

Recall of anti-tobacco advertising and information, warning labels and news stories in a national sample of Aboriginal and Torres Strait Islander smokers

Television advertisements and warning labels on tobacco products are the most commonly cited sources of information on the dangers of smoking.^{1,2} There is good evidence that messages about the harms of smoking increase knowledge, worry about health risks, attempts to quit, and even quit success.³⁻⁷ These messages aim to either change pro-smoking attitudes and intentions or strengthen those that support quitting.⁸

Smoking is the leading cause of sickness and death among Aboriginal and Torres Strait Islander peoples.⁹ To tackle this, funding was established in 2009 for community-led programs that raise awareness, provide education and challenge norms about smoking.¹⁰ Australia also launched its first national Indigenous Anti-Smoking Campaign ("Break the Chain") in March 2011.¹¹ These targeted programs ran alongside the National Tobacco Campaign, state and territory campaigns, and other sources of information, such as news media. In addition, plain packaging of tobacco products, with new and larger warning labels, was mandated from 1 December 2012.¹²

Some experts doubt the effectiveness of mainstream messages in reducing smoking among Aboriginal and Torres Strait Islander peoples.¹³ While culturally relevant messages are preferred,¹⁴ mainstream media campaigns achieve high recall,¹⁵⁻¹⁷ including in remote areas.^{17,18} Here, we describe recall of anti-tobacco advertising and information (mainstream and targeted), pack warning labels and news stories among Aboriginal and Torres Strait Islander smokers, and assess the association of these messages with attitudes that support quitting.

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Abstract

Objectives: To describe recall of anti-tobacco advertising (mainstream and targeted), pack warning labels, and news stories among a national sample of Aboriginal and Torres Strait Islander smokers, and to assess the association of these messages with attitudes that support quitting, including wanting to quit.

Design, setting and participants: A quota sampling design was used to recruit participants from communities served by 34 Aboriginal community-controlled health services and one community in the Torres Strait. We surveyed 1643 Aboriginal and Torres Strait Islander smokers from April 2012 to October 2013.

Main outcome measures: Frequency of recall of advertising and information, warning labels and news stories; recall of targeted and local advertising; attitudes about smoking and wanting to quit.

Results: More smokers recalled often noticing warning labels in the past month (65%) than recalled advertising and information (45%) or news stories (24%) in the past 6 months. When prompted, most (82%) recalled seeing a television advertisement. Just under half (48%) recalled advertising that featured an Aboriginal or Torres Strait Islander person or artwork (targeted advertising), and 16% recalled targeted advertising from their community (local advertising). Frequent recall of warning labels, news stories and advertising was associated with worry about health and wanting to quit, but only frequent advertising recall was associated with believing that society disapproves of smoking. The magnitude of association with relevant attitudes and wanting to quit increased for targeted and local advertising.

Conclusions: Strategies to tackle Aboriginal and Torres Strait Islander smoking should sustain high levels of exposure to anti-tobacco advertising, news stories and warning labels. More targeted and local information may be particularly effective to influence relevant beliefs and subsequently increase quitting.

Methods

Survey design and participants

The Talking About The Smokes (TATS) project surveyed 1643 current smokers from April 2012 to October 2013 (Wave 1, or baseline), and has been described in detail elsewhere.^{19,20} Briefly, we used a quota sampling design to recruit participants from communities served by 34 Aboriginal community-controlled health services (ACCHSs) and one community in the Torres Strait (project sites), which were selected based on the population distribution of Aboriginal and Torres Strait Islander people by state or territory and remoteness. In most

sites (30/35), we aimed to interview a sample of 50 smokers or recent quitters (ex-smokers who had quit ≤ 12 months previously), with even numbers of men and women, and people aged 18–34 and ≥ 35 years. The sample size was doubled in four large city sites and in the Torres Strait community. People were excluded if they did not identify as Aboriginal or Torres Strait Islander, were under 18 years of age, were not usual residents of the area, were staff of the ACCHS, were unable to complete the survey in English if there was no interpreter available, or if the quota for the relevant age–sex–smoking category had been filled. In each site, different locally determined methods were used

to collect a representative, albeit non-random, sample.

Interviews were conducted face to face by trained interviewers, almost all of whom were members of the local Aboriginal and Torres Strait Islander community. The survey, entered directly onto a computer tablet, took 30–60 minutes to complete. A single survey of health service activities was also completed for each project site.

The baseline sample closely matched the sample distribution of the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) by age, sex, jurisdiction and remoteness, and by number of cigarettes smoked per day for current daily smokers. However, there were inconsistent differences in some socioeconomic indicators: our sample had higher proportions of unemployed people, but also higher proportions who had completed Year 12 and who lived in more advantaged areas.¹⁹

The project was approved by three Aboriginal human research ethics committees (HRECs) and two HRECs with Aboriginal subcommittees: Aboriginal Health & Medical Research Council Ethics Committee, Sydney; Aboriginal Health Research Ethics Committee, Adelaide; Central Australian HREC, Alice Springs; HREC for the Northern Territory Department of Health and Menzies School of Health Research, Darwin; and the Western Australian Aboriginal Health Ethics Committee, Perth.

Questions on health information exposure

As the TATS project is part of the International Tobacco Control Policy Evaluation Project (ITC Project), survey questions were based on ITC Project survey questions and are presented in Appendix 1. How often respondents noticed warning labels (in the past month), anti-tobacco news stories (in the past 6 months) and anti-tobacco advertising or information (in the past 6 months) was assessed on a five-point scale ranging from “never” to “very often”, which was later collapsed to three categories (never, sometimes, often).

Smokers who said they had never noticed advertising or information (hereafter collectively referred to as advertising) in the past 6 months were not asked further related questions. Smokers who had noticed advertising were asked whether it was on: television, radio, the internet, outdoor billboards, newspapers or magazines, shops or stores, pamphlets, and posters in various locations (yes or no). Those who recalled noticing advertising in the past 6 months were also asked whether any had featured an Aboriginal or Torres Strait Islander person or artwork (“targeted advertising”) and, if so, whether any featured an Aboriginal or Torres Strait Islander person or artwork from the local community (“local advertising”). We combined these responses to create the variable “type of advertising”, which categorised smokers as having: never noticed any advertising, noticed mainstream (but no targeted) advertising, noticed some targeted (but no local) advertising, or noticed some local advertising.

Main outcome measures and covariates

There were four main outcomes: believing smoking is dangerous to others (“agree” or “strongly agree” that cigarette smoke is dangerous to both non-smokers and children), being very worried that smoking will damage the smoker’s own health in the future, agreeing that mainstream society disapproves of smoking, and wanting to quit. Additional analyses were conducted on forgoing cigarettes because of warning labels.

Covariates included daily or non-daily smoking status and key sociodemographic indicators (sex, age, identification as Aboriginal and/or Torres Strait Islander, labour force status, education, remoteness and area-level disadvantage). We also assessed for variation according to tobacco control activity that had occurred at the project site over the previous year (whether there were dedicated tobacco control resources, and the number of media used to communicate anti-tobacco advertising), which was determined in the project site survey.

We also assessed differences in warning label recall before and after plain packaging was mandated (1 December 2012), treating the 3-month phase-in period as “before”.

Statistical analyses

Logistic regression was used to assess: (i) variation in health information recall (often v sometimes or never) by daily smoking status, sociodemographic variables, and tobacco control activity at the project site; (ii) the association between health information recall and the four main outcome measures; and (iii) variation in warning label recall and outcomes before and after plain packaging was mandated. Stata 13 (StataCorp) survey [SVY] commands were used to adjust for the sampling design, identifying the 35 project sites as clusters and the quotas (based on age, sex and smoking status) as strata.²¹

Data for health information recall were excluded for less than 2% of participants due to missing or refused responses, and for less than 2% due to “don’t know” responses. Questions about recall of warning labels were not asked of those who had not smoked in the past month ($n=44$), nor those surveyed at the first project site ($n=26$), after which questions were modified. These participants were therefore excluded from logistic regression analyses, which controlled for recall of each other type of health information, survey month (collapsed into 2-month blocks), daily smoking status and other sociodemographic covariates. Regression analyses for wanting to quit excluded a further 4.8% of smokers who responded “don’t know” to this question.

Results

Recall of health information

Of smokers who were asked about warning labels, 65% (1015/1557) said they had often noticed warning labels in the past month (Box 1). This was higher than the proportion of all smokers who recalled often noticing anti-tobacco advertising (45%; 730/1606) or news stories (24%; 386/1601) in the past 6 months.

Frequent recall of health information was similar for daily and non-daily smokers (Appendix 2). Fewer men than women reported often noticing warning labels (odds ratio [OR], 0.68; 95% CI, 0.51–0.90) and news stories (OR, 0.71; 95% CI, 0.51–1.00). While smokers from remote areas were less likely than those in major cities to recall often noticing advertising (OR, 0.56; 95% CI, 0.37–0.84), they were more likely to recall often noticing news stories (OR, 1.81; 95% CI, 1.18–2.79) and did not differ for recall of warning labels. Being from an area where the health service used a greater range of advertising media was associated with noticing it more often, with ORs increasing from 2.02 (95% CI, 1.15–3.57) for 5–8 media to 3.17 (95% CI, 1.84–5.46) for 9–12 media, compared with areas that used four or fewer media.

Associations with attitudes and wanting to quit

Recall of warning labels, advertising and news stories was positively associated with being very worried about future health and wanting to quit (Box 2). Only advertising recall was positively associated with believing society disapproves of smoking. For each outcome, the magnitude of ORs increased for those who recalled more targeted and local advertising, although this association was only significant for believing cigarette smoke is dangerous to others and wanting to quit.

Outcomes for warning labels before and after plain packaging

Compared with smokers surveyed in the period before plain packaging, those surveyed after its introduction were similarly likely to recall noticing warning labels but had higher odds for believing the labels made them more likely to quit (OR, 1.37; 95% CI 1.02–1.82) (Appendix 3). Smokers who had noticed warning labels in the past month were more likely to say these labels led them to forgo at least one cigarette after plain packaging compared with before it (OR, 1.54; 95% CI, 1.14–2.09). Further, those who said warning labels led them to forgo at least one cigarette were more

1 Exposure to health information in a national sample of Aboriginal and Torres Strait Islander smokers*

Health information exposure variables	% (frequency) [†]
Warning labels (in past month)	
How often have you noticed the warning labels on packs your smokes are sold in?	
Never	11% (164)
Almost never or sometimes	24% (378)
Often or very often	65% (1015)
Have the warning labels stopped you from having a smoke when about to?	
Never noticed warning labels	10% (164)
Noticed warning labels but never stopped	55% (887)
Noticed warning labels and stopped at least once	34% (550)
News stories (in past 6 months)	
How often have you seen or heard a news story about smoking or quitting?	
Never	30% (477)
Almost never or sometimes	46% (738)
Often or very often	24% (386)
Advertising and information (in past 6 months)	
How often have you noticed anti-tobacco advertising or information?	
Never	15% (241)
Almost never or sometimes	40% (635)
Often or very often	45% (730)
Noticed any targeted advertising	
Yes	48% (783)
No or never noticed advertising	46% (745)
Don't know	6% (96)
Noticed any local advertising	
Yes	16% (258)
No or never noticed mainstream or targeted advertising	74% (1195)
Don't know	11% (171)
Did you notice advertising or information: [‡]	
On television	82% (1327)
On the radio	43% (690)
On the internet, including social media sites	25% (390)
On outdoor billboards	45% (706)
In newspapers or magazines	47% (751)
On shop windows or in shops where tobacco is sold (at point of sale)	43% (679)
In leaflets or pamphlets	55% (877)
Posters or displays at local health service	74% (1186)
Posters or displays at other Aboriginal or Torres Strait Islander organisation	67% (1051)
Posters or displays at local festival or community event	59% (921)

*Results are from the Talking About The Smokes baseline sample of current smokers ($n=1643$, or $n=1573$ for questions regarding recall of warning labels). [†]Except where specified (for targeted and local advertising), percentages and frequencies exclude refused and "don't know" responses, which accounts for differences in the total. [‡]Results are percentages of all smokers, including those who had never seen advertising or information in the past 6 months. ◆

likely to want to quit (OR, 3.73; 95% CI, 2.63–5.29) (data not shown).

Discussion

Advertising and information

We found high levels of recall of anti-tobacco advertising and information, particularly for television campaigns

and local health promotion materials, which is likely to have been boosted by the community-led tobacco control activity that occurred over the survey period. However, even with this heightened activity, smokers from remote areas were less likely to say they often noticed advertising, consistent with trends for national mass media exposure.²² Recall of mass media advertising has been shown to increase

2 Association of health information exposure with attitudes in a national sample of Aboriginal and Torres Strait Islander smokers*

	Believe smoking is dangerous to others		Very worried smoking will damage own health		Believe mainstream society disapproves of smoking		Want to quit smoking	
	% (frequency) [†]	AOR (95% CI) [‡]	% (frequency) [†]	AOR (95% CI) [‡]	% (frequency) [†]	AOR (95% CI) [‡]	% (frequency) [†]	AOR (95% CI) [‡]
Noticed warning labels (in past month)		<i>P</i> < 0.001		<i>P</i> < 0.001		<i>P</i> = 0.45		<i>P</i> < 0.001
Never	77% (126)	1.0	14% (22)	1.0	58% (95)	1.0	45% (71)	1.0
Sometimes	86% (325)	1.54 (0.93–2.56)	20% (75)	1.41 (0.81–2.44)	55% (209)	1.01 (0.67–1.54)	58% (204)	1.31 (0.82–2.07)
Often	94% (953)	3.56 (2.16–5.86)	44% (442)	3.44 (2.14–5.53)	64% (650)	1.21 (0.80–1.81)	78% (755)	2.90 (1.85–4.52)
Noticed news stories (in past 6 months)		<i>P</i> = 0.12		<i>P</i> = 0.002		<i>P</i> = 0.12		<i>P</i> = 0.03
Never	90% (427)	1.0	25% (118)	1.0	64% (306)	1.0	59% (271)	1.0
Sometimes	91% (668)	0.58 (0.35–0.97)	34% (250)	1.56 (1.16–2.08)	59% (438)	0.75 (0.56–1.00)	71% (491)	1.40 (1.07–1.82)
Often	93% (359)	0.67 (0.37–1.24)	49% (187)	1.84 (1.30–2.61)	66% (254)	0.73 (0.51–1.05)	81% (297)	1.61 (1.05–2.47)
Noticed advertising (in past 6 months)		<i>P</i> = 0.004		<i>P</i> < 0.001		<i>P</i> < 0.001		<i>P</i> = 0.002
Never	82% (197)	1.0	18% (42)	1.0	58% (139)	1.0	48% (112)	1.0
Sometimes	91% (580)	2.26 (1.31–3.88)	29% (179)	1.10 (0.70–1.73)	56% (356)	1.08 (0.74–1.57)	68% (403)	1.57 (1.12–2.18)
Often	94% (684)	2.78 (1.47–5.26)	47% (342)	2.02 (1.29–3.17)	70% (510)	2.07 (1.31–3.27)	79% (548)	2.17 (1.42–3.31)
Type of advertising (in past 6 months)[§]		<i>P</i> = 0.006		<i>P</i> = 0.25		<i>P</i> = 0.60		<i>P</i> < 0.001
Never noticed any advertising	82% (197)	1.0	18% (42)	1.0	58% (139)	1.0	48% (112)	1.0
Noticed mainstream (but no targeted) advertising	91% (522)	1.94 (1.09–3.46)	32% (181)	1.00 (0.62–1.60)	60% (345)	1.00 (0.67–1.48)	65% (354)	1.27 (0.91–1.78)
Noticed some targeted (but no local) advertising	93% (489)	2.58 (1.39–4.80)	43% (224)	1.15 (0.72–1.83)	66% (347)	1.13 (0.74–1.74)	77% (388)	1.99 (1.30–3.04)
Noticed some local advertising	95% (245)	3.63 (1.58–8.38)	44% (112)	1.34 (0.79–2.27)	66% (170)	1.24 (0.79–1.97)	84% (202)	2.88 (1.76–4.72)

AOR = adjusted odds ratio. * Results are based on the Talking About The Smokes project baseline sample of current smokers who had smoked in the past month ($n = 1573$).

† Percentages and frequencies exclude refused and “don’t know” responses. ‡ AORs are adjusted for daily smoking status, key sociodemographic variables (age, sex, Indigenous status, labour force status, highest level of education, remoteness and area-level disadvantage), noticing other types of health information, and survey month (in 2-month blocks). *P* values are reported for overall variable significance, using adjusted Wald tests. § In addition to other covariates, analyses for type of advertising are also adjusted for frequency of advertising recall (often v sometimes or never). ◆

with broadcast intensity,^{23–25} which is fundamental to achieving good reach among smokers of low socioeconomic status.^{6,25–27} Broadcast intensity is also important for influencing quitting activity and success.^{5,6,22,25,28,29}

It is notable that targeted and local advertising was associated with higher levels of motivation to quit, a novel finding as far as we are aware. In part, targeted campaigns may be more memorable purely because of the interest in their targeted or local nature,³⁰ which could be expected to weaken the observed relationship with wanting to quit. On the contrary, our results show the association

increased in magnitude for recall of more targeted and local information, which suggests it is more potent than mainstream advertising. This finding is supported by analyses presented elsewhere in this supplement.³¹ While it is possible that the observed relationship could be due to higher exposure to all types of advertising, it remained significant irrespective of how often advertising was noticed.

Aboriginal and Torres Strait Islander peoples perceive targeted messages to be more relevant and effective,^{14,15,30} which may affect the influence of these messages on relevant attitudes. Among Maori people in New

Zealand, culturally relevant campaigns have been shown to prompt discussions about smoking³² — an indirect effect of advertising that increases interest in quitting.³³ While there is clear justification for targeted messages, together with emerging evidence regarding their benefit, consideration must also be given to whether this strategy is an effective use of scarce resources.³⁴

Elsewhere, attitudes and intentions have been found to be most strongly influenced by advertising that evokes an emotional response, such as graphic or story-based messages.^{6,25,35} Such messages are rated

highly by Aboriginal and Torres Strait Islander people and non-Indigenous Australians alike,¹⁴ and may also be an effective way to reduce disparities in quitting.³⁶ How to best balance mainstream and targeted (including locally led) advertising will be an important area for future research.

Warning labels

We found that forgoing cigarettes was strongly associated with wanting to quit, as has been found in other settings,^{37,38} and that smokers were more likely to forgo cigarettes in the period after plain packaging was mandated than before. Although our before and after samples were not in any way random, the evidence is supportive of health warnings and plain packaging playing a role in maintaining concern about smoking. This is one of the aims of Australia's plain packaging legislation, which increased the size of graphic warning labels, stripped all branding and regulated a drab brown pack colour.¹²

There is recent evidence that plain packaging increases the salience and effectiveness of health warnings.³⁹⁻⁴¹ Our findings confirm these findings in a minority population with a high smoking prevalence. Further, our finding that warning label recall was not socially patterned adds to scarce evidence on the socioeconomic impacts of graphic pack warning labels, which has been identified as an international priority for tobacco control research.^{6,42}

News stories

Frequent recall of news stories was related to higher levels of worry about health and interest in quitting, which supports previous findings that news items can complement paid sources of communication.^{6,43} We found no evidence of a social gradient in recall of news stories; in fact, they were more likely to be noticed often by smokers from remote areas. Online platforms to share and discuss news could play an important role here, and have been used effectively for Aboriginal tobacco control news and advocacy efforts.⁴⁴ Local stories and those about

leaders and other role models may be particularly influential.^{45,46}

Strengths and limitations

This article draws on data from a broadly representative national sample of Aboriginal and Torres Strait Islander smokers. The size of the sample has enabled us to consider subgroup analyses based on socioeconomic indicators and other participant characteristics, including remoteness of residence. The frequency at which health promotional materials were recalled is likely to have been inflated by biased recruitment of project sites that prioritised tobacco control and of participants who were more connected to the health service. Although this means we cannot generalise results about how often different types of advertising and information were recalled, it does not compromise the findings on whether more frequent recall is associated with relevant attitudes and intentions.

The main limitation of our study is its reliance on self-report of awareness. It does not incorporate more objective media market data, as these would not capture some of the local activity and would therefore have been a limited source of information beyond the main media markets. Awareness can be affected by opportunity for exposure, the potency of the material, and the openness of the individual to the message. While it is impossible to separate these entirely, it is possible to infer likely relative contributions. For example, warning labels on packs are roughly equally available (albeit affected by levels of consumption) and are of largely fixed (standardised) potency. Thus, differences in recall and reactions can be largely attributed to the openness of the individual to the label's message. When assessing associations with attitudes or intentions, we adjusted for noticing other types of health information (to control for variability due to openness) and for socioeconomic indicators (to control for variability due to opportunity for exposure), with the rationale that associations independent of these influences were a better assessment of potency. However, campaign effects are difficult to

disentangle from other tobacco control efforts and contextual factors,³ particularly when using cross-sectional data. As such, a multivariable model that considers these factors has been reported in detail elsewhere for the outcome of wanting to quit.³¹

Finally, we report adjusted analyses, which necessarily exclude a small proportion of smokers who declined to answer questions, answered "don't know", had not smoked in the past month or were surveyed at the first project site. While it is possible that the excluded participants differ from those who were included, the same pattern of results was observed for unadjusted associations (where there were fewer exclusions) and where outcomes with a high percentage of "don't know" responses (eg, wanting to quit) were repeated with "don't know" recoded as "no".

With these limitations in mind, we found a clear link between more frequent recall of health information and attitudes that support quitting, including wanting to quit. Further research is required to assess whether more targeted information is better able to tap into relevant beliefs and subsequently increase quitting.

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