

Evaluating smokefree compliance in a large smokefree park: Methods issues and results

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The performance of smokefree park policies can be evaluated through surveys of park users, observational studies of smoking and the presence of tobacco-related litter. But only one study we are aware of has attempted to investigate the most efficient approach to evaluating compliance for such policies.¹ We therefore aimed to extend this area of research by determining compliance with the smokefree park policy for a large urban park in Wellington City, New Zealand, and to compare observational and litter count measures.

Methods: Over 25 nights in January/February 2016, starting at approximately 1930h each evening, tobacco-related litter (packaging and butts) were physically collected along the paved one kilometre walking circuit and around the associated seating and grass verges (within 0.5 m of the paved surface). Litter data from the start days of four separate “series of consecutive nights” were removed from the analyses to account for litter that had potentially accumulated over longer than 24-hour periods. Also on these 25 standardised walks, observational data were collected on any people being passed on the walkway and in the children’s play area (ie, number of adults and presence or not of smoking by these adults).

Additional data collection on 35 occasions over the same months was at purposefully selected times when the park was likely to be busy on weekends (typically around midday). On these occasions data were collected on people and smoking at: the outdoor table area of the café, the children’s play area, and on stretches of the walkway that the observer transitioned on route to the café. See Table 1 for further methods details. Ethics approval was via standard University of Otago processes.

Results and Discussion: The data collection occurred on 60 separate occasions, taking a total of 10.9 hours of time in the park, and occurred without incident (Table 1). The most efficient method for assessing compliance appeared to be cigarette butt collection, with 22.0 butts collected per hour of data collection time on the standardised evening walks. This compared to people observed smoking at 1.4 events per hour of data collection time (or 1.8 at relatively busier times when there were ≥ 50 people per hour of observation [additional tabulated data available on request]). Nevertheless, butt collection will only partially reflect smoking in parks since not all smokers toss their butts, although other New Zealand research suggest that most do.^{2 3}

Compliance with the smoking policy appeared incomplete in all areas of the park and smoking was most commonly seen in “other” park areas such as on the sport fields or on grass in front of the café (Table 1). Although no smoking was observed in the children’s play area or when people were seated at outdoor café tables, both these areas contained discarded cigarette butts.

Smoking at the café within this park was significantly lower than that found for 55 cafés and bars with outdoor tables in the Wellington Central Business District, in a previous study⁴ (ie,

0% vs 7.2% $p < 0.00003$). However, this latter study did involve different data collection times, a lower proportion of children being present, and some of these venues also served alcohol.

Table 1: Smokefree policy compliance-related data for a large smokefree park

Data characteristics	Number (%)	95%CI or SD
Tobacco-related litter data (25 evenings)		
Cigarette butts collected on the standardised walking circuit, and adjacent seating and grass verges	187	–
Average butts per daily collection (after discarding the initial collection days [n=4] which began each series of consecutive data collection days)	6.14	SD = 4.13
As above, but range of butts per daily collection	0 to 14	–
Discarded tobacco packs collected	2	–
Observational data (from the same evenings as above and at times when the café was popular on weekends)		
Walking circuit users passed by (or passing) the observer (excluding cyclists) – number of adults (n=34 observation episodes: 25 evenings and 9 days when 1+ adults were present)	405	–
Adults smoking out of the above	2 (0.49%)	0.082% to 1.62%
Café within the park – number of adults sitting at outdoor tables (n=35 observation episodes; 27 with 1+ adult present)	139	–
Adults smoking out of the above	0 (0.0%)	0.00% to 2.69%
Children's play area – number of adults observed in the well-defined area with fences and hedging on the boundaries (n=60 observation episodes; 49 with 1+ adult present)	402	–
Adults smoking out of the above	0 (0.00%)	0.00% to 0.74%
Other park areas – adults seen smoking on the sports fields and in car parks within the park boundary (no denominator data could be easily collected due to the large park size)	13	–
Users of e-cigarettes anywhere in the park (no denominator data)	1	–

SD = standard deviation. 95%CI = 95% confidence interval.

Conclusions: This small study suggests that there is chronic non-compliance with the smokefree policy for this large urban park. If this problem is typical, then further efforts by the relevant City Council may be warranted, such as improved signage and use of smokefree by-laws. The most time efficient method for evaluating compliance appears to be the monitoring of cigarette butt litter, but the use of observational data can help to provide a richer picture, including around e-cigarette use.

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References

1. Toledo Cortés L, Thomson G, Edwards R. Testing policy evaluation methods for smoke-free outdoor area policies. *Evaluation Journal of Australasia* 2014;14:35-42.

2. Patel V, Thomson GW, Wilson N. Cigarette butt littering in city streets: a new methodology for studying and results. *Tob Control* 2013;22:59-62.
3. Wilson N, Oliver J, Thomson G. Smoking close to others and butt littering at bus stops: pilot observational study. *PeerJ* 2014;2:e272.
4. Martin N, McHugh H, Murtagh J, et al. Observational study of the visibility of branded tobacco packaging and smoking at outdoor bars/cafes in Wellington, New Zealand. *N Z Med J* 2014;127:27-36.