No need to ban smoking in cars with children present—it’s almost snuffed out

Smokefree environments are widespread in New Zealand with legislation banning smoking in workplaces, bars, casinos and restaurants, school grounds and on public transport. Many local government councils are expanding smokefree environments to include parks, playgrounds, sports grounds, beaches and particular streets. Private places like marae, homes and cars have largely been exempted—except where that place is also a workplace, such as a residential care facility or a prison.

Recently there has been a call to ban smoking in cars when children are present with strong public support claimed for such a move. This would help to reduce infant and child exposure to secondhand smoke (SHS), moves to denormalise smoking and potentially could reduce the risk of children taking up smoking. However, little is known about the prevalence of smoking in cars when children are passengers.

Some studies found that over 25% of adolescent students self-reported having been exposed to smoking within cars. A recent roadside study (n=149,886 vehicles) within New Zealand reported that 3.2% of vehicles observed had smokers and of these 4.1% had children present. That is, just 0.13% had smoking in cars while children were present, a far cry from the 25%+ prevalence quoted in the self-reported studies.

An earlier New Zealand study (n=16,055 vehicles) found the smoking prevalence in cars was 4.1% and of these 23.7% had other occupants (not just children) exposed to SHS. This works out to be approximately 1% of occupants being exposed to SHS within a car. Thus, the prevalence of smoking in cars with children inside was at most 1.0% in 2005 and drifted downwards to 0.13% in 2012.

In the current study (2012) some student nurses set out to determine the frequency of adults smoking in cars with children present in Auckland.

**Methods**—The Auckland suburbs of Newmarket, Mangere and Manurewa were chosen to provide a comparison between areas of high versus low deprivation. Newmarket was considered a low deprivation area whereas Mangere and Manurewa were considered to be medium to high deprivation areas.

Observation times were randomly generated (between 9am and 5pm) and on two random days in a week. Randomisation was carried out via computer to minimise bias. Observations were concurrently carried out over two one-hour periods during one week of the 2012 Easter School Holidays (5th April to 10th April).
Cars were categorised as follows:

- Cars with adult(s) not smoking;
- Cars with adult(s) smoking;
- Cars with adult(s) not smoking and with child(ren); and
- Cars with adult(s) smoking and with child(ren).

Trucks were included as private cars as truck drivers are permitted to smoke (subject to their company policy). Cars with tinted windows were excluded as it was too difficult to ascertain whether smoking was actually taking place. Buses, taxis, public shuttles were excluded as passengers in such services would not be permitted to smoke. Motorcycles and scooters were excluded.

A child was defined as anyone who looked under 14, including babies. Ethnicity was inferred as either Māori, Pacific, European, Indian, Asian or Other based on the observer's judgement. The weather, day, time and location were noted. The prevalence(s) were not adjusted for any covariates (e.g. number of people in the car, type of vehicle, ethnicity or socioeconomic status [SES]) or any type of weighting for cluster effects.

**Results**—Of the 2857 eligible vehicles observed (combining the three suburbs) only 63 (2%) carried adults smoking while children were present (Table 1). Of these the ethnic breakdown was: Māori 57%, Pacific 27%, European 11%, and Indian 5%.

Over the three suburbs, the prevalence of cars with adults smoking while children were present ranged from zero in Newmarket and Mangere to 7% for Manurewa. There was a definite SES gradient with more adults smoking in cars while children were present in the highest deprivation area.

**Table 1. Categories of cars and smokers by suburb**

<table>
<thead>
<tr>
<th>Auckland suburb</th>
<th>Cars with adult(s) non-smoking Count (row %)</th>
<th>Car with adult(s) smoking Count (row %)</th>
<th>Car with adult(s) not smoking &amp; with children Count (row %)</th>
<th>Car with adult(s) smoking &amp; with children Count (row %)</th>
<th>Total Count (row %)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manurewa</td>
<td>516 (57%)</td>
<td>118 (13%)</td>
<td>211 (23%)</td>
<td>58 (6%)</td>
<td>903 (99%)</td>
</tr>
<tr>
<td>Mangere</td>
<td>794 (75%)</td>
<td>27 (3%)</td>
<td>228 (22%)</td>
<td>5 (0%)</td>
<td>1054 (100%)</td>
</tr>
<tr>
<td>Newmarket</td>
<td>755 (84%)</td>
<td>18 (2%)</td>
<td>127 (14%)</td>
<td>0 (0%)</td>
<td>900 (100%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2065 (72%)</strong></td>
<td><strong>163 (6%)</strong></td>
<td><strong>566 (20%)</strong></td>
<td><strong>63 (2%)</strong></td>
<td><strong>2857 (100%)</strong></td>
</tr>
</tbody>
</table>

* Percentages may not add up to 100% due to rounding

**Discussion**—The 2% prevalence of children in cars with adults smoking was relatively higher than the study prevalence inferred by Patel, Thompson & Wilson\(^7\) which was 0.13%. Two-thirds of our sample, however came from low SES suburbs, where there are more smokers with children. We can, though, use the 2% prevalence as an upper limit.
Latest national population statistics suggested that there were 892,900 persons under 15 years at 31 March 2012.\textsuperscript{9} Taking the 2\% prevalence of adults car smoking with children inside, this equates to 17,858 children affected nationally. Using Patel, Thompson and Wilson’s\textsuperscript{7} estimate of 0.13\%, equates to 1161 children affected by smoking in cars. Thus, somewhere between 1161 and 17,858 children are exposed to smoke while passengers in vehicles at any point in time.

This was a small observational study with several limitations: Firstly, ethnicity was inferred. We had no way of confirming the demographics of the population observed. Secondly, observations occurred in one week only. There could be something peculiar about the Easter period that limits the generalisability of the study. Other limitations include: not being able to observe a car’s whole trip. Adult passengers may have smoked sometime on their journey but not when observed. We did not record the number of children per vehicle. Thus, we conclude that our counts and prevalence(s) are underestimates of the reality.

Whilst legalised bans can modify public behaviour, the policy and parliamentary process of lobbying for successful passage of a law change has considerable opportunity cost (in time spent and financial expenditure) attached to it. If the law changes, a public education campaign would need to preface its introduction much like that required to inform the public of the recent Land Transport (Road User) Amendment Rule 2011\textsuperscript{10} driving rule change. The Government would also need to commit ongoing resources to law enforcement, debt collection for unpaid fines and prosecution.

Whereas now many vehicle passengers who smoke, do so with a window down\textsuperscript{8} the proposed ban would encourage smokers in cars with children present to contain their smoking within the vehicle perhaps by closing windows, using tinted windows or holding their cigarette below the window line of the car—as cell phone users do with their mobile to avoid detection by police or traffic officers.

Whilst it could be inferred that smoking in vehicles with children present is more likely to occur in populations and areas with higher smoking prevalence, our study supports that this is so. If legislation was introduced to ban smoking in cars when children are present, Māori and Pacific people would disproportionately be affected by this. That is, Māori and Pacific people would disproportionately find themselves in breach of such a law. It has been inferred that if implemented in New Zealand, breaches of the law would incur a fine.\textsuperscript{11} In Australia fines range from $A75–$A200. Māori and Pacific people already face significant inequities (in employment, health care, education and justice).\textsuperscript{12,13}

Is a law change to ban smoking in cars when children are present warranted given the proportionately small number of children actually affected by exposure to smoke in vehicles and the possible negative social and economic consequences for Māori and Pacific people. Could an equivalent amount of effort and funding not be directed towards assisting low SES Māori and Pacific smokers to quit?

Rather than a punitive approach that would contribute to significant ethnic social and economic disparities, at-risk children’s families could be supplied with tobacco-
smoke alarms for their vehicles. Each Plunket or for-hire infant or child car seat could be fitted with one.

As Māori Party co-leader Tariana Turua has rightly pointed out, ‘offenders’ are not hard to spot,14 so interventions could be directed at those observed. They could be offered smokefree car kits including for example: a smokefree car sticker, an activity book for children, a sample pack of nicotine replacement for use when driving, a CD-based programme to assist with not smoking while driving and information on where to get further cessation assistance.

Conclusion—Our study confirms that some adults who smoke still do so in the relatively small and enclosed confines of a vehicle when children are present. There is no doubt that this is harmful to the children and contributes to their higher morbidity from smoking related illness than children of non-smoking parents. That this is more likely to occur in areas of high deprivation is consistent with previous studies7,8 and with higher smoking prevalence in populations in these areas.15,16

But we argue that the time for a ban on smoking in cars when children are present has passed. The practice is already declining and is largely confined to more deprived groups who have not benefited from the same level of public health education campaigns that has driven the behaviour down.

The risk of alienating Māori and Pacific with such a policy change is high. A more helpful approach directed at the small population still smoking in cars should suffice to snuff out children’s exposure to smoke in cars for good.

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