

The Young, Delinquency, Drink and Driving

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The Queensland Drink Driving Project is an interdisciplinary educational research program funded by the Commonwealth Department of Community Services and Health. Active participants in the Project include staff from the Department of Social and Preventive Medicine at the University of Queensland, the Alcohol and Drug Programs Unit of the Queensland State Education Department and the Research Division of the Queensland State Department of Transport.

This paper presents some information obtained during the development of the P.A.S.S. (Plan a Safe Strategy) drink driving program. This is a school-based education program for Year 10 students which is designed to prevent the onset of drink driving by young adults.

One key issue in the design of the program was the extent to which drink driving is a 'normal', or majority, behaviour determined by opportunity as is argued by Homel (1983) and Gusfield (1985) or is the aberrant behaviour of a socially discrete minority. This question needs to be addressed in any systematic attempt to design an educational intervention. Norstrom (1981) stated a long recognised fact of drink driving interventions when he wrote 'it is unrealistic to conceive of general deterrence in terms of a uniform response by the whole community; rather different responses can be expected dependent upon distinctive qualities of the potential offenders. Conversely, a number of workers in the field have noted that it is inappropriate to design and implement interventions as though the community of drink drivers was homogenous (Wells-Parker et al., 1986; Lacey et al., 1979). The program designer working with either institutionalised actions, such as R.B.T., sentencing regulations, re-education programmes for convicted drink drivers, or with prevention programmes such as pre-driving education packages or media campaigns, needs to define exactly who will be the target for the program. Such information helps to establish the effect to be expected and ultimately to provide a measure for its success or failure.

Evaluation of preventive approaches (McAlister, 1981) suggests that the most effective models are designed to lessen the likelihood of the behaviour occurring rather than to change an already established pattern. Applying this to a school-based program for drink driving raises the need to determine the relative

proportions of students who are likely to be engaged in drink driving at the time of the education intervention and whether they are distinguishable in any other way from their non-drink driving peers.

The extensive literature on the characteristics of convicted adult drink drivers has provided a relatively consistent picture of the psychosocial characteristics of this group. They are likely to be male, of low socio-economic status, alcohol dependent or at least heavy drinkers and with high levels of hostility and aggression. They have also been identified as having low self-esteem, a perceived lack of control over external events and a relatively high orientation to sensation seeking (Donovan et al., 1983; Donovan and Marlatt, 1982). Recent studies of offenders indicate that they are more likely to have had previous contact with the justice system (Argeriou et al., 1985) and to have a criminal history (Beerman et al., 1988).

The question has been raised as to the extent that this work, much of which is based on studies of convicted drink drivers, is valid for non-convicted drink drivers. Work by Smith et al. (1976), Vingilis et al. (1982), Homel (1983) and Underhill (1986) has found consistently that young males are more likely to be apprehended than alcohol-impaired females or older males. That is that convicted persons are not representative of the population of drink drivers revealed in random roadside surveys. At the same time the findings of the few community studies of the correlates of self-reported impaired drink driving are similar to those based on convicted drink drivers (Norstrom 1980; Wilson and Jonah 1985).

In an overview of their findings from a community survey of drinking and driving, Wilson and Jonah (1985) also came to the conclusion that drink driving countermeasures aimed at the general driving community are unlikely to deter the group of persons who could be considered to be confirmed impaired drivers. Their study provided figures on the proportion of adults in the community who are likely to drive when impaired. They found that of the 71 per cent of persons who had drunk in the last 30 days, 13 per cent reported that they had driven whilst impaired and a further 35 per cent could be classified as drinking but not impaired drivers.

Prior to setting the goals for the design of an education package, it is important to examine whether it is possible to discriminate a similar problem group within the general school community. The aim of the present study therefore, was to determine if the characteristics attributed to adult drink drivers can be identified in high school students, if they can be related to drink driving behaviours, and what proportion of a student group will have these characteristics.

Method

Sampling

The data reported in this paper were obtained from a comprehensive drink

driving survey of Year 10 students in a representative sample of Queensland state high schools. A sample of 1992 students was randomly selected from 4980 students surveyed. The final sample had an average age of 14.9 years and included 985 males and 997 females. A more detailed description of sampling is given in an earlier report (Sheehan et al., 1986).

Measures

The following relevant psychological and social factors were included in the questionnaire: a measure of drinking frequency, driving frequency, number of friends in the respondent's group who drink and drive, the Zuckerman scale (Zuckerman, 1979) measuring thrill and adventure seeking, the Bachman and O'Malley (1978) delinquency scale, and a lie or social desirability scales (Coopersmith, 1981). As a measure of conventional behaviour, frequency of church attendance was also included. Paternal occupation was coded using Australian Bureau of Statistics codes (ABS, 1988).

The main dependent variable 'Driven (or 'Never Driven') a Motor Vehicle after Drinking' was the student's answer to the survey question 'After drinking 2 or more glasses of an alcoholic drink in one hour have you ever driven a car or any other motor vehicle?' The consumption of 2 glasses in 1 hour was chosen to define drinking because it generates a blood alcohol concentration of over 0.02 per cent in an average size person (Blaze-Temple et al., 1988). The illegal blood alcohol level for 17 year old Queensland drivers is 0.02 per cent. The legal driving age in Queensland is 17 years and the legal age for drinking in licensed premises is 18 years.

Results

In the first stage of analysis, a set of univariate analyses (Chi-square, t-tests) were conducted to establish the relationship between each psychosocial factor and drink driving.

Table 1 shows that as many as 10 percent of Year 10 state high school students reported that they have drink driven a motor vehicle at least once in their lives and that these underage drink drivers are more likely to be male.

Table 1

**Drink Driving Behaviour by Sex
Year 10 Students (column percentages*)**

Behaviour	% Males (n=975)	% Females (n=994)	% Total** (n=1979)
Driven a motor vehicle after drinking	15	5	10
Never driven a motor vehicle after drinking	85	95	90

*Rounded

**Includes 10 who failed to record sex
Chi-square=49 d.f.=1 p<0.001

There is no significant relationship between drink driving and the students' report of paternal occupation (See Table 2).

Table 2

Drink Driving Behaviour by Fathers Occupational Status Year 10 Students (n=1676*) (column percentages **)

Behaviour	STATUS				
	Upper White Collar (n=329)	White Collar (n=444)	Farming (n=135)	Blue Collar (n=659)	Unemployed etc (n=109)
Driven a motor vehicle after drinking	8	8	10	9	13
Never driven a motor vehicle after drinking	92	92	90	91	87

*Includes 316 students who had no father / gave uncodeable responses or who failed to answer for father's occupation and / or drink driving

**Rounded

Chi-square=3 d.f.=4 p<0.05

This table needs to be interpreted with some caution. The students found the three items measuring paternal occupation difficult to answer and the number of missing and uncodeable responses was high.

The relationship between reported drink driving and frequency of drinking is reported in Table 3. The more often students drink alcohol, the more likely it is that they will report having ever driven after drinking.

Table 3

Drink Driving Behaviour By Drinking Frequency in The Past Year Year 10 Students (n = 1970*) (column percentages **)

Behaviour	DRINKING FREQUENCY			
	Never (n=574)	A Few Times (n=767)	Once Every 4 Weeks (n=254)	At Least Once a Week (n=375)
Driven a motor vehicle after drinking	0	5	14	33

Never driven a motor vehicle after drinking	100	95	86	67
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*Excludes 22 students who failed to answer for drinking frequency and/or drink driving

**Rounded

Chi-square=307 d.f.=3 p<0.001

The relationship between driving a motor vehicle and drink driving is given in Table 4. The more often Year10 students drive a car or motor cycle then the more likely it is that they will have driven after drinking.

Table 4

Drink Driving Behaviour by Driving a Motor Vehicle in The Past Year Year 10 Students (n = 1968*) (column percentages **)

Behaviour	DRINKING FREQUENCY			
	Never (n=481)	A Few Times (n=896)	Once Every 4 Weeks (n=222)	At Least Once a Week (n=369)
Driven a motor vehicle after drinking	0	5	20	28
Never driven a motor vehicle after drinking	100	95	80	72

*Excludes 24 students who failed to answer for drinking frequency and/or drink driving

**Rounded

Chi-square=237 d.f.=3 p<0.001

The extent to which drink driving is related to the number of friends a student has who have drink driven is presented in Table 5. The more drink driving friends a student has, then the more likely it is that he or she has also been a drink driver.

Table 5

Drink Driving Behaviour by Number of Friends Who Have Drink Driven/Ridden Year 10 Students (n = 1958*) (column percentages*)

Behaviour	No Friends Who Drink Drive/Ride (n=1426)	Up to 3 Friends Who Drink Drive/Ride (n=326)	More Than 3 Friends Who Drink Drive/Ride (n=206)
Driven a motor vehicle after drinking	4	19	35
Never driven a motor vehicle after drinking	96	81	65

*Excludes 34 students who failed to answer for number of friends who drink drive/ride and/or drink drive

**Rounded

Chi-square=228 d.f.=2 p<0.001

The relationship between church attendance and drink driving is presented in Table 6. The more often students go to church, then the less likely it is that they have ever driven after drinking.

Table 6

Drink Driving Behaviour by Church Attendance Year 10 Students (n = 1925*) (column percentages **)

Behaviour	CHURCH ATTENDANCE			
	Not at All (n=1053)	A Few Times (n=489)	Once or Twice a Month (n=93)	At Least Once a Week (n=281)
Driven a motor vehicle after drinking	12	8	8	4
Never driven a motor vehicle after drinking	88	92	92	96

*Excludes 67 students who failed to answer for church attendance and/or drink driving

**Rounded

Chi-square=20 d.f.=3 p<0.001

In the Zuckerman Thrill and Adventure scale recorded in Table 7 the respondent is asked to indicate their desire to perform activities possessing varying degrees of hazard. A typical item in this scale is :

'I would like to try parachute jumping', or

'I would never want to try jumping out of a plane with or without a parachute'

The mean scores on this scale are presented in Table 7.

Table 7

Index of Thrill and Adventure Seeking by Drink Driving Behaviour Year 10 Students (n = 1927*)

Behaviour	THRILL AND ADVENTURE SCORE			
	m	sd	t	p
Driven a motor vehicle after drinking (n=186)	6.8	2.0	5.2	<.001

Never driven a motor vehicle after drinking (n=1741)	5.8	2.4		
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*Excludes 65 students who failed to answer 5 or more of the 10 Thrill and Adventure items and/or drink driving

The analysis in Table 7 indicates that those Year 10 students who reported drink driving are also more likely to favour activities that contain elements of excitement and risk.

The social desirability scale (or lie scale) reported in Table 8 contains 8 overly optimistic social desirability traits with which the respondent is asked to identify or not identify. Typical items in this scale include; 'I always do the right thing'; 'I'm never shy'.

Table 8

Index of Social Desirability by Drink Driving Behaviour Year 10 Students (n = 1964*)

Behaviour	SOCIAL DESIRABILITY SCORE (LIE SCALE)			
	m	sd	t	p
Driven a motor vehicle after drinking (n=191)	3.1	1.9	2.77	<.01
Never driven a motor vehicle after drinking (n=1741)	2.7	1.8		

*Excludes 28 students who failed to answer 4 or more of the 8 Social Desirability items and/or drink driving

The association is weaker ($p < .01$) but suggests that those who report drink driving have a tendency to assert good things about themselves.

In the Bachman and O'Malley Delinquency Scale reported in Table 9, the respondent is asked to record which deviant activity, out of a list of 15 deviant activities, s/he has performed over the last 12 months. The activities vary in severity and consist of 6 interpersonal aggression items (e.g. I had a serious fight in school or at work) and 9 theft and vandalism items (e.g. I've taken something from a store without paying for it). All affirmative responses are summed to determine the respondent's delinquency index.

Table 9

Reported Delinquency by Drink Driving Behaviour Year 10 Students (n =

1931*)

Behaviour	DELINQUENCY SCORE			
	m	sd	t	p
Driven a motor vehicle after drinking (n=183)	5.4	3.6	16.6	<.001
Never driven a motor vehicle after drinking (n=1741)	2.2	2.4		

*Excludes 61 students who answered 'yes' to all 15 delinquency items or failed to answer 8 or more of these items and/or drink driving items

The Table 9 data show that those students who have reported drink driving also have a significantly higher level of delinquency.

The two subsets of the delinquency scale measuring interpersonal aggression and theft and vandalism were analysed separately. These analyses yielded similarly high separation between drink driving students and their non-drink driving cohorts. (Interpersonal aggression: $t = 13.2$; $p < .001$; Theft: $t = 14.92$, $p < .001$)

Table 10

Discriminant Analysis of Psychosocial Correlates of Drink Driving Year 10 Students (n = 1979*)

Items in Order of Entry	STANDARDISED COEFFICIENTS
Drinking Frequency	0.54
Driving Frequency	0.39
Delinquency	0.28
Number of Drinking Driving Friends	0.23
Social Desirability	0.09
Sex	-0.09
Thrill and Adventure Seeking	+
Church Attendance	+
CHI-SQUARED	479
CANONICAL R	0.48
EIGEN VALUE	0.30
WILKS LAMBDA	0.77
CORRECTLY CLASSIFIED	82%

* Excludes 13 who failed to answer for drink driving (missing values for any discriminating variables assigned item total mean)

+ Variable used but excluded from analysis

All the significant psychosocial variables were then entered into a discriminant analysis. The delinquency scale was entered in full. This technique was used to determine how much contribution each variable would make towards predicting drink driving when the variance due to the other variables was taken into account.

The results of the discriminant analysis are reported in Table 10. They show that drinking frequency is the best single predictor of drink driving by Year 10 students. Driving frequency, delinquency and number of drink driving friends also contributed substantially to discriminating underage drink drivers from their non-drink driving peers. These variables, as well as the person's sex and their score on the social desirability scale, successfully classified 82 per cent of the students into drink driving or non-drink driving groups. Once these characteristics are taken into account, thrill and adventure seeking scores, and church attendance, do not add any more to the explained variance. Of the 196 students who reported drink driving 34 (17.3 per cent) could not be discriminated from their non-drink driving peers with these variables.

Discussion

These findings indicate that a minority of underage high school students report combining drinking and driving. A sizeable proportion (82 per cent) of these students can be discriminated from students who are not drinking and driving by using the psychosocial indicators shown to characterise convicted and self-report impaired adult drivers.

These students report both drinking more frequently and driving more frequently than do their non-drink driving school peers and they are likely to have more friends who drink and drive. Other characteristics which distinguish this group of students include being male, scoring higher on self-reported delinquent activities and being more attracted to adventurous and thrilling activities. Perhaps not surprisingly, they are less frequent church attenders. Socioeconomic status is not related to the behaviour and this finding is consistent with other community based studies (Wilson and Jonah, 1985).

An interesting and difficult to interpret finding of this study was the significantly high scores on the set of items measuring socially desirable responses. In the context of their other answers it seems hard to believe that this group are trying to make a good impression. It may be that their positive responses on items such as 'I am never shy', 'I never worry about anything', 'I like everyone I know', reflect the unsophisticated 'Bravado' style noted by other survey researchers working with delinquent and anti-social behaviours (Milavsky et al., 1982). Adolescents who report that they engage in problem behaviour are also more likely to miss or make mistakes in answering questionnaire items or to inflate the frequencies of their involvement in delinquent behaviours. A typical picture from such questionnaires is a respondent who is non-conforming, lacks social awareness and self-criticism and has a 'larger than life' style.

The implications of these findings for the design of a school-based education program are important. It cannot be assumed that a drink driving intervention designed for 14 year olds will precede the behaviour for all students. A significant group of students will have engaged in drink driving and will have the characteristics of older offenders. Ideally, two types of program should be initiated. The first to be based in the school setting would follow a public health model and aim to prevent the majority of students taking up the behaviour. This program would also endeavour to move the small minority who are engaging in drink driving, but do not share the distinctive personality characteristics, away from the behaviour. If such a strategy were effective in the long term it would isolate the involved students in such a way as to make them more readily identifiable. It is this model that was followed in the design of the P.A.S.S. program.

There is clearly also a need for a second program which targets the 'at risk' group. Such an intervention would need to be more intensive, more focused and probably more expensive (Lacey et al., 1979) It would have as its goal the demanding task of modifying already established behaviours in an atypical group. In real life terms it is difficult to imagine how such a discriminating program could be implemented in a school setting. It would probably only be acceptable to the community as a pre-licensing or first offender initiative, though it might have a place in the programs of the corrective institutions for young people.

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