

The Influence of Family, Community, Age and Gender on Drink Driving Risk Behaviours Amongst Rural High School Students: What are the Implications for Health Promotion?

James Bennett-Levy, James Nugent, Katrina Falconer & Marcia Dwonczyk

Abstract

Issues addressed: The present study was carried out to determine (1) the frequency of drink driving risk behaviours over a six month period among high school students in rural New South Wales, and (2) the influence of family, community, age and gender.

Methods: A short questionnaire assessing drink driving risk behaviours, attitudes and knowledge was administered to 1363 high school students from 14 schools who had attended drink driving prevention presentations. The questionnaire distinguished between three classes of drink driving risk behaviours - (1) driving self (2) getting into a car with a family member who was over-the-limit and (3) getting into a car with a friend who was over-the-limit.

Results: 50 per cent of the students reported that at least once in the previous six months they had been a driver or a passenger in a car where the driver was over the legal blood alcohol limit. Family patterns of drink driving and community norms exerted very strong influences on all three classes of risk behaviour. Males were more likely to be drink drivers than females, but females were just as likely to be passengers of friends and family. Younger students were more likely to be passengers with family; older students were more likely to be passengers with friends, or to be driving themselves.

Conclusions: Families, community norms, age and gender strongly influence the level of students' drink driving risk behaviours. The key role of families and community has been largely overlooked in the literature on school-based drink driving prevention programs.

So What? The major implication is that school-based drink driving prevention programs may be of limited benefit unless the drink driving risk behaviours of families and community are also addressed in a coordinated manner. Additionally, gender-specific and age-targeted approaches to drink driving prevention should be developed for the classroom.

Key Words: Drink Driving; Students; Family; Community; Rural

Introduction

An extensive review of drink driving prevention strategies in Australia confirmed previous studies which have indicated that there is little evidence to support the effectiveness of school-based programs operating within a general alcohol education framework as a strategy to reduce drink driving.¹ It has been argued that one reason for these poor outcomes is that drink driving behaviours need to be differentiated from education about other alcohol-related behaviours in order to increase their "perceived deviance".^{2,3,4}

Another reason for the modest outcomes of drink driving prevention programs in schools is that it is not clear to whom they should be targeted. Which age groups should be targeted in what manner? Should there be a particular focus on males? And should we involve parents and community?^{5,6,7}

The present study examined the influence of family, community, age and gender on the drink driving risk behaviours of high school students. A short questionnaire was developed to assess students' drink driving knowledge, behaviour and attitudes as part of the evaluation of a drink driving prevention program carried out between 1994-96 in 27 schools on the North Coast of New South Wales. Only the results from the

subset of items which assessed students' drink driving risk behaviours over the previous six months are presented in detail here.*

A number of studies have attempted to determine the correlates of drink driving behaviours using a variety of different approaches.^{2,8,9,10,11} However, this study differed from other studies in three important ways:

1. We looked at high risk behaviours across all high school students from years 7-12, which allowed us to examine differential patterns across age groups. Most studies have only studied one or two specific age groups (usually those of driving age).
2. We asked students about their drink driving experiences both as drivers and passengers (one other study has done the same,² but most have not). This distinction turned out to be important because of differential patterns of driving and passenger behaviours among males and females, and across ages.

* Unpublished data from those questionnaire items which addressed students' knowledge of drink driving laws and their expectations of future high risk behaviours indicated that: (1) students had good knowledge of drink driving laws following drink driving presentations. This accorded well with other studies.⁴ (2) students' attitudes and expectations of engaging in drink driving risk behaviours in the future were closely tied to their reported levels of drink driving risk behaviours over the previous six months.

87040719



3. We made a distinction between two different classes of passenger behaviour: Getting into a car with a family member over-the-limit, and getting into a car with a friend over-the-limit. This distinction, which does not seem to have made elsewhere in the literature, allowed us to examine the formative influence of the family on high risk behaviours. Of course, in family situations, students - especially younger ones - may be coerced or forced into the car with drunk family members, and have relatively little control over high risk situations, whereas it is reasonable to assume that there is more of an element of choice and volition involved in getting into a car with a drinking friend.

The present study focussed on two questions:

- (1) What was the level of drink driving risk behaviours among students on the North Coast? And
- (2) What were the demographic correlates, and possible determinants, of these risk behaviours?

Method

Study sample

The subjects were 1363 students from 14 secondary schools across the North Coast of New South Wales. Six hundred and ninety three were male, 665 were female, and nine did not record their gender. Their average age was 15.3 years. Schools ranged in location from being in moderately large rural centres with populations of more than 40,000 people, such as Lismore and Port Macquarie, to being located in small outlying townships with populations of fewer than 5000 people.

The study sample was derived from a total of 4100 students from 27 schools who attended the presentations. The questionnaire was developed during the first six months of the project, so the first schools were not included; nor were the last schools, as we closed data collection in order to analyse the results before the completion of the project. The only other schools which were excluded were those in which there was not enough time after the presentations to distribute the questionnaires. The sample group did not differ from the total group in terms of age, gender or type of school (State or Catholic, location and size).

Materials

A 15 item questionnaire was designed to be completed in about 10 minutes. Students filled out the questionnaire following a 45 minute presentation from a person who had sustained a severe head injury in a drink driving accident. The questionnaires were given after the presentation so that data collection could be combined with evaluation of the presentation.

The presenters were funded by a grant from the Motor Accidents Authority of New South Wales to do school

presentations in which they told the stories of their accidents and subsequent rehabilitation. Qualitative data indicated that the presentations were very well received, with 95 per cent of respondents saying that they would recommend the presentations to fellow students.

The questionnaire addressed four areas: (1) knowledge of drink driving laws, (2) drink driving risk behaviours over the previous six months (3) attitudes/expectations of future drink driving risk behaviours over the following six months, and (4) an evaluation of the presentation.

Results from a subset of three questions are reported here. Specifically these were:

1. In the last six months, have you been a passenger with a family member who you think was driving over the legal blood alcohol limit? (FAMILY MEMBER)
2. In the last six months, have you been a passenger with a friend who you think was driving over the legal blood alcohol limit? (FRIEND)
3. In the last six months, have you driven a car or motor cycle when you were over the legal blood alcohol limit? (SELF)

Students ticked one of four responses: never, once, two to four times, five or more times. "Don't drive" was also an option for the driver question.

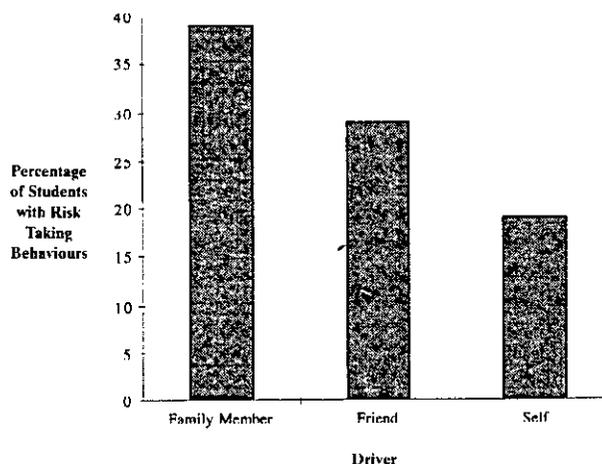
Results

1. Level of Drink Driving Risk Behaviours

The percentage of students engaging in the three categories of drink driving risk behaviours (passenger with family or friends, or driving self) on one or more occasions over the previous six months is shown in Figure 1.

Being a passenger with a family member constituted the most frequent category of risk behaviour, except in Year 11 & 12 students (Table 1).

Figure 1: Percentage of Students who have Engaged in Drink Drive Risk Taking Behaviours over a 6 Month Period



The number of students who reported at least one drink driving risk behaviour from either the *family* or *friend* or *driving self* categories over the previous six months was almost precisely half the sample (50.5 per cent). Drink driving risk behaviours appear to be a substantial problem in the New South Wales North Coast community.

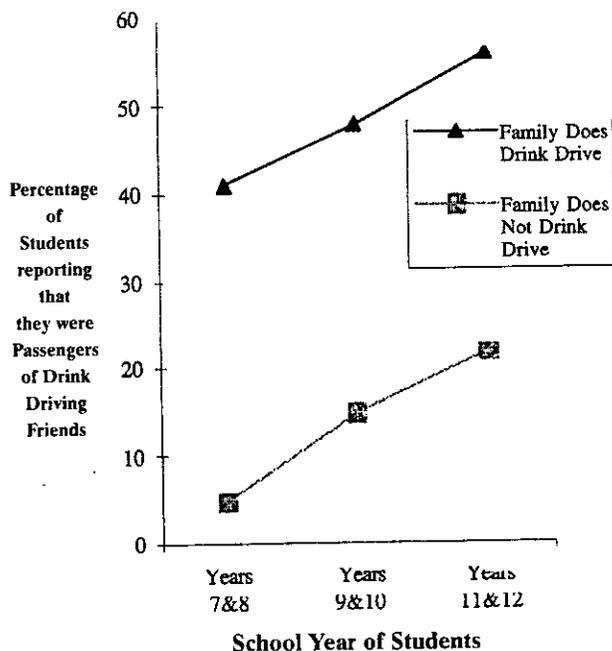
2. Effects of Family Drink Driving

Of the 39 per cent of students who reported at least one occasion of being a passenger with a family member who was over-the-limit, 16 per cent reported being a passenger on one occasion; 15 per cent on two to four occasions, and 8 per cent on more than five occasions. Thus almost a quarter (23 per cent) of students were exposed to drink driving situations by family members on multiple occasions.

Overall, students who came from drink driving families were three times more likely to get into a car with a drink driving friend (48 per cent vs. 16 per cent, $X^2=160.7$, $p<.0001$). However, these figures mask what is a much more dramatic effect when the effects of age are taken into account.

Figure 2 shows the relationship between exposure to family drink driving, and getting into a car with drink driving friends.

Figure 2: Family Drink Driving Effects on Students' Passenger Behaviours with Drink Driving Friends



It can be seen that in the youngest age groups (Years 7 & 8) where the effects of family modelling are presumably at their strongest, students from drink driving families are eight times more likely to get into a car with drink driving friends than students from non-drink driving families. Thereafter the rate of increase of

risk behaviours with age is similar for the two groups, which may reflect similar levels of susceptibility to peer influence. Students from drink driving families therefore appear to start their teenage years with a greatly increased likelihood of engaging in risky passenger practices with friends.

As far as students' own drink driving behaviour is concerned, students from drink driving families are twice as likely to drink drive as students from non-drink driving families (27 per cent vs. 13 per cent, $X^2=20.4$, $p<.0001$). These figures are almost certainly an underestimate since they are based on those Year 11 and 12 students who remain at school. Many previous studies suggest that there is over-representation of early school leavers who achieve poorly at school among young adults who drink drive. This being the case, it would be expected that the influence of family drink driving would be far greater among a random sample of 17 and 18 year olds, which included those who had left school after Years 9 or 10.

3. Effects of Community

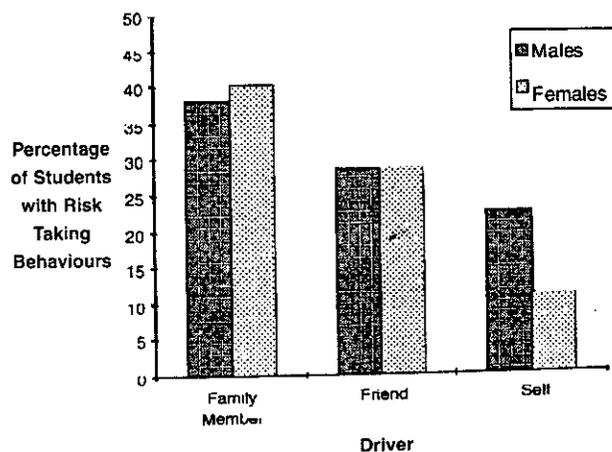
There were considerable differences in level of drink driving risk behaviours between students from different schools. For instance, the percentage of students reporting drink driving risk behaviours among family members ranged from 16 per cent to 55 per cent in different schools ($X^2=87.1$, $p<.0001$). Such reports of family drink driving presumably reflect differences in norms between different communities. Analysis of data from individual schools indicates that drink driving rates tended to be higher among the smaller, more remote rural communities.

4. Effects of Gender

Figure 3 indicates the percentage of male and female students who had engaged in the three categories of drink driving risk behaviours over the previous six months.

There were no gender differences in being a passenger with family members who were over-the-limit.

Figure 3: Percentage of Male and Female Students who have Engaged in Risk Taking Behaviours over a 6 Month Period



However, it is interesting to note that even though males were much more likely to be drink drivers than females ($X^2=14.9$, $p<.0001$) as found in other studies,^{2,11,12} females were just as likely as males to be passengers with friends who were over-the-limit ($X^2=.023$, ns). This indicates that male drink driving can be specifically differentiated from high risk passenger behaviours, where males and females are equally at risk.

5. Effects of Age

Table 1 indicates the level of risk behaviours among different School Years.

TABLE 1: Percentage of Students from Different School Years who have Engaged in the 3 Kinds of Drink Driving Risk Behaviours over the Previous 6 Months

	YRS. 7 & 8	YRS. 9 & 10	YRS. 11 & 12
FAMILY	46%	44%	28%
FRIENDS	21%	30%	32%
SELF	8%	7%	13%

Younger students were more likely than older students to be placed in high risk situations by their families ($X^2=35.6$, $p<.0001$). Not surprisingly, older students were more likely to get into cars with drink driving friends ($X^2=8.5$, $p<.02$), and to drink drive themselves ($X^2=14.03$, $p<.001$). One particularly alarming aspect of the data was the number of under-age students who claimed not only to be driving, but drink driving (around 7 per cent). These students were mostly from the more remote rural schools.

Discussion

The principal findings from this study are, firstly, that there is a high rate of drink driving risk behaviours among high school students of all ages on the North Coast of New South Wales; and secondly, that family, community, gender and age exert a large influence on the nature and extent of drink driving among high school students.

One in two students had been in at least one high risk situation in the previous six months. Although we are not aware of any data with which these levels can be directly compared (the most comparable study unfortunately used a different scale),² we do know from other sources that the North Coast of New South Wales has a higher than average number of motor vehicle accidents involving drink driving, so it is likely that these figures are at the upper end of the scale for high risk behaviours in New South Wales.¹³ What is uncertain is how comparable they are with the figures for rural communities in other States.

Families. Our data indicate that family patterns of drink driving seem to exert very significant effects on

the extent of drink driving risk behaviours among students. This compliments family studies indicating that adolescent patterns of alcohol usage closely mirror those of their parents,¹⁴ and extends this finding into the area of drink driving. We suspect that one of the reasons such data have not previously been uncovered in the schools drink driving literature is that the necessary questions about family drink driving may not have been asked because of their sensitivity.

Some authors have suggested that fathers play the primary role in modelling driving behaviours for their sons.^{7,15} If family modelling of drink driving risk behaviours is one of the major influences on students' drink driving, this suggests that drink driving prevention programs aimed at students would be more effective if their families were included in some way.

Communities. It was also found that there were large differences in the level of drink driving risk behaviours among students and families from different communities, indicating that community norms exert a significant influence on drink driving risk behaviours. Consistent with other studies, remote rural communities had particularly high rates of risk behaviours.^{1,2,8} This finding supports the notion that drink driving behaviours among students are likely to flourish in communities where such behaviour is more accepted.^{2,3}

A number of studies and review articles over the years have indicated that the effects of drink driving prevention programs in schools are quite modest.^{1,2} The present study suggests that for a drink driving prevention program aimed at students to have a better chance of influencing behaviour, it would need to target families and the local community, as well as students, through an integrated, coordinated approach. Researchers working in different areas of health promotion in schools have come to similar conclusions. For instance, one group which evaluated a general alcohol education program whose effect appeared negligible commented:

"It may be that such a school program must be integrated with a comprehensive and coordinated community-wide prevention effort involving schools, parents, peers, media, churches, civic clubs, local government and other important institutions."⁵

Gender. Gender also played a significant role in determining risk behaviours. Unsurprisingly, males were much more likely to be drink drivers.^{7,10,12} However, females were just as likely to be passengers in cars driven by drink drivers, replicating an earlier study of a large rural Queensland cohort.⁷ To date, the drink driving literature has tended to emphasise the risk behaviours of young males, and failed to take sufficient note of the fact that adolescent females are as likely to be passengers.

Our data, and that of the Queensland Drink Driving Project, suggest that a distinction should be made between "passenger behaviours" and "driver

behaviours," and between differential male/female patterns. A previous study found that females have a more negative attitude to drink driving than males.¹² In a part of our study not reported here, we found indications that females showed greater (more positive) attitude change following the school presentations than males.

These findings might suggest that a number of females are less than willing passengers of drink drivers (predominantly males), and that if they were provided with more skills and support to voice their concern, they might be able to exert a greater influence on the safety of themselves and others.

The elevated levels of drink driving in adolescent males have been variously interpreted as a reflection of higher thrill-seeking behaviours among young males; as being part of a generally elevated level of "deviant" behaviour among adolescent males; and as indicating that young males, lacking a formalised rite of passage, utilise mastery of the automobile as a measure of the transition from boyhood to manhood.^{12, 16}

As different kinds of drink driving risk behaviours are gender-linked, there is an obvious need to include gender-specific problem solving and skills rehearsal in the school-based component of any integrated drink driving prevention program. If drink driving is largely a product of male culture, then it makes sense for young males to gain greater awareness of the issues by facilitated discussion among themselves. If some females are unwilling participants as passengers of (mostly) drink driving male drivers, then this suggests that there would be value in providing them with the opportunity to share their experiences, to empower one another to voice their concerns, and to take action to ensure their safety. A targeted approach is also consistent with a study which found that males and females were responsive to different components of drink driving programs.¹⁷

Age. Table 1 indicates that students of different ages were differentially exposed to high risk situations. Year 7-10 students were more likely to be in cars with drink driving parents, while Year 9-12 students were more likely to be travelling with drink driving friends. Older students, by virtue of having a licence, are more likely to drink drive themselves, although there was also a small minority of younger students who claimed to be drink driving.

Many drink driving prevention programs in schools have concentrated on students in years 10-12, for the obvious reason that they are of legal or near legal driving age. Even programs which have paid attention to passenger behaviours have tended to concentrate on older students.² The present data indicate that the genesis of drink driving risk behaviours may lie in risky passenger behaviours, and that programs focussed on passenger behaviours more specifically oriented toward younger high school students - and their parents - should be considered alongside driver-oriented programs for older students.

This study also revealed a number of young students from largely rural and remote communities claiming to drink drive. Further enquiry from local informants such as teachers who had lived in these areas a long time confirmed this finding. These informants revealed that many students start driving, some on farms, some on dirt roads, from an early age. The vehicles that they are driving, moreover, are often unregistered and dangerous (having oil drums as seats, for example). Accidents apparently happen quite frequently but usually go unreported except where there is major injury. This phenomenon, while barely noted in the literature, appears quite prevalent in remote rural areas.

Several caveats are in order in interpreting these results. Firstly, we had no formal check on the validity and reliability of our data. Desirable though this might be, it was beyond the scope of the present study. A related point is that the data were dependent on students' interpretation of their family members' and friends' levels of blood alcohol, estimates which would inevitably be subject to some degree of inaccuracy.

Inasmuch as our findings were quite comparable with other studies (e.g. the gender effects, remote community effects), there is apparent face validity. It was also our impression that these students, who had just been exposed to powerful presentations, took their task seriously.

A second point is that our data are correlative and cross-sectional. Whilst it is tempting to suggest that there is a likely causal relationship between family/community drink driving behaviours and students' risk behaviours, such a conclusion would need to be established in a longitudinal study.

Thirdly, whilst the association between families' drink driving practices and students' risk behaviours appears strong, the precise mechanisms are likely to be complex. Behavioural modelling may well be one transmission pathway, but there are likely to be many others.^{9, 14, 16, 18}

Conclusion

We suggest that if further progress is to be made in reducing drink driving among young people in rural communities, three approaches should be considered:-

1. Health promotion programs should be implemented which target students and families and communities in a coordinated manner. An expanded version of the "Health Promoting Schools" concept, which encompasses family and community, may provide a framework for such an initiative.^{19, 20, 21} We suggest that a promising approach to the issue of drink driving in small rural communities would be a focussed localised drink driving prevention strategy which is initiated from school, incorporates respected local personalities, and spreads across local council, local media, local

identities, local shops and pubs, and other institutions.

2. Separate gender-based problem solving and skills training groups in the classroom should be developed.
3. For younger high school students, school programs should (i) specifically target passenger risk behaviours and (ii) make an active effort to incorporate families, the principal models for passenger risk behaviours in younger students. Programs for older students should target both passenger and driver risk behaviours.

The task of changing drink driving practices among young people in rural communities is the task of achieving cultural change among males, families and communities. Our data suggest that programs which are entirely school-based, and which do not address the gender- and age-specific issues of students, are likely to be modest in their effects. In contrast, programs which address the needs of students, families and communities in a coordinated and targeted manner stand a far greater chance of achieving significant change.

Acknowledgements

This study was supported by a grant awarded to the North Coast Head Injury Service by the Motor Accidents Authority of New South Wales.

Authors

James Bennett-Levy
Department of Psychology and Sociology
James Cook University
Townsville, Qld
E-mail HYPERLINKmailto:James.BennettLevy@jcu.edu.au

James Nugent, Marcia Dwonczyk
North Coast Head Injury Service
Lismore, NSW

Katrina Falconer,
North Coast Head Injury Service
Port Macquarie, NSW

References

1. Drink Driving Prevention Services. *Drink drive prevention: A model of best practice* (SWCPH Research Paper 96/35): South West Centre for Public Health, Albury, NSW, 1997.
2. Sheehan, M., Schonfield, C., Ballard, R., Schofield, F., Najman, J., & Siskind, V. A three year outcome evaluation of a theory based drink driving education program. *Journal of Drug Education* 1996; 26: 295-312.
3. Klitzner, M. D., Vegega, M. E., & Gruenewald, P. An empirical examination of the assumptions underlying youth drinking/driving prevention programs. *Evaluation and Program Planning* 1988; 11: 219-235.
4. Albert, W. G., & Simpson, R. I. Evaluating an educational program for the prevention of impaired driving among Grade 11 students. *Journal of Drug Education* 1985; 15: 57-71.
5. Hopkins, R. H., Mauss, A. L., Kearney, K. A., & Weisheit, R. A. Comprehensive evaluation of a model alcohol education curriculum. *Journal of Studies on Alcohol* 1988; 49: 38-50.
6. Wragg, J. The longitudinal evaluation of a primary school drug education program: Did it work? *Drug Education Journal of Australia* 1990; 4: 31-44.
7. Queensland Drink Driving Project. *The development and implementation of the 'Plan a Safe Strategy' drink driving prevention program* (NCADA Monograph Series No. 13). Canberra: Australian Government Publishing Service, 1990.
8. Barnes, G. M., & Welte, J. W. Predictors of driving while intoxicated among teenagers. *Journal of Drug Issues* 1988; 18: 367-384.
9. Beck, K. H., Summons, T. G., & Matthews, M. P. Monitoring parent concerns about teenage drinking and driving: A focus group interview approach. *Journal of Alcohol and Drug Education* 1991; 37: 46-57.
10. Farrow, J. A. Drinking and driving behavior of 16 to 19 year olds. *Journal of Studies on Alcohol* 1985; 46: 369-374.
11. Turrisi, R., Jaccard, L., Kelly, S. Q., & O'Malley, C. M. Social psychological factors involved in adolescents' efforts to prevent their friends from driving while intoxicated. *Journal of Youth and Adolescence*; 1993; 22: 147-169.
12. Farrow, J. A., & Brissing, P. Risk for DWI: A new look at gender differences in drinking and driving influences, experiences, and attitudes among new adolescent drivers. *Health Education Quarterly* 1990; 17: 213-221.
13. Frape, G. *Communications strategy drink driving campaign*. Roads and Traffic Authority (NSW), Sydney, 1993.
14. Barnes, G. M., Farrell, M. P., & Cairns, A. Parental socialization factors and adolescent drinking behaviors. *Journal of Marriage and the Family* 1986; 48: 27-36.
15. Fletcher, R., Hamilton, D., & Hewitson, P. Fathers talking about risky driving to their teenage sons. *Men's Health Project*, University of Newcastle, 1997.
16. Moffitt, T. Adolescent-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review* 1993; 100: 674-701.
17. Klitzner, M., Blasinsky, M., Marshall, K., & Paquet, U. Determinants of youth attitudes and skills towards which drink driving prevention programs should be directed. Volume 1: *The State of the Art in Youth DWI Prevention*. NHTSA, Washington DC, 1985.
18. Dobkin, P. L., Tremblay, R. E., & Sacchitelle, C. Predicting boys' early-onset substance abuse from father's alcoholism, son's disruptiveness, and mother's parenting behavior. *Journal of Consulting and Clinical Psychology* 1997; 65: 86-92.
19. Lynagh, M., Schofield, M. J., & Sanson-Fisher, R. W. School health promotion programs over the past decade: A review of the smoking, alcohol and solar protection literature. *Health Promotion International* 1997; 12: 43-60.
20. McBride, N., Cameron, I., Midford, R., & James, R. Facilitating health promotion in Western Australian schools: Key factors for success. *Health Promotion Journal of Australia* 1995; 5: 11-16.
21. NSW Department of Health, NSW Department of School Education, Catholic Education Commission (NSW) and the Association for Independent Schools (NSW). *Towards a health promoting school. A joint project*, 1996.