The Alcohol Education and Rehabilitation Foundation

A Selection of AER Funded Projects

13 March 2009

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Substance Use and Mental Health Problems in Young Australians: A Report to the Alcohol Education & Rehabilitation Foundation Ltd

John McAloon and Mark R Dadds

School of Psychology
The University of New South Wales

June 2006

Overview

The AER Foundation kindly provided funding in 2005 for the study "Substance use and mental health problem in young Australians". The study aimed to study a large cohort of Australian youth over two time points one year apart, documenting their substance use and how it related to their mental health, attitudes to substance use, and the peer and family influences they experienced about substance use. This document provides a comprehensive report on the project. The authors gratefully acknowledge the support given by the AER Foundation.

1) Evaluation of the project results against the project objectives. The present research was funded to:

- Identify or 'map' the developmental pathways associated with co-occurring mental health and substance use problems in young people;
- Examine the patterns of onset, offset, and change in substance use, in populations with distinct mental health vulnerabilities;
- Examine the motives young people develop for substance use, and how these motives relate to mental health problems (e.g., that substances might aid coping with particular mental health problems they experience). Our preliminary research indicates that motives vary consistent with the mental health profile the individual demonstrates, thus holding implications for the development of effective preventive interventions;
- Identify emotional and social skill characteristics that are common to, and thus help explain the co-occurrence of, mental health and substance use/abuse behaviours;
- Identify the role parent, familial, and peer environmental characteristics play in the development and maintenance of substance use/abuse behaviours, the motives for their use, and their co-occurrence with mental health problems;
- Thus, contribute to the development of early intervention strategies that are informed by research evidence as the most cost effective means of reducing the harmful effects of substance use in Australia.

Outcomes: All of the above goals were achieved. The project successfully recruited and retained a large sample of Australian youth and took measures of substance use, mental health status, motives for using substances, emotion regulation and social skills, and peer and family influences over a one-year period. The results show increase use of substances with age over the year period associated with externalising problems (i.e., aggression, antisocial behaviour, impulsivity) but not with anxiety and depression once their association with externalising problems was controlled. This is the first study to simultaneously assess externalising and internalising problems and substance use in young Australians and show that the relations between anxiety/depression and substance use are in part associated with increased behaviour problems found in adolescents with emotional problems.

Further, the association between externalising problems and substance use held for males and females and was largely mediated by the influences of peers and family. That is, the extent to which mental health problems led to substance use was related to the extent to which the individual had family and friends that used and had positive attitudes to substance use. These results were particularly strong for alcohol and cigarette use; marijuana use was more stable over the 12 month period of the study such that externalising problems and parent and peer attitudes were associated with time 1 use, however, once this pattern of use had been established, stability became the rule whereby patterns of use showed increased stability with little change occurring due to environmental factors.

The results show that adolescence is a key time for the development of substance use problems. As predicted, increased SU was associated with 'outward acting' behaviour problems but once these effects were noted, there was little relationship of SU to anxiety and depression in the sample. The relationship between mental health and SU was largely mediated by the influence of family and friends for both genders and this occurred mainly in early adolescence. These results show that early adolescence is a key window of opportunity for targeting substance use prevention and early intervention programmes to youth, and that these programmes should emphasise the relationships of substance use to impulsive, antisocial behaviour, and peer and family influences.

The following performance indicators were nominated:

- Development of measurement tools (Achieved);
    - Parent and Peer Attitudes Toward Substance Use (PAPA-TSU): The PAPA-TSU (McAloon & Dadds, unpublished)
    - The Emotion Regulation Questionnaire (ERQ) (McAloon & Dadds, unpublished) is a 26 item self report measure designed to assess participant ability to regulate emotion in socially and situationally appropriate terms.
- Establishing partnerships with NSW school systems (Achieved);
    - Ethics approval and individual school testing completed.
- Development of full research protocol and ethics approvals (Achieved);
- Recruitment of target sample size (Achieved);
- Present state-of-the-art drug education information to schools in return for participation (Achieved) – each participant school received an individually tailored report setting out confidential information on substance use rates across age and gender in their school;.
- Feedback data to key agencies that will contribute to curricular developments on alcohol and drug education within schools (Achieved and ongoing);
- Disseminate present research to the development of evidence-based and assessable preventive intervention programmes (Ongoing).

Other reporting information

- Overview of the evaluation methodology implemented to asses the outcomes and processes of the object: The project was based on measuring adolescent SU and mental health, and a range of possible mediating variables at two time points one year apart. This was achieved with good sample sizes, retention rates, and all measures successfully utilized.
- Enduring benefits of the project addressing key questions around the development of alcohol problems, prevention strategies and policy in relation to youth: Dissemination of the project findings is underway through scientific papers and presentations to local and international research, policy and practitioner forums.
- A copy of any project material produced such as articles in peer reviewed journals and educational materials for schools: Attached.
- The research paper entitled "Substance use and mental health problem in young Australians" follows.

4.5 Summary

The above findings lead to the following general conclusions:

- Alcohol, cigarette, and marijuana use in this sample of Australian youth was significantly associated with mental health problems in the form of externalising problems, viz., outward aggression, antisociality, and impulsiveness.
- Mental health problems of anxiety and depression were not associated with substance use once their shared variance with externalising problems were controlled.
- The relationship of these externalising problems to substance use was largely mediated by the social milieu, that is, the attitudes that the adolescent's parents and peers held toward substance use. Thus, externalising problems were associated with increased usage to the extent that the individual was in a social environment that facilitated drug use.
- There was no evidence that social skills, emotion regulation, or the motives reported for substance use, had roles in mediating the relationship between mental health and substance use.
- The influence of mental health problems and the mediation by parent and peer attitudes, on substance use, is predictive. That is, higher externalising problems in the context of a facilitative social environment predictive increase in substance use over time. Thus, these relationships are likely to be critical in the development of substance use.

Overall, these results show that behaviour problems in early adolescence are predictive of substance use problems over time. Further, this predictive relationship works largely via social mechanisms such that adolescents with behaviour problems are likely to show increased substance use if they inhabit a world in which substance use is facilitated. The implications for early intervention are that efforts should be directed toward the remediation of externalising behaviour problems, and providing protective mechanisms that buffer the negative effects of parental and peer influences on substance use.

4. 6 Limitations of the Current Design

Some strengths and limitations of the current study should be noted. The sample was a reasonable size and reasonable retention rates from time 1 to time 2 were achieved. Considerable effort was made to ensure the sample was representative of the general population. The extent to which the findings generalise to all sections of the population however, is not known and it should be noted that the sample had insignificant representation by rural, indigenous, and other groups that make up Australian communities. Considerable effort was also put into measure development and validation, however, it should be noted that all measures were self-reported by the adolescents. Thus, the results need to be read throughout as referring to the adolescents' perceptions of the construct under investigation.

The University of Queensland

Title

Identifying cost-effective interventions to reduce the burden of harm associated with alcohol misuse in Australia

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Acknowledgements

This project was funded by the Alcohol Education Rehabilitation Foundation

EXECUTIVE SUMMARY

The National Drug Strategy household survey from 1993 to 2004 shows that four in five Australians drank alcohol in the past year and one in ten did so daily. Although the evidence suggests that most Australians consume alcohol with an average pattern of drinking at low risk levels, substantial numbers of both low risk drinkers and higher risk drinkers also drink above the limits for acute harm.

Although the relationship between alcohol consumption and health is complex, the evidence is irrefutable, the misuse of alcohol represents one of the leading causes of preventable death, illness and injury in Australia. Alcohol is the single most important risk factor for both fatal and non-fatal injuries and in 2004-05, the total tangible cost attributed to alcohol consumption (which includes lost productivity, health care costs, road accident-related costs and crime-related costs) was estimated at $10.83 billion.

A number of strategies are available to governments to minimise the harm associated with alcohol misuse. Considerable research has been conducted into understanding whether various interventions for problem drinkers work. While evidence on effectiveness is important, policy makers require additional information on the efficiency of interventions, i.e., an assessment of both costs and consequences. As an aid to priority setting, several studies have examined efficiency using cost-effectiveness analysis.

The purpose of this study is to provide a comprehensive analysis of the costeffectiveness of interventions to reduce the burden of harm associated with alcohol misuse in Australia. The project has been labelled ACE-Alcohol as it aims to Assess the Cost-Effectiveness (ACE) of interventions to reduce Alcohol related harm. The research contextualises results from a recent World Health Organisation study to the Australian setting using, where possible, Australian data on costs, effectiveness of interventions and health outcomes.

ACE-Alcohol builds on a broader body of priority setting research that explicitly focuses on cost-effectiveness analysis. The ACE-Alcohol model is built in Microsoft Office Excel 2003 and uses the add-in tool @Risk for uncertainty analysis. Intervention cost-effectiveness was evaluated over the lifetime of the Australian population eligible for each intervention in a baseline year of 2003. The modelling strategy adopts two approaches according to whether diseases or injuries related to alcohol misuse are evaluated.

A technical advisory panel comprised of alcohol experts assisted in the identification of interventions modelled in ACE-Alcohol. The interventions evaluated include: volumetric taxation; advertising controls; mass media campaigns; brief intervention by primary care practitioners; provision of residential treatment to individuals with alcohol dependence; licensing controls; increasing the minimum legal drinking age to 21 years; and, random breath testing (RBT).

In the cost-effectiveness analysis, all intervention costs, cost offsets and DALYs were adjusted to the baseline year of 2003 and discounted at a rate of 3% per annum. An incremental cost-effectiveness ratio (ICER) was evaluated for each intervention and compared with a cost-effectiveness threshold of $50,000 per DALY averted. Two comparators were used in ACE-Alcohol: current practice and the partial null. Current practice was considered to comprise predominantly on RBT given its widespread use throughout Australia. Using the partial null, interventions were also assessed using marginal analysis. This enables increasing amounts of investment in the chosen intervention to be compared with the additional benefits conferred. Such an analysis lends itself to identifying an optimal expansion pathway, i.e., the ordering of interventions in the most efficient package.

The findings of ACE-Alcohol suggest the health gains that can be achieved, measured by DALYs, range from 150 (95% uncertainty interval (UI): 79 - 260) for increasing the minimum legal drinking age; to 11,000 (95%UI: 6,000 - 16,000) for taxation. With the exception of increasing the minimum legal drinking age to age 21, which benefits only those aged between 18 and 20 years, the interventions that target hazardous and harmful drinkers (brief intervention with / without support) or alcohol dependents (residential treatment with / without naltrexone) avert fewer DALYs than the population-wide interventions. There is also substantial variability in the intervention costs. These range from $0.58 million (95%UI: $0.47 million - $0.69 million) for taxation increases to $71 million (95%UI: $57 million - $85 million) for random breath testing.

Two interventions stand out as being most effective and cost-effective: changes to the way taxes are imposed and advertising bans. Both of these interventions are dominant (i.e., less expensive and more effective than current practice) and have a high probability of being cost-effective. Increasing the minimum legal drinking age to 21 years is also dominant, although the potential health gains are small given the target range is persons aged 18 - 20 years. All other interventions have a high or very high probability of being under the $50,000 per DALY cost-effectiveness threshold. The exception is residential treatment for alcohol dependence (with or without naltrexone) which is not cost-effective.

In terms of the most cost-effective package of interventions, the expansion path includes (in order of incremental cost-effectiveness): volumetric taxation, advertising bans, increase in minimum legal drinking age to 21 years, brief intervention, licensing controls, drink driving mass media campaign, random breath testing and then residential treatment + naltrexone. When combined as a package, the alcohol interventions could avert 26,000 DAL Ys (95%UI: 19,000 - 34,000 DAL Ys) at a total intervention cost of $210 million (95%UI: $190 million - $230 million). The costs of intervention would be partly offset by an estimated reduction of $130 million (95%UI: $64 million - $220 million) in the costs of treating alcohol-related diseases and injuries.

DISCUSSION

The purpose of ACE-Alcohol was to provide a comprehensive analysis of the cost-effectiveness of interventions to reduce the burden of harm associated with alcohol misuse in Australia. Using a consistent method it is envisaged that the results of this study may be compared with results from the wider ACEPrevention project and the earlier WHO-CHOICE project.

The key findings from ACE-Alcohol suggest that all the prevention interventions modelled are more cost-effective in reducing alcohol-related harm than those that treat alcohol dependence. When taken as a package of interventions, all interventions modelled with the exception of residential treatment would result in a cost-effective investment portfolio. Compared to current practice, the optimal package could lead to a substantial improvement in population health at a cost of under $50,000 per DALY. Changes to volumetric taxation and banning of alcohol advertising should be a high priority for investment due to the high probability of cost-savings. Increasing the minimum legal drinking age to 21 years, brief interventions in general practice, increased licensing controls, drink driving campaigns and random breath testing are also likely to be cost-effective when judged against a $50,000 per DALY threshold. Only residential treatment for alcohol dependence (with or without naltrexone) is not cost-effective by this standard.

The results suggest that although random breath testing is cost-effective and is already being implemented in Australia, the same amount of $71 million that is currently spent on random breath testing would, if invested in more costeffective interventions, achieve over ten times the amount of health gain.

In spite of these promising efficiency gains, the results of ACE-Alcohol need to be considered in terms of the second filter criteria. First, the strength of evidence underpinning the interventions is at best modest and the strength of evidence varies between interventions. The type of evidence ranges from modelling the effects of increased taxation on consumption, to analyses of

pooled time series data (e.g. advertising bans, minimum legal drinking age) and the meta-analyses of randomised controlled trials (e.g. brief intervention).

Second, population-wide interventions, such as changes to taxation and advertising bans, may be more equitable than targeted interventions, such as residential treatment or brief interventions, which rely on access to a GP with the time to screen and deliver the intervention. This may disadvantage those in regional areas where GPs are in short supply and residential detoxification facilities are limited.

Third, alcohol manufacturers and retailers will oppose policies that reduce demand for alcohol and aim to reduce alcohol consumption. Further, consumers may not welcome increased alcohol prices or restrictions on access to alcohol products. Increasing the minimum legal drinking age will probably be unacceptable to most consumers under the age of 21 years.

Fourth, those interventions that are based on one-off legislative changes (e.g. changes to taxation and the minimum legal drinking age) may be most feasible and sustainable because the systems and infrastructure to implement and monitor the changes are already in place. The feasibility and sustainability of brief intervention and residential treatment are less certain because they depend on an adequate workforce of motivated GPs and other staff to provide counselling and treatment. The feasibility of interventions may also be affected by broader social cost implications that are not captured by taking a health sector perspective in the analyses. For example, including dead weight loss (i.e. loss of consumer surplus) associated with changes to taxation may affect the cost-effectiveness and feasibility of the taxation intervention from a broader social viewpoint.

The sustainability of intervention effectiveness is an important unknown in the cost-effectiveness analysis. Some interventions, such as random breath testing, are supported by more than 20 years of time series data. This suggests that they have a sustained effect, but for other interventions, such as residential treatment, the trials only include relatively short-term follow up and the sustainability of intervention effects is uncertain. Differences in intervention sustainability could affect the order of interventions in the expansion pathway but would not substantially alter the cost-effectiveness of the intervention package.

Fifth, there is little chance that alcohol interventions will reduce population health. Although there may be some loss of the putative protective effects of moderate alcohol use for ischaemic heart disease, gallbladder and bile duct disease, these small losses would be more than out-weighed by the population health gains from reducing all other alcohol-related diseases and injuries. There are also potentially positive effects of the interventions that we have not included in our analyses, such as productivity gains generated by decreases in alcohol-related disease and injury, reduced road traffic accidents, violence and crime.

ACE-Alcohol considers the ideal mix of interventions to alleviate the burden of harm from alcohol misuse in the adult Australian population. The analysis does not address issues relevant to the Indigenous population or vulnerable subgroups of the population, other than dependent drinkers. These sub-studies are urgently required. Although the ACE-Alcohol methodology lends itself to these types of analyses, the resources available in the current project were insufficient to expand the analyses to these groups.

Additional funding is being sought for these analyses. Further, ACE-Alcohol has attempted to use, where possible, local data. In some areas, such as cost of changing legislation, cost of raising the legal drinking age and cost of advertising campaigns, additional data sources were utilised.

In spite of the shortcomings of ACE-Alcohol, the results provide policy makers with clear evidence on the cost-effectiveness of interventions to curb alcohol misuse. By re-allocating existing resources committed to reducing alcohol-related harm, policy makers could achieve over ten times the health gain for the same level of investment. Given the scarcity of resources and the ever increasing fiscal restraint imposed by governments, it is hoped that these results may be adopted by policy makers in order to reduce the current burden of harm that alcohol imposes on our society.

ALCOHOL STUDIES
Bulletin
A Project Funded by the Alcohol Education and Rehabilitation Foundation
NSW Bureau of Crime Statistics and Research

Number 6
December 2005

The role of alcohol in injuries presenting to St Vincent's Hospital Emergency Department and the associated short-term costs

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This bulletin presents the results from research investigating the role of alcohol in injury presentations to an inner-city emergency department and the associated short-term economic costs. In this study injured patients attending St Vincent's Hospital Emergency Department during September 2004 and February 2005 were interviewed about their alcohol consumption prior to the injury event and where possible, administered a breathalyser test. One-third of the injured patients interviewed reported consuming alcohol prior to the injury and almost two-thirds of these patients stated that they had been drinking at licensed premises. Alcohol consumption was found to be more prevalent amongst patients presenting with injuries resulting from interpersonal violence, with almost two-thirds of these patients reporting that they had been drinking prior to the injury. The estimated annual cost of alcohol to St Vincent's Emergency Department was as much as $1.38 million. While the overall economic cost of alcohol-related injuries is probably much greater than our estimate indicates, the research described here highlights the resources that could be devoted to other illness and disease if a proportion of alcohol-related injuries were reduced.

INTRODUCTION

The consumption of alcohol is a generally accepted part of Australian culture. However some drinking, particularly at high-risk levels, is associated with a considerable amount of harm to the community. Chikritzhs et al. (2003) estimate that, between 1993/94 and 2000/01, over half a million hospitalisations in Australia were caused by risky or high-risk alcohol consumption, and that 70 per cent of these episodes were for acute conditions, mostly injuries. These estimates include only alcohol-attributable conditions that require inpatient care. They do not include alcohol-related injuries that do not result in hospital admission. The main objective of the current study is to provide further data on the role of alcohol in injury events by examining recent alcohol use amongst injured patients attending an inner-city emergency department (ED). This study also aims to quantify the short-term economic cost of these injuries in terms of the ED resources that these cases consume.

ALCOHOL STUDIES
Bulletin
A Project Funded by the Alcohol Education and Rehabilitation Foundation
NSW Bureau of Crime Statistics and Research

Number 7
December 2005

Costing alcohol-related injuries presenting to St Vincent's Hospital Emergency Department – A methodological note

Suzanne Poynton[1], Neil Donnelly[1,2], Don Weatherburn[1], Gordian Fulde[3] & Linda Scott[1]

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The purpose of this bulletin is to describe a methodology for calculating the short-term costs associated with alcohol-related injuries presenting to St Vincent's Emergency Department (ED). This costing analysis was part of a larger study undertaken at St Vincent's ED in 2004/05, which examined the role of alcohol in injury events. The NSW Bureau of Crime Statistics and Research has published the substantive findings from this research in an accompanying Alcohol Studies Bulletin (see Poynton et al. 2005). The current bulletin provides the methodological detail that underpinned the calculations used to derive the costing estimates in this emergency department investigation.

INTRODUCTION

The study reported in detail in Poynton et al. (2005) aimed to answer two specific research questions:

(1) What proportion of injuries presenting to St Vincent's ED are alcohol-related?

(2) What is the short-term financial cost associated with these alcohol-related injuries?

To answer these questions, two four-week audits of emergency department presentations were conducted on two separate occasions at St Vincent's Hospital in September 2004 and February 2005. During these periods a research assistant was located at the ED 24 hours a day, seven days a week in order to identify injury presentations and to collect information on alcohol consumption prior to the event from the patient or from their medical records. Overall, 4,878 cases presented to St Vincent's during the two 28-day audit periods and 1,345 of these (27.6%) were identified as injuries relevant to the study. A further 66 cases identified during the audit periods involved patients who were seeking treatment for alcohol intoxication.[1]

To determine alcohol-involvement in injury cases presenting during the two audit periods, three data sources were used; (1) self-report data on the amount of alcohol consumed in the six hours preceding the injury (n=817), (2) Blood Alcohol Concentration (BAC) data from blood tests ordered by the attending medical officer (n=92) and (3) subjective ratings of intoxication (n=167). Each of these sources of data indicate that a substantial proportion of injuries presenting to St Vincent's ED can be classified as alcohol-related. One-third of all injured patients interviewed for the study reported consuming alcohol in the six hours preceding the injury. One-fifth of all injury cases, where alcohol involvement was known, involved a person who had been drinking at high-risk levels or who had a BAC above 0.1g/100ml.

Evaluation of Opportunistic Screening and Brief Intervention in an Emergency Department

An AER Funded Research Initiative

January 2007

Synopsis

Objective
To evaluate the efficacy of opportunistic screening and brief intervention by Emergency Department clinicians to reduce high-risk alcohol consumption.
Method
Open, Randomised control trial with allocation blinding. All attendees to an adult city emergency department were eligible for screening for high-risk alcohol use with the Paddington Alcohol Test. Patients screening positive were eligible for randomisation to no counselling (standard care), brief intervention on-site by an emergency clinician, or off-site motivational intervention by drug and alcohol counsellors during business hours within a week. Telephone follow-up occurred at one and three months.
Results
Over 12 months 10,274 (31%) of 32,965 patients presenting to emergency were screened by 183 emergency clinicians. One-thousand and forty-six screened positive for high-risk alcohol use, 471 consenting to enrolment. Forty emergency clinicians provided 149 brief interventions. Fifteen of 149 participants (10%) randomised to motivational intervention attended appointments. For all groups, there was a reduction in the number of high-risk drinkers and a significant decrease in the maximum number of alcohol units/per day consumed at one and three months. Maximum daily drinking (alcohol units/day) was less for standard care than other groups at one-month follow-up only.
Conclusion
Emergency department attendance with alcohol screening appears to decrease high-risk alcohol use, regardless of intervention. Emergency clinicians can be trained to deliver brief intervention but this strategy may be no more efficacious than standard care or referral for off-site motivational interview. Given poor compliance with attending off-site counselling, continued investigation of onsite strategies for high-risk alcohol use is warranted. Consideration can be given to offering emergency clinicians training in brief intervention.

Although screening and BI interventions are feasible in terms of actual time spent per task, the perception of time required for these tasks was a barrier to staff participation, especially the time taken for recruiting and consenting patients for research. This is an important consideration for future ED-based alcohol interventions.

School of Psychiatry & Clinical Neurosciences
University of Western Australia

Title

Reducing Morbidity among licit substances using adolescents:

a record linkage assessment of a brief intervention

Authors

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Two interventions stand out as being most effective and cost-effective: changes to the way taxes are imposed and advertising bans. Both of these interventions are dominant (i.e., less expensive and more effective than current practice) and have a high probability of being cost-effective. Increasing the minimum legal drinking age to 21 years is also dominant, although the potential health gains are small given the target range is persons aged 18 - 20 years. All other interventions have a high or very high probability of being under the $50,000 per DALY cost-effectiveness threshold. The exception is residential treatment for alcohol dependence (with or without naltrexone) which is not cost-effective.

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The results suggest that although random breath testing is cost-effective and is already being implemented in Australia, the same amount of $71 million that is currently spent on random breath testing would, if invested in more costeffective interventions, achieve over ten times the amount of health gain.

In spite of these promising efficiency gains, the results of ACE-Alcohol need to be considered in terms of the second filter criteria. First, the strength of evidence underpinning the interventions is at best modest and the strength of evidence varies

between interventions. The type of evidence ranges from modelling the effects of increased taxation on consumption, to analyses of

pooled time series data (e.g. advertising bans, minimum legal drinking age) and the meta-analyses of randomised controlled trials (e.g. brief intervention).

Second, population-wide interventions, such as changes to taxation and advertising bans, may be more equitable than targeted interventions, such as residential treatment or brief interventions, which rely on access to a GP with the time to screen and deliver the intervention. This may disadvantage those in regional areas where GPs are in short supply and residential detoxification facilities are limited.

Third, alcohol manufacturers and retailers will oppose policies that reduce demand for alcohol and aim to reduce alcohol consumption. Further, consumers may not welcome increased alcohol prices or restrictions on access to alcohol products. Increasing the minimum legal drinking age will probably be unacceptable to most consumers under the age of 21 years.

Fourth, those interventions that are based on one-off legislative changes (e.g. changes to taxation and the minimum legal drinking age) may be most feasible and sustainable because the systems and infrastructure to implement and monitor the changes are already in place. The feasibility and sustainability of brief intervention and residential treatment are less certain because they depend on an adequate workforce of motivated GPs and other staff to provide counselling and treatment. The feasibility of interventions may also be affected by broader social cost implications that are not captured by taking a health sector perspective in the analyses. For example, including dead weight loss (i.e. loss of consumer surplus) associated with changes to taxation may affect the cost-effectiveness and feasibility of the taxation intervention from a broader social viewpoint.

The sustainability of intervention effectiveness is an important unknown in the cost-effectiveness analysis. Some interventions, such as random breath testing, are supported by more than 20 years of time series data. This suggests that they have a sustained effect, but for other interventions, such as residential treatment, the trials only include relatively short-term follow up and the sustainability of intervention effects is uncertain. Differences in intervention sustainability could affect the order of interventions in the expansion pathway but would not substantially alter the cost-effectiveness of the intervention package.

Fifth, there is little chance that alcohol interventions will reduce population health. Although there may be some loss of the putative protective effects of moderate alcohol use for ischaemic heart disease, gallbladder and bile duct disease, these small losses would be more than out-weighed by the population health gains from reducing all other alcohol-related diseases and injuries. There are also potentially positive effects of the interventions that we have not included in our analyses, such as productivity gains generated by decreases in alcohol-related disease and injury, reduced road traffic accidents, violence and crime.

ACE-Alcohol considers the ideal mix of interventions to alleviate the burden of harm from alcohol misuse in the adult Australian population. The analysis does not address issues relevant to the Indigenous population or vulnerable subgroups of the population, other than dependent drinkers. These sub-studies are urgently required. Although the ACE-Alcohol methodology lends itself to these types of analyses, the resources available in the current project were insufficient to expand the analyses to these groups. Additional funding is being sought for these analyses. Further, ACE-Alcohol has attempted to use, where possible, local data. In some areas, such as cost of changing legislation, cost of raising the legal drinking age and cost of advertising campaigns, additional data sources were utilised.

In spite of the shortcomings of ACE-Alcohol, the results provide policy makers with clear evidence on the cost-effectiveness of interventions to curb alcohol misuse. By re-allocating existing resources committed to reducing alcohol-related harm, policy makers could achieve over ten times the health gain for the same level of investment. Given the scarcity of resources and the ever increasing fiscal restraint imposed by governments, it is hoped that these results may be adopted by policy makers in order to reduce the current burden of harm that alcohol imposes on our society.

2x abstracts

Emergency department-based intervention with adolescent substance users: 12-month outcomes. Robert J. Tait, Gary K. Hulse, Suzanne I. Robertson, Peter C. Sprivulis

Abstract

We evaluated the 12-month outcomes of a brief intervention, enhanced by a consistent support person, which aimed to facilitate referral attendance for substance use treatment following a hospital alcohol or other drug (AOD) presentation. Outcomes were assessed as: attendance for substance use treatment; the number of hospital AOD ED presentations; change in AOD consumption and psychological wellbeing (GHQ-12). We recruited 127 adolescents, with 60 randomised to the intervention and 67 receiving usual care. At 12 months, 87 (69%) were re-interviewed. Significantly more of the intervention than t he usual care group (12 versus 4) had attended a treatment agency. Excluding the index presentations, there were 66 AOD hospital presentations post intervention, with the proportion of AOD events falling for the intervention group, whilst no change occurred for the usual care group. Irrespective of randomisation, those who attended for substance use treatment had a greater decline in total self-reported drug use than the remainder. Both intervention and usual care groups had improved GHQ-12 scores by 12 months, with reduction in GHQ scores correlated with reduced drug use. In conclusion, while brief intervention in ED only has limited success in facilitating adolescents to attend for subsequent AOD treatment, it can significantly reduce the number of AOD related ED presentations. © 2005 Elsevier Ireland Ltd. All rights reserved.

Adolescent substance use and hospital presentations: A record linkage assessment of 12-month outcomes. Robert J. Tait, Gary K. Hulse

Abstract

Aims: To examine the prevalence of different substances used by adolescents admitted to hospital emergency departments (ED); to evaluate the impact of an ED based brief intervention (BI) on hospital events; to compare outcomes for those using `alcohol alone', `alcohol plus illicit ± licit drugs' ('alcohol plus'), or `other drugs' excluding alcohol, and investigate the relationship between hazardous alcohol consumption patterns and hospital events.

Design: We used hospital record linkage to follow-up a randomised control trial cohort. Participants: Adolescents (12—19 years) recruited in ED with presentations involving alcohol or other drugs (AOD): 67 received usual care and 60 a BI that facilitated attendance at community drug agencies. Measurements: Drug-use categories were assigned from the substances used at the baseline presentation. Outcomes were assessed as hospital admissions plus ED presentations in the 12-month post-intervention. `Hazardous' alcohol use was categorised via the AUDIT-3. Results: The drug-use categories were `alcohol alone' (n = 67, 53%), `alcohol plus' (n =31, 24%) and `other drugs' (n = 28, 22%). In the 12-month post-intervention, the randomisation groups had similar numbers of AOD hospital events. A Cox regression showed that in the usual care but not the BI group, for `other drugs' there was a 8-fold increased hazard (`risk') of an AOD hospital event compared with `alcohol alone' and a 10-fold increase compared to `alcohol plus'. Each pre-recruitment AOD event doubled the hazard of an AOD event. For the BI group, these were not significant predictors. The `other drugs' group had more AOD events than either of the other groups. `Hazardous' (77%) alcohol use was common but was not a predictor of AOD hospital events.

Conclusions: BI can be delivered in ED and reduce hospital AOD morbidity associated with the use of drugs other than alcohol. Interventions should focus on those with prior AOD events and `other drugs' presentations.

The University of Queensland

Title

Improving alcohol history taking by Junior Medical Officers

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Acknowledgements

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Background. The World Health Organization (WHO) reports that alcohol use was responsible for 4% of the global disease burden in 2000, second only to tobacco and high blood pressure. Brief interventions have been proven effective in producing significant reductions in alcohol use, yet alcohol use is not routinely recorded in hospital settings. An effective strategy to address this problem has not been implemented. Our study aimed to determine the effect of two strategies to improve assessment and management of alcohol use disorders by Junior Medical Officers (JMOs).

Method. This was a crossover trial conducted at two hospitals over two years. Medical records of patients who had been admitted by JMOs were examined for records of: alcohol use; quantified alcohol consumption; alcohol intervention; alcohol withdrawal or a consultation from the Drug and Alcohol team. Data were also collected on tobacco use and nicotine replacement therapy (NRT). In year 1, the first hospital received printed individual feedback on their own and their group's results, while the second hospital received a face-to-face presentation of their group's results by one of the Staff Specialists. The following year, they received the alternate intervention.

Results. A total of 3025 patient records were examined for 130 JMOs. After Individual Feedback, the percentage of records with any alcohol history remained static at 60%; however the percentage of quantified histories rose from 69% to 92% ($p<0.001$). More smokers were detected ($p=0.038$) and NRT prescribing rates rose significantly from 2% to 16% ($p=0.004$). After Group Feedback, recording rates of alcohol and tobacco use remained static. Logistic regression showed that JMOs were significantly more likely to record alcohol status if the doctor was an intern (i.e. first year), was located at the second hospital, or if the patient was male, and was younger than the median age of 70 years.

Conclusion. This study suggests that feedback on individual performance with education about desired standards is effective in improving the recording of quantified alcohol histories by Junior Medical Officers.

The prevalence of alcohol related injury amongst patients presenting with injury to Emergency Departments in South Western Sydney

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SYDNEY SOUTH WEST
AREA HEALTH SERVICE
NSW HEALTH

Executive Summary

Aim of the study

Each year, in Australia, approximately 3,000 people die as a result of excessive alcohol consumption and around 65,000 people are hospitalised. The annual cost to the Australian community of alcohol-related social problems is estimated to be $7.6 billion. Research regarding alcohol and injury is scarce in Australia and mostly related to road deaths and injuries due to alcohol. The National Alcohol Strategy 2006-2009, published by the Australian Commonwealth Department of Health and Aged Care, identified the need for additional research including exploring opportunities for the collection of local data related to alcohol for use in targeted interventions and policy.

The main social and cultural factors that increase alcohol consumption include unemployment, low socio-economic status (SES), low educational attainment and country of birth. Sydney South West Area Health Service (SSWAHS) has a lower SES than other New South Wales (NSW) metropolitan health services and a greater proportion of people speaking a language other than English at home.

This study replicates aspects of previous studies in both the United States and Australia but will provide unique Australian data examining the association between alcohol consumption and injury specific to a low socioeconomic community with a high proportion of non-English speaking residents.

The aims of the study were as follows:

1. Determine the prevalence of alcohol related injury amongst all patients presenting with injury to SSWAHS Emergency Departments (EDs) who report consuming alcohol in the six hours prior to injury.
2. Explore the contribution of contextual factors and setting on the association between alcohol and injury.
3. Estimate the risk of sustaining an injury if consuming alcohol in the six hours prior to injury.
4. Examine associations between level of alcohol consumed (six hours prior to the injury) and injury type.
5. Examine associations between level of alcohol consumed (six hours prior to the injury) and injury severity.

Materials and Methods

The study was undertaken in emergency departments of six hospitals in SSWAHS between November 2005 and October 2006 and used a case-crossover design. For each subject, alcohol consumption, in the six hour period prior to injury was reported. Alcohol intake for the same six hour period one day, two days and seven days prior to the injury was also recorded, thus resulting in three controls for every subject and increased the power of the study. As each case serves as his/her own referent in the case crossover design, potential confounders such as smoking, age, sex and socio-economic status are controlled for by design rather than by statistical modelling. Additionally, If attendees had presented to a SSWAHS ED with an injury in any of the three time period windows, they were deemed ineligible for inclusion in the study as their own controls for that time period.

Attendees were patients with an injury presenting to the EDs of selected hospitals in the SSWAHS. Potential participants were included in the study if they were aged over 14 years, injured in the 24 hours prior to presentation to the ED and spoke one of the five identified languages i.e., Arabic, Cantonese, English, Mandarin, and Vietnamese. Participants also needed to give informed consent to be interviewed, have their medical records accessed and undertake a breath test. Consent was gained from a guardian or parent if the potential subject was aged between 14 and 16 years of age.

A single questionnaire in four sections was developed for this study. The questionnaire: included a:

- General section which contained screening and socio-demographic questions and questions on events related to the nature and circumstances of the injury and a history of alcohol use as defined by the CAGE questionnaire. A breath test reading and rating of the subject's injury severity were also obtained.
- Case section which included questions related to drinking and drug use patterns in the six hours before injury and interviewer and interviewee feedback on responses
- Control section which included questions on drinking and drug use patterns for three time periods viz; 24 hours before the injury, 48 hours before the injury and seven days before the injury.
- Final section which contained questions on general drinking patterns for males and females, ED outcome data: and subjective measures of alcohol use:

Overall, 2492 attendees in the emergency departments of six SSWAHS hospitals were eligible for the study. Of these, 1599 completed a questionnaire giving a response rate of 64.2 percent. Those who did not complete a survey were either missed, refused, or admitted to the ward (and were not able to be followed up).

The response rate was highest at RPA hospital (78.2%) and lowest at Campbelltown and Bowral hospitals (48.4% and 48.1% respectively).). for that time period.

Conclusions

This case crossover study contributes to Australian research on alcohol and injury and particularly provides valuable data on drinking prevalence and risk in a multicultural population. Like other Australian and overseas studies, most of the study population were young, male, single and had a low education level. Seventeen percent of the study population reported drinking alcohol in the six hours prior to their injury. Compared to other Australian studies, this prevalence is lower and may be partly explained by characteristics of the study population especially gender and ethnicity.

The risk of sustaining an injury was 1.42 times greater in those who had consumed alcohol than those who had not. At high levels of alcohol intake (>90g) the risk of injury was doubled and was similar at these levels for both males and females.

Contextual factors that contributed to alcohol intake and injury included drinking alone or in a group of people with higher levels of alcohol being consumed when males were present in a group. Those born overseas and speaking a language other than English at home were more likely to drink at lower levels than their Australian born counterparts and drinking in a hotel type environment increased the risk of sustaining an injury by 52 percent.

The results of this study are consistent with other studies, which show that alcohol intake increased the risk of injury from falls, violence and motor vehicle collisions (MVC). However, there was no association between increasing alcohol intake and injury severity. Injury severity was greatest at low levels of alcohol (<= 30g) intake or at very high levels of intake (> 90g).

Enduring Benefits of the Research

This study illustrates the need for further research regarding contextual factors influencing alcohol consumptions and subsequent injury risk.

Further research is warranted to:

- Explore the increased risk of drinking at a hotel/licensed premise type venue. It should also determine whether hotels/licensed premises are meeting the guidelines under the Responsible Service of Alcohol legislation.
- Contribute to the body of evidence and identify contextual factors amenable to change.
- Identify if there are particular issues relating to the time of injury related to alcohol consumption.
- Explore the differences in drinking patterns and injury risk in various ethnic populations
- Further examine the influence of alcohol consumption on injury in Aboriginal populations

These results provide additional local data to inform debate at a State and National level concerning alcohol related harm. It will also inform the development of local strategies to reduce harm associated with alcohol use. The local data will also be useful for the local communities in lobbying for changes to reduce injury in the community related to alcohol consumption ie trading hours of licensed premises.

HUNTER NEW ENGLAND
NSW HEALTH

DRAFT

Adoption of the Alcohol Linking Police Program into routine practice by NSW Police

Final Evaluation Report to the Alcohol Education and Rehabilitation Foundation

John Wiggers, Deborah Radvan, Megan Valentine
Angela Dalton, Craig Nicholas

November 2007

AER Foundation Ltd
acrf.com.au
Changing the way we drink

Summary

Background

Alcohol misuse is a significant cause of harm in most countries. Such harms are diverse, and occur in a variety of social contexts, including the consumption of alcohol on licensed premises. As a consequence, liquor licensing legislation exists in many jurisdictions to facilitate, in part, the safe consumption of alcohol on such premises.

Various strategies exist to support the harm reduction objectives of liquor licensing laws. One strategy demonstrated to be effective is enforcement action undertaken by regulatory agencies, such as police. Despite evidence of its effectiveness, limited enforcement of liquor licensing laws, as they pertain to licensed premises, is suggested to occur.

The Alcohol Linking Program was developed in response to identified barriers to Police enforcement of licensed premises. The Program, an intelligence-led educational intervention, sought to reduce incidents of alcohol-related crime through the implementation of two intervention elements:

1. Improving the availability to Police of alcohol intelligence information regarding attended incidents (Data Recording Intervention);

2. Based on such information, Police delivery of an educational intervention to enhance licensee responsible service and management practices (Premises Intervention)

The Program, a collaborative initiative of Hunter New England Health and NSW Police, was previously suggested to be efficacious in reducing alcohol-related crime, and to be acceptable to key stakeholders. Based upon these findings, a decision was made by the NSW Government for the Program to be adopted into routine practice by all Police in NSW.

The purpose of this report is to describe the strategies and outcomes of the adoption of the Program into routine practice by NSW Police over the period 2002 to January 2006. The adoption initiative was supported by the Alcohol Education and Rehabilitation Foundation, NSW Police, NSW Health, and Hunter New England Health.

Adoption Model

A model involving three components was developed to facilitate the adoption of the two Program interventions into routine policing practice. The three components of the model were:

- *Program Design*

To facilitate adoption, the interventions themselves were designed to involve limited additional time demands of Police, and to value-add to existing Police procedures and organisational goals.

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- *Behavioural and Organisational Change strategies:*

Adoption of the Program required a number of changes to the operational practices of Police. Strategies used to facilitate such changes included obtaining organisational leadership approval and support, the enhancement of supportive organisational systems and procedures, the training of Police, and the implementation of performance monitoring processes.

- *Change Management*

'Change agent' positions were created and located at the local level to support the implementation of the adoption strategies.

Implementation of Adoption Model

The adoption initiative was implemented successively in three separate geographic areas (Phases). The Data Recording and Premises Interventions were implemented sequentially in each Phase.

Evaluation Method

The effectiveness of the Program was assessed in terms of:

- the availability to Police of alcohol intelligence information
- Police delivery of the Premises Intervention
- levels of alcohol-related crime

Availability of alcohol intelligence information

The impact of the Data Recording Intervention on the availability of alcohol intelligence information was measured in terms of Police recording of the Program's four required intelligence information items. The items related to the following characteristics of people involved in Police attended incidents:

1) Prior alcohol consumption
2) Level of Intoxication
3) Last place of alcohol consumption
4) Name and address of licensed premises if last place of consumption was a licensed premises

Recording of such information was assessed for people involved in 32 incident categories combined, and for those involved in a single incident category, assaults.

In each Phase, measurement of the level of recording was undertaken for two time periods, for the month following implementation of the Data Recording Intervention, and for the period from one month following implementation of the intervention to January 2006.

Police delivery of Premises Intervention

Licensees received one of three levels of educational intervention based upon the recorded association of their premises with people involved in incidents.

- *Level 1*: A letter advising of the new Police alcohol intelligence system
- *Level 2*: The above letter, together with a report detailing incidents involving people associated with their premises.

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- *Level 3*: The above letter and report, and a Police audit of responsible service and management practices.

The number of licensed premises that received each of the levels of intervention is reported.

Level of alcohol-related crime

A quasi-experimental design was used to evaluate the impact of the Program on the number of people involved in alcohol-related incidents and assaults in each Phase. Data for a three month period before the implementation of the Premises Intervention in each Phase were compared with three months of post-intervention data, and with equivalent data for a comparison area.

Evaluation Findings

Availability of alcohol intelligence information

There was an immediate and marked uptake of Police recording of the four alcohol intelligence items. In the month following the implementation of the Data Recording Intervention in each Phase, between 78% and 100% of people involved in incidents had the required information recorded for each of the items.

The level of recording was further improved and sustained throughout the remaining adoption period for all information items. In each Phase, from one month after implementation of the Data Recording Intervention to January 2006, the mean monthly proportion of people that had the information recorded for each item averaged between 84% and 100%.

Based upon this newly available information:

- between 14% and 20% of people involved in the 32 incident types had consumed alcohol prior to the incident, with the highest rates in rural areas.
- between 26% and 34% of people involved in assaults had consumed alcohol prior, with the highest rates in rural areas.
- between 66% and 76% of people who consumed alcohol prior to being involved in an incident were moderately, well, or seriously intoxicated.
- between 32% and 53% of people who consumed alcohol prior to being involved in an incident last consumed alcohol on a licensed premises, with the highest rates in urban areas.
- the proportion of people who reported last consuming alcohol on a licensed premises and who were moderately, well or seriously intoxicated varied between 66% and 71%.

Police delivery of Premises Intervention

The Premises Intervention was delivered on 9,143 occasions throughout the three adoption Phases.

- 3,407 premises received the Level 1 intervention
- 4,854 premises received the Level 2 intervention
- 882 premises received the Level 3 intervention

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Level of alcohol-related crime

A statistically significant greater reduction in the number of people involved in alcohol-related incidents and assaults was observed in both Phase 1 and Phase 2, relative to their respective comparison areas. There was no statistically significant difference between the Phase 3 area and its comparison area in the number of people involved in either alcohol-related incidents or alcohol-related assaults.

Conclusion

The findings of the adoption initiative are unequivocal. They demonstrate an immediate, marked and sustained increase in the availability of alcohol intelligence information to Police on three successive occasions. Significant reductions in alcohol-related incidents and assaults occurred in two of the three Phases, reinforcing previous findings of the Program's potential to reduce alcohol-related harm. On the basis of these findings, the decision by NSW Police to adopt the Program into routine policing practice, and its continued operation in that jurisdiction are supported.

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AER Centre for Alcohol Policy Research

Title

The AER Centre for Alcohol Policy Research seeks to expand the evidence base of information and knowledge to underpin discussions and decisions about what to do in response to harmful consequences of alcohol in Australia.

Two of the centre's projects are included below

The range and magnitude of alcohol's harm to others

Heavy drinking and harm among youth

The **Centre for Alcohol Policy Research** is located at Turning Point Alcohol & Drug Centre, and is wholly funded by the Alcohol Education Rehabilitation Foundation

The **AER Centre for Alcohol Policy Research** seeks to expand the evidence base of information and knowledge to underpin discussions and decisions about what to do in response to harmful consequences of alcohol in Australia. Two projects of note

1. The range and magnitude of alcohol's harm to others – **(in progress)**
   The two-year project commissioned by AER on harms from drinking to others rather than the drinker, got under way in 2008. Anne-Marie Laslett leads the study at Turning Point, with all other AER Centre staff members involved. It also involves as collaborating researchers Dr. Tanya Chikritzhs (NDRI) and Dr. Christopher Doran (NDARC).

   The fact of the Australian study has already produced fruit elsewhere. New Zealand researchers, led by Dr. Sally Casswell, a consultant to the Australian study, succeeded in getting funding to carry out a survey on the subject in New Zealand. It is likely that there will be other such projects elsewhere in the future. This development offers the possibility of cross-national comparative analyses on the topic, initially of Australia and New Zealand.

   In 2008 the study proceeded on two main tracks:

   - One of these was with existing datasets which can be analysed in terms of the concerns of the study.
   - The other is a general-population survey of Australian adults on different aspects of alcohol's harm to the others. A final dataset file will be delivered early in 2009.

   At an international meeting in June 2008, a general overview of the project was presented, as well as a cross-national conceptual paper, considering the handling of alcohol in child welfare agencies and statistics in Australia compared with Canada and the United States.

2. Recent trends in risky alcohol consumption and related harm among young people in Victoria (completed)
   This report on trends in risky drinking among young people draws on several national and state youth survey series, and also on Victorian hospitalization data.

   Objective: To examine recent trends in the proportion of young people who drink at risky levels and the rate of alcohol-related harms experienced by young people in Victoria, Australia.

   Methods: The study uses published data from a series of surveys that ask questions relating to alcohol consumption to ascertain whether the proportion of young people drinking at risky levels has increased over the time period in which data are available. Alcohol-caused hospital admissions and emergency department presentations for young people are also examined over recent years to assess trends in alcohol-related harms.

   Results: The survey data shows mixed results, with no clear trend in the rate of risky drinking among young people. The harms data suggests that rates of alcohol-related harm, particularly acute intoxication, have increased dramatically over recent years.

   Conclusions: The relationship between survey-derived estimates of alcohol consumption and rates of alcohol-related harms is not as clear-cut as expected, and raise concerns about the sensitivity of population surveys in detecting changes in harmful drinking patterns.

   Implications: The current increasing trends in alcohol-related harms for young people in Victoria suggest the need for immediate public health interventions.