Smoke-free homes and workplaces of a national sample of Aboriginal and Torres Strait Islander people

Abstract

Objective: To examine Aboriginal and Torres Strait Islander people's protection from second-hand smoke at home and work.

Design, setting and participants: The Talking About The Smokes project surveyed 2522 Aboriginal and Torres Strait Islander people from communities served by 34 Aboriginal community-controlled health services and one community in the Torres Strait, using quota sampling, from April 2012 to October 2013. We made comparisons with data from Australian smokers in the International Tobacco Control Policy Evaluation Project (ITC Project), collected from either July 2010 to May 2011 or September 2011 to February 2012.

Main outcome measures: Whether smoking was not allowed anywhere in the home, or not allowed in any indoor area at work.

Results: More than half (56%) of Aboriginal and Torres Strait Islander smokers and 80% of non-smokers reported that smoking was never allowed anywhere in their home. Similar percentages of daily smokers in our sample and the Australian ITC Project data reported bans. Most employed Aboriginal and Torres Strait Islander daily smokers (88%) reported that smoking was not allowed in any indoor area at work, similar to the Australian ITC Project estimate. Smokers working in smoke-free workplaces were more likely to have smoke-free homes than those in workplaces where smoking was allowed indoors (odds ratio, 2.85; 95% CI, 1.67–4.87). Smokers who lived in smoke-free homes were more likely to have made a quit attempt in the past year, to want to quit, and to have made quit attempts of 1 month or longer.

Conclusion: Most Aboriginal and Torres Strait Islander people are protected from second-hand smoke at work, and similar proportions of Aboriginal and Torres Strait Islander smokers and other Australian smokers do not allow smoking inside their homes.

Second-hand smoke was estimated to cause more than 600 000 deaths globally in 2004, mainly from ischaemic heart disease, respiratory infections, asthma and lung cancer.[1] Protecting people from the dangers of second-hand smoke by banning smoking in indoor and other public places is an essential element of effective tobacco control programs.[2]

Smoking is banned in virtually all enclosed public places in Australia.[3] More than 92% of Australian smokers and ex-smokers reported that smoking was not allowed in any indoor area at their workplace in 2010–2011, slightly less than in similar surveys in the United Kingdom and Canada but more than in the United States and European and middle- and low-income countries surveyed.[4] In Australia[5] and all countries with available trend data, the proportion of the population living in smoke-free homes is increasing; this is not just due to falling smoking prevalence.[6]

Forty-two per cent of Aboriginal and Torres Strait Islander people aged 15 years or older were daily smokers in 2012–2013, 2.6 times the age-standardised prevalence among other Australians.[7] This is a decrease from 45% in 2008 and 49% in 2002, a similar rate of decline as among other Australians.[7] In 2008, Aboriginal and Torres Strait Islanders who smoked daily were less likely than other Australians to live in homes where no one usually smoked inside (56% v 68%).[5] Aboriginal and Torres Strait Islander smokers with lower household incomes were significantly more likely to live in homes where someone usually smoked inside.[5]

Here, we provide the first national picture of smoking bans in the workplaces of Aboriginal and Torres Strait Islander people. We also describe whether home smoking bans were always followed and assess the associations between smoke-free workplaces and homes and quitting.

Methods

The Talking About The Smokes (TATS) project surveyed 2522 Aboriginal and Torres Strait Islander people using a quota sampling design in the communities served by 34 Aboriginal community-controlled health services (ACCHSs) and one community in the Torres Strait, and has been described elsewhere.[8,9] Briefly, the 35 sites were selected based on the geographic distribution of the Aboriginal and Torres Strait Islander population by state or territory and remoteness. In 30 sites, we aimed to interview 50 smokers or ex-smokers who had quit ⩽12 months before, and 25 non-smokers, with equal numbers of women and men and in each of two age groups (18–34 and ⩾35 years). In four major-city sites and the Torres Strait community, the sample sizes were doubled. People were excluded if they were aged less than 18 years, not usual residents of the area, staff of the ACCHS, or deemed unable to complete the survey. In each site, different locally determined methods were used to collect a representative, although not random, sample.

Baseline data were collected from April 2012 to October 2013. 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 was completed on a computer tablet and took 30–60 minutes. The baseline sample closely matched the distribution of

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1 Smoking bans in homes and workplaces*

	Australian ITC Project†	Talking About The Smokes project			
	Daily smokers, % (95% CI)	Daily smokers, % (frequency)	Non-daily smokers, % (frequency)	Ex-smokers, % (frequency)	Never-smokers, % (frequency)
Home (*n*)	1010	1377	251	310	568
Total smoking ban	53.4% (47.7%–59.0%)	53% (735)	69% (173)	79% (246)	80% (455)
Partial smoking ban	31.0% (25.7%–36.8%)	23% (313)	18% (46)	15% (46)	14% (80)
No ban	15.7% (11.7%–20.6%)	24% (329)	13% (32)	6% (18)	5% (31)
Work (*n*)	604	461	89	131	284
Total indoor ban	88.5% (80.9%–93.3%)	88% (406)	89% (79)	95% (124)	93% (263)
Partial indoor ban	4.5% (2.0%–10.0%)	6% (27)	11% (10)	2% (2)	4% (11)
No ban	7.0% (3.3%–14.3%)	6% (28)	0	4% (5)	4% (10)

ITC Project = International Tobacco Control Policy Evaluation Project. * Percentages and frequencies exclude refused responses and "don't know" responses, or when not applicable. † Australian ITC Project results are from Wave 8.5 (home), conducted September 2011 to February 2012, and Wave 8 (work), conducted July 2010 to May 2011, and were age- and sex-standardised to smokers in the 2008 National Aboriginal and Torres Strait Islander Social Survey. ◆

age, sex, jurisdiction, remoteness, quit attempts in past year and number of daily cigarettes smoked reported in the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS). 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.[8] A single survey of health service activities, including whether there were dedicated tobacco control resources, was completed at each site.

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.

As the TATS project is part of the International Tobacco Control Policy Evaluation Project (ITC Project), interview questions were closely based on those in other ITC Project studies, especially the Australian ITC surveys.[10] We asked questions about whether smoking was allowed inside the home, and whether people smoked inside even if it was not allowed. For those with either an incomplete smoking ban or a complete ban where people still smoked inside the house, we asked if participants were uncomfortable telling elders or community leaders, other visitors or other household members to smoke outside. For participants who were employed, we asked about smoking rules in indoor areas at work. The questions used in this article are listed in Appendix 1.

Results were compared with those from the Australian ITC Project surveys conducted in September 2011 to February 2012 (Wave 8.5, $n = 1504$) or July 2010 to May 2011 (Wave 8, $n = 1513$). These surveys were completed by random digit telephone dialling or on the internet, and included those contacted for the first time and those who were recontacted after completing surveys in previous waves. Only smokers were recruited, so these samples only included smokers and ex-smokers who had quit since previous waves. Slightly different definitions of smokers between the TATS project and ITC Project surveys meant that only daily and weekly smoker categories were directly comparable. We focused our comparisons on daily smokers.

Statistical analyses

We calculated the percentages and frequencies of responses to the TATS project questions, but did not include confidence intervals for these as it is not considered statistically acceptable to estimate sampling error in non-probabilistic samples. We compared results for daily smokers with those from Australian ITC Project surveys, which were directly standardised to the distribution of age and sex of Aboriginal and Torres Strait Islander smokers reported in the 2008 NATSISS.

Associations between the outcome variables and sociodemographic and smoking variables were assessed using logistic regression to generate odds ratios (ORs) and *P* values based on Wald tests. Stata 13 (StataCorp) survey [SVY] commands were used to adjust for the sampling design, using 35 site clusters, and the age–sex quotas as strata.[11]

Reported percentages and frequencies exclude participants who refused to answer, answered "don't know", or for whom the question was not applicable (eg, not employed or no indoor area at work). Less than 1% answered "don't know" or refused to answer each of the questions analysed in this report, except for questions about being uncomfortable telling others to smoke outside, being treated unfairly, quit attempts and wanting to quit. However, even the least completely answered of these questions, about wanting to quit, had only 79 participants (4.8%) who answered "don't know" and 11 (0.7%) who refused to answer.

Results

Smoke-free homes

More than half of smokers (56%, 908/1628) and 80% (701/876) of

non-smokers reported that smoking was never allowed anywhere in their home. Non-daily smokers (69%; OR, 1.94; 95% CI, 1.45–2.58), ex-smokers (79%; OR 3.36; 95% CI, 2.50–4.51) and never-smokers (80%; OR, 3.58; 95% CI, 2.84–4.52) were significantly more likely to report such bans than were daily smokers (53%) (Box 1). A similar age–sex-standardised percentage of Australian daily smokers (53.4%) reported total home smoking bans in Wave 8.5 of the Australian ITC Project study.

Of the smokers who reported that smoking was never allowed inside, 10% (91/903) said that some people still smoked inside regardless. So, 50% (812/1623) reported an effective total ban, and 28% (450/1623) a partial ban (including a total ban that was not fully effective), while 22% (361/1623) reported that smoking was allowed anywhere inside. Of those with a partial ban, 51% (225/442) reported being uncomfortable telling elders or community leaders (190/439; 43%), visitors (154/443; 35%) or other householders (125/442; 28%) to smoke outside. Of the respondents with no ban, 59% (213/363) reported it would be possible to stop people smoking inside, but 53% of these (114/215) reported that they would have to make some exceptions.

Smokers who were significantly more likely to report an effective total home smoking ban included non-daily smokers, employed people, Torres Strait Islanders and people who were both Torres Strait Islander and Aboriginal (v Aboriginal people), people aged 18–24 years (v those aged 45 years or over), people with children in their home, those who had finished Year 12 or had post-secondary educational qualifications (v those with less than Year 12), and those who did not feel they had been treated unfairly in the past year because they were Aboriginal or Torres Strait Islander (Box 2). There was no significant association between sex, remoteness or area-level disadvantage and having an effective ban.

Smoke-free workplaces

Most employed Aboriginal and Torres Strait Islander daily smokers (406; 88%) reported that smoking was not allowed in any indoor area at work, similar to the standardised estimate in Wave 8 of the Australian ITC Project study (88.5%) (Box 1). Remoteness and area-level disadvantage were significantly associated with non-smokers not being protected by a workplace indoor smoking ban (Box 3). Smokers working in

2 Aboriginal and Torres Strait Islander smokers with effective home smoking bans,* by sociodemographic factors ($n = 1643$)

Characteristic	% (frequency)†	Odds ratio (95% CI)	P‡
Total	50% (812)		
Age (years)			
18–24	56% (193)	1.0	< 0.001
25–34	55% (242)	0.95 (0.71–1.28)	
35–44	51% (199)	0.79 (0.54–1.16)	
45–54	38% (102)	0.47 (0.31–0.70)	
⩾55	43% (76)	0.58 (0.39–0.86)	
Sex			
Female	53% (441)	1.0	0.15
Male	47% (371)	0.81 (0.61–1.08)	
Number of infants in home			
None	47% (670)	1.0	< 0.001
One or more	69% (139)	2.49 (1.79–3.48)	
Number of children in home			
None	39% (267)	1.0	< 0.001
One or more	58% (540)	2.11 (1.68–2.65)	
Indigenous status			
Aboriginal	49% (699)	1.0	0.04
Torres Strait Islander or both	60% (113)	1.61 (1.03–2.52)	
Labour force status			
Employed	56% (318)	1.0	0.02
Unemployed	47% (260)	0.69 (0.52–0.91)	
Not in labour force	47% (232)	0.70 (0.53–0.94)	
Highest education attained			
Less than Year 12	44% (371)	1.0	< 0.001
Finished Year 12	57% (246)	1.69 (1.30–2.21)	
Post-school qualification	56% (193)	1.58 (1.16–2.15)	
Treated unfairly because Indigenous in past year			
No	54% (369)	1.0	0.01
Yes	47% (425)	0.75 (0.60–0.93)	
Smoking status			
Daily smoker	48% (660)	1.0	0.003
Non-daily smoker	61% (152)	1.68 (1.20–2.34)	
Remoteness			
Major cities	52% (220)	1.0	0.66
Inner and outer regional	50% (412)	0.93 (0.68–1.27)	
Remote and very remote	47% (180)	0.82 (0.53–1.26)	
Area-level disadvantage			
1st quintile (most disadvantaged)	51% (325)	1.0	0.30
2nd and 3rd quintiles	51% (348)	1.01 (0.74–1.37)	
4th and 5th quintiles	45% (139)	0.78 (0.52–1.15)	
Local health service has dedicated tobacco control resources			
No	52% (244)	1.0	0.55
Yes	49% (568)	0.91 (0.67–1.25)	

* An effective total ban is when smoking is both never allowed and never occurs. † Percentages and frequencies exclude refused responses and "don't know" responses, or when not applicable. ‡ Wald test for each variable. ◆

3 Aboriginal and Torres Strait Islander employed non-smokers with total indoor smoking bans at work, by sociodemographic factors ($n = 417$)

Characteristic	% (frequency)*	Odds ratio (95% CI)	P†
Total	93% (387)		
Age (years)			
18–24	95% (105)	1.0	0.17
25–34	89% (90)	0.47 (0.17–1.26)	
35–44	96% (92)	1.31 (0.35–4.92)	
45–54	96% (67)	1.28 (0.32–5.07)	
⩾55	89% (33)	0.47 (0.12–1.81)	
Sex			
Female	95% (204)	1.0	0.10
Male	91% (183)	0.50 (0.22–1.14)	
Indigenous status			
Aboriginal	94% (349)	1.0	0.43
Torres Strait Islander or both	90% (38)	0.65 (0.23–1.90)	
Highest education attained			
Less than Year 12	94% (103)	1.0	0.99
Finished Year 12	94% (118)	1.00 (0.32–3.13)	
Post-school qualification	93% (165)	0.93 (0.32–2.72)	
Treated unfairly because Indigenous in past year			
No	95% (193)	1.0	0.35
Yes	92% (188)	0.67 (0.29–1.55)	
Smoking status			
Ex-smoker	95% (124)	1.0	0.43
Never-smoker	93% (263)	0.71 (0.30–1.67)	
Remoteness			
Major cities	95% (116)	1.0	0.01
Inner and outer regional	96% (197)	1.13 (0.40–3.18)	
Remote and very remote	85% (74)	0.29 (0.11–0.80)	
Area-level disadvantage			
1st quintile (most disadvantaged)	88% (111)	1.0	0.02
2nd and 3rd quintiles	97% (202)	3.90 (1.50–10.1)	
4th and 5th quintiles	93% (74)	1.67 (0.61–4.56)	

* Percentages and frequencies exclude refused responses and "don't know" responses, or when not applicable. † Wald test for each variable. ◆

smoke-free workplaces were more likely to have effective smoking bans at home than those in workplaces where smoking was allowed in some or all indoor areas (287/484, 59% v 22/65, 34%; OR, 2.85; 95% CI, 1.67–4.87).

Association with quit attempts and wanting to quit

Smokers who lived in homes with an effective total smoking ban were significantly more likely than other smokers to have made a quit attempt in the past year, to want to quit and (among smokers who had attempted to quit in the past 5 years) to have made a quit attempt of 1 month or longer (Box 4). In contrast, there were no such significant associations with working in a smoke-free workplace.

Discussion

Smoke-free homes

Previous research has shown that the proportion of smokers who reported living in smoke-free homes was increasing faster among Aboriginal and Torres Strait Islanders than among other Australians, but that a gap remained in 2008.[5] Our study demonstrates that this gap now appears to have been closed, reflecting a significant change in behaviour by Aboriginal and Torres Strait Islander smokers.

This does not mean that there is no gap in the proportion of households that are smoke-free or in the proportion of children who live in smoke-free households. Changes to these will probably require smoking prevalence to fall further, along with more smokers choosing to smoke outside. We found that the presence of infants, children and adult non-smokers in the household was associated with having a smoke-free home, consistent with earlier ITC Project research, including Australian surveys.[12] Longitudinal research in Darwin also showed that Aboriginal households implemented smoking bans after the birth of a baby.[12,13] As in previous research, we found that the most disadvantaged Aboriginal and Torres Strait Islander people were the least likely to live in smoke-free homes, although this association did not hold for remoteness or area-level disadvantage.[5]

It is encouraging that few people reported any lapses in maintaining their home smoking bans, and more than half of those with no ban reported that a ban would be possible. People more often reported being uncomfortable telling elders or community leaders to smoke outside, rather than other visitors or householders. Local tobacco action workers could work with elders and community leaders to find respectful solutions, so that people do not feel uncomfortable about asking them not to smoke inside. Further research into the barriers to maintaining effective home smoking bans would be useful.

A literature review suggested that comprehensive national tobacco control programs to reduce smoking prevalence are the most effective in increasing the prevalence of smoke-free homes.[14] Australia has boosted comprehensive national tobacco control activity in recent years, including programs specifically for Aboriginal and Torres Strait Islander peoples.[15] This has been complemented by local tobacco control activity at the participating sites. Local and regional Aboriginal and Torres Strait Islander social marketing campaigns have focused on smoke-free homes (eg, "Smoking can kill those close to you"

4 Quitting-related outcomes of Aboriginal and Torres Strait Islander smokers, by home and work smoking bans

	Made quit attempt in past year			Want to quit			Quit attempt of 1 month or longer*		
	% (frequency)†	OR (95% CI)	P‡	% (frequency)†	OR (95% CI)	P‡	% (frequency)†	OR (95% CI)	P‡
Home (*n*)	1594			1540			970		
No ban or partial ban	45% (363)	1.0		65% (502)	1.0		45% (201)	1.0	
Effective total ban	54% (425)	1.39 (1.10–1.75)	0.006	74% (574)	1.55 (1.22–1.97)	< 0.001	53% (277)	1.38 (1.08–1.77)	0.01
Work (*n*)	538			515			352		
No ban or partial ban	47% (30)	1.0		68% (42)	1.0		51% (19)	1.0	
Total ban	52% (246)	1.22 (0.68–2.19)	0.50	76% (344)	1.50 (0.81–2.79)	0.20	59% (186)	1.37 (0.66–2.83)	0.40

OR = odds ratio. * For those with at least one quit attempt in the past 5 years. † Percentages and frequencies exclude refused responses and "don't know" responses, or when not applicable. ‡ Wald test for each variable. ◆

in the Northern Territory).[16] However, the evidence for the impact of such campaigns on the prevalence of smoke-free homes is more modest, as is the evidence for direct counselling of families about smoke-free homes.[3,14,17]

Other research has demonstrated an increase in smoke-free homes after smoking bans have been implemented in public places, and we have similarly demonstrated an association between smoke-free homes and smoke-free workplaces.[4] The previously demonstrated greater concern by Aboriginal people for the effects of smoking on family, especially children, rather than on their own health, further explains the rapid spread of home smoking bans.[18] Introducing a home smoking ban is easier than successfully quitting, but the significant association we found between smoke-free homes and quitting suggests that smokers are not making their homes smoke-free as a substitute to quitting.

However, this optimism needs to be tempered by research that shows reported indoor home smoking bans reduce but do not eliminate children's exposure to environmental tobacco smoke and its toxins.[19,20]

Smoke-free workplaces

It is good news that almost all Aboriginal and Torres Strait Islander people reported being protected by indoor smoking bans at work, as is reported by other Australians. We are not aware of comparable data to assess trends, but there has been considerable recent attention to promoting and supporting smoke-free policies at Aboriginal organisations. Improvements can still be made in the most disadvantaged and remote areas. Better monitoring and enforcement of existing indoor smoking bans, as well as their extension to outdoor public spaces (where people are close together), is a focus of the current National Tobacco Strategy.[15]

Association with quit attempts and wanting to quit

Our cross-sectional study is consistent with longitudinal ITC Project research, including Australian surveys, which showed that having a total indoor home smoking ban was associated with both quit intentions and making more and longer quit attempts.[12] However, a cross-sectional study using earlier Australian Bureau of Statistics (ABS) Aboriginal and Torres Strait Islander survey data found only a non-significant association with quit attempts, but did find a significant association with successful past cessation.[5] Making the home smoke-free might make it easier for a smoker to quit, but it is also likely that this association is in part due to smokers who are most concerned about their smoking making their homes smoke-free as part of the quitting process.

Strengths and limitations

This is a large nationally representative (albeit not random) survey of Aboriginal and Torres Strait Islander people. However, caution is needed as it relies on self-report of smoke-free homes and workplaces without biochemical verification. Due to inaccurate recall or social desirability bias, it is likely that some participants with reportedly effective total smoking bans are still being exposed to second-hand smoke. However, we think marked bias is unlikely as smoking is still very common and normalised in these communities. Our finding that 10% of smokers reported that some smoking occurred in the home despite not being allowed suggests there was minimal bias towards the most socially desirable response (complete adherence to the smoking ban).

Our questions were the same as in the ITC Project comparison survey, but they differed from those used in ABS surveys.[5] The ABS asked whether any householders *usually* smoke inside, whereas we asked whether smoking (by anyone) was *ever allowed* inside, and whether people smoked in spite of bans. Therefore, our estimates for the percentage of daily smokers living in homes where smoking was either not allowed (53%) or with effective total home smoking bans (48%) were understandably lower than the 2008 ABS estimate for those living in homes where no householder usually smoked inside (56.3%; 95% CI, 52.4%–60.2%).

Analyses of longitudinal data using follow-up surveys to this baseline survey will provide more methodologically sound confirmation of likely causal directions of the observed cross-sectional associations.

In conclusion, we found that the gap has closed between the proportion of Aboriginal and Torres Strait Islander smokers and all Australian smokers who live in homes with smoking bans, and that these bans may help smokers to quit. Aboriginal and Torres Strait Islander non-smokers are also well protected from second-hand smoke at work.

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Local research assistants Elaine Daylight and Kirrie Machan with TATS project coordinator Arika Errington during on-site training at Nhulundu Wooribah Indigenous Health Organisation, Gladstone, Queensland.

Local research assistant Kirrie Machan and TATS project coordinator Arika Errington in Gladstone, Queensland.