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The Effects of Tobacco Control Mass Media Campaigns on the Cessation Behaviours of Ontario Smokers

Background

Tobacco control mass media campaigns are a key element of comprehensive tobacco control strategies. A recent Cochrane review found mass media campaigns in the context of comprehensive tobacco control programs may be effective in changing adult smoking behaviours.¹ Of the nine studies that were carried out in communities or regions, six studies demonstrated positive effects on smoking behaviour. These studies included an Australian campaign that was found to have direct effects on cessation. A Massachusetts campaign was shown to have long term success up to eight years after the campaign initiative; however, a campaign in California showed positive results only during the period of adequate funding and implementation. The Cochrane review further identified that intensity and duration of mass media campaigns may influence the effectiveness on smoking behaviours. The review did not identify any consistent relationship between campaign effectiveness and demographics of smokers regarding their age, education, ethnicity or gender.

Recent evaluations have also explored the effectiveness of various mass media campaigns. The campaign “Stoptober” from the United Kingdom was estimated to have generated an additional 350,000 quit attempts and saved 10,400 discounted life years.² Similarly, the US Centers for Disease Control and Prevention’s “Tips” campaign was estimated to have added 1.64 million quit

Highlights

- Tobacco control mass media campaigns are key components of comprehensive tobacco control strategies
- Over the past decade, 94% of Ontario smokers were exposed to tobacco control mass media, general tobacco media stories, and pharmaceutical ads
- Overall, exposure to any tobacco control media campaigns, news stories and pharmaceutical ads increases the likelihood of making a quit attempt
- Exposure to more tobacco control media was associated with increased rates of quitting
- Continued programming of effective mass media campaigns is needed to encourage quitting among Ontario smokers
- Local public health organizations can supplement provincial media campaigns and support quitting by seeking earned and paid media on tobacco issues and programming



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attempts, leading to a savings of up to 500,000 quality adjusted life-years.³ A cost effectiveness analysis found that “Tips” spent approximately \$480 per quitter, \$2,819 per premature death averted, \$393 per life year saved, and \$268 per quality-adjusted life-year gained.⁴ An Oklahoma media campaign “Exposure to Tobacco Stops With Me” doubled quit attempts among tobacco users and increased knowledge about the harm of secondhand smoke.⁵ Nonnemaker and colleagues found that exposure to mass media campaigns in Florida led to increases in quit attempts, although there was no statistically significant effect on relapse.⁶ Durkin and colleagues found that campaign reach, intensity, duration and message type are important factors associated with a successful campaign. Sufficient population exposure is vital for mass media campaigns to be effective, especially for lower socioeconomic status smokers—television continues to be the primary channel to effectively reach and influence adult smokers.⁷

Objective

This report describes the characteristics of smokers who were aware of anti-tobacco mass media campaigns and assess the impact of awareness on quit intentions, quit attempts and smoking cessation among a longitudinal population representative sample of Ontario smokers. Along with mass media tobacco control campaigns, we include exposure to general news media and tobacco pharmaceutical cessation aid advertising.

Methods

We compiled data from 3361 adult smokers with at least one follow up interview from the Ontario Tobacco Survey, a population-representative cohort of smokers in Ontario. Respondents were asked aided recall questions for various anti-tobacco campaigns between 2005 and 2011, exposure to general news media on tobacco, as well as exposure to pharmaceutical ads for smoking cessation medications.

Table 1 describes the ad campaigns assessed. These questions were only asked in the survey during periods in which the campaign was active (variation by campaign). A description of a campaign that did not appear in Ontario during this time period was used to control for recall bias: “An ad showing a young child using alphabet blocks to spell out the names of health problems associated with smoking?”.



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Table 1: Effect of Individual Mass Media Campaigns on Making a Quit Attempt at a Subsequent Survey and Risk of Relapse Given a Quit Attempt Among Smokers in Ontario, Canada, 2005-2011

Campaign	Observations	Rate of Quit Attempt (Relative Risk)	Risk of Relapse (Hazard Ratio)
Stupid.ca: An ad about kids doing risky things with the message: "What's more stupid"?	10189	1.17 (1.07, 1.27)	1.11 (0.95, 1.30)
An ad about a former waitress who is dying of secondhand smoke with the message: "Support a smoke-free Ontario"?	7349	1.24 (1.04, 1.48)	0.85 (0.52, 1.41)
An ad about a character named Bob who's trying to quit smoking?	1062	1.25 (1.00, 1.57)	1.04 (0.44, 2.43)
An ad showing smoke-rings with the message: "Don't let the children be a target, make your home smoke-free"	7349	1.34 (1.13, 1.58)	1.15 (0.69, 1.92)
An ad showing people overcoming life challenges, including throwing away a pack of cigarettes with the message: "you have it in you"	5402	1.06 (0.96, 1.19)	0.9 (0.75, 1.09)
An ad showing different people seeing messages about appointments connected to quitting smoking with the message: "what's your quit date?"	5402	1.18 (1.03, 1.36)	0.94 (0.78, 1.45)
An ad about a former waitress talking to her former boss about how secondhand smoke has affected her health?	1769	1.20 (0.98, 1.45)	1.04 (0.7, 1.56)
Have you seen or heard of radio or newspaper ads providing tips and support for quitting? For example, "Quit Tip #6: Change your routine?"	4776	1.21 (1.08, 1.36)	0.77 (0.63, 0.94)
An ad showing a woman smoking near a window. Her smoke travels through the house and clings to a teddy bear that is picked up by a little girl with the message "Make your home smoke-free"?	3208	1.14 (0.96, 1.35)	1.06 (0.78, 1.45)
Have you seen or heard of radio or newspaper ads for the [year] Driven to Quit Challenge, sponsored by the Canadian Cancer Society?	4067	1.36 (1.20, 1.55)	0.90 (0.71, 1.14)
An ad where a boy passes his dad a CD with a recorded message encouraging his dad to quit smoking?	4010	1.04 (0.92, 1.20)	0.90 (0.70, 1.15)
An ad where smokers talk about craving cigarettes, how hard it is to quit, and subsequent weight gain. Sick people counter each comment with statements about their tobacco-related illnesses such as the patient who needs oxygen and the cancer patient who has lost 25 pounds?	3145	1.06 (0.91, 1.24)	0.74 (0.57, 0.98)

Note: All analyses adjusted for age, sex, education, marital status, children at home, perceived health, use of quit aids, occasional or daily smoking, heaviness of smoking index, perceived addiction, perceived difficulty in refraining from smoking, perceived that smoking would be hard to quit.



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Smoking behaviours were prospectively assessed for up to three years. During each follow-up interview, we classified smoking cessation behavior as making no quit attempt, self-reported serious attempt to quit, and time to relapse after a quit attempt.

To study the association between campaign recall and smoking outcomes (a) making a quit attempt and b) cessation for more than one month at follow-up, we used Poisson regression models (Generalized Estimation Equations; Poisson distribution and log link). Mass media exposure and its association with time to relapse among those who made a quit attempt was examined using interval censored survival analysis. All analyses adjusted for demographic and smoking history characteristics. Analyses were conducted using Stata 14 software accounting for the complex survey design.

Results

Quit Attempts

Smokers who recalled any exposure to mass media campaigns were 11% more likely to subsequently report a quit attempt relative to smokers who did not recall campaigns (Relative Risk, [RR]: 1.11; 95% confidence interval [CI] 1.01-1.22; see Table 2).

Table 2: Effect of Mass Media on Making a Quit Attempt at a Subsequent Survey and Risk of Relapse Given the Quit Attempt Among Smokers in Ontario, Canada, 2005-2011

Campaign	Rate of Quit Attempt (Relative Risk)	Risk of Relapse (Hazard Ratio)
Any ad reported in past 6 months	1.11 (1.01, 1.22)	1.10 (0.93, 1.3)
Cumulative ads reported since survey enrollment	1.06 (1.02, 1.11)	1.02 (0.95, 1.10)
News article on tobacco in past 6 months	1.15 (1.03, 1.30)	0.91 (0.75, 1.11)
Pharmaceutical ad reported in past 6 month	1.10 (1.01, 1.20)	0.95 (0.82, 1.11)

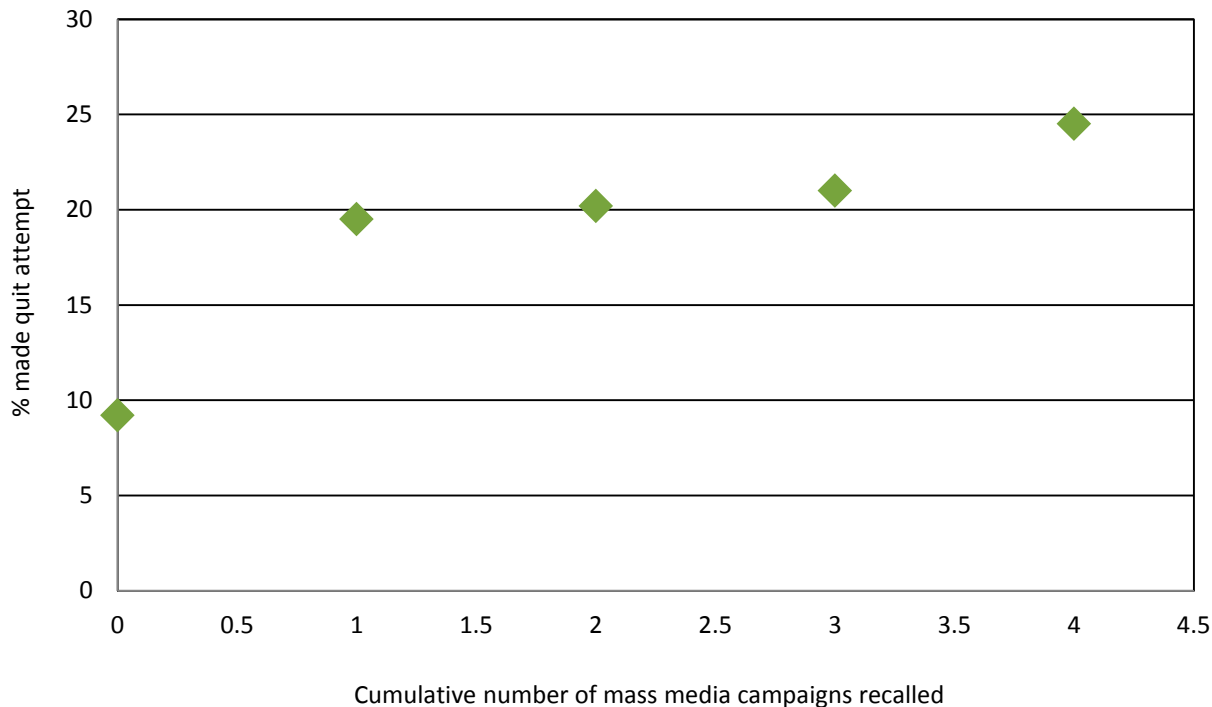
Note: (n=3361, obs=10,189). All analyses adjusted for age, sex, education, marital status, children at home, perceived health, use of quit aids, occasional or daily smoking, heaviness of smoking index, perceived addiction, perceived difficulty in refraining from smoking, perceived that smoking would be hard to quit.

Being exposed to more mass media campaigns was associated with an additional increase in the likelihood of making a quit attempt (see Figure 1).



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Figure 1: Percent of Participants Who Go on to Make a Quit Attempt in the Subsequent 6 Months Given Cumulative Number of Mass Media Campaigns Recalled



Note: Unadjusted estimates. Ontario Tobacco Survey 2005-2011.

Independent campaign effects on quit attempts were observed for 5 campaigns: “Quit: You Have It In You”, a quit tips campaign; “Driven to Quit”, a quit contest; “Support a Smoke-free Ontario”, voiced by a dying waitress; “Don’t Let Your Children be a Target”, a smoke-free homes campaign; and “Stupid.ca”, a humour-based campaign to prevent initiation among youth. News articles increased the likelihood of making quit attempts by 16%. Pharmaceutical ads increased chance of quit attempts by 10%; these ads also increased the use of cessation pharmaceuticals by 7% (data not shown), whereas tobacco control campaigns and general news media did not increase the use of pharmaceutical aids.

Risk of Relapse

Overall, there was no effect of mass media, news media or pharmaceutical ads on risk of relapse, given a quit attempt (see Table 2). Independent campaign effects on reducing the risk of relapse were observed for 2 campaigns: “Quit: You Have It In You” and “Sick”, a campaign that used the experiences of people ill with tobacco-caused diseases to counteract common excuses for relapse.



Conclusions

Ontario mass media campaigns had broad reach among the general population of smokers. Similar to international evaluation findings, tobacco control mass media campaigns in Ontario over the past decade, including news media stories and pharmaceutical ads, had a population-level effect on encouraging smokers to quit. The primary effect of these mass media campaigns encouraged smokers to make quit attempts; specific campaigns also reduced the risk of relapse.

Tobacco control mass media campaigns are critical components of the Smoke-Free Ontario Strategy. Continued programming for effective campaigns messages are important to encourage and support smokers to quit. Since general news stories about tobacco alone also increased the likelihood of smokers making quit attempts, local public health organizations can increase quitting in their regions by regularly seeking earned and paid media on tobacco issues and programming.

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