

# The Alcohol Intervention Training Program—arming ‘new generation’ health professionals assisting the farming community to reduce alcohol misuse

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Most recently, Alison has been part of a collaborative National Centre for Farmer Health—Deakin research team developed to tackle the problems of alcohol misuse and associated mental health issues in the farming community. She has been involved since the research and development stage of the Alcohol Intervention Training Program (AITP) and has provided training to Sustainable Farm Families (SFF) health professionals from Queensland and across Victoria.

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## Abstract

**Introduction:** Farm men and women in Australia have higher levels of alcohol misuse than their urban counterparts, and experience elevated alcohol-related health risks.<sup>(1)</sup> The Sustainable Farm Families™ (SFF) program<sup>(2)</sup>—a ‘new generation’ service which addresses health, wellbeing and safety among this population—has also identified alcohol-related behaviours among farmers as problematic. SFF health professionals have expressed a lack of confidence when dealing with alcohol-related behaviours. This paper reports on a project which developed, implemented and evaluated a training program designed to equip a ‘new generation’ of SFF health professionals with increased alcohol-related knowledge, to increase their confidence in raising alcohol-related issues, and to increase their skills in discussing and responding to the alcohol misuse-related problems experienced by farm men and women.

**Method:** The Alcohol Intervention Training Program (AITP) was developed and piloted with 6 experienced SFF health professionals. 32 SFF health professionals involved in upcoming SFF programs were recruited and allocated to either an intervention (trained with the AITP) or control group (not currently offered training). All health professionals completed questionnaires assessing their knowledge of alcohol misuse, as well as perceived barriers, attitudes and self-efficacy when working with people who misuse alcohol. The intervention group then participated in the AITP.

Further questionnaires were completed by all health professional post training and at a 3 month follow-up.

**Results:** Immediate post-training findings suggest significant improvement in the intervention group’s knowledge related to alcohol misuse and in their self-efficacy following participation in the AITP, when compared with controls. Continuing improvement in self-efficacy was identified at follow-up, but knowledge returned to pre-training levels. The barriers to working with people who misuse alcohol reduced for both intervention and control health professionals following training. This effect was maintained at follow-up. The attitude and willingness of SFF health professionals to work with clients who misuse alcohol declined for both groups immediately post training. At a three month follow-up, the intervention group showed a significant improvement in willingness—beyond pre-training levels—while the control group maintained a reduced level.

**Discussion:** Alcohol misuse is a well-entrenched and pervasive issue in rural communities. The AITP is an evidence-based strategy which appears to have a positive impact on the development of a ‘new generation’ of health professionals armed with greater levels of knowledge and confidence for assisting farm men and women to adopt more positive alcohol-related behaviours leading to better physical and mental health.

## Introduction

Farm men and women in Australia have higher levels of alcohol misuse than their urban counterparts, and experience elevated alcohol-related health risks.<sup>(1)</sup> The Sustainable Farm Families (SFF) program<sup>(2,3)</sup> is a ‘new generation’ program developed by the Western District Health Service in Hamilton, Victoria which aims to

address health, wellbeing and safety behaviours among this population. Over 2000 farm men and women from across Australia have participated since 2003. Evaluations of the program<sup>(3,4)</sup> have shown that participants see the program to be of great benefit, and would recommend it to others. Further, significant improvements in recognising risk factors for cardiovascular disease, diabetes and bowel cancer as well as changes in knowledge for type, amount and frequency of exercise required per day have been reported. Of particular importance is the sustained improvement in health indicators for people at risk for chronic diseases, such as cardiovascular disease, diabetes and cancer in addition to positive changes in safety behaviour and lifestyle.

Despite these positive gains, the SFF program has identified alcohol-related behaviours among farmers as an ongoing challenge with 54 per cent of men and 22 per cent of women in the broadacre agriculture industry reportedly engaging in high single occasion drinking, and drink at a high risk level at least monthly.<sup>(2)</sup> The SFF program evaluation indicated that the number of days drinking alcohol and the number of standard drinks consumed did not alter significantly following the program. Health areas directly affected by alcohol misuse include many forms of cancer, liver cirrhosis, digestive disorders<sup>(5,6)</sup>, and an increased risk for coronary heart disease.<sup>(7,8)</sup> A strong association between mental health problems and alcohol misuse has also been identified<sup>(9)</sup>, specifically among Australian farmers<sup>(10)</sup>, thus indicating that addressing mental health issues is important in any treatment of alcohol problems.

Despite the known health risks of alcohol misuse, a solution to the problem remains elusive. SFF health professionals have expressed a lack of knowledge and confidence when responding to alcohol misuse and find it easier to discuss behavioural risk factors such as obesity, smoking and lack of exercise. Lack of alcohol focused training has previously been identified as a barrier to the identification, assessment and treatment of clients who misuse alcohol.<sup>(11-13)</sup> Our pilot survey (unpublished) indicated that while 75 per cent of health professionals knew where to refer people with alcohol problems, only three documented alcohol related referrals have been made. A further consideration is that while health professionals in, often small, rural communities are expected to be at the frontline in the response to alcohol misuse, they regularly have close personal ties with those who misuse alcohol or may even experience the problem themselves. This paper reports on a project which developed, implemented and evaluated a training program designed to support a 'new generation' of health professionals with increased alcohol-related knowledge, confidence in raising alcohol-related issues, and skills in discussing and responding to the alcohol-related problems experienced by farmers and agricultural workers.

## Method

### Participants

Thirty-two health professionals involved in upcoming SFF programs were allocated to the intervention ( $n=15$ ) or the control ( $n=17$ ) group. All participants were registered nurses (Division 1) working in health care across rural Victoria and Queensland who were trained to deliver the SFF program within their own and other farming communities. In addition to their active involvement in the SFF program, these health professionals work in areas ranging from community health to acute care settings. Participants from the same health service were matched to the same group (either control or intervention) to control against cross-contamination.

### Materials

The intervention materials were initially developed from a review of the literature and the researchers' experience in the drug and alcohol and mental health fields. The program was tailored to the rural sector through the researchers' experience working with farm men and women. The Alcohol Intervention Training Program (AITP) has been designed to be delivered in four sessions over two days as outlined in Table 1. The study protocol is outlined more fully in Brumby et al.<sup>(14)</sup>

**Table 1 Delivery format and content of the Alcohol Intervention Training Program (AITP)**

Session 1	Session 2	Session 3	Session 4
<b>Understanding alcohol misuse</b>	<b>Detecting and assessing alcohol use problems*</b>	<b>Communication Skills</b>	<b>Brief Interventions</b>
<ul style="list-style-type: none"> <li>• diagnostic definitions</li> <li>• NHMRC guidelines for safe drinking<sup>(15)</sup></li> <li>• physiological, psychological, social and financial effects of alcohol misuse.</li> </ul>	Training in the use of the: <ul style="list-style-type: none"> <li>• Alcohol Use Disorders Intervention Test (AUDIT)<sup>(16)</sup></li> <li>• Short Index of Problems (SIP)<sup>(17)</sup></li> <li>• Depression, Anxiety and Stress Scale (DASS21)<sup>(18)</sup></li> <li>• Readiness To Change Questionnaire (RTCQ)<sup>(19)</sup></li> </ul>	<ul style="list-style-type: none"> <li>• dual relationships</li> <li>• active listening</li> <li>• probing techniques</li> <li>• motivational interviewing</li> </ul>	<ul style="list-style-type: none"> <li>• blood alcohol concentration (BAC)</li> <li>• personal responsibility for change</li> <li>• methods for employing empathy and supporting self-efficacy</li> <li>• training in the use of the Timeline follow back (TLFB)<sup>(20)</sup> drinking calendar.</li> </ul>

\* These screening and assessment tools specifically target alcohol misuse and associated mental health issues and are widely used in research and clinical settings. These measures will also be used as outcome measures to evaluate changes in the alcohol use and mental health of farm men and women with whom SFF health professionals work

A presenter’s manual, slide presentation and a training support kit were developed for this project. The kit included a plain language statement and consent form; pre and post-training questionnaires; a copy of the slides; a set of worksheets containing group exercises, assessment and screening tools and a range of case scenarios; a course evaluation form; and, a post-training information support package. The support package contained laminated standard drink information cards and a standard drink measures tumbler; background on the screening and assessment tools; and pamphlets covering the National Centre for Farmer Health (NCFH) website, alcohol and mental health referral services, further information resources on alcohol and mental health and tips for reducing drinking alcohol.

Self-rated outcome measures and a knowledge questionnaire were selected to assess changes pre- and post-training in the health professionals:

- *Knowledge of alcohol misuse questionnaire.* This multiple choice questionnaire was developed by the research team as a method of assessing the health professionals’ general knowledge about alcohol and alcohol misuse. It contains 12 questions relating to material covered in the AITP training manual.
- *Self-efficacy scale.* This scale was adapted from one originally developed to assess the self-efficacy of care staff working with depression in the aged care sector. It determines the level of confidence health professionals have in their own ability to work with the alcohol problems of farm men and women [18].
- *SAAPPQ (Short Alcohol and Alcohol Problems Perception Questionnaire).* This questionnaire comprises two subscales from the Alcohol and Alcohol Problems Perception Questionnaire (AAPPQ)<sup>(21)</sup> and was used to assess the health professionals’ attitude and willingness to work with clients who have alcohol problems. This scale has been reliably used in previous research.<sup>(22-24)</sup>
- *Perceived barriers to working with alcohol problems scale.* This scale examines perceived barriers to working with alcohol-related problems and was adapted from a scale developed by the authors looking at perceived barriers when working with depression.<sup>(25)</sup>

### Procedure

The AITP manual was developed and piloted with six health professionals. These health professionals have had extensive experience with the SFF program but are no longer active presenters. Pilot participants provided extensive feedback both during and after the training that was used to inform the refinement of the AITP.

Prior to training commencement, all health professionals (intervention and control) were provided with a Plain Language Statement and Consent Form and completed the self-rated outcome measures and knowledge questionnaire (pre). The intervention group attended one of three program venues (Cairns, QLD; Melbourne,

VIC; or, Hamilton, VIC). At the conclusion of training, all participants completed the questionnaires for the second time (post) and again three months post training (follow-up).

## Results

A repeated measure MANOVA was conducted to examine the differences between the two groups across the three assessment timeframes using SPSS version 18. Descriptive data for this analysis are provided in Table 1. A multivariate group (intervention and control) by time (pre, post, and follow-up) interaction was found ( $F(2, 58) = 7.54, p < .01$ ; partial  $\eta^2 = .21$ , power = .93). Univariate group by time were found on each of the measures: self-efficacy ( $F(2, 58) = 5.74, p < .01$ ; partial  $\eta^2 = .17$ ; power = .85); SAAPPQ ( $F(2, 58) = 26.50, p < .001$ ; partial  $\eta^2 = .48$ , power = 1.00); Barriers ( $F(2, 58) = 4.68, p < .05$ ; partial  $\eta^2 = .14$ , power = .77) and Knowledge ( $F(2, 58) = 7.54, p < .001$ ; partial  $\eta^2 = .21$ , power = .93). A summary of these interaction effects are provided in Figures 1 to 4. To examine the interaction effects further, additional ANOVAs were conducted to examine the differences between pre and post, pre and follow-up, and post and follow-up assessments for each group.

A summary of the interaction effect for the variable knowledge is provided in Figure 1. For the variable knowledge, there was a significant improvement from pre to post for the intervention group ( $F(1,13) = 10.12, p < .01$ , partial  $\eta^2 = .44$ , power = .84). However, there followed a significant decline from post to follow-up ( $F(1,13) = 8.09, p < .05$ , partial  $\eta^2 = .85$ , power = .75). None of these effects were significant for the control group, thus indicating that their knowledge remained stable.

**Figure 1 Changes in knowledge about alcohol use over time (Knowledge of alcohol misuse questionnaire)**

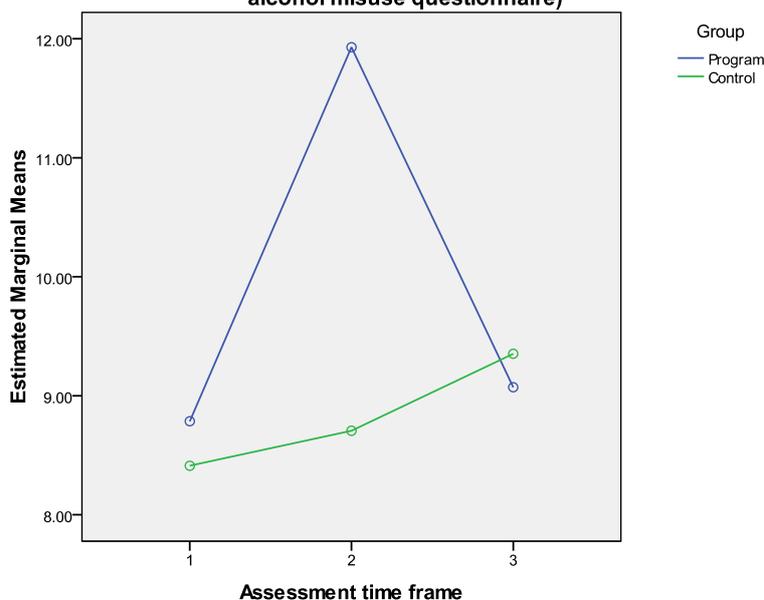
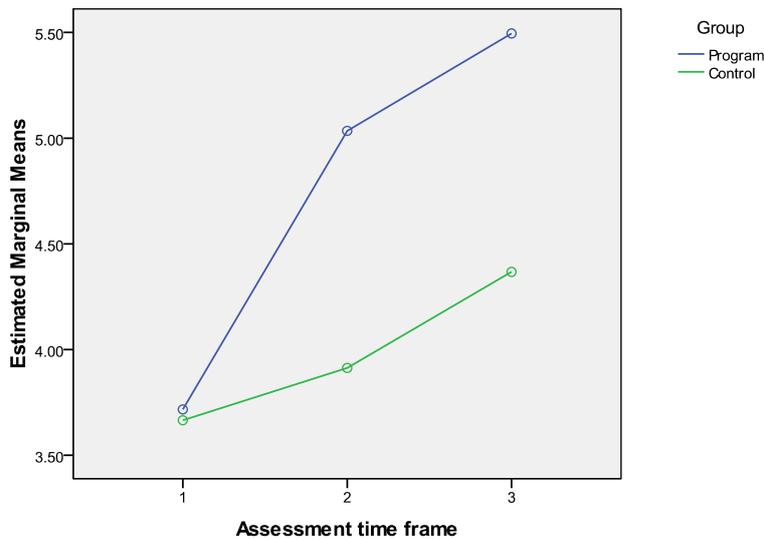


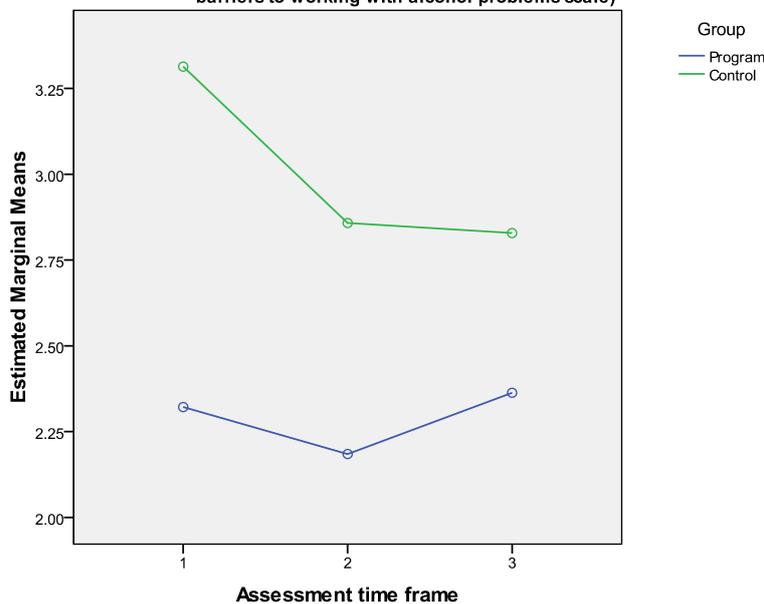
Figure 2 (where assessment time frame 1=pre, 2=post and 3=follow-up) shows improved self-efficacy from pre to post assessment for both groups. This was significant (Intervention:  $F(1,13) = 54.25, p < .01$ ; partial  $\eta^2 = .62$ , power = .99; Control:  $F(1,16) = 7.52, p < .05$ ; partial  $\eta^2 = .15$ , power = .36) for both groups, however the improvement was greater for the intervention. There was a significant difference between pre and follow-up assessments ( $F(1,13) = 20.75, p < .01$ ; partial  $\eta^2 = .80$ , power = 1.00) for the intervention group. There were no significant differences between post and follow-up for either group.

**Figure 2 Changes in self-efficacy when working with people who misuse alcohol over time (Self-efficacy scale)**



For the intervention group there were no significant differences between the three assessments on the variable, barriers. However, there was a trend, as can be seen in Figure 3, for the intervention participants to perceive fewer barriers after the program. Unexpectedly, this pattern was also observed for the control group and this was significant for this group ( $F(1,13)= 15.11, p<.001; \text{partial } \eta^2= .49, \text{power}= .95$ ).

**Figure 3 Changes in barriers to working with people who misuse alcohol over time (Perceived barriers to working with alcohol problems scale)**



The effects on the last variable were not fully in line with expectations for the intervention group. Figure 4 shows the intervention SAAPPQ scores declined from pre to post ( $F(1,13)= 11.64, p<.01; \text{partial } \eta^2= .47, \text{power}= .88$ ). However, SAAPPQ scores increased from post to follow-up ( $F(1,13)= 16.85, p<.01; \text{partial } \eta^2= .56, \text{power}= .97$ ). In contrast, the control groups' scores on the SAAPPQ declined from pre to post ( $F(1,13)= 13.46, p<.01; \text{partial } \eta^2= .46, \text{power}= .93$ ); post to follow-up ( $F(1,13)= 26.95, p<.001; \text{partial } \eta^2= .63, \text{power}= .99$ ) and from pre to follow-up ( $F(1,13)= 49.58, p<.001; \text{partial } \eta^2= .76, \text{power}= 1.00$ ).

**Figure 4 Changes in attitudes and willingness to work with people who misuse alcohol over time (SAAPQ - Short Alcohol and Alcohol Problems Perception Questionnaire)**

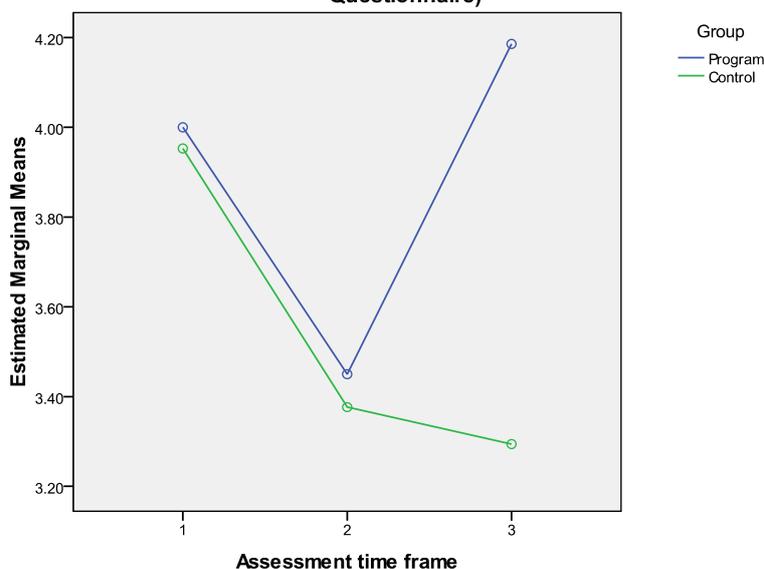


Table 1 denotes the means and standard deviations across time and group for each of the four outcome measures.

**Table 1 Means and standard deviations across time and group**

Measure	Pre	Post	Follow-up
1. Knowledge			
Intervention	8.79 (1.42)	11.93 (3.10)	9.10 (1.33)
Control	8.41 (1.70)	8.71 (1.57)	9.35 (2.32)
2. Self-efficacy			
Intervention	3.72 (.71)	5.03 (.73)	5.50 (.87)
Control	3.67 (.77)	3.91 (.68)	4.37 (1.19)
3. Barriers			
Intervention	2.32 (.46)	2.18 (.16)	2.36 (.43)
Control	3.31 (.53)	2.86 (.28)	2.83 (.42)
4. SAAPPQ			
Intervention	4.00 (.25)	3.45 (.32)	4.19 (.30)
Control	3.95 (.41)	3.38 (.29)	3.29 (.26)

N=31

## Discussion

The findings suggest that the AITP has had some effect in creating ‘new generation’ health professionals armed with skills and confidence to reduce alcohol misuse by farm men and women. While knowledge of alcohol misuse peaked following the training, it returned to baseline levels after 3 months. This indicates the importance of consolidating new knowledge through the use of regular in-service or e-learning techniques.

The increase in self efficacy levels suggests two effects. Primarily, the AITP has boosted the level of self-efficacy in intervention health professionals. There is also support for the theory that simply being involved in the project, completing the questionnaire material and raising one’s consciousness about the issues is enough to increase a health professional’s confidence in dealing with alcohol misuse in the short-term.

A significant effect of the AITP on the barriers to working with people who misuse alcohol is not evident at this point. The pre-training assessment indicates a pre-existing variability between the intervention and control

groups on this measure, with the control group having a higher initial level of barriers. It may be that by being selected to participate in the AITP, the initial barriers were already reduced for the intervention health professionals prior to any assessment. As with self-efficacy, an elevated consciousness may have been enough to reduce the enhanced initial barriers observed in the control group.

A delayed improvement in health professionals' attitudes and willingness to work with clients who misuse alcohol has been identified as a result of the AITP. Both groups initially showed a reduced level of attitude and willingness immediately following the training. The nature of the material in highlighting the challenges to working with alcohol misuse may have created an initial post-training resistance to working with this group. It was not until the three month follow-up that training participants displayed a marked increase in their desire to work with clients who misuse alcohol. It may be that it was only upon returning to their workplace armed with the material from the training that intervention health professionals recognised their newly developed skills and capabilities. In combination with an increased level of confidence, a willingness to engage with clients developed.

Problems associated with alcohol misuse in farming communities continue to demand a renewed and innovative approach. The National Rural Health Alliance (NRHA) describe farming as "one of the riskiest occupations in terms of injury rates both in Australia and overseas" (p.15).<sup>(26)</sup> Alcohol is consistently linked to these risks. Almost 50% of all road crashes take place on open rural roads.<sup>(26)</sup> Alcohol was involved in approximately 18% of crashes and 30% of fatalities on rural and remote roads as reported by Queensland police.<sup>(27)</sup> 13.3% of 338 farm related fatally injured persons tested were found to have a BAC over .05.<sup>(28)</sup> High risk drinking and alcohol-related mortality continue to be elevated for rural dwellers, particularly young adults, when compared with urban counterparts.<sup>(29)</sup> Compounding these health and social costs are the economic cost estimates of alcohol misuse in Australia, recently increased to \$36 billion.<sup>(30)</sup> This research adds an important component to the SFF program by producing an evidence-based strategy for creating a 'new generation' of health professionals well armed to encourage farm men and women to adopt behaviours that will reduce alcohol-related problems and promote better physical and mental health. The next phase of this project will examine the impact these 'new generation' health professionals have directly on the alcohol misuse and associated mental health issues of farm men and women.

## References

1. Miller PG, Coomber, K., Staiger, P., Zinkiewicz, L., & Toumbourou, J.W. Review of rural and regional alcohol research in Australia. *Australian Journal of Rural Health*. 2010;18:110-7.
2. Brumby S, Willder S, Martin J. The sustainable farm families project: changing attitudes to health. *Rural and Remote Health*. 2009;9:1012.
3. Brumby S, Wilson B, Willder S. Living Longer on the Land Sustainable Farm Families in Broadacre Agriculture. Rural Industries Research and Development Corporation Innovation for rural Australia. 2008.
4. Boymal J, Rogers, P., Brumby, S. & Willder, S. Living longer on the land: an economic evaluation of a health program that works. Canberra, Australia 2007 Contract No.: Publication No. 08/048.
5. Gmel GR, J. Harmful alcohol use. *Alcohol Research and Health*. 2003;27:52-62.
6. Rehm J, Gmel, G., Sempos, C.T. & Trevisan, M. Alcohol related morbidity and mortality. *Alcohol Research and Health*. 2003;27:39-51.
7. McElduff P, & Dobson, A.J. How much alcohol and how often? Population based case-control study of alcohol consumption and risk of a major coronary event. *British Medical Journal*. 1997;314:1159-64.
8. Trevisan M, Dorn, J., Falkner, K., Russell, M., Ram, M., Muti, P., et al. Drinking pattern and risk of non-fatal myocardial infarction: A population-based case-control study. *Addiction*. 2004;99:313-22.
9. Staiger PK, Long, C., McCabe, M.P., & Ricciardelli, L.A. Defining dual diagnosis: A qualitative study of the views of health care workers. *Mental Health and Substance Abuse: A dual diagnosis*. 2008;1:194-204.
10. Stain HJ, Kelly, B., Lewin, T.J., Higginbotham, N., & Beard, J.R. Social networks and mental health among a farming population. *Social Psychiatry and Psychiatric Epidemiology*. 2008;43:843-9.
11. Begun A. Training project for social work education for the prevention and treatment of alcohol use disorders. Milwaukee, Wisconsin: University of Wisconsin-Milwaukee, Social Work Department 2004.
12. Gilbert N, & Terrell, P. Dimensions of social welfare policy. 5th edition ed. Boston, MA: Allen and Bacon; 2002.
13. Miller M, & C' de Baca, J. What every mental health professional should know about alcohol. *Journal of Substance Abuse Treatment*. 1995;12:355-65.
14. Brumby S, Kennedy, A., Mellor, D., McCabe, M.P., Ricciardelli, L.A., Head, A., & Mercer-Grant, C. The Alcohol Intervention Training Program (AITP): A response to alcohol misuse in the farming community. *BMC Public Health* (in press).

15. National Health and Medical Research Council. Australian Guidelines to reduce health risks from Drinking Alcohol. Working to build a healthy Australia [serial on the Internet]. 2009: Available from: [http://www.nhmrc.gov.au/\\_files\\_nhmrc/file/publications/synopses/ds10-alcohol.pdf](http://www.nhmrc.gov.au/_files_nhmrc/file/publications/synopses/ds10-alcohol.pdf).
16. Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M. Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption--II. *Addiction*. 1993 Jun;88(6):791-804.
17. Miller WR, Tonigan, J.S. & Longabaugh, R. The Drinker Inventory of Consequences (DRI-C): An instrument for assessing adverse consequences of alcohol abuse. Project MATCH Monograph Series, Vol 4: National Institute on Alcohol Abuse and Alcoholism, Rockville, MD.; 1995.
18. Lovibond PFL, S.H. Manual for the Depression Anxiety Stress Scales. Sydney, Australia: Psychology Foundation of Australia; 1995b.
19. Rollnick S, Heather, N., Gold, R., & Hall, W. Development of a short "Readiness to Change" questionnaire for use in brief opportunistic interventions. *British Journal of Addictions*. 1992;87:743-54.
20. Sobell LC, & Sobell, M.B. Timeline followback: user's guide. Toronto: Addiction Research Foundation; 1996.
21. Shaw S, Cartwright, A., Spartley, T., & Harwin, J. Responding to drinking problems. Baltimore, MD: University Park Press; 1978.
22. Gorman MD, Werner, M.L., & Duffy, W.S. Evaluation of an alcohol education package for non-specialist health care and social workers. *British Journal of Addictions*. 1990;85:223-33.
23. Lightfoot CJP, & Orford, J. Helping agents' attitudes towards alcohol-related problems: situations vacant? A test and elaboration of a model. *British Journal of Addictions*. 1986;81:749-56.
24. Richardson MA. Social work education: the availability of alcohol-related course curriculum and social workers' ability to work with problem drinkers. *Journal of Social Work Practice*. 2008;22(1):119-28.
25. McCabe M, Russo, S., Mellor, D., Davison, T., & George, K. Effectiveness of a training program for carers to recognize depression among older people. *International Journal of Geriatric Psychiatry*. 2008;23:1290-6.
26. Alliance NRH. Drugs and alcohol in rural Australia. ACT1998.
27. Sheehan M, Siskind, V., Turner, R., Veitch, C., O'Connor, T., Steinhardt, D., Blackman, R., Edmonston, C., & Sticher, G. Rural and Remote Road Safety Project—Final Report. (CARRS-Q Monograph 4). Brisbane, Australia: QUT, CARRS-Q.2008.
28. Franklin R, Mitchell R, Driscoll T, Fragar L. Farm-related fatalities in Australia, 1989-1992. ACAHS, NOHSC and RIRDC: Moree. 2000.
29. Peach HG, Bath, N.E., & Farish, S.J. Comparison of unsafe drinking between a rural and metropolitan area. *Drug and Alcohol Review*. 1998;17:117-20.
30. Laslett A-M, Catalano, P., Chikritzhs, Y., Dale, C., Doran, C., Ferris, J., Jainullabudeen, T., Livingston, M, Matthews, S., Mugavin, J., Room, R., Schlotterlein, M., & Wilkinson, C. The Range and Magnitude of Alcohol's Harm to Others. Fitzroy, Victoria2010.