn't know, couldn't say or refused to report how long ago they had quit smoking. For the purpose of this report, only those former smokers who had recently quit (within the past five years) were categorised as recent **successful quitters** (n=169).

Table 2:

Those who made an attempt to quit within the past five years (N=554): demographic profile of those smokers who were unsuccessful in their attempt and those who successfully quit, 2005

Demographic characteristic	Total N=554 % (n)	Unsuccessful quitters n=385 % (n)	Successful quitters n=169 % (n)
Sex			
Male	49.9 (n=276)	51.7 (n=199)	45.8 (n=77)
Female	50.1 (n=277)	48.3 (n=186)	54.2 (n=91)
Age			
18–29	30.5 (n=169)	31.9 (n=123)	27.1 (n=46)
30–49	48.1 (n=267)	47.8 (n=184)	48.8 (n=83)
50+	21.4 (n=119)	20.3 (n=78)	24.1 (n=41)
Education			
Year 11 or less	32.2 (n=178)	33.0 (n=127)	30.4 (n=51)
Year 12 / some tertiary	39.6 (n=219)	40.8 (n=157)	36.9 (n=62)
Finished tertiary	28.2 (n=156)	26.2 (n=101)	32.7 (n=55)
SEIFA			
Bottom 25%	18.5 (n=102)	18.8 (n=72)	17.9 (n=30)
26%–50%	17.8 (n=98)	20.3 (n=78)	11.9 (n=20)
51%–75%	29.9 (n=165)	29.4 (n=113)	31.0 (n=52)
Above 75%	33.9 (n=187)	31.5 (n=121)	39.3 (n=66)
Region of residence			
Melbourne	69.9 (n=387)	70.1 (n=270)	69.2 (n=117)
Rural Victoria	30.1 (n=167)	29.9 (n=115)	30.8 (n=52)
Daily cigarette consumption ^a	N=531	n=364	n=167
Light (<15)	49.2 (n=261)	51.1 (n=186)	44.9 (n=75)
Medium (15–24)	32.4 (n=172)	32.4 (n=118)	32.3 (n=54)
Heavy (25+)	18.5 (n=98)	16.5 (n=60)	22.8 (n=38)

Note: Sample sizes do not include those respondents who didn't know, couldn't say, or refused to state how many times they had attempted to quit.

^a Refers to the level of daily cigarette consumption by successful quitters before they quit smoking, and the *current* level of daily consumption by unsuccessful quitters. Consumption data was missing for 21 unsuccessful quitters and for two successful quitters.

All quitters

The combined sample of recent unsuccessful quitters and recent successful quitters – referred to collectively as **quitters** – comprises all respondents who had made an attempt to quit in the five years preceding the 2005 survey (N=554). Therefore, of all those Victorian smokers who had attempted to quit smoking in the past five years (all quitters), 69.5% (n=385) were unsuccessful in their attempt and 30.5% (n=169) were able to successfully quit smoking.

Table 2 presents a demographic profile of unsuccessful and successful quitters in 2005. Chi-square analyses indicated that there were no significant differences in the demographic characteristics, or in the daily cigarette consumption, of those respondents who had been successful or unsuccessful in a quit attempt made over the past five years.

Recency and length of the quit attempts made by unsuccessful quitters, 2005

To obtain a greater understanding of the nature of quit attempts made by smokers who had not succeeded in a recent quit attempt, all unsuccessful quitters were asked some questions about the last quit attempt they had made. As shown in Table 3, approximately half of these last quit attempts ended more than 12 months ago (49%), and less than one-tenth of unsuccessful quitters had ended their last quit attempt within the four weeks preceding the survey (7%).

The majority of unsuccessful quitters stopped smoking for less than three months on their last quit attempt (65%), and less than one-fifth stopped smoking for more than twelve months (16%). Around one-fifth of unsuccessful quitters relapsed within the first seven days of quitting (Table 3).

Table 3:
Recency and length of the most recent quit attempt made by unsuccessful quitters (n=385), 2005

Time period	How long ago did last quit attempt end?	How long stopped for on last quit attempt?
	%	%
1–6 days	1.7	21.1
1–4 weeks	5.6	27.6
1–3 months	15.8	16.7
3–6 months	10.0	10.5
6–9 months	8.8	4.0
9–12 months	9.1	4.2
More than 1 year	49.0	15.8

Note: Does not include those respondents who didn't know or couldn't say how long they stopped for on their last quit attempt (n=1).

Use of quitting aids and services by unsuccessful and successful quitters, 2005

All quitters were asked whether various quitting aids and services had contributed in any way to their attempt to quit smoking. Sixty-four per cent of unsuccessful quitters believed that their quit attempt had been assisted by at least one aid. Similarly, more than two-thirds (68%) of successful quitters believed that a quitting aid had contributed to their ability to quit.

Anti-smoking television commercials were widely perceived as having contributed to the quit attempts of both unsuccessful and successful quitters, more so than any other quitting aid or service (Table 4). Logistic regression analyses (controlling for the amount of TV watched per weekday and level of cigarette consumption) indicated that successful quitters tended to be more likely to believe that anti-smoking television commercials had contributed to their quit attempt (46%) than unsuccessful quitters

Table 4:

Proportion of unsuccessful quitters (n=385) and successful quitters (n=169) who believed that each quitting aid or service contributed to their quit attempt, 2005

Quitting aids and services	Total N=554 %	Unsuccessful quitters n=385 %	Successful quitters n=169 %
Anti-smoking television commercials	39.7	37.1 ^a	45.6 [†]
NRT (gum, patches, tablets) or other medications	29.1	32.5 ^a	21.3 [*]
Advice from health professionals	18.8	17.9	20.7
Self-help materials (such as brochures, books)	12.1	11.9	12.5
Telephone Quitline	6.5	6.2	7.1
Internet sites	2.5	1.6	4.8
<i>No aid contributed</i>	35.2	36.4	32.5

Note: This item took a multiple-response format, such that respondents were able to state that more than one aid contributed to their quit attempt.

^a Reference category for logistic regression analyses.

^{*} p < 0.01; [†] p < 0.05.

(37%). In contrast, successful quitters were significantly less likely to believe that NRT or other pharmaceutical aids had contributed to their quit attempt (21%) than were unsuccessful quitters (33%) (Table 4).

Around one-fifth of both unsuccessful and successful quitters attributed advice from health professionals as having contributed to their quit attempt (18% and 21%, respectively), while just over one-tenth of respondents believed that self-help materials had contributed to their quit attempt (12% of unsuccessful quitters; 13% of successful quitters). Telephone Quitlines and internet sites contributed to the quit attempts of less than one-tenth of both unsuccessful quitters (6% and 2%, respectively) and successful quitters (7% and 5%, respectively) (Table 4). The extent to which advice from health professionals, self-help materials, telephone Quitlines and internet sites were perceived as having contributed to quit attempts did not significantly differ between unsuccessful and successful quitters.

Performance of anti-smoking television commercials, 2005

Between 2004 and 2005, Victorian adults were potentially exposed to 179 anti-smoking television commercials (17,987 TARPs). Commercials promoting NRT products comprised two-thirds of these potential exposures, and the remaining TARPs were accounted for by ads run through either the National Tobacco Campaign (NTC) or by Quit Victoria.

Of all those respondents who believed that an anti-smoking television commercial contributed to their quit attempt (n=220), "Sponge" was the strongest performer of all anti-smoking television commercials, earning 13 mentions per share of TARPs (performance index = 13). "Sponge" was recalled by one-fifth (21%) of quitters and yet accounted for only 2% of the total TARPs (Table 5). The NTC series of health effects ads also performed well (performance index = 12), recalled by more than two-thirds of quitters (69%), despite accounting for only 6% of the total TARPs and not being aired at all in 2005. Recalled by one-fifth of all quitters (21%), "Parents" was another strong performer, as it was recalled eight times per share of TARPs (performance index = 8). "Parents" was aired in each of the years between 2001 and 2005, though it accounted for only 3% of the total 2004 to 2005 TARPs. The "Jenny", "Bubblewrap" and "Echo" commercials were all recalled between two and three times per share of TARPs (Table 5), while the "Call for help" and "Cough" commercials were the weakest performers, with performance indices below one - indicating that they were recalled fewer than one time per share of TARPs. Commercials promoting NRT products performed particularly poorly (performance index = 0.04). These commercials accounted for two-thirds (66%) of all TARPs in 2004 and 2005 and yet were recalled by only 3% of quitters.

Table 5:
Performance of anti-smoking television commercials among quitters who believed that an anti-smoking television commercial contributed to their quit attempt (n=220)

	Years in which ad was screened	Proportion of total TARPs 2004–2005 (n=17987) %	Recall: All quitters (n=220) % ^b	Performance Index ^a : <i>Total</i>	Performance Index ^a : <i>Unsuccessful quitters</i> (n=143)	Performance Index ^a : <i>Successful quitters</i> (n=77)
Anti-smoking television commercial						
National Tobacco Campaign (NTC) health effects ads (“Artery,” “Tar lung,” “Lung,” “Stroke/brain,” “Tumour” and “Eye”)	1997–2004	5.9	68.6	11.6	11.9	11.2
Parents – little girl in hospital with Dad, “you should’ve been there”	2001–2005	2.5	20.9	8.4	5.6	13.5
Nice people – person with lung cancer meets all the medical staff in hospital	2002–2004	0.8	1.4	1.8	1.8	1.6
Jenny – woman dying of lung cancer shows x-rays and photos of her kids	2003–2004	1.9	5.4	2.8	2.2	4.1
Call for help ads – someone (young woman, businessman, pregnant couple, builder) calling the Quitline / young man in home calling Quitline, camera travels down phone line	2003–2005	10.9	7.3	0.7	0.7	0.6
Bubblewrap – bubblewrap shaped as lungs, popped with lit cigarette	2005	4.6	11.8	2.6	3.2	1.4
Echo – people talk about why they can’t quit and then others talk about their illnesses	2005	2.9	6.8	2.3	2.7	1.8
Sponge – the lungs are shown as a sponge, wrung out	2005	1.6	20.5	12.8	12.7	13.0
Cough – black and white film of an old man coughing in bed	2005	1.7	0.0	0.0	0.0	0.0
Nicotine Replacement Therapy (NRT) ads						
Nicotine Replacement Therapy (NRT) ads	1997–2005	65.9	2.7	0.04	0.1	0.0
Other	n.a.	n.a.	5.5	n.a.	n.a.	n.a.
None	n.a.	n.a.	4.5	n.a.	n.a.	n.a.
Don’t know / Can’t say / Refused	n.a.	n.a.	5.9	n.a.	n.a.	n.a.

Note: 1.4% of total 2004–2005 anti-smoking TARPs were accounted for by an Australian Competition and Consumer Commission (ACCC) led campaign, which aimed to correct the belief that “light” and “mild” cigarettes are less harmful to health than regular cigarettes.

^a The total performance index was calculated by dividing the total recall figure (percentage of quitters who recalled the commercial) by the proportion of total TARPs accounted for by each commercial. The performance indices for unsuccessful and successful quitters were calculated using the recall percentage for these separate groups (see Appendix B for recall data).

^b The recall questions took a multiple-response format, such that respondents were able to recall more than one anti-smoking television commercial. Percentages do not total to 100.

The relative performance of each anti-smoking television commercial varied when unsuccessful and successful quitters were considered separately (Table 5). “Sponge” and the NTC commercials were the strongest performers for unsuccessful quitters (performance indices = 13 and 12, respectively), followed by “Parents” and “Bubblewrap” (performance indices = 6 and 3, respectively). In contrast, “Parents” was the strongest performer among successful quitters, being recalled 14 times per share of TARPs (performance index = 14). Thirty-four per cent of successful quitters recalled “Parents”, even though it only accounted for 3% of total TARPs. “Sponge” and the NTC commercials were the second and third

strongest performers among successful quitters (performance indices = 13 and 11, respectively). “Jenny”, “Echo”, “Nice people” and “Bubblewrap” also performed reasonably well among successful quitters, being recalled at least once per share of TARPs. NRT commercials were not recalled by any of the successful quitters. Separate recall data for unsuccessful and successful quitters is presented in Appendix B.

DISCUSSION

A considerable amount of tobacco control activity has occurred in the state of Victoria, Australia, over the past decade. This comprehensive tobacco control program has encompassed the implementation of smokefree laws; the prohibition of point-of-sale advertising; cigarette price increases; enhanced provision of smoking cessation information and services; and extensive mass media campaigns.⁵ The data in this report indicate that this recent tobacco control activity has coincided with an increase in the number of smokers making quit attempts, which is also consistent with the significant decreases in adult smoking prevalence that have occurred in Victoria since 1998.¹⁸

Since 1998, the number of smokers who have made at least one quit attempt has significantly increased, such that in 2005 more than 80% of regular smokers had attempted to quit. There has also been an increase in the number of Victorian regular smokers who have made multiple attempts to quit, suggesting that recent tobacco control activity may have encouraged smokers who had previously been unsuccessful in their quit attempts, to feel motivated and supported enough to continue making quit attempts. As increasing the number of smokers who are making quit attempts has been recognised as one of the most effective methods of improving the population cessation rate,¹⁹ these increases in quitting activity among Victorian smokers are promising.

Preventing relapse among those who are trying to quit smoking is also important for increasing the population cessation rate. Vulnerability for relapse is especially high during the early stages of a quit attempt, when it can be difficult for smokers to establish a period of abstinence.¹⁰ Of those Victorian smokers who had attempted to quit in the five years preceding the 2005 survey, more than two-thirds relapsed from their period of cessation and so were unsuccessful in their attempt. The majority of these unsuccessful quitters remained abstinent for less than three months; almost half relapsed within the first month and one-fifth had resumed smoking within the first seven days of quitting. These results reinforce the importance of supporting smokers in the early stages of their quit attempt, when vulnerability for relapse is greatest.

One way in which smokers can improve their chances of making it through the early period of their quit attempt is through the use of quitting aids and services. In 2005, approximately two-thirds of both unsuccessful and successful quitters in Victoria believed that a quitting aid contributed to their ability to quit, and this level of use of quitting aids and services is slightly higher than has been observed in US samples of successful²⁰ and unsuccessful quitters.¹¹ Given that Zhu et al (2000)¹¹ have demonstrated that the use of quitting aids during a quit attempt can double long-term cessation rates, it is encouraging that the majority of Victorian smokers are supported by at least one quitting aid or service when trying to quit smoking.

Anti-smoking television commercials contributed to a greater number of quit attempts than did any other cessation aid, and successful quitters tended to be more likely than unsuccessful quitters to believe that television commercials contributed to their quitting. This suggests that mass media campaigns are one of the most important sources of support for smokers involved in the quitting process, and these findings add to the growing body of evidence that anti-smoking television campaigns are an integral component of tobacco control programs.^{1, 20- 22} Recent successful quitters in Massachusetts also reported being helped more by anti-smoking commercials than any other cessation aid,²⁰ and it has been found that population cessation rates improve with increased exposure to anti-smoking commercials.²² The advantage of television campaigns may be the way in which they are disseminated, as this helps to ensure high levels of exposure at the population level. The mass reach of television campaigns in Victoria is confirmed by the TARPs data from the Melbourne media market, which indicates that a

Victorian adult would have been potentially exposed to around 60 anti-smoking television commercials (excluding NRT commercials) in the two years between 2004 and 2005. Therefore, mass media campaigns are likely to have been one of the most important and cost-effective measures implemented through Victoria's tobacco control program.

Over the past decade, quitters in Victoria have been exposed to a variety of different anti-smoking commercials, including the NTC health effects ads, a range of commercials produced by Quit Victoria, and commercials that promote NRT products. Performance indices were created to indicate how well each commercial was recalled by Victorian quitters, when accounting for the commercial's share of total exposures (TARPs) to anti-smoking television commercials. Among those quitters who believed that an anti-smoking television commercial contributed to their quit attempt, "Sponge" was the strongest performer of all commercials. "Sponge" was aired initially in 1985 and then again in 1995 and 2005, and was the first Victorian commercial to seriously depict the health consequences of smoking, such that it is likely to have a particular resonance with many Victorian smokers. In contrast, "Cough" was a humorous style commercial that initially aired in 1977 and then was also replayed in 2005. "Cough" was not recalled by any of the Victorian quitters, reinforcing previous findings that anti-smoking commercials using humour tend not to be as effective as those that elicit strong negative emotions in smokers.^{20, 23}

The series of commercials featured in Australia's National Tobacco Campaign (NTC) communicated information about the health effects of smoking in a way that was original and confronting, and provoked negative emotional responses in smokers.⁷ The NTC commercials performed strongly with Victorian quitters, as they were recalled 12 times per share of TARPs. This finding is positive yet not overly surprising, given that, although the NTC commercials were not aired in 2005, Victorian quitters were exposed to these commercials in each of the eight years between 1997 and 2004. Another strong performer was the "Parents" commercial, which was recalled 14 times per share of TARPs among successful quitters and six times per share of TARPs among unsuccessful quitters. "Parents" aired in each of the years between 2001 and 2005, so quitters were exposed to this commercial in the survey year, as well as repeatedly over earlier years. The influence that commercial repetition has on recall is also confirmed by the performance of "Sponge", as Victorian smokers were exposed to this commercial several times over many years. These findings indicate that the repetition of a campaign over several years is an effective means of improving the recall of a commercial.

Advertisements promoting NRT products were the weakest performing of all anti-smoking commercials, as they accounted for two-thirds of all TARPs between 2004 and 2005, and yet were recalled by only 4% of unsuccessful quitters, and were not recalled by any successful quitters. Consistent with these findings, only 1% of recent quitters in Massachusetts believed that an NRT advertisement had helped them to quit smoking.²⁰ It is possible that respondents did not consider commercials promoting NRT to be anti-smoking commercials, therefore perceiving that they were not relevant to the question about recall of anti-smoking commercials. Alternatively, the poor performance of these commercials may be attributable to the nature of NRT advertisements. Designed to communicate the benefits of using a pharmaceutical aid when quitting, NRT commercials tend to use positive tones and messages, rather than the negatively emotional styles that tend to be most effective in anti-smoking commercials.²⁰

Although NRT advertisements were recalled by very few quitters in 2005, NRT products (or other medications) contributed in some way to around one-third of all quit attempts made in the past five years. Unsuccessful quitters were more likely to believe that NRT had contributed to their quit attempt than were successful quitters. It is possible that this difference may reflect a tendency for less motivated or more dependent smokers to use NRT as a "magic pill". There are indications from a number of studies that the wide accessibility of NRT products may encourage quit attempts by smokers who are otherwise not overly motivated to quit,^{24, 25} and by smokers who score highly on nicotine dependency scales.²⁶ However, because nicotine withdrawal is only one of the difficulties that smokers face when trying to quit, the use of NRT does not guarantee cessation success. These variations in motivation to quit and nicotine dependency may explain the differences in the extent to which unsuccessful and successful quitters in Victoria believed that NRT had contributed to their quit attempt.

Limitations

The conclusions of this report are limited to some extent by the use of retrospective recall about the use of cessation aids, services and anti-smoking television commercials, particularly as respondents were recalling their use of aids and services during quit attempts made over the past five years. It is possible that perceptions of the contribution made by cessation aids, and memory of anti-smoking commercials, may have altered with time. An additional limitation stems from the decision to use TARP's data from the past two years only, when calculating the performance indices for television commercials. As such, these performance indices do not take into account the *total* amount of audience exposure to each commercial, but rather give greater emphasis to recent levels of exposure. However, as respondents were prompted to recall the anti-smoking television commercials they most remembered from the past two years, it was anticipated that recent exposure levels would have had the strongest bearing on recall of commercials in the 2005 survey.

Conclusion

Overall, these results indicate that recent developments in tobacco control in Victoria have coincided with an increase in quitting activity among regular smokers, and that around one-third of Victorian smokers who had recently tried to give up smoking were successful in their quit attempt. They also indicate that the majority of Victorian smokers report that they were supported in some way by quitting aids and services when attempting to quit. These results particularly highlight the essential role that mass media campaigns play in tobacco control programs. By indicating that anti-smoking television commercials are perceived as having contributed to substantial numbers of quit attempts, the present findings support previous research that has demonstrated the broad impact of airing commercials that provoke negative emotions for smokers.

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APPENDIX A

Table A:
Proportion of regular smokers who have attempted to quit at least once, by demographics, 1998–2005

	1998 (N=416)	1999 (N=423)	2000 (N=386)	2001 (N=404)	2002 (N=379)	2003 (N=492)	2004 (N=574)	2005 (N=551)	Linear trend Odds Ratio ^a	95% CI for Odds Ratio
	% (±95% CI)	% (±95% CI)	% (±95% CI)	% (±95% CI)	% (±95% CI)	% (±95% CI)	% (±95% CI)	% (±95% CI)		
Total	75.7 (±4.1)	72.9 (±4.2)	79.3 (±4.0)	79.1 (±4.0)	76.5 (±4.3)	80.7 (±3.5)	83.1 (±3.1)	80.7 (±3.3)	1.07**	1.03–1.10
Sex										
Males (n=192–313)	77.7 (±5.3)	70.9 (±5.8)	78.7 (±5.8)	76.1 (±5.8)	74.5 (±5.8)	76.4 (±5.3)	81.0 (±4.4)	78.3 (±4.7)	1.03	0.99–1.08
Females (n=162–262)	73.1 (±6.5)	75.4 (±6.1)	80.0 (±5.6)	82.5 (±5.4)	79.1 (±6.3)	85.1 (±4.5)	85.7 (±4.2)	83.4 (±4.5)	1.11**	1.05–1.17
Age group (years)										
18-29 y/o (n=108–187)	65.0 (±8.5)	66.3 (±7.9)	71.7 (±8.0)	76.7 (±7.3)	65.9 (±8.9)	75.4 (±6.8)	80.5 (±5.7)	74.4 (±6.5)	1.09*	1.03–1.15
30-49 y/o (n=174–248)	86.2 (±5.1)	77.6 (±5.8)	84.6 (±5.4)	79.6 (±5.8)	80.2 (±5.8)	80.7 (±5.1)	85.3 (±4.5)	84.0 (±4.6)	1.02	0.96–1.07
50+ y/o (n=88–148)	70.8 (±8.2)	72.7 (±9.3)	79.3 (±8.3)	81.9 (±8.0)	81.7 (±8.0)	88.7 (±6.1)	82.9 (±6.1)	82.4 (±6.5)	1.12*	1.04–1.20
Education										
Yr 11 or less (n=139–228)	71.9 (±7.4)	77.3 (±6.2)	78.1 (±5.4)	80.3 (±6.4)	77.2 (±7.0)	84.3 (±5.5)	85.6 (±4.7)	81.6 (±5.6)	1.10*	1.03–1.16
Yr 12/tertiary (n=128–226)	78.1 (±5.9)	64.8 (±7.5)	84.2 (±6.3)	76.4 (±6.7)	75.6 (±6.9)	79.2 (±5.8)	80.8 (±5.2)	79.0 (±5.3)	1.05	1.00–1.10
Finished tertiary (n=30–137)	75.7 (±9.3)	78.4 (±8.5)	68.0 (±16.7)	81.5 (±7.6)	76.6 (±8.7)	78.0 (±6.9)	82.8 (±6.4)	81.9 (±6.5)	1.05	0.98–1.13
SEIFA^b										
Bottom 25% (n=59–115)	77.4 (±9.7)	80.1 (±9.3)	81.9 (±9.9)	85.4 (±8.4)	80.9 (±9.8)	84.1 (±8.2)	83.2 (±6.9)	88.2 (±6.4)	1.08	0.99–1.18
26% - 50% (n=60–119)	79.8 (±9.8)	75.4 (±10.0)	80.9 (±9.0)	78.2 (±10.5)	81.2 (±9.9)	74.0 (±8.8)	75.8 (±8.3)	78.9 (±7.3)	1.00	0.92–1.08
51% - 75% (n=99–173)	75.2 (±8.1)	73.1 (±8.1)	82.8 (±7.4)	82.2 (±7.1)	73.9 (±8.5)	83.8 (±5.8)	88.5 (±4.9)	77.1 (±6.3)	1.07	1.00–1.14
Above 75% (n=148–190)	74.4 (±6.6)	69.1 (±7.1)	75.3 (±6.8)	74.8 (±6.7)	73.6 (±7.1)	79.6 (±6.2)	82.4 (±5.4)	81.0 (±6.1)	1.09*	1.03–1.15
Region										
Melbourne (n=261–407)	n/a	n/a	78.9 (±5.0)	77.2 (±5.0)	74.8 (±5.3)	78.1 (±4.3)	83.7 (±3.6)	80.1 (±4.0)	1.06	0.99–1.13
Rural Vic (n=118–175)	n/a	n/a	80.2 (±7.0)	83.2 (±6.4)	80.1 (±7.2)	87.8 (±5.7)	81.7 (±5.9)	81.9 (±5.7)	1.02	0.92–1.13

^a An odds ratio greater than 1.00 indicates an increase in the likelihood that respondents had attempted to quit at least once, across the years 1998–2005.

^b Reported percentages for SEIFA quartiles are actual figures. Logistic regression analyses involving SEIFA controlled for sex and age.

[†] $p < .05$ for linear trend across the years 1998 to 2005.

* $p < .01$ for linear trend across the years 1998 to 2005.

** $p < .001$ for linear trend across the years 1998 to 2005.

APPENDIX B

Table B:

Recall of anti-smoking television commercials by unsuccessful quitters (n=143) and successful quitters (n=77) who believed that an anti-smoking television commercial contributed to their recent quit attempt, 2005

Anti-smoking television commercial	Years in which ad was screened	Total All quitters (n=220) %	Unsuccessful quitters (n=143) %	Successful quitters (n=77) %
National Tobacco Campaign (NTC) health effects ads ("Artery," "Tar lung," "Lung," "Stroke/brain," "Tumour" and "Eye")	1997–2004	68.6	69.9	66.2
Parents – little girl in hospital with Dad, "you should've been there"	2001–2005	20.9	14.0	33.8
Nice people – person with lung cancer meets all the medical staff in hospital	2002–2004	1.4	1.4	1.3
Jenny – woman dying of lung cancer shows x-rays and photos of her kids	2003–2004	5.4	4.2	7.8
Call for help ads – someone (young woman, businessman, pregnant couple, builder) calling the Quitline / young man in home calling Quitline, camera travels down phone line	2003–2005	7.3	7.7	6.5
Bubblewrap – bubblewrap shaped as lungs, popped with lit cigarette	2005	11.8	14.7	6.5
Echo – people talk about why they can't quit and then others talk about their illnesses	2005	6.8	7.7	5.2
Sponge – the lungs are shown as a sponge, wrung out	2005	20.5	20.3	20.8
Cough – black and white film of an old man coughing in bed	2005	0.0	0.0	0.0
Nicotine Replacement Therapy (NRT) ads	1997–2005	2.7	4.2	0.0
Other	n.a.	5.5	4.9	6.5
None	n.a.	4.5	4.2	5.2
Don't know / Can't say / Refused	n.a.	5.9	6.3	5.2

Note. The recall questions took a multiple-response format, such that respondents were able to recall more than one anti-smoking television commercial. % do not total to 100.