



Attitudes to, and knowledge of, secondhand smoke in New Zealand homes and cars

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Abstract

Aims To review the evidence on knowledge and attitudes among the New Zealand public concerning secondhand smoke (SHS) and smoking in homes and cars.

Methods A literature search for published and unpublished material relevant to New Zealand.

Results While New Zealanders' knowledge about SHS effects has improved since 1989, with 90% or more of the adult population aware of a risk to health, this knowledge may be shallow. Wellington area surveys indicate that significant proportions of the population are not aware of both the major consequences of SHS, that is, strokes and heart disease.

Survey data indicates increasing public support for smokefree homes during 1999–2003, particularly among Maori who showed a 68% increase in support during that period. In 2003, over 80% of New Zealand smokers indicated that people have a right to smokefree homes. However, these attitudes do not necessarily result in smokefree homes. Of those 14–15 year olds with at least one parent who smoked, less than 45% reported having a smokefree home.

Conclusions Improved tobacco control and increased investment in mass media campaigns on SHS issues are needed to strengthen healthy norms around smokefree homes and cars.

This article reviews the evidence on knowledge and attitudes among the New Zealand public concerning secondhand smoke (SHS) and smoking in homes and cars. Work on this topic is part of work by the Housing and Health Research Programme/He Kainga Oranga of the University of Otago, to identify health risks in the home setting and the methods of reducing them.

The adoption and implementation of public and private policies to control SHS depends partly on the related knowledge and attitudes of the population. As New Zealand legislation now controls smoking in nearly all interior work and public places, homes and cars are now the areas with the most potential for further protecting public health from the SHS hazard.

The context for knowledge about the effects of exposure to SHS includes the information found in the media (including paid advertising), formal education in schools and elsewhere, information to patients and their families from health professionals, and the experience of individuals in observing the effects of SHS. In addition, the tobacco industry and other commercial groups in New Zealand still deny the substantial health effects of SHS.¹

Worldwide, the tobacco industry has been concerned to maintain the idea that the scientific evidence about SHS harm is debated and controversial. For instance, a study found that reviews of the health effects of SHS were over 80 times more likely to find no health effects if the authors were tobacco industry funded.² In New Zealand, a representative of British American Tobacco (BAT) gave evidence to the Health Select Committee of Parliament in November 2002. He was reported as saying that:

‘in our view, it has not been established that ETS [environmental tobacco smoke] exposure genuinely increases the risk of nonsmokers developing lung cancer or heart disease’³

Currently, the BAT New Zealand website states:

‘... we think that many of the claims against environmental tobacco smoke have been overstated. Specifically, we don’t believe that it has been shown to cause chronic disease, such as lung cancer, cardiovascular disease or chronic obstructive pulmonary disease, in adult non-smokers’

‘... the studies on lung cancer to date suggest that if there is a risk, it is too small to measure with any certainty. There is evidence for example that exposure to it is related to acute illnesses, like respiratory and ear infections, in children who live in smoking households’¹

Much of the context for public knowledge about SHS is determined by the coverage of the subject by mass media.⁴ In the USA, there has been a persistent gap between the scientific consensus about SHS harm and the media coverage of that consensus, with media continuing to report that the science was ‘controversial.’⁵

Attitudes to SHS and restrictions on smoking arise within a context of beliefs about rights and obligations. For instance, depending on their views and the way in which the topic is framed, people will support the rights of children to health, or will advocate a smoker’s right to do what they want in their own home (including smoking in a house with children). The New Zealand Human Rights Commission does not consider that smoking is a right under the Human Rights Act.⁶

The normalcy of smoking restrictions within a society affects attitudes about SHS restrictions in private places. Workplace bans appear to create spillover effects, with Australian evidence indicating that those working in places with smoking restrictions are more likely to discourage visitors from smoking in their homes. Other predictors of positive attitudes to SHS restrictions in the home include the presence of children, some or all the adults being non-smokers, and believing that SHS can harm people.⁷

Some of the elements that may affect smokers or non-smokers attitudes about SHS include perceptions about the amount of SHS around themselves or their children. If the amount is perceived as small, and the risk of that SHS to health is perceived as trivial, action to change the situation can be seen as unnecessary.⁸ This tendency can be exacerbated by the extent to which people have unfounded optimistic views about risks to themselves. Optimism tends to be greatest for risks thought to be personally controllable, and where the evidence of harm is delayed.⁹

Methods

A search was made in April–May 2004, through Medline and other electronic search engines, using combinations of the following search words: Zealand, Maori, environmental, secondhand, tobacco, smok*, home*, infant*, child*, and parent*. The references within the material found enabled further publications to be identified. In addition, official and other reports were obtained by inquiries to official and other agencies. Additional trend analyses were conducted on some of the data obtained using the software package Epi Info 2000.

Results

Public knowledge of SHS hazards—In 1989, there were considerable differences in the reported knowledge of harm to health from SHS, by ethnicity (Table 1). However, by 1999 there was little difference between the responses of Maori respondents and respondents from the total population, with at least 90% agreeing in 2003 that there was harm from SHS (Table 1).

Table 1: Proportion of the adult population agreeing to statements that SHS causes harm (various national surveys)

Year	Adult population				
	Over 55 years	Maori	Pacific	Smokers	All
1989*	74%	65%	69%	60%	84%
1991*	86%	78%	85%	74%	86%
1999‡		92%			92%
2001‡		94%			94%
2001#		87%			91%
2003†		91%			90%

*Agree to the statement 'The health of non-smokers can be damaged by other people's tobacco smoke'.^{11,12}; #Agree to the statement 'Smoke from other people's cigarettes is harmful to you' – by saying 'probably' or 'definitely'.¹³; ‡Agree to the statement 'People's health can be damaged by other people's tobacco smoke'.¹⁴; †Agree to the statement 'People's health can be damaged by other people's tobacco smoke' ('slightly' or 'strongly').¹⁵

One of the first extensive surveys in New Zealand, on knowledge about SHS effects, was done in 1988 for the Tobacco Institute of New Zealand (TINZ) by the Heylen Research Centre. The survey was of 1000 people aged 15 and over. When asked if the statement 'Science has not established that other peoples' cigarette smoke is a health hazard to non-smokers' was true or false, 26% said true, and 69% (52% of smokers) said false.¹⁰ The survey report gives data from earlier New Zealand surveys, with reactions to the statement 'Cigarette smoking is not harmful to non-smokers'. Agreement to this statement in 1982 and 1985 was 16% and 12% respectively.¹⁰

A 1989 survey for the Department of Health asked if the statement: 'The health of non-smokers can be damaged by other people's tobacco smoke' was true. A large majority (84%) agreed, 6% disagreed, and 10% said neither, or didn't know.¹¹ Populations whose agreement was lower than average included those over 55 years of age (74%), Maori (65%), Pacific (69%), and smokers (60%). By 1991, the same statement was agreed to by significantly more of those groups who previously had lower than average agreement.¹²

The depth of the knowledge about SHS effects—The depth of knowledge about harm from SHS has been investigated in two Wellington area surveys: in 1997 and 1999–2000. These indicated that only half or less of the groups surveyed were aware that SHS contributed to all of five specific health conditions (Table 2).^{16,17} In one survey, of Wellington bar and restaurant staff and owners, less than a third of interviewees knew of the risk for strokes from SHS.¹⁷ In an Auckland survey, 1376 Pacific mothers of 6-week-old infants were 'given a short description of sudden infant

death syndrome (SIDS)' and asked if they had heard of 'the ways parents could help prevent SIDS or cot death'. Only 32% reported maternal smoking as a risk factor.¹⁸

Table 2: Knowledge about particular SHS effects on health identified in local surveys

Question	Survey of Wellington bar and eating place workers 1999–2000 ¹⁷	Public survey in Wellington, 1997 ¹⁶
<i>Does breathing other people's smoke increase the risk of:</i>	Answering 'Yes'	Answering 'Yes'
Asthma	80%	60%
Cancer	69%	76%
Heart disease	61%	57%
Breathing/respiratory problems*	92%	58%
Cot death	53%	69%

* The 1997 survey used the word 'respiratory' instead of 'breathing'.

Public attitudes to SHS in homes and cars—Apart from the 1988 survey for TINZ, most of the New Zealand data on attitudes to SHS in homes and cars has been gathered since 1999. The questions used have varied from asking directly if 'people should be able to smoke' in homes and cars, to questions which frame smokefree homes as a right. In addition, there have been questions about smoking when children are around or when there are car passengers. Data about reported smokefree policies for homes can also be interpreted as evidence about attitudes.

The 1988 survey for TINZ gave seven options for preferred smoking policies in homes and cars. Even so, 41% of non-smokers and 4% of smokers wanted no smoking at all in their own homes. For other peoples' homes, 35% of non-smokers and 18% of smokers wanted no smoking at all. For private cars, 58% of non-smokers and 18% of smokers wanted no smoking at all.¹⁰

A 1997 Wellington area survey asked for reactions to the statement 'it should be made illegal for people to smoke in cars when there are passengers.' Over 50% of interviewees agreed, including 43% of smokers. Over 85% of interviewees (78% of smokers) agreed that homes should be smokefree 'when there are children around,' and 94% agreed that cars with children in them should be smokefree (86% of smokers).¹⁶ Surveys between 1999 and 2003 indicate that support for smoking at home has declined significantly (Table 3).¹⁵

If questions were framed in terms of children, or rights for smokefree homes, very different answers were given. During 1999–2003, over 90% of both Maori and the general population disagreed with the statement that it was 'OK to smoke around children.'¹⁵ Over 80% of both Maori and the general population indicated that people have a right to live in an environment free of smoke. Most smokers (81% overall, 76% of Maori smokers) agreed to this principle.^{13,15}

Table 3: Attitudes to smoking in homes and cars¹⁵

Year	Proportion answering “not at all” to the statement:			
	“People should be able to smoke at home”		“People should be able to smoke in private cars”	
	Maori	All	Maori	All
1999	22%	23%	46%	29%
2001	25%	19%	34%	23%
2003	37%	33%	48%	41%
P value for trend	p<0.00001	p<0.00001	p=0.52	p<0.00001

Finally, the depth of information about the effects of SHS may affect attitudes to smoking. In a survey during 1999–2000 of Wellington bar and restaurant staff and owners, interviewees were asked about the risk of seven health conditions from SHS. Those aware of all seven risks were twice as likely compared to all other interviewees to want no smoking in bars (14% compared to 7%, $p=0.009$), and over twice as likely to want stronger restrictions on smoking in bars (21% compared to 9%, $p=0.012$).¹⁹

Attitudes about SHS relative to behaviour—There are large gaps between people’s general views on SHS and their self-reported smoking behaviour. In the 1997 Wellington area survey, only 50% of smokers ‘reported not smoking in the company of children’, despite 78% agreeing that homes should be smokefree ‘when there are children around’.¹⁶ There are also gaps between behaviour and the general acceptance of rights for smokefree homes. Of 14–15 year old students with at least one parent who smoked, less than 45% reported having a smokefree home, despite over 80% acceptance by smokers of the right for a smokefree home.^{13,20}

Discussion

Limitations of the data—The data on the depth of knowledge about SHS effects are from regional surveys, and may not be generalisable to the rest of the country. Because of this, and the changes in knowledge and attitudes over time, there is an ongoing need for national data on these issues. There is also a need for surveys that seek unprompted responses to questions such as ‘what are the health effects of other peoples’ smoke’. These questions may be more effective in determining the depth of knowledge about SHS, compared to questions that prompt about particular health effects.

There is also a lack of New Zealand data on the perceptions of SHS harm compared to other causes of harm, the perceived immediacy or distance of SHS harm, the frequency of any prompts about SHS harm, and their effectiveness. Furthermore, because of the wide variance between the answers for different questions about attitudes to SHS in private places, there appears to be a need for much more detailed data on the way New Zealanders balance support for ‘rights’ to smokefree homes and their preferences for permitted smoking.

Key findings—While New Zealand adults’ awareness that SHS is harmful appears to have been high since 1988 or before, with generally less than 10% of the population

unaware of the harm since 1999, this impression may obscure considerable variance in the depth of knowledge about the harm.

The New Zealand data illustrate that when survey questions about attitudes to SHS restrictions include the context of rights to live in a smokefree setting, interviewees are much more likely to favour the smokefree approach. This result echoes New Zealand survey data about attitudes to smokefree workplaces, where survey questions that included the context of rights to be smokefree also produced higher levels of support.²¹ However, declared attitudes on the need for smokefree homes are not necessarily reflected in actions by smokers to reduce SHS exposure to others.

The depth of knowledge—The evidence of a varied depth of knowledge of SHS effects (depending on the groups asked and the questions used) is repeated elsewhere. In an Australian survey in 2000, there were large differences between the knowledge of SHS health effects—ranging from over 80% agreeing that there was an increased risk of lung cancer, child asthma, and child respiratory problems, to only 31% agreeing that there was an increased risk of child ear problems.²² The quality of knowledge about SHS effects is important, as behaviour about SHS depends on the depth of information available, and the emotional value of the information to the recipient, amongst other things.^{23,24}

The effect of knowledge and attitudes about SHS on actions—Elements which may effect smokers or non-smokers actions include their knowledge about SHS, their interest in SHS effects, their ability to make plans to act, and their ability to carry out any plans. For instance, they may know of some risks from SHS to children, but the risk is either outweighed by other immediate needs, or there is an indifference to that level of risk. The *possible and future* health effects of SHS often appear distant compared to the immediate need to end nicotine craving, or welcome a (smoking) guest.⁸ Smokers can use ‘self-exempting’ beliefs (varied forms of denial) to help reduce the contradictions between their knowledge of SHS risks, and their behaviour.²⁵

Smokers or non-smokers may be interested in SHS risks, but may be unable to make plans to act. They may have limited experience of others near them succeeding, have little experience of being able to persuade others to change behaviour, or be unable to break down the tasks into practical stages. The ‘costs’ of acting may be too great at particular times or overall, compared to the perceived benefits (the costs may be immediate and concrete, and benefits diffuse and in the future).

Factors in deciding actions include the severity and likelihood of perceived effects of SHS; the perceived benefits and costs of acting; the *proximity* of the threat or benefit; and the frequency of effective prompts about threats, benefits, and their proximity. Many of these factors are heavily dependent on context, such as the opinion of friends, experience, cues (smokefree notices, bans elsewhere), and emotions (e.g. due to experience of illness of children).⁸

Policy implications—Changing the behaviour of others in one’s household, especially smokers, is more difficult when there are higher numbers of smokers per household. Once there is some form of local majority in favour of smokefree homes (e.g. the majority of a personal circle), changing household behaviour is likely to become easier however. Thus a ‘critical mass’ is needed for the adoption of the idea.⁸ In turn, these local norms are generally influenced by societal norms.

The need for local and societal-wide change suggests the importance of further Government investment in mass media campaigns on SHS issues (to supplement the low intensity campaigns that have occurred in recent years in New Zealand). Evidence elsewhere indicates that exposure to such campaigns, within strong and comprehensive national tobacco control programs, can increase the likelihood of smokefree homes.^{4,26,27} This is supported by the strength of the evidence showing that, compared to many tobacco control interventions,²⁸ mass media campaigns (as part of comprehensive tobacco control programs) can decrease smoking prevalence cost-effectively.

However, the very low levels of resources invested in New Zealand tobacco control health promotion campaigns (which are largely mass media) may be below an adequate intensity threshold to be sufficiently effective. In the 2003–2004 year, for example, less than \$7 million was so invested by Government through the two main national agencies: the Health Sponsorship Council and the Quit Group (personal communication, J Muschamp, 2004).²⁹ This compares with, for instance, over \$31 million per year spend on road safety information and promotion.³⁰

Furthermore, annual tobacco-related deaths in New Zealand are over 10 times the level of road deaths.^{30,31} Thus, national-level health promotion spending to prevent deaths is under \$1400/death for tobacco control, compared to \$69,900/death for road safety. Indeed, in terms of the prevention of premature deaths, national tobacco control health promotion campaigns appears to be funded at a fiftieth or less of the rate for road safety.

Further actions needed to increase knowledge and change attitudes include the enforcement of existing New Zealand statute law by Government, so as to prevent the dissemination of misleading information on smoking and SHS by the tobacco industry.

Conclusions

While New Zealanders' knowledge about SHS effects has improved since 1989, this knowledge appears to remain shallow in quality. Survey data indicates that public support for smokefree homes has increased, but varies markedly with the type of question asked. Further reduction in SHS exposure in homes requires further changes in societal norms on such exposure. A greater investment to create supportive environments for smokefree homes and cars would help these changes, and facilitate a reduction in the substantial morbidity and mortality burden from SHS.

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References:

1. British American Tobacco New Zealand. Environmental tobacco smoke. Auckland: British American Tobacco New Zealand. Available online. URL: http://www.batnz.com/oneweb/sites/BAT_5LPJ9K.nsf/vwPagesWebLive/80256D0B004C1BC780256ABE005B6B21?opendocument&DTC=20040414 Accessed April 2005.
2. Barnes D, Bero L. Why review articles on the health effects of passive smoking reach different conclusions. *JAMA*. 1998;279:1566–70.
3. New Zealand Press Association. Tobacco giant asks for balanced approach to new smoking bans. *Dominion*. Wellington: 6 November 2002.
4. King KA, Vidourek RA, Creighton S, Vogel S. Smokers' willingness to protect children from secondhand smoke. *Am J Health Behav*. 2003;27:554–63.
5. Kennedy G, Bero L. Print media coverage of research on passive smoking. *Tob Control*. 1999;8:254–60.
6. Human Rights Commission. Access to Infertility Services: development of priority criteria: Submission to the National Health Committee. Wellington: Human Rights Commission; 1996. Available online. URL: <http://www.hrc.co.nz/index.php?p=13681&format=text&id=13741> Accessed April 2005.
7. Borland R, Mullins R, Trotter L, White V. Trends in environmental tobacco smoke restrictions in the home in Victoria, Australia. *Tob Control*. 1999;8:266–71.
8. Borland R. Theories of behavior change in relation to environmental tobacco smoke control to protect children. Geneva: World Health Organization International Consultation on Environmental Tobacco Smoke (ETS) and Child Health background paper series; 1999a. Available online. URL: <http://www.who.int/tobacco/media/en/borland.pdf> Accessed April 2005.
9. Weinstein N. Optimistic biases about personal risks. *Science*. 1989;246:1232–3.
10. Anonymous. Volume III of 'Summary and conclusions' to Heylen Research Institute survey 'Cigarette smoking and social pressures – New Zealand'. Guildford Archive: British American Tobacco; 1988. Bates Nos. 400459701–825.
11. National Research Bureau. Heart health behaviour of adult New Zealanders. Wellington: Department of Health; 1989.
12. National Research Bureau. Monitor of heart health behaviour of adult New Zealanders (second reading). Wellington: Department of Health; 1991.
13. Forsyte Research. TVC/Me Mutu Campaign Monitoring – First Baseline Report. Wellington: The Quit Group; 2001.
14. CM Research NZ Ltd. Auahi Kore/Smokefree Research Report. Wellington: Health Sponsorship Council; 2001.
15. NFO New Zealand. Auahi kore/Smokefree market research report prepared for Health Sponsorship Council. Wellington: NFO New Zealand; 2003.
16. Al-Delaimy W, Luo D, Woodward A, Howden-Chapman P. Smoking hygiene: a study of attitudes to passive smoking. *N Z Med J*. 1999;112:33–6.
17. Jones S, Love C, Thomson G, et al. Second-hand smoke at work: The exposure, perceptions and attitudes of bar and restaurant workers to environmental tobacco smoke. *Aust N Z J Public Health*. 2001;25:90–3.
18. Paterson J, Tukuitonga C, Butler S, Williams M. Awareness of sudden infant death syndrome risk factors among mothers of Pacific infants in New Zealand. *N Z Med J*. 2002;115:33–5.

19. Thomson G. The attitudes and knowledge about second hand smoke of the staff and owners of bar and eating places. Wellington: Department of Public Health, Wellington School of Medicine, University of Otago; 2001. Available online. URL: <http://www.ash.org.nz/pdf/SecondhandSmoke/HealthEffects/StaffOwners.pdf> Accessed April 2005.
20. Scragg R, Laugesen M, Robinson E. Parental smoking and related behaviours influence adolescent tobacco smoking: results from the 2001 New Zealand national survey of 4th form students. *N Z Med J*. 2003;116(1187). URL: <http://www.nzma.org.nz/journal/116-1187/707>
21. Thomson G, Wilson N. Public attitudes about tobacco smoke in workplaces – the importance of workers' rights in survey questions. *Tob Control*. 2004;14:206–7.
22. Walsh R, Tzelepis F, Paul C, McKenzie J. Environmental tobacco smoke in homes, motor vehicles and licensed premises: community attitudes and practices. *Aust N Z J Public Health*. 2002;26:536–42.
23. Blackburn C, Spencer N, Bonas S, et al. Effect of strategies to reduce exposure of infants to environmental tobacco smoke in the home: cross sectional survey. *BMJ*. 2003;327:257–61.
24. Gilpin E, White M, Farkas A, Pierce J. Home smoking restrictions: which smokers have them and how they are associated with smoking behavior. *Nicotine Tob Res*. 1999;1:153–62.
25. Green E, Courage C, Rushton L. Reducing domestic exposure to environmental tobacco smoke: a review of attitudes and behaviours. *J R Soc Health*. 2003;123:46–51.
26. Rohrbach L, Howard-Pitney B, Unger J, et al. Independent evaluation of the California Tobacco Control Program: relationships between program exposure and outcomes, 1996-1998. *Am J Public Health*. 2002;92:975–83.
27. Gilpin E, Farkas A, Emery S, et al. Clean indoor air: advances in California, 1990-1999. *Am J Public Health*. 2002;92:785–91.
28. Hopkins D, Briss P, Ricard C, et al. Reviews of evidence regarding interventions to reduce tobacco use and exposure to environmental tobacco smoke. *Am J Prev Med*. 2001;20:16–66.
29. Health Sponsorship Council. Annual report 2003-2004. Wellington: Health Sponsorship Council; 2004, p34.
30. Land Transport Safety Authority. Annual report 2003-2004. Wellington: Land Transport Safety Authority, 2004, p11,64.
31. Ministry of Health. Looking Upstream: Causes of death cross-classified by risk and condition, New Zealand 1997. Public Health Intelligence Occasional Bulletin Number 20. March 2004. Wellington: Ministry of Health, p.8. Available online. URL: http://www.moh.govt.nz/moh.nsf/wpg_Index/Publications-Looking+Upstream Accessed April 2005.