

Surveying all outdoor smokefree signage in contrasting suburbs: methods and results

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Received 8 July 2016, accepted 21 November 2016, published online 19 January 2017

Background

Outdoor smokefree area policies are expanding internationally;¹ the practicalities of policy implementation include communication and enforcement.² In New Zealand, there is some public support for smokefree outdoor areas;^{3,4} however, awareness of existing smokefree policies is often low.^{5,6} The lack of effective signage may be a factor in this limited awareness.⁷ Legislation requires the grounds of all school and early childhood centres to be smokefree at all times, and requires notices to this effect ‘prominently displayed at or immediately inside ... every entrance to the premises’.⁸ There is evidence that such legislation is effective^{9,10} but the appropriate use of the legally-mandated signage has not been well studied. There are no other New Zealand laws or local authority bylaws explicitly requiring smokefree outdoor areas (although worker safety laws could be considered relevant in some settings). Nevertheless, local government authorities often have non-legally binding educational policies that use signage to encourage people not to smoke in some areas (along with Council website information and publicity at the time of Council adoption of the smokefree policy). Given this background we aimed to pilot a survey method for studying the extent of smokefree signage for outdoor public places at a city suburb level.

Methods

For the study we selected two residential suburbs in the Wellington region; Karori (14 000 population, low deprivation), in the west of Wellington City, and East Porirua (comprising Ranui Heights, Porirua East, Cannons Creek, and Waitangirua; 15 600 population, high deprivation, with a large proportion of social housing). We chose these suburbs because of the contrasting levels of small area-based deprivation,¹¹ and similar population sizes. In both Wellington and Porirua Cities, there are ‘educational’ smokefree policies for playgrounds and sportsfields.^{12,13}

We identified relevant settings based on those covered by existing smokefree law and smokefree policies (i.e. early childhood centres and school grounds, playgrounds and sports fields) and then added

all outdoor parks and sports facilities, and other defined outdoor public settings that could plausibly be smokefree, for a total of 95 settings (Table 1). Based on examination of area maps and telephone book listings, the exact locations of these sites were identified. Field surveys were then conducted from September 2015 to January 2016 by the authors. All smokefree signs around the pedestrian-accessible borders of each setting were recorded and photographed. After the survey, the recorded data were checked against the photos. Data were analysed with Epi Info (version 7.1.5.2) using Chi-square tests (Mantel Haenszel, two-tailed) and analysis of variance (ANOVA) when comparing means.

Results

For the educational settings (early childhood centres and schools) that were legally required to have smokefree signage, the levels of signage were far from complete (Table 1). For example, only 42% of pre-schools in Karori and 58% of schools in Eastern Porirua had any such signage. Signage density was also low, considering that signs are legally required at all entrances, and schools usually have several such entrances (e.g. 22 signs for 16 schools were identified, or 1.4 per school on average). There were no statistically significant differences between the suburbs in smokefree signage for these educational settings.

For the two settings where City Council smokefree policies apply (children’s play areas and selected parks), the less deprived suburb had higher mean signage per setting than the deprived one (Eastern Porirua) at 1.25 vs 0.29 smokefree signs ($P=0.024$). This was also statistically significant in terms of signage per setting in these play areas (83.3% vs 16.7%, $P=0.027$). For other settings smokefree signage was fairly rare.

Discussion

This is the first such survey that we know of to take a whole-of-suburb approach to studying smokefree outdoor areas. The method appeared to work adequately in that sufficient data were collected and no problems were encountered with the data collection.

Table 1. Results for the field survey of outdoor smokefree signage at outdoor settings in the two suburbs of contrasting deprivation^A

Type of outdoor setting	Eastern Porirua (relatively deprived suburb, Porirua City)			Karori (less deprived suburb, Wellington City)			Suburb differences in mean signs per setting (<i>P</i> -values)
	Outdoor settings (<i>N</i>)	Total signs (<i>N</i>)	Any signs at setting (%)	Outdoor settings (<i>N</i>)	Total signs (<i>N</i>)	Any signs at setting (%)	
<i>Legally required to be smokefree</i>							
Early childhood centres (grounds)	11	9	54.6	12	6	41.7	0.372
School (primary or secondary) grounds	12	10	58.3	4	12	75.0	0.228
<i>City Council smokefree policies apply in both suburbs</i>							
Children’s play areas	6	1	16.7	6	5	83.3	0.027
Parks with sports fields or children’s play areas	1	1	100.0	2	5	100.0	0.221
<i>No Government or City Council smokefree policy</i>							
Cafés – outdoor table areas	1	0	0.0	4	0	0.0	–
Health and residential aged care facilities	4	1	25.0	4	0	0.0	0.356
Other parks and reserves	8	2	25.0	9	0	0.0	0.125
Sports clubs (e.g. tennis, bowls etc)	1	0	0.0	4	0	0.0	–
Other ^B	1	0	0.0	5	1	20.0	0.655
Total	45	24	40.0	50	29	32.0	0.487

^AOnly signs at entrances or the site perimeter were considered with the exceptions of: (i) including the signs on children's play equipment; (ii) including the signs on the walls of pre-school and school buildings (where visible from the perimeter). For cafés with outdoor tables we only counted signs on tables or permanent signs relating to the outdoor area. Within New Zealand, Eastern Porirua (Porirua East, Ranui Heights, Cannons Creek, Waitangirua) has a deprivation decile 10 ranking (most deprived decile) while the suburb of Karori has 4 parts: 2 in decile 1 (least deprived decile: Karori North and Karori East), 1 in decile 2 (Karori South) and 1 in decile 4 (Karori Park). The two cities have very similar policies for smokefree play areas and sports fields.

^BIn Eastern Porirua: a marae (cultural centre). In Karori: A tertiary educational institution, a plaza, a fenced conservation sanctuary (Zealandia), a cemetery, and a mall with a parking area.

Nevertheless, we did not evaluate additional potential time saving aspects that could have been considered, such as use of Google Street View.¹⁴

This survey found that non-compliance with the national smokefree law for early childhood centres and schools was common in these two suburbs. Such a problem has been identified previously for New Zealand schools¹⁴ and variable compliance has been described for smokefree parks in Vancouver, Canada.¹⁵ The results also suggest statistically significant poorer levels of smokefree signage in the more deprived suburb in terms of children's play areas (which are covered by City Council smokefree policies). Such inequality in creating a supportive environment is problematic, given the critical need to address the tobacco-related inequalities in New Zealand. There is an opportunity for health promoters to conduct such simple surveys to bring any deficits and inequalities in coverage to the attention of relevant organisations and policymakers.

With the general expansion of outdoor smokefree area policies internationally, further surveys could be considered by health authorities and researchers, so as to identify the scope for improving outdoor smokefree signage and therefore the potential impact of such smokefree areas.

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