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Associations between advertising recall and quitting in a national cohort of Aboriginal and Torres Strait Islander smokers

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Mass media campaigns have been shown to reduce the prevalence of smoking, where supported by comprehensive tobacco control strategies.^{1,2} In Australia, this comprehensive approach has seen the prevalence of smoking fall below 15% among adults.³ However, while the daily smoking prevalence is also declining among Aboriginal and Torres Strait Islander peoples aged 15 years and over (from 49% in 2002 to 39% in 2014),⁴ it remains more than double that of other Australians of similar age.⁵ Past television advertisements from the National Tobacco Campaign appear to be well-recognised and received among Aboriginal and Torres Strait Islander people, however, Aboriginal and Torres Strait Islander smokers often express a preference for more culturally relevant messages.⁶ Further, locally developed social marketing has been a feature of many anti-tobacco programs, including the Tackling Indigenous Smoking initiative.⁷ Evaluations of targeted and regional social marketing campaigns have reported good recall of campaign materials and messages but have been too limited in scope to explore impact on quitting.^{8,9}

The Talking About the Smokes (TATS) Project presented an opportunity to describe reach and impact of mainstream and targeted anti-tobacco advertising. The TATS project surveyed 1,721 Aboriginal and/or Torres Strait Islander smokers and recent quitters between April 2012 and October 2013 (Wave 1) and recontacted 50% (849/1,721) of those participants approximately one year later (Wave 2: August 2013 to August

2014). Participants were recruited from 34 Aboriginal Community Controlled Health Services and one community in the Torres Strait. Project sites were selected based on the population distribution of Aboriginal and Torres Strait Islander peoples, by State/Territory and remoteness. Quotas were used for even recruitment of men and women, and those aged 18-34 and ≥ 35 years of age, within the quota established for each site, using methods appropriate to the geographic and social context of the project site. The research methods have been described in detail elsewhere, including the partnerships that were central to the research.^{10,11}

The survey was modelled on the International Tobacco Control (ITC) Project, particularly the Australian ITC Project surveys. The TATS survey asked participants "How often have you noticed ads [advertising or information, hereafter: advertising] that talk about the danger of smoking, or that encourage quitting?" (1. Never to 5. Very often). Those who recalled advertising were asked "Did any feature an Aboriginal or Torres Strait Islander person or their artwork?" ("targeted advertising") and, if yes, "Did any feature an Aboriginal or Torres Strait Islander person from this community, or artwork from this community?" ("local advertising").

Baseline cross-sectional results from the TATS project reported modest positive effects of mainstream campaigns on interest in quitting, but much stronger relationships for targeted (especially local) campaigns.¹² The interpretation of these results was complicated by the possibility those who reported attitudes supportive of quitting may be more likely to notice and recall advertising and news stories.

Here, we consider whether frequency and type (mainstream, targeted, local) of advertising exposure is associated with attempts to quit smoking, using both longitudinal and cross-sectional data from Wave 2 (follow-up) of the Talking About the Smokes study. Research within mainstream populations indicates that effects of advertising on quitting dissipate within weeks of the advertising ending.^{13,14} Due to the long interval between surveys (median 12 months, IQR 11-15 months), we hypothesised that we would see cross-sectional associations between advertising and quitting in the six months prior to follow-up, but that advertising recall in the six months prior to baseline would not be associated with

quitting between the two surveys in longitudinal analyses.

To answer this question, we analysed data from 739 re-contacted participants who reported smoking tobacco daily or weekly at baseline. Daily/weekly smokers who were re-contacted were similar to those lost to follow-up (in sex, employment, education and cigarettes per day) using chi-square tests of association, except that: of those followed up more were older than 45 years (31% vs. 25%) and fewer were aged 18-24 (18% vs. 23%) ($p=0.03$); more were from a regional areas (61% vs 41%) and fewer were from a major city (18% vs 34%) ($p<0.001$); more were from areas of the greatest disadvantage (SEIFA quintile 1: 42% vs 36%) and fewer were from areas of the least disadvantage (SEIFA quintiles 4-5: 15% vs 23%) ($p=0.001$). Age, remoteness and area-level disadvantage were therefore included as covariates in all analyses, together with the time interval between surveys, sex, cigarettes per day and exposure to other policies between the surveys (recall of warning labels, recall of news stories, advice to quit, tax rise). To disentangle any possible effects due to reverse causality, in which strong motivation to quit would increase recall of advertising (rather than the other way around), cross-sectional analyses also adjusted for baseline levels of the advertising exposure and wanting to quit.

The majority (86%) of the cohort continued smoking at least weekly at follow-up. Similar proportions of the cohort reported they had ever noticed any advertising (85% vs. 83%, $p=0.06$, McNemar's Exact Test), targeted advertising (50% vs. 48%, $p=0.48$) and local advertising (17% vs. 17%, $p=0.82$) at baseline and follow-up.

Logistic regression was used to explore the relationship between advertising exposure and quitting, using Stata's SVY commands to establish the 35 project sites as clusters. In longitudinal modelling, advertising recall of any kind (mainstream, targeted, local) did not predict quitting between surveys. In cross-sectional analyses, noticing advertising in the 6 months before follow-up was associated with whether or not a quit attempt was made in the same 6-month period, but only those who recalled any local advertising were significantly more likely to have tried to quit (58% vs. 39%, AOR: 2.03) (See Table 1). The effect size increased when these participants were compared with those who had not recalled any ads (AOR: 2.52).

We did not find an effect for prior exposure in the longitudinal analysis. However, the cross-sectional association is consistent with our hypothesis, which supports the explanation that the effects of advertising are short term. This is also consistent with previous work, including the finding that advertising, particularly local advertising, was associated with increased intentions to quit in our baseline survey of Aboriginal and Torres Strait Islander smokers.¹²

The level of advertising recall reported here is encouraging, as recall can be considered a proximal indicator of effectiveness.

Research from elsewhere demonstrates that exposure (and thus recall) is fundamental to the success of quit smoking campaigns to increase quit intentions, attempts and sustained quitting.^{2,14} For Aboriginal and Torres Strait Islander smokers, local material may be particularly motivating, although it must be acknowledged that the positive association for local advertising reported here occurred in the context of mainstream mass-media campaigns. Further evaluation of the most effective (and cost-effective) means of communicating anti-tobacco campaigns is required.

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Table 1: Longitudinal and cross-sectional associations between advertising exposure and quitting in the Talking About the Smokes study (n=739).

Recall in past 6 months	Longitudinal model ^a		Cross-sectional association ^{a,b}	
	Quitting between surveys		Quitting activity in past 6 months	
	freq. (%)	AOR (95%CI)	freq. (%)	AOR (95%CI)
How often advertising recalled		<i>p</i> =0.99		<i>p</i> =0.26
Never	50 (53%)	1.0 (ref)	35 (29%)	1.0 (ref)
Rarely – sometimes	149 (50%)	0.99 (0.51-1.92)	131 (41%)	1.65 (0.70-2.39)
Often – very often	171 (52%)	0.92 (0.51-2.04)	140 (48%)	1.63 (0.88-3.25)
Recalls targeted advertising		<i>p</i> =0.30		<i>p</i> =0.53
No	169 (47%)	1.0 (ref)	148 (39%)	1.0 (ref)
Yes	201 (55%)	1.22 (0.83-1.79)	163 (46%)	1.09 (0.82-1.46)
Recalls local advertising		<i>p</i> =0.62		<i>p</i> =0.006
No	299 (50%)	1.0 (ref)	238 (39%)	1.0 (ref)
Yes	71 (55%)	1.14 (0.68-1.91)	73 (58%)	2.03 (1.24-3.34)
Advertising type		<i>p</i> =0.72		<i>p</i> =0.03
Never	50 (53%)	1.0 (ref)	35 (29%)	1.0 (ref)
Mainstream only	115 (45%)	0.88 (0.42-1.84)	109 (43%)	1.42 (0.76-2.70)
Some targeted but not local (+/- mainstream)	130 (54%)	1.11 (0.55-2.22)	90 (39%)	1.08 (0.57-2.03)
Some targeted including local (+/- mainstream)	71 (55%)	1.12 (0.57-2.21)	73 (58%)	2.52 (1.29-4.95)

a: Results are Aboriginal and Torres Strait Islander people in the Talking About the Smokes cohort who were daily weekly smokers at baseline (n=739).

Adjusted odds ratios control for the interval between surveys (<11months, ≥11months & <12months, ≥12months & <14months, ≥14months), socio-demographics (age, sex, remoteness, SEIFA), cigarettes per day (non-daily, 1-19, 20+) at baseline and exposure to other tobacco control policies/programs (recall of news stories, recall of warning labels, advice to quit, tax rise) between surveys.

b: Additional adjustments for wanting to quit (yes vs. no/don't know) and advertising recall at baseline.

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