

Smoking is rank! But, not as rank as other drugs and bullying say New Zealand parents of pre-adolescent children

Marewa Glover, Anette Kira, Sandar Min, Robert Scragg, Vili Nosa, Judith McCool and Chris Bullen

Introduction

Tobacco, alcohol and marijuana, in that order, are popular drugs widely used in New Zealand and elsewhere.^{1,2} Twenty-one per cent of New Zealanders aged over 15 years are smokers, of whom Māori (the indigenous people of New Zealand) and Pacific Island people, (comprising 15% and 7% of the national population respectively³) have substantially higher smoking prevalences (45% and 31% respectively), than European (21%) and Asian (12%) New Zealanders.⁴ Deaths and morbidity attributable to tobacco smoking far exceed those from other preventable causes combined, such as alcohol, illegal drugs, obesity or unsafe sex.⁵ Smoking has been estimated to contribute to almost 10% of the health inequality between Māori and non-Māori New Zealanders.^{6,7} Despite this, smokers under-estimate their personal risk from smoking.⁸⁻¹⁰

Although both smokers' and non-smokers' perceptions of the risk of smoking have been well researched, relatively few studies have examined people's perception of the risk of smoking in comparison with other preventable health risks. Calman et al.¹¹ asked teachers to rank the relative importance of teaching particular health topics, such as cigarette smoking, food and exercise, alcohol, sex and illegal drugs. Teachers of 10-12 year olds ranked smoking as the sixth most important topic, less important than food and nutrition, but more important than alcohol, drugs or sex. In a study by Krewski

and colleagues,¹² smoking was found to be rated as more risky (to health) than obesity, violence or (unprotected) sex. Participants in another study perceived that avoiding cigarettes was more likely to prevent cancer than reducing alcohol consumption or avoiding being overweight.⁸ However, when Borland¹³ asked Australian smokers to select the riskiest behaviour from a list of six items, smoking being the item that was the most likely to cause death, and five others all of which had a substantially lower mortality risk than smoking, only about a third of those surveyed selected smoking.

Parents' beliefs about health risks affect their advice and expectations of smoking behaviours with their children. Knowledge of the harms associated with smoking contributes to promoting smoke-free expectations to children.¹⁴ The more parents are aware of smoking health risks, the more likely they are to communicate anti-smoking messages to their children.¹⁵ Qualitative research with Māori, Pacific Island and other New Zealand parents found that they perceived many other hazards, such as illegal drugs, alcohol and sex, to be more important to discuss with their children than smoking.¹⁶

Both ranking and rating are commonly used to obtain value data from participants. For items that are likely to have low discriminability, rating may be more suitable, as ranking may inaccurately result in a difference. However, if there are likely to be differences between the items, ranking is regarded as being more suitable.¹⁷ In tobacco

Abstract

Issue addressed: Despite the established risks associated with smoking, 21% of New Zealand adults smoke. Prevalence among Māori (indigenous) and Pacific Island New Zealanders is disproportionately high. Prevention of smoking initiation is a key component of tobacco control. Keeping Kids Smokefree – a quasi-experimental trial – aimed to do this by changing parental smoking behaviour and attitudes. However, little is known about parents' attitudes to smoking in comparison with other concerns.

Method: Parents of 4,144 children attending five urban schools in a high smoking prevalence population in Auckland, New Zealand, were asked to rank seven concerns on a paper-based questionnaire, including smoking, alcohol and bullying, from most to least serious.

Results: Methamphetamine and other illicit 'hard' drugs were ranked as most serious followed by marijuana smoking, alcohol drinking, bullying, cigarette smoking, sex and obesity. Never smokers ranked cigarette smoking as more serious than current or ex-smokers.

Conclusion: Parents' under-estimation of the serious nature of tobacco smoking relative to other drugs could partly explain low participation rates in parent-focused smoking initiation prevention programs.

Key words: tobacco smoking, smoking initiation, drug prevention

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So what?

This study contributes to more effective smoking prevention by providing insight into how pre-adolescents' parents rank smoking in comparison to other health concerns. If parents perceive bullying, alcohol and illegal drugs to be a greater threat to their child than tobacco smoking, they may be less inclined to focus attention on preventing their children from taking up smoking. The parents themselves may also be less likely to quit smoking.

control, research rating is more commonly used. We found only one study that asked participants to rank smoking against other health risks (Calman et al, 1985). We were unable to identify other research that has investigated how parents rank smoking in comparison to other preventable health risks. Other than Glover et al.,¹⁶ previous research has not focused on a New Zealand context or considered attitude differences by ethnicity. Research that investigated how parental values affect the risk of children becoming smokers has predominantly been based on reports from the children¹⁸⁻²⁰ and only a few use parent samples.^{21,22} Because of this lack of research into parents' perception of the comparative risk of smoking, and also of the association between parental attitudes and perception of smoking and their influence on adolescent uptake of smoking, this study aimed to investigate how parents of pre-adolescent children rank cigarette smoking in comparison with other risks to health. We also sought to compare the ranking between different ethnic groups.

Method

The data are drawn from the baseline survey completed by parents of children participating in Keeping Kids Smokefree (KKS), a community-, school- and family-based non-randomised controlled trial of a smoking initiation prevention intervention for children from a lower socioeconomic, predominantly Māori and Pacific Island, community in Auckland, New Zealand. A fifth school, not part of the KKS trial, from a different area of Auckland, but of similar size (500 students) and ethnic makeup, participated in a sub-study using the same questionnaire in the same year (reported elsewhere).²³ KKS was aimed at modifying key behaviours and attitudes of parents to prevent uptake of smoking in pre-adolescents. The study protocol, including details about the method, ethics approval, sampling and rationale, is described in Glover et al.²⁴ The findings from Glover et al.¹⁶, that smoking was not as important as other topics, led to the design of the ranking question relevant for this paper. The question read: "Rank the following problems in order of seriousness with 'A' representing the most serious issue (use each letter once)". Listed

problems included: bullying/violence; overweight/obesity; marijuana smoking; cigarette smoking; crystal methamphetamine (P) and other drugs; alcohol drinking; and sex.

Ethics approval for the study was obtained from the University of Auckland Human Participants Ethics Committee (Ref. 2006/416). The study was registered with the Australian and New Zealand clinical trials register (ACTRN12611000591954).

Participants

Four Auckland schools (catering for 11-13 year old children) were recruited for KKS. Two intervention schools were chosen for: 1) number of Māori and Pacific Island students; 2) availability of community tobacco action network and support services (health promotion workers, smoking cessation services); and 3) willingness of schools to participate. Schools were recruited in a variety of ways. A local newspaper article about the proposed study attracted the attention of the principal from one of our pre-selected target intervention schools. Another school from the same community made up the required intervention sample size, and a pair of schools from a comparable nearby suburb participated as control. The fifth school, required for the sub-study, was invited to take part in just one survey round. To recruit parents, a study pack for parents was sent home with students. To encourage participation, the survey was promoted to the students and staff at a school assembly, using drama to show how students should deliver the study materials to their parents. The total sample size was 4,144 parents. Participants self-identified their ethnic group as Māori, Pacific Island, Asian or European/Other. For the remainder of this paper, 'European' refers to 'European/Others'.

Data collection

The items included in the ranking comparison with smoking were drawn from Glover et al's¹⁶ study, which found that parents were concerned about alcohol, 'P' and other illegal drugs, bullying, marijuana, sex and obesity. Parents were asked to rank these seven

8 Rank the following problems in order of seriousness with "A" representing the most serious issue.

Bullying/Violence	<input type="checkbox"/>
Overweight/Obesity	<input type="checkbox"/>
Marijuana Smoking	<input type="checkbox"/>
Cigarette Smoking	<input type="checkbox"/>
P and other drugs	<input type="checkbox"/>
Alcohol Drinking	<input type="checkbox"/>
Sex	<input type="checkbox"/>

A B C D E F G
Use each letter once.

Figure 1: Question asking parents to rank the seriousness of seven health risks.

problems from most serious to least serious (Figure 1). Only one problem was allowed to be ranked most serious, second most serious and so forth, and each item had to have a unique ranking (i.e. they could not be ranked equal).

Parents were asked about their own smoking status and their relationship to the student (e.g. mother, father).

Analyses

Overall ranking order and descriptive statistics (mean ranking and standard deviation) were calculated. We used a non-parametric test, the Kendall coefficient of concordance (W), to examine whether participants ranked the data in a random or structured way.

Results

Of the total sample 3,072 parents (74.1%) completed the ranking question; 46 parents didn't provide ethnicity information and were thus excluded from the analysis. Thus, the final analysis included 3,026 parents (73%). The majority were either Māori or Pacific Island people (Table 1).

The proportions of current smokers in the Māori and European ethnic groups (Table 2) in the study sample were higher than the national average but smoking was less prevalent than the national average among Pacific Island people.

Overall, the parents ranked methamphetamine and other illicit 'hard' drugs as the most serious concern (Table 3) ($p < 0.0001$). Cigarette smoking was ranked fifth. However, the standard deviations of the sample means were wide and overlapped.

Table 1: Characteristics of participants.

Variable	All respondents (n=4,144)	Completed ranking (n=3,072)
	%	%
Ethnicity		
Māori	25.8	28.1
Pacific	40.3	37.8
Asian	24.1	25.2
European & Others	10.5	11.1
Missing	2.6	1.5
Gender		
Male	22.1	22.1
Female	70.2	72.2
Missing	7.8	5.6
Smoking status		
Current smokers	27.6	29.7
Ex-smokers	19.1	20.6
Never smokers	48.2	45.7
Missing	5.1	4.0

Table 2: Frequency of smoking status by ethnicity.

Ethnicity	Smoking status		
	Current smoker	Ex-smoker	Never smoker
Māori	443 (53.8%)	244 (29.6%)	137 (16.6%)
Pacific Island	291 (26.3%)	241 (21.8%)	576 (52%)
Asian	49 (7.6%)	46 (7.1%)	553 (85.3%)
European	120 (36.6%)	96 (29.3%)	112 (34.2%)

Parents of all ethnic groups, except Asians, ranked cigarettes as the fifth most serious concern and all ethnic groups ranked methamphetamines and other drugs as most serious (Table 4). Māori and European participants had ranked bullying as the second most serious concern, while Pacific Island people ranked alcohol and marijuana as more serious than bullying. Participants in each ethnic group ranked the problems in some structured way and did not select the ranked item randomly ($p < 0.001$) (Table 4).

Current and ex-smokers ranked all seven concerns in the same order (Table 5) and ranked cigarettes as the fifth most serious problem, while never smokers ranked cigarettes as the fourth most serious. Never smokers ranked all substances as more serious than the non-substance-related concerns. Further, never smokers ranked smoking as more serious and P and other drugs as less serious, than did ex- or current smokers (Table 5).

Discussion

The results suggest that cigarette smoking is not regarded as a serious concern for parents of pre-adolescent children when compared to other concerns presented, consistent with previous research.^{11,13} These findings are inconsistent with studies that have used rating data,^{8,12} in which smoking rated highest.

Parents of all ethnic groups, irrespective of their smoking status, ranked methamphetamine and other drugs as their most serious concern. This is despite evidence suggesting that smoking may be the first stage on the pathway towards illicit drug use.²⁵⁻²⁷ Cigarette smoking has previously been identified as a strong predictor of later drug use.²⁸ News coverage of health issues has been associated with perceptions of health risk behaviours and perceived harm.²⁹ It is possible that the low ranking of smoking as a problem, in comparison to methamphetamine and other drugs, reflects more intense media coverage of this issue in mainstream press.

Furthermore, our findings support evidence of the association between prevalence of smoking and ethnicity, and perceived risk of smoking in comparison to other health issues. Hence, interventions, for groups with high smoking prevalence, may need to be specifically targeted at altering misconceptions about the relative benign implications of smoking in comparison to other problems.

It may be a challenge for interventions, aimed at reducing smoking uptake through changing parent smoking behaviour, to engage parents in an initiative that focuses primarily on smoking behaviours. Findings from this study suggest that interventions may need to

Table 3: Descriptive statistics of overall ranking.

Problem	Rank order	Mean Ranking	Std. Dev.
Methamphetamine and other drugs	1	2.18	1.68
Marijuana	2	3.32	1.58
Bullying	3	3.89	2.00
Alcohol	4	3.92	1.43
Cigarette smoking	5	4.23	1.61
Sex	6	4.87	1.92
Obesity	7	5.59	1.79
Kendall coefficient of concordance (W)		0.25	
Chi-square		4683	
p value		<0.0001	

address other drug-related concerns alongside addressing risk of smoking uptake and tobacco's role as a 'gate-way' drug. Alternatively, interventions may need to be more holistic, addressing the range of concerns parents have. Taking a community development approach, whereby parents' concerns are first canvassed and interventions are designed around these priorities, means that tobacco smoking may not be spontaneously offered up due to the perception of smoking as a less serious problem.

In New Zealand, regular media campaigns promote the harms of smoking and the benefits of quitting. However, based on the findings from this study, such campaigns may also need to include a component that informs people of the harms of tobacco in comparison to other substances. Moreover, campaigns could include education on the initiating role of cigarettes for future illicit drug use in order to increase cigarettes' perceived rank in relation to other drugs.

Future work

When parents rank the seriousness of their concerns, they are possibly not taking a long-term public health perspective which would bring to mind mortality and morbidity, but rather are considering community-specific or shorter-term dimensions, such as social acceptability, risk of criminality or financial loss. It would be useful to investigate the range of dimensions separately. For example, parents may rank cigarettes as the most serious in terms of mortality, but rank cigarettes less serious for social acceptability.

Since this study found a difference according to ethnicity, interventions targeted at certain ethnic groups may have greater

success if they have ethnic-specific understanding of how that group ranks smoking in comparison to other drugs. Widespread underestimation of the risks associated with smoking in comparison to other concerns could contribute to a lower than adequate allocation of funding for tobacco control programs, lack of support for implementation of such programs, and lack of attractiveness as a career option or research focus. Moreover, an understanding of how health professionals, teachers or politicians rank smoking in comparison to other risks may also help tobacco control policy and program planning.

Qualitative studies to investigate the reason behind the ranking order to understand why parents rank smoking lower than other problems would be useful. Understanding the impact that low ranking of smoking as a problem has on smoking cessation, and potentially what can be done to increase the perceived relative risk of smoking, would be beneficial for future interventions. Other potential future work includes investigating the effectiveness of a more holistic intervention that addresses parents' multiple concerns. For example, it may be that smoking cessation rates could be higher if other concerns were acknowledged and addressed.

Strengths and limitations

A strength of this study is that it was a whole-school study, that is, all parents rather than just a sample were invited to participate, and there was a very high response rate across the schools. A limitation is that the majority of participants were female, and were from schools serving a high proportion of lower socioeconomic families. The

Table 4: Rank order and mean ranking and standard deviation for all seven problems by each ethnic group.

Problems	Māori (n=863)		Pacific (n=1160)		Asian (n=662)		European (n=341)	
	Rank order	Mean Rank (SD)	Rank order	Mean Rank (SD)	Rank order	Mean Rank (SD)	Rank order	Mean Rank (SD)
Methamphetamine and other drugs	1	1.87 (1.56)	1	2.43 (1.80)	1	2.37 (1.66)	1	1.82 (1.45)
Bullying	2	3.59 (1.96)	4	4.01 (2.02)	5	4.26 (1.95)	2	3.54 (2.01)
Marijuana	3	3.71 (1.56)	2	3.21 (1.56)	2	2.88 (1.56)	3	3.56 (1.47)
Alcohol	4	3.87 (1.47)	3	3.90 (1.43)	4	4.02 (1.34)	4	3.89 (1.48)
Cigarette	5	4.49 (1.56)	5	4.11 (1.72)	3	3.98 (1.51)	5	4.47 (1.45)
Sex	6	5.04 (1.80)	6	4.83 (1.93)	6	4.53 (2.05)	6	5.23 (1.80)
Obesity	7	5.44 (1.81)	7	5.50 (1.86)	7	5.96 (1.63)	7	5.49 (1.76)
Kendall coefficient of concordance (W)		0.29		0.23		0.29		0.33
Chi-square		1517		1505		1151		668
P value		<0.0001		<0.0001		<0.0001		<0.0001

Table 5: Rank order and mean ranking and standard deviation for all seven problems by smoking status.

Problems	Current (n=912)		Ex (n=632)		Never (n=1,405)	
	Rank order	Mean Rank (SD)	Rank order	Mean Rank (SD)	Rank order	Mean Rank (SD)
Methamphetamine and other drugs	1	1.92 (1.61)	1	1.97 (1.56)	1	2.42 (1.73)
Marijuana	2	3.51 (1.52)	2	3.54 (1.57)	2	3.09 (1.58)
Bully	3	3.69 (1.97)	3	3.66 (1.99)	5	4.13 (2.00)
Alcohol	4	3.85 (1.48)	4	3.94 (1.42)	3	3.96 (1.39)
Cigarette	5	4.55 (1.56)	5	4.27 (1.59)	4	4.02 (1.63)
Sex	6	5.07 (1.83)	6	5.14 (1.82)	6	4.62 (1.99)
Obesity	7	5.41 (1.78)	7	5.48 (1.82)	7	5.76 (1.76)
Kendall coefficient of concordance (W)		0.29		0.29		0.24
Chi-square		1586		1084		2060
p value		<0.0001		<0.0001		<0.0001

findings are, therefore, not representative of the wider population. Secondly, while there was a clear difference in ranking, the underlying reasons why there was a difference are unclear. It is possible that parents were considering a wider range of social consequences when ranking problems, not just mortality and morbidity. For example, unsafe sex has wider implications, such as unplanned pregnancies. Moreover, because this study relied on ranking, there is a risk that the forced choice method exaggerated the actual difference between perceived seriousness of the concerns. Third, due to the interdependence of ranking data it was not possible to test if the difference between groups – for example, between never, current or ex-smokers – was statistically significant.

Conclusion

This study is a timely reminder that despite overwhelming evidence of the health implications of smoking, it is not rated highly as a concern for parents. How parents rank concerns may well be based on a different criteria (e.g. severe and immediate impact of the behaviour). Our findings indicate a need for further research on how to effectively engage parents in smoke-free interventions through salient, meaningful messages that acknowledge the cognitive basis of concern. In order to prevent smoking uptake, it is important to alert parents to the risk of tobacco smoking uptake among their children, especially if the parents smoke. Preventive interventions need to acknowledge parents' other concerns, but clearly explain that long-term tobacco smoking harms and kills more people than these other concerns combined, and point out the role of tobacco as a gateway drug for alcohol and illegal drug use.

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Authors

Marewa Glover, Anette Kira, Sandar Min, Centre for Tobacco Control Research, School of Population Health, University of Auckland, New Zealand

Robert Scragg, Epidemiology & Biostatistics, School of Population Health, University of Auckland

Vili Nosa, Pacific Health, School of Population Health, University of Auckland

Judith McCool, Social & Community Health, School of Population Health, University of Auckland

Chris Bullen, Clinical Trials Research Unit, School of Population Health, University of Auckland

Correspondence

Marewa Glover, Centre for Tobacco Control Research, School of Population Health, University of Auckland, New Zealand
e-mail: m.glover@auckland.ac.nz

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