

RESEARCH PAPER

What the public thinks about the tobacco industry and its products

M J Ashley, J E Cohen

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See end of article for authors' affiliations

Correspondence to:
Dr Mary Jane Ashley,
Department of Public
Health Sciences, University
of Toronto, Toronto,
Ontario M5S 1A8,
Canada;
maryjane.ashley@
utoronto.ca

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Objectives: To assess public attitudes toward the tobacco industry and its products, and to identify predictors of attitudes supportive of tobacco industry denormalisation.

Design: Population based, cross sectional survey.

Setting: Ontario, Canada.

Subjects: Adult population (n = 1607).

Main outcome measures: Eight different facets of tobacco industry denormalisation were assessed. A denormalisation scale was developed to examine predictors of attitudes supportive of tobacco industry denormalisation, using bivariate and multivariate analyses.

Results: Attitudes to the eight facets of tobacco industry denormalisation varied widely. More than half of the respondents supported regulating tobacco as a hazardous product, fining the tobacco industry for earnings from underage smoking, and suing tobacco companies for health care costs caused by tobacco. Majorities also thought that the tobacco industry is dishonest and that cigarettes are too dangerous to be sold at all. Fewer than half of the respondents thought that the tobacco industry is mostly or completely responsible for the health problems smokers have because of smoking and that tobacco companies should be sued for taxes lost from smuggling. In particular, less than a quarter thought that the tobacco industry is most responsible for young people starting to smoke. Non-smoking, knowledge about health effects caused by tobacco, and support for the role of government in health promotion were independent predictors of support for tobacco industry denormalisation.

Conclusions: Although Ontarians are ambivalent toward tobacco industry denormalisation, they are supportive of some measures. Mass media programmes aimed at increasing support for tobacco industry denormalisation and continued monitoring of public attitudes toward this strategy are needed.

Prevention, protection, and cessation have long been the conceptual underpinnings of tobacco control efforts in Canada.^{1,2} Recently, a fourth underpinning, tobacco industry denormalisation (TID) was added as a key component in the national strategy to reduce tobacco use in Canada.² In this context, TID is defined as:

“Denormalization refers to the activities undertaken specifically to reposition tobacco products and the tobacco industry consistent with the addictive and hazardous nature of tobacco products, the health, social and economic burden resulting from the use of tobacco, and the practices undertaken by the industry to promote its products and create social goodwill toward the industry”.²

Currently, little is known about how Canadians view the tobacco industry, its products, and TID strategies. Such data could be a guide as to how TID can be most effectively incorporated into new and existing tobacco control programmes and policies. Further, since TID has yet to be implemented either consistently or on a widespread basis in Canada, such data could serve as a baseline against which progress in TID can be measured.

In this paper we present population based data from Ontario, Canada on what the public thinks about the tobacco industry, its products, and selected TID strategies. We examine predictors of supportive attitudes for TID and discuss the implications of our findings for tobacco control programmes and policies.

METHODS

Data

The data were obtained between April and June 2000 in a province wide, population based survey (“Q2000”) undertaken in Ontario, Canada. The primary objective of this survey, conducted under the auspices of the Ontario Tobacco Research Unit and fully described elsewhere,³ was to obtain information on the public’s knowledge about the health effects of smoking and their attitudes regarding tobacco and tobacco control measures. Briefly, the English speaking population aged 18 years and older and who resided in households, was sampled using a two stage, probability based selection process. First, households were identified by random digit dialling, and then respondents were randomly selected from all eligible adults in the household, based on the most recent birthday method.⁴ Interviews were conducted by the Institute for Social Research at York University in Toronto, Canada, using computer assisted telephone interviewing (CATI). Up to 12 call attempts were made during the day and evening on weekdays and weekends, before a number was considered non-responding.

Interviews were completed with 1607 respondents (response rate 60%, calculated by dividing the number of completed interviews by the estimated number of eligible households). Interviews lasted about 20 minutes on average and addressed the respondent’s sociodemographic

Abbreviations: CATI, computer assisted telephone interviewing; CTUMS, Canadian Tobacco Use Monitoring Survey; TID, tobacco industry denormalisation

characteristics, knowledge about smoking and health, smoking history, attitudes toward the tobacco industry and tobacco products, and toward a wide range of tobacco control measures, including TID measures (the questionnaire is available from the first author). The sociodemographic characteristics of the sample were compared with those of Ontario residents based on the 1996 Census. The sample was representative with respect to age, sex, and marital status, but those with low levels of education were under-represented, a common finding in survey research.^{5,6}

Tobacco industry denormalisation

Eight questions directly concerned selected facets of TID. Four dealt with attitudes toward the tobacco industry and its products and four concerned TID strategies. Specifically, questions concerning the tobacco industry and its products addressed the dishonesty of the industry about the effect of smoking on health, its responsibility for the health problems smokers have because of their smoking, and for youth starting to smoke, and the dangerousness of cigarettes. Questions concerning TID strategies addressed regulation of tobacco as a hazardous product, fining of the tobacco industry by government for earnings from underage smoking, and suing of the industry by the Ontario government for health care costs caused by smoking and for taxes lost because of smuggling.

In order to identify predictors of support for TID, the responses to the eight TID questions were incorporated into a denormalisation scale. This scale had a reliability (α) coefficient of 0.70. Scale values ranged from 0 to 1, with a mean of 0.55 and a median of 0.63. Respondents whose answers to six or more of the eight items comprising the scale indicated support for denormalisation were classified as "high scorers" on the scale.

Independent variables

Support for TID, as indicated by scores on the denormalisation scale, was considered in relation to the sociodemographic characteristics of respondents (sex, age, and educational attainment) and their smoking status (smoker, non-smoker). Because former smokers and never smokers were virtually identical in their support for TID, they were considered in the analysis as one group, non-smokers.

In previous work we showed that knowledge about the health effects of active and passive smoking,^{7,8} and attitudes toward the role of government in health promotion,^{8,9} were independent predictors of attitudes toward tobacco control measures. To examine the relation between the TID measures and both knowledge concerning health effects and views about the responsibility of government for health promotion, two scales were created. One, a health effects knowledge scale, was based on 10 items in the questionnaire that dealt with the specific effects of active and passive smoking (smoking as a cause of: heart attacks in smokers, lung cancer in smokers, chronic bronchitis in smokers, pregnancy complications in smokers, strokes in smokers, and male impotence in smokers; and other people's smoking as a cause of: lung cancer in non-smokers, heart attacks in non-smokers, chest problems in children, and ear problems in children). The other scale, a government responsibility scale, was based on five items (government's responsibility regarding programmes and policies to: encourage healthy eating habits, encourage people to quit smoking, encourage people to be physically active, prevent alcohol abuse, and discourage young people from smoking). The reliability coefficients of the scales were 0.86 and 0.79, respectively.

Table 1 Attitudes of the Ontario adult population concerning the tobacco industry, its products, and tobacco industry denormalisation strategies (n = 1607)

	Per cent agreement	95% CI
Attitudes toward the tobacco industry and its products		
The tobacco industry rarely/never tells the truth about the health effects of smoking	75	73 to 77
Cigarettes are too dangerous to be sold at all	56	54 to 59
The tobacco industry is mostly/completely responsible for health problems smokers have because of their smoking	43	40 to 46
The tobacco industry is most responsible for young people starting to smoke	22	19 to 24
Attitudes toward tobacco industry denormalisation strategies		
Tobacco should be regulated as a hazardous product	82	80 to 84
The tobacco industry should be fined by the government for the money they earn from young people under 19 who smoke	64	61 to 66
The Ontario government should sue tobacco companies for health care costs caused by tobacco products	55	52 to 58
The Ontario government should sue the tobacco companies for the taxes lost because of cigarette smuggling	40	37 to 43

Analysis

The data were analysed using Stata.¹⁰ Observations were weighted according to the probability of adults in the selected household being selected into the sample.³ Support for each of the eight facets of TID was determined (table 1). Bivariate analyses examined the relations between each of the six independent variables (sex, age, education, smoking status, health knowledge score, and government responsibility score) and the denormalisation score (table 2), and each

Table 2 Bivariate analysis of denormalisation views by sex, age, education, smoking status, health knowledge score, and government responsibility score

Potential predictor variable	"High scorers" on denormalisation scale	
	Per cent	95% CI
Sex		
Male (n = 700) ^{ns}	50	46 to 54
Female (n = 907)	52	49 to 56
Age (years)*		
18-32 (n = 402) ^{ns}	53	48 to 58
33-42 (n = 384)	49	44 to 55
43-55 (n = 386)	53	47 to 58
56+ (n = 388)	49	43 to 54
Education*		
<High school (n = 214) ^{ns}	50	43 to 57
High school graduate (n = 408)	47	42 to 53
Some post-secondary (n = 540)	52	47 to 56
University degree (n = 413)	54	49 to 59
Smoking status		
Non-smoker (n = 1186)**	56	53 to 59
Smoker (n = 421)	34	29 to 39
Knowledge score		
Low (n = 812)†	39	35 to 42
High (n = 795)	64	60 to 68
Responsibility score		
Low (n = 790)†	37	33 to 40
High (n = 817)	65	61 to 68

^{ns}Differences between categories are not significant.

*Information on age and education was missing for 47 and 32 respondents, respectively.

†Differences between categories are significant (p < 0.001).

Table 3 Summary of bivariate and multivariate findings

	Sex	Age	Education	Smoking status	Knowledge score	Government responsibility score
Bivariate analysis						
The tobacco industry rarely/never tells the truth about the health effects of smoking	* (male)	ns	ns	**	***	ns
Cigarettes are too dangerous to be sold at all	** (female)	ns	ns	***	***	***
The tobacco industry is mostly/completely responsible for the health problems smokers have because of their smoking	ns	ns	ns	***	***	***
The tobacco industry is most responsible for young people starting to smoke	ns	ns	ns	**	***	***
Tobacco should be regulated as a hazardous product	*** (female)	ns	ns	***	***	***
The tobacco industry should be fined for the money they earn from young people under 19 who smoke	*** (female)	*** (younger)	ns	***	***	***
The Ontario government should sue tobacco companies for health care costs caused by tobacco products	ns	ns	** (more educated)	***	***	***
The Ontario government should sue the tobacco companies for the taxes lost because of cigarette smuggling	ns	ns	ns	***	***	***
Multivariate analysis						
Denormalisation scale	ns	ns	ns	***	***	***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

facet of TID (table 3). Respondents whose views were supportive of TID on six or more items of the scale (that is, their overall score was above the median score) were classified as “high scorers” on the denormalisation scale. Multiple linear regression, using the denormalisation scale as the dependent variable, was used to examine the independent roles of the six variables as predictors of support for TID (table 3).

RESULTS

Overall attitudes toward tobacco industry denormalisation

The attitudes of the population to the individual TID items (table 1) showed wide variability. Substantial support was found for three items. Four fifths of respondents thought that tobacco should be regulated as a hazardous product, three quarters viewed the tobacco industry as dishonest, and two thirds thought that the industry should be fined for earnings from underage smoking. A majority of respondents also thought that cigarettes are too dangerous to be sold at all and that the Ontario government should sue tobacco companies for health care costs arising from tobacco. However, only a minority thought that the tobacco industry was mostly or completely responsible for the health problems that smokers have because of their smoking, that the tobacco industry is most responsible for young people starting to smoke, and that the Ontario government should sue the tobacco companies for taxes lost from smuggling.

Bivariate analysis

The percentage of respondents with a high score (above the median) on the denormalisation scale did not vary by sex, age, or educational attainment (table 2). However, respondents who did not smoke, respondents who were most knowledgeable about the health effects of active and passive smoking (above the median on the health effects knowledge scale), and respondents who thought that government was responsible for health promotion programmes and policies (above the median on the government responsibility score) were much more likely to score high on the denormalisation scale ($p < 0.001$).

A largely similar pattern was observed when the TID items were individually considered (table 3). Support for all of the TID items was significantly related to smoking status, knowledge about the health effects of smoking, and views about the government’s responsibility for health promotion

programmes and policies. There was only one exception—views about the dishonesty of the industry were not related to the government responsibility score. Most of the items were not significantly related to education or age. However, those with higher education were more likely to favour suing for health care costs, and younger persons were more likely to think that the industry should be fined for earnings from underage smoking. With regard to sex, females were more likely than males to agree that tobacco products are too dangerous to be sold at all, and they were more supportive of fining for underage smoking and for regulating tobacco as a hazardous product. On the other hand, males were more likely to view the tobacco industry as dishonest.

Multivariate analysis

In the multiple linear regression, sex, age, and education were not found to be independently related to the denormalisation score; however, support for TID was higher among respondents who were non-smokers, more knowledgeable about the health effects of active and passive smoking, and had strong beliefs that government should be responsible for health promotion programmes and policies (table 3).

DISCUSSION

There is now strong evidence that TID can be an effective tobacco control strategy, particularly in the context of a comprehensive tobacco control programme. Much of this evidence comes from California,^{11–12} Massachusetts,^{13–14} and Florida.^{15–17} Recently, the effectiveness of TID in the American Legacy Foundation’s “Truth” campaign was documented at a national level.¹⁸ The campaign was shown to change youth attitudes toward tobacco, in particular, the attitudes of youth at risk of smoking.

In a recent review of TID conducted for Health Canada, Lavack¹⁹ recommended that Canada’s national anti-tobacco media campaign incorporate TID. This view has also been endorsed by the federal Minister of Health’s Ministerial Advisory Council on Tobacco Control,²⁰ and by 12 national and provincial health/tobacco control groups in an open letter to the minister, published in the *Globe and Mail* national newspaper.²¹

Although the TID strategy is often considered in the context of mass media campaigns, the intent of TID goes well beyond this component of tobacco control programmes. TID mass media campaigns, however, appear to be critical in preparing the ground for other measures aimed at fundamentally

changing how the tobacco industry and its products are regulated, and how the industry is held responsible for the effects of its products and the way it conducts its business.

Our data indicate that there is a need for TID campaigns in Ontario. In particular, less than half of Ontarians (43%) consider the tobacco industry to be primarily responsible for the health problems caused by their products, and only 55% favour holding the tobacco industry responsible for the health effects of its products. Even fewer Ontarians (22%) appreciate the pivotal role of tobacco industry in youth smoking. Other data, although sparse, lend credence to this finding. In a recent survey of Canadians 15 years of age and older (CTUMS), conducted by Health Canada, only 13% of respondents identified the tobacco industry as the main source of influence in initiating smoking.²² In developing TID campaigns, consideration may need to be given to targeting specific subgroups of the population, such as youth, or particular aspects of tobacco control, such as public policies.²³

Our data also show that most adult Ontarians view the tobacco industry as dishonest and most support the regulation of tobacco as a hazardous product, suggesting that some TID measures would be acceptable to residents of this province now and could be implemented. In her report, Lavack¹⁹ quoted findings from a national 1999 Environics Survey commissioned by Health Canada that also suggest receptivity to TID initiatives.

Our findings indicate that adults who are non-smokers and more knowledgeable about the health effects of smoking are more supportive of TID. This is in keeping with the findings of 1996 surveys of adult Ontarians⁷ and Canadian legislators,^{8,9} which showed that both knowledge of health effects and smoking status are independently associated with support for more restrictions on smoking in a variety of venues and other tobacco control measures. As Canadians become better informed about the health effects of smoking, we can expect growing support for TID initiatives. Given the key roles that legislators play in implementing tobacco control measures, particular efforts should be made to assure that they are fully informed about tobacco's public health toll.

Our finding that respondents who viewed government as having responsibility for health promotion programmes and policy were more supportive of TID is also consistent with findings from the study of Canadian legislators; in this study it was shown that legislators' views about the role of government in health promotion were associated with support for various public policy interventions,⁹ including tobacco control measures.⁸ However, such views may not be as amenable to change as is knowledge about the health effects of tobacco use.

This study is not without limitations. Only 60% of eligible respondents took part in the survey and it is not known if or how the attitudes of non-respondents might have differed. As well, other potential predictors of TID were not explored—for example, living in a tobacco growing or manufacturing area of Ontario, or living in a community where smoking is highly regulated in public places and workplaces.

We conclude that the Ontario population is ambivalent toward TID, and that interventions (for example, mass media campaigns) are needed to ensure that the public is better informed about the underlying role of the tobacco industry in the tobacco epidemic. However, some TID strategies are now supported by a majority of the population and could be implemented with reasonable certainty of popular support. TID attitudes should continue to be monitored in provincial and national surveys, in order to gauge changing support for TID strategies. Finally, research to understand better the theoretical basis of how TID leads to reductions in smoking

What this paper adds

Tobacco industry denormalisation is now an underpinning strategy of tobacco control in several jurisdictions across North America. However, little is known about public attitudes toward the tobacco industry and its products or attributes of the public that are associated with support for tobacco industry denormalisation.

This study provides unique data concerning the attitudes of adults in one province of Canada with regard to eight facets of tobacco industry denormalisation. It identifies non-smoking, knowledge about tobacco caused health effects, and attitudes supportive of the role of government in health promotion as attributes that are associated with support for tobacco industry denormalisation. These data can be used to inform tobacco control policy and programme development and will serve as a baseline against which changing attitudes toward the tobacco industry can be gauged.

prevalence and increased support for policy interventions could be undertaken.

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Authors' affiliations

M J Ashley, J E Cohen, Ontario Tobacco Research Unit, University of Toronto, and Department of Public Health Sciences, University of Toronto, Toronto, Ontario, Canada

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ECHO

The economic burden of environmental tobacco smoke in the first year of life

G M Leung, L-M Ho, T-H Lam



Please visit the Tobacco Control website [www.tobaccocontrol.com] for a link to the full text of this article.

Aims: To examine the population impact and economic costs associated with environmental tobacco smoke (ETS) in Chinese infants with non-smoking mothers.

Methods: Prospective, population based birth cohort study in Hong Kong, 1997-98. Main outcome measures were: doctor consultations and hospitalisations; adjusted odds ratios for higher utilisation by service type for each of the ETS exposure variables; corresponding population attributable risks (PARs); and associated extra health care costs.

Results: For the 1997 annual birth cohort, ETS exposure through the mother in utero was positively associated with higher consultation (adjusted odds ratio (OR) 1.26) and hospitalisation (OR 1.18) due to any illness. This translated into 7.4% of all inpatient episodes in the first year of life, representing an additional 1581 hospital attendances that cost over US\$2.1 million. The corresponding PAR for outpatient services was 7.7%, where the majority was due to respiratory or febrile illnesses, accounting for \$0.44 million in extra costs. Postnatal exposure to ETS at home was linked to higher rates of hospitalisations for any illness compared with non-exposed infants (OR 1.12), which led to 662 extra hospitalisations consuming \$0.90 million, where the associated PAR was 3.1%.

Conclusions: Assuming that ETS was causally associated with health services use, about 9% of the total direct medical costs in the first year of life can be attributed to passive smoking. The community, as well as the private citizen, needs to be made aware of the costs foregone from exposure to tobacco smoke as well as the potential savings from a smoke-free society.

▲ *Archives of Disease in Childhood* 2003;**88**:767-771.