



## COVER SHEET

---

This is the author-version of article published as:

**Freeman, James and Schonfeld, Cynthia and Edmonston, Colin (2006) An investigation into the self-reported effectiveness of a distance-education drink driving rehabilitation program for a group of drink drivers. *The Journal of Australasian College of Road Safety* 17(1):pp. 32-37.**

Accessed from <http://eprints.qut.edu.au>

© 2006 Australasian College of Road Safety

**AN INVESTIGATION INTO THE SELF-REPORTED EFFECTIVENESS OF  
A DISTANCE-EDUCATION DRINK DRIVING REHABILITATION  
PROGRAM FOR A GROUP OF DRINK DRIVERS**

James Freeman, Cynthia Schonfeld & Colin Edmonston

*Abstract*

This paper reports on the examination of a group of convicted drink drivers' self-reported appraisals regarding the effectiveness of a court-ordered distance education drink driving rehabilitation program ( $N = 51$ ). The analysis indicated that participants were satisfied with the implementation and content of the program, and reported program completion had a positive effect on improving their knowledge and skills to avoid drink driving. Despite this, approximately 25% of participants reported it likely they would drink and drive in the future, with such intentions being associated with attitudes and beliefs about drink driving rather than with the appraisal of program effectiveness. The findings have implications for the implementation of distance education rehabilitation programs to remote communities and the development of effective countermeasures that reduce the prevalence of drink driving.

*The Current Context*

Drink driving continues to be a major road safety concern as alcohol-related crashes result in substantial injuries, fatalities and property damage. The gravity of the problem is reflected in the enormous amount of literature that has focused on the impact of drink driving, and the effectiveness of different countermeasures to reduce the prevalence of the offending behaviour (Beirness, Mayhew & Simpson, 1997). Research indicates that legal sanctions such as fines and licence disqualification periods are effective in deterring a large proportion of general motorists from drink driving, but the application of sanctions in isolation has proven to be less effective in reducing alcohol-impaired driving among more persistent offenders (see for example Marques, Voas & Hodgins, 1998). More recently, alternative countermeasures such as drink driving rehabilitation programs have been developed and often combined with legal sanctions in an attempt to further reduce the prevalence of drink driving (Freeman & Liossis, 2002).

### *Effectiveness of Drink Driving Programs*

Despite an early series of negative appraisals regarding the effectiveness of rehabilitation programs (Foon, 1988; Holden, 1983; Sanson-Fisher et al., 1986), a growing body of research has demonstrated that drink driving programs have the potential to reduce recidivism and alcohol-related crashes (Davies, Broughton, Harland & Tunbridge, 2000; DeYoung, 1997; Nochajski & Stasiewicz, 2002). The primary aim of these programs has generally been accepted to be the process of separating drinking from driving by providing participants with the knowledge, skills and strategies to avoid further offending behaviour (Popkin, 1994; Wells-Parker, 1994). A secondary aim has often been to reduce drinking levels by increasing participants' awareness of the seriousness of excessive alcohol consumption (Wells-Parker, 1994). The most promising results have been reported by large scale meta-analytic studies that have examined first time and multiple offenders, effect size, intervention characteristics and the quality of research design for each study (Wells-Parker et al., 1995). Furthermore, the most promising indications regarding the effectiveness of rehabilitation programs have been for those interventions that have focused primarily on recidivist drink drivers (DeYoung 1997; Ferguson et al. 2000; Siskind et al. 2001).

### *Distance Education*

The potential of drink driving rehabilitation programs to promote behavioural change has led to the development of distance education versions to cater for individuals who live in rural and remote locations. In the simplest form, a common element of distance education programs is that the teacher and students are separated by time and place (Keegan, 1990). Historically, distance education has been utilised as a teaching mechanism for over 100 years in academic, vocational and recreational capacities (Treloar, 1998). There has been tremendous growth within the distance education field in the last decade (Carnevale, 2000; Lockhart & Lacy, 2002), as a considerable advantage of the approach is the ability to reach a greater audience and thus provide a service to individuals who would not have otherwise been able to access the program. A growing body of research has demonstrated the approach to be as effective as face-to-face teaching in academic settings (Jordan et al., 1999; Treloar, 1998), but few

research attempts have focused on programs that aim to stop further offending behaviours.

### *Need for Multiple Outcome Measures*

In general, the majority of previous research examining the effectiveness of drink driving countermeasures has focused primarily on summative outcome measures such as recidivism rates (Fitzpatrick, 1992; Popkin, 1994; Sanson-Fisher et al., 1986). While recidivism rates are the most accessible outcome measure (Buchanan, 1995), a number of researchers have raised questions regarding the accuracy of the measure (Beirness et al., 1997; Cavaiola & Wuth, 2002; Fitzpatrick, 1992; Popkin, 1994; Sanson-Fisher et al., 1986; Wells-Parker et al., 1995), as the probability of being apprehended for drink driving remains relatively low in a number of jurisdictions (Beitel, Sharp & Glauz, 1975; Homel, Carseldine and Kearnes, 1988; Voas, 1982)<sup>1</sup>. In addition, summative measurements provide very little insight into the impact of rehabilitation programs on key outcomes such as drinking behaviours, knowledge, motivation and attitudes, nor appraisals regarding the effectiveness of programs. The collection of such data has the potential to inform the development of future programs.

At present, only a small amount of research has examined offenders' self-reported experiences (Ferguson et al., 2000; Levy, 1997). Despite this, preliminary research has provided rich contextual information regarding the impact of interventions on the acquisition of new knowledge and strategies to avoid drink driving (Connors et al., 1986; Ferguson et al., 2000) as well as participants' motivations to change drinking and drink driving behaviours (Ferguson, 1997; Ferguson et al., 2000; Levy, 1997; Wells-Parker et al., 1998; Wells-Parker et al., 2000). The present study aims to extend previous research and conduct an exploratory investigation into the self-reported experiences and appraisals of a group of convicted offenders who complete a distance education version of a drink driving rehabilitation program called "Under the Limit" (UTL).

---

<sup>1</sup> Thus recidivism rates may be affected by factors such as the level and effectiveness of law enforcement activities in a particular jurisdiction, and the ability to avoid police detection (Freeman & Liossis, 2002).

### *The “Under the Limit” Program*

UTL is an 11-week education-based drink driving prevention and rehabilitation program developed in 1993 by an interdisciplinary team of university researchers, government and non-government agencies including Magistrates, Community Corrections, TAFE and Police. The program is available throughout the state of Queensland. The UTL program is based on best practice models in the areas of problem drinking as well as drinking and driving (Ferguson et al., 2000). The program aims to promote controlled drinking (not abstinence) and separate drinking from driving. The program has traditionally been implemented through Technical and Further Education (TAFE) colleges in 11 weekly sessions of one and a half hours<sup>2</sup>. In 1998, a distance education version of the program was developed and implemented, to enable offenders who for a range of reasons (eg persons living in remote areas of the state, shift workers, single parents) could not attend a local TAFE college to participate in the program.

It was decided that an initial evaluation of the distance education program should examine the efficiency of delivery as well as offender views of the content and impact.

The study thus focuses on the following research questions:

- What are participants’ self-reported experiences of completing the program?
- What are participants’ self-reported perceptions regarding the effectiveness of the program?
- What are participants’ self-reported attitudes towards drink driving after program completion?
- What factors are associated with further intentions to re-offend?

---

<sup>2</sup> An evaluation regarding the effectiveness of the TAFE-implemented program demonstrated a 50% reduction in recidivism rates for individuals with prior drink driving convictions who were apprehended with blood alcohol concentration levels above the higher threshold of 0.15g/100ml (Siskind et al., 2000).

## Method

### *Participants*

A total of 51 convicted drink drivers volunteered to participate in the study. There were 40 males and 11 females in the study. The overall response rate for the research was 46% as 111 offenders were contacted to participate in the study. Participants were located in a number of rural and non-rural areas: Far North Qld ( $n = 6$ ), Townsville ( $n = 6$ ), South East Qld ( $n = 16$ ), Darling Downs ( $n = 10$ ), Central Qld ( $n = 11$ ), Mackay ( $n = 2$ ).

### *Materials*

#### *Program Assessment Questionnaire*

A questionnaire developed for the study, collected a variety of information focusing on participants' experiences, perceptions and appraisals of the UTL program. Participants were required to respond to a mixture of categorical (e.g., 3 point) and 10-point measures (from 1 = "strongly disagree", 5 = unsure, to 10 = "strongly agree"). The first part of the questionnaire collected demographic information such as the age, employment, marital status and level of income of participants. The second section focuses on participants': (a) experiences of completing the program (e.g., length of time & assistance from friends), (b) assessment of the content of the program (e.g., appraisal of videos & drinking diaries as well as program outcomes), (c) attitudes towards drink driving, and (d) drinking behaviours (e.g., quantity) and drink driving behaviours (e.g. frequency of past offences and intentions to re-offend in the future).

### *Procedure*

Data were collected through structured interviews via two procedures. Firstly, the majority of participants (70%,  $n = 36$ ) were interviewed face-to-face at their residence or a convenient location. Only the researcher and the participant were present during the interview. Secondly, when face-to-face interviews were not possible due to logistical problems (e.g., time and travel) telephone interviews were conducted at a convenient time for participants (30%,  $n = 15$ ). Both forms of interviews took approximately 20-30 minutes to complete.

## Results

### *Characteristics of Sample*

The majority of participants were between the ages of 25 - 44. Participants were mostly male, who were employed (62.7%) on a full-time basis in blue-collar occupations, earning approximately \$12,000 - \$35,000. There was considerable variation in the level of participants' education and more than half the sample reported currently being single. The socio-demographic characteristics of the sample are comparable to recent studies that have focused on convicted drink drivers apprehended in Queensland (Buchanan, 1995; Ferguson et al., 2000). Place of residence varied considerably from the Wide Bay region to the Northern Queensland region, which was the main contributing factor for the sample being enrolled in the distance education version of the UTL program.

### **1. EXPERIENCES AND LOGISTICS OF PROGRAM COMPLETION**

In regard to the first aim of the study, participants reported no problems contacting the program coordinator, and indicated they found her friendly, reliable and knowledgeable. There were few reported difficulties corresponding with the facilitator via mail (e.g., returning completed activities) and the program did not have a negative effect on participants' family, work or social life. The majority of the participants reported completing the program by themselves (60%), although a sizable proportion reported receiving assistance from friends or family (40%). Most lessons took between one (66.7%) or two hours to complete each week (31.4%). In general, the self-reported data indicates that participants experienced few difficulties completing the distance education program (e.g., correspondence via mail & telephone), which suggests the implementation of a distance education drink driving program in rural/remote areas has the potential to be a viable alternative to traditional face-to-face programs.

### **2. ASSESSMENT OF CONTENT**

In regard to appraisals of program content, the majority of participants reported most lessons to be easy to understand (98%) although approximately half the sample reported some lessons were unrelated to their situation (55%). Participants were provided with different methods to complete the worksheets such as drawing pictures

or telling a story, which was reported as helpful. In particular, the sample indicated that the videos and drinking diaries were easy to understand and related to their situation.

In regard to the effectiveness of the program to assist the sample in avoiding drink driving in the future, participants responded to 13 questions (on a 10 point scale) with the mean score for the total questionnaire being 7.10 (*S.D.* = 1.88). Table 1 depicts the mean scores and standard deviations for each of the 13 questions designed to investigate self-reported appraisals regarding the effectiveness of the program. As highlighted, the most effective aspects of the program were associated with learning about appropriate drinking quantities and the effect(s) alcohol has on driving abilities. An additional question explored participants' satisfaction levels with the program (10 point scale from 1 = "extremely unsatisfied", 5 = unsure, to 10 = "extremely satisfied"), revealing most of the sample were satisfied with the content of the program  $M = 7.68$  ( $SD = 1.95$ ).

Table 1. *Descriptive Statistics for Program Effectiveness*

	M	SD
Understanding the negative outcomes of drink driving:	7.55	2.52
Gaining knowledge regarding standard drinks:	7.84	2.58
Learning drinking quantity and remain under legal limit	8.17	2.27
Learning about internal/external factors that affect drink driving	6.78	2.10
Understanding alcohol makes hazards worse	2.29	2.69
Understanding alcohol increases chance of crash	7.29	2.70
Learning benefits of cutting down on drinking	7.14	2.64
Learning about strategies to reduce drinking	6.69	2.75
Understand when most likely to drink and drive	7.10	2.48
Learning strategies to stay under legal limit	7.55	2.34
Becoming aware of pressures to drink and drive	6.06	2.82
Learning about reasons why people drink	6.43	2.58
Filling out the drinking diaries each week	6.35	2.82

### 3. ATTITUDES TOWARDS DRINK DRIVING

The third aim of the study was to examine participants' attitudes towards drink driving behaviours after completing the program. Participants responded to 17 questions (on a 10 point scale from 1 = "strongly disagree" to 10 = "strongly agree") and in general, the sample reported positive attitudes towards; (a) trying to avoid the offending behaviour ( $M = 6.50$ ,  $S.D. = 1.01$ ) and (b) recognising the seriousness of the offence ( $M = 6.90$ ,  $S.D. = 1.14$ ). Participants also considered that it was not



acceptable to drink and drive ( $M = 7.68$ ,  $S.D. = 2.60$ ), and believed there was no excuse for drink driving ( $M = 7.78$ ,  $S.D. = 3.14$ ). However, they also indicated the majority of their friends believed it was acceptable to drink and drive ( $M = 6.78$ ,  $S.D. = 3.03$ ). Finally, they reported the dangers of drink driving as being overrated ( $M = 8.22$ ,  $S.D. = 2.61$ ). Taken together, the results indicate that while participants believed drink driving to be unacceptable and reported having the skills to avoid the offence, the sample appear immersed in an environment that condones drink driving behaviour e.g., friends drink and drive.

#### 4. DRINKING AND DRINK DRIVING BEHAVIOURS

An investigation of drinking behaviours upon program completion revealed that approximately one third of the sample were not drinking heavily, as they reported drinking alcohol once a month or less. Conversely, a sizeable proportion reported drinking alcohol every day, four or more days a week (27.4%). In regard to intentions to drink and drive again, three quarters (76%) of the sample reported it unlikely that they would re-offend, one participant was unsure, and 11 (21.5%) participants reported that it was possible they would drink and drive in the future (see table 2). The percentage of participants intending to drink and drive again in the current sample is comparable with recent Queensland research that has examined repeat offenders intention to re-offend after completing interventions (Freeman, 2004).

Table 2. *Self-reported Drinking & Drink Driving Behaviours*

	Drinking			Drink Driving	
	<i>N</i>	%		<i>N</i>	%
Never	3	5.9	Unlikely	39	76.5
Once a Month	12	23.6	Unsure	1	2
Once a Week	7	13.7	Likely	11	21.5
2 to 3 times a week	15	29.4			
4 to 5 times a week	4	7.8			
Every day	10	19.6			

#### *Intercorrelations between Program Outcomes and Intention to Re-offend*

Table 3 depicts the bi-variate relationships between appraisal of program effectiveness, satisfaction levels, attitudes towards drink driving and intentions to re-offend. Firstly, in regard to self-reported satisfaction with the program, the measure was not significantly associated with intention to re-offend ( $r = -.20$ ), nor with actual

drinking levels ( $r = .10$ ), or socio-demographic characteristics such as age or level of income. Rather, program satisfaction appears associated with an overall appraisal regarding the effectiveness of the program ( $r = .65^{**}$ ). In addition, satisfaction was positively associated with drinking driving attitudes, as those who recognised drink driving was inappropriate and not to be tolerated reported a higher level of program satisfaction ( $r = .46^{**}$ )<sup>3</sup>.

In regards to appraisals of program effectiveness, as highlighted above the factor appears associated with satisfaction levels ( $r = .65^{**}$ ), as well as positive attitudes towards avoiding drink driving ( $r = .37^{**}$ ). However, such appraisals were not related to socio-demographic characteristics or alcohol consumption levels. The third factor of interest was intention to re-offend, as 23.5% of the sample were not certain that they could avoid drink driving in the next year. Interestingly, intention to re-offend for the current sample does not appear to be associated with appraisals regarding the effectiveness of the program ( $r = .04$ ), satisfaction levels ( $r = -.20$ ) attitudes towards the content of the program (e.g., lessons, videos or drinking diaries), or socio-demographic characteristics. Furthermore, in contrast to previous research which demonstrated that higher levels of alcohol consumption increase the likelihood of re-offending (Baum, 1999; Yu, 2000), intention to re-offend were not highly correlated with drinking behaviours<sup>4</sup>.

Rather, intention to re-offend were negatively associated with appropriate attitudes towards drink driving ( $r = -.56^{**}$ ). The results may suggest that individuals who believe drink driving is common, have friends who drink and drive and believe that drink driving is acceptable under some circumstances are more likely to drink and drive again in the future. Once again, it is unknown what impact the UTL program had on intention to re-offend as participants were not interviewed before commencing the program. What appears evident is that individuals who believe drink driving is acceptable (even after completing a drink driving rehabilitation program) are at risk of re-offending in the future.

---

<sup>3</sup> However, given that pre-program assessment of such attitudes was not taken, it remains unknown whether the program had a direct impact on attitudes towards drink driving, and thus the specific relationship between attitudes and program satisfaction remains unclear.

<sup>4</sup> Although it is noted that a comprehensive assessment of participants' drinking behaviours was not undertaken.

Table 3. *Appendix A. Intercorrelations Between Outcome Measures*

	1	2	3	4	5	6	7
1. Effectiveness of Program	1	.65**	.37**	-.03	.04	-.18	-.02
2. Satisfaction levels with Program		1	.46**	.10	-.20	-.01	-.16
3. Attitudes regarding Drink Driving			1	-.13	-.56**	.22	.03
4. Drinking Frequency				1	.24	.15	.08
5. Intentions to Re-offend					1	-.12	.02
6. Age						1	.00
7. Level of Income							1

### Discussion

The present research aimed to investigate the self-reported experiences and perceptions of a group of convicted offenders who completed a distance education version of a rehabilitation program. At present very little research has attempted to examine the impact of distance education programs on convicted offenders, or in fact the effect of distance programs for offenders in general. In regard to the logistics of implementing programs, the group reported few difficulties corresponding with the facilitator (via telephone) or receiving or returning lesson content via the mail. Importantly, completing the program was reported to have minimal impact on participants' family or work life, and the group indicated the lessons were easy to understand. Furthermore, participants reported the program to be effective, particularly within the areas of providing information about appropriate drinking levels and the effects of alcohol on driving. Perceptions regarding program effectiveness were positively associated with satisfaction levels, as the group were generally satisfied with the content of the program. Upon program completion the majority of participants also reported positive attitudes towards attempting to avoid drink and drive, and recognised the seriousness of the behaviour and dangers associated with the offence. In summary, the results indicate that a distance education program has the potential to expose drink driving offenders to valuable information regarding the seriousness of the offending behaviour and alternative methods to avoid the offence.

Finally, an examination of participants' intention to re-offend revealed that three quarters of the sample were confident of avoiding further offences, but approximately one quarter considered it possible that they would drink and drive again in the future. The findings indicate that while rehabilitation programs are effective for the majority

of individuals who complete such interventions, additional countermeasures such as alcohol ignition interlocks may be required to assist some individuals to avoid the drink driving sequence. The findings also suggest that the behaviour of drink driving may be entrenched for some individuals, and the process of providing them with the knowledge, skills and strategies to avoid drink driving – in some cases- may not be adequate to stop further offending behaviour. Given that self-reported intentions to re-offend were not associated with satisfaction or appraisal levels but rather with attitudes towards drink driving (both individual and friends'), further research may benefit from examining the environmental and situational factors that facilitate the behaviour of drink driving in some rural/remote communities.

### *Study Limitations*

Some limitations of the study were identified. Participants were not randomly selected. The small sample size limits statistical power and generalisations to the larger population of convicted drink drivers. In general, researchers have experienced considerable difficulties recruiting drink driving offenders, as this population appears extremely unwilling to present for interviews (Cavaiola & Wuth, 2002; Ferguson, 1997). Recently, these recruitment difficulties have been highlighted by small sample sizes that have ranged between 40 and 100 participants (Fetherston & Lenton, 2002; Karki, 2002; Nochajski & Stasiewicz, 2002; Smith, 2003). The accuracy of the self-reported data remains susceptible to self-reporting bias, especially responses that focus on future offending behaviours. Furthermore, it remains uncertain whether stated intentions, such as intending to drink and drive again in the next year, are effective predictors of future behaviours. Finally, participants were not interviewed before commencing the program, which would have facilitated the examination of attitudinal and behavioural changes that result from program completion.

Despite such limitations, the results provide initial evidence for the continued implementation of distance education programs for individuals who are otherwise unlikely to be exposed to essential skills and strategies to avoid drink driving. However, such programs also need to consider addressing the social and physical environment that maintains or promotes the offending behaviour, as the factors that influence drink driving may also extend beyond personal characteristics and consumption levels. As a result, future research may benefit from incorporating pre-

program questionnaires to identify what impact intervention programs have on a range of personal and social factors. It would also be of value to obtain consent from participants to access official data on their offences and evaluate the effectiveness of the program in terms of recidivism rates.

## References

- Baum, S. (1999). Self-Reported drink driving and deterrence. *The Australian and New Zealand Journal of Criminology*, 32 (2), 247-261.
- Beirness, D.J., Mayhew, D.R., & Simpson, H.M. (1997). *DWI Repeat Offenders: A Review and Synthesis of the Literature*. Canada: Health Canada.
- Beitel, G.A., Sharp, M.C., & Glauz, W.D. (1975). Probability of arrest while driving under the influence of alcohol. *Journal of Studies on Alcohol*, 36, 109-115.
- Buchanan, D.A. (1995). *Recidivism rates of a cohort of drink-drivers in Queensland – A basis for comparison*. Unpublished Masters Thesis, University of Queensland.
- Carnevale, D. (2000). Survey finds 72% rise in number of distance-education programs. *Chronicle of Higher Education*, 46 (18) 57-58).
- Cavaiola, A.A., & Wuth, C. (2002). *Assessment and treatment of the DUI offender*. New York: Haworth Press.
- Connors, G.J., Maisto, S.A., & Ersner-Hershfield, S. (1986). Behavioral treatment of drunk-driving recidivists: short-term and long-term effects. *Behavioural Psychotherapy*, 14, 34-45.
- DeYoung, D.J. (1997). An evaluation of the effectiveness of alcohol treatment, driver license actions and jail terms in reducing drunk driving recidivism in California. *Addiction*, 92 (8), 989-997.
- Ferguson, R.T. (1997). *Motivational interviewing with less motivated driving under the influence of alcohol second offenders with an exploration of the processes related to change*. Unpublished Doctoral Dissertation, Graduate School of the University of Wyoming.

Ferguson, M., Schonfeld, C., Sheehan, M., & Siskind, V. (2000). *The Impact of the "Under the Limit" drink driving rehabilitation program on the lifestyle and behaviour of offenders*. Road Safety Research Report: CR187, Canberra. Federal Office and Road Safety.

Fetherston, J., & Lenton, S. (2002). A study of repeat drink drivers in Western Australia. *Proceedings of the Road Safety Research, Proceedings of the Research, Policing and Education Conference*, Adelaide, South Australia, [CD-ROM].

Fitzpatrick, J.L. (1992). Problems in the evaluation of treatment programs for drunk drivers: Goals and outcomes. *The Journal of Drug Issues*, 22, 155-167.

Foon, A.E. (1988). The effectiveness of drink-driving treatment programs: a critical review. *The International Journal of the Addictions*, 23 (2), 151-174.

Freeman, J., & Liopsis, P. (2002). Drink driving rehabilitation programs and alcohol ignition interlocks: Is there a need for more research? *Road and Transport Research*, 4, 3-13.

Holden, R.T. (1983). Rehabilitative sanctions for drunk driving: An experimental examination. *Journal of Research in Crime and Delinquency*, 22, 55-72.

Homel, R.J, Carseldine, D., & Kearns, I. (1988). Drink-Driving Countermeasures in Australia. *Alcohol, Drugs and Driving*, 4 (2), 113-144.

Jordan, L., Spooner, F., Calhoun, M., Beattie, J., Algozzine, B., & Galloway, T. (1999). Life beyond the large city: a distance education program in learning disabilities at the university of north Carolina at charlotte. *Rural Special Education Quarterly*, 18(3-4), 44-58.

Karki, O.V. (2002). Feasibility study on ignition interlocks in Finland. *Proceedings of the 16<sup>th</sup> International Conference on Alcohol, Drugs and Traffic Safety*, Montreal, Canada, [CD-ROM], ICADTS.

Keegan, D. (1990). *Foundations of Distance Education*. Routledge, London.

Levy, C.M. (1997). *Applying the transtheoretical model of change to court ordered/DUI outpatient treatment clients*. Unpublished Doctoral Dissertation. The College of William and Mary in Virginia.

Lockhart, M., & Lacy, K. (2002). An assessment model and methods of evaluating distance education programmes. *Perspectives*, 6, 98-104.

Marques, P.R., Voas, R.B., & Hodgins, D. (1998). Vehicle interlock programs: protecting the community against the drunk driver. *Journal of Prevention and Intervention in the Community*, 17 (1), 31-44.

Nochajski, T.H., & Stasiewicz, P.R. (2002). Short-term effectiveness of brief motivational intervention with convicted DWI offenders. *Proceedings of the 16<sup>th</sup> International Conference on Alcohol, Drugs and Traffic Safety, Montreal, Canada*, [CD-ROM], ICADTS.

Popkin, C.L. (1994). The deterrent effect of education on DWI recidivism. *Alcohol, Drugs and Driving, Vol 10* (3-4), 287-294.

Sanson-Fisher, R., Redman, S., & Osmond, C. (1986). *Rehabilitation of drink drivers in Australia and New Zealand*. Canberra: Federal Office of Road Safety.

Siskind, V. (1996). Does licence disqualification reduce reoffence rates? *Accident Analysis and Prevention*, 28 (4), 519-524.

Siskind, V., Sheehan, M., Schonfeld, C., & Ferguson, M. (2000). *The Impact of the "Under the Limit" Drink Driving Rehabilitation Program on Traffic Safety: An Outcome Evaluation of "Under the Limit"*. (ATSB Monograph CR186). Canberra: Australian Transport Safety Bureau.



Smith, K. (2003). *A Qualitative Study of Deterrence and Deviance in a Group of Recidivist Drink Drivers*. Unpublished Masters Manuscript. University of Canberra, Australia.

Treloar, C.J. (1998). Evaluation of a national and international distance education programme in clinical epidemiology. *Medical Education*, 32, 70-75.

Voas, R.B. (1982). *Drinking and driving: Scandinavian laws, tough penalties and United States alternatives*. National Highway Traffic Safety Administration Report No.DOT-HS-806-240. Springfield, Virginia: National Technical Information Center.

Wells-Parker, E. (1994). Mandated treatment: lessons from research with drinking and driving offenders. *Alcohol Health and Research World*, 18 (4), 302-306.

Wells-Parker, E., Bangert-Downs, R., McMillen, R., & Williams, M. (1995). Final results from a meta-analysis of remedial interventions with drink/drive offenders. *Addictions*, 90, 907-926.

Wells-Parker, E., Kenne, D., Spratke, K., & Williams, M. (2000). Self-efficacy and motivation for controlling drinking and drinking/driving: an investigation of changes across a driving under the influence (DUI) intervention program and of recidivism prediction. *Addictive Behaviours*, 25 (2), 229-238.

Wells-Parker, E., Williams, M., Dill, P., & Kenne, D. (1998). Stages of change and self-efficacy for controlling drinking and driving: a psychometric analysis. *Addictive Behaviours*, 23(3), 351-363.

Yu, J. (2000). Punishment and alcohol problems recidivism among drinking-driving offenders. *Journal of Criminal Justice*, 28, 261-270.