



Foundation for Alcohol
Research & Education

Adolescent risky drinking: Sources of alcohol and the role of parents

Dr Conor Gilligan, School of Medicine and Public Health
UNIVERSITY OF NEWCASTLE

Associate Professor Kypros Kypri, School of Medicine and Public Health
UNIVERSITY OF NEWCASTLE

JUNE 2012



About the Foundation for Alcohol Research and Education

The Foundation for Alcohol Research and Education (FARE) is an independent charitable organisation working to prevent the harmful use of alcohol in Australia. Our mission is to help Australia change the way it drinks by:

- helping communities to prevent and reduce alcohol-related harms
- building the case for alcohol policy reform and
- engaging Australians in conversations about our drinking culture.

Over the last ten years FARE has invested more than \$115 million, helped 750 organisations and funded over 1,400 projects addressing the harms caused by alcohol misuse.

FARE is guided by the World Health Organization's Global Strategy to Reduce the Harmful Use of Alcohol¹ for addressing alcohol-related harms through population-based strategies, problem-directed policies, and direct interventions.

Adolescent risky drinking: sources of alcohol and the role of parents

Principal Investigators: Conor Gilligan¹, Kypros Kypri²,

Other contributors: Natalie Johnson¹, Marita Lynagh¹, Dan Lubman³

1. Discipline of Health Behaviour Science and Priority Research Centre for Health Behaviour, School of Medicine and Public Health, University of Newcastle, Australia

2. Centre for Clinical Epidemiology & Biostatistics, School of Medicine and Public Health, University of Newcastle, Australia

3. Turning Point Alcohol and Drug Centre and Monash University, Victoria, Australia.

Contact:

Dr Conor Gilligan

Discipline of Health Behaviour Sciences
University of Newcastle
Level 3 David Maddison Building
Cnr King & Watt Sts
Newcastle

Conor.Gilligan@newcastle.edu.au

Phone: +61 249 138 635

Fax: +61 249 138 148

Contents

The project	6
1. Background.....	7
1.1. Sources of alcohol for teenage drinking.....	7
The research.....	9
2. Introduction.....	9
2.1. Young people and alcohol	9
2.2. The role of parents	9
2.3. Laws and guidelines	10
3. Parental supply of alcohol and adolescent risky drinking.....	11
3.1. Aim	11
3.2. Methods	11
3.3. Results	13
3.4. Discussion	14
3.5. Conclusion.....	16
4. Parent attitudes, family dynamics and adolescent drinking: Qualitative study of the Australian Parenting Guidelines for Adolescent Alcohol Use.....	23
4.1. Aim	23
4.2. Methods	23
4.3. Results and Discussion.....	24
4.4. Conclusion.....	30
5. Changing parental behaviour to reduce risky drinking among adolescents: Current evidence and future directions	35
5.1. Aim	35
5.2. The role of parental social networks in supply of alcohol	35
5.3. The potential to intervene with parents	36
5.4. Future directions.....	37
5.5. Conclusion.....	39
Summary and future directions	40
Appendices.....	41
Appendix A: Questionnaire for students	42
Appendix B: Parental Interview Protocols	54
References	57

Acronyms

ASSAD	Australian School Students' Alcohol and Drug Survey
CG	Dr Conor Gilligan
GLM	Generalised linear model
NHMRC	National Health and Medical Research Council
NSW	New South Wales

The project

1. Background

Funding received from the Foundation for Alcohol Research and Education (previously Alcohol Education and Rehabilitation Foundation) for the study 'Sources of supply for teenage drinking' has enabled several studies to be undertaken. The work has focused on sources of alcohol for adolescent drinking, and has specifically explored the role of parents in supplying alcohol, as well as parental attitudes towards adolescent drinking. This work has established the basis for the design of an intervention project targeting parental behaviours in relation to adolescent alcohol consumption. The work has generated pilot data to help inform an intervention, and has established relationships to enable the compilation of a strong team of expert researchers to lead a competitive grant application for 2012/2013 submission. The specific components of the work are outlined below:

1.1. Sources of alcohol for teenage drinking

A study was undertaken with 13-17 year old students in Catholic and Independent High Schools in the Lower Hunter Region. A research assistant was employed to perform data collection in schools, which occurred during normal lesson times. In preparation for this study, focus group sessions were held with students in two of the participating schools to explore relevant issues and pilot the questionnaire instrument. The research assistant was involved with note-taking during the focus groups and partial transcription of recordings after the sessions, as well as subsequent updates to the questionnaire (refer Appendix A).

This project has led to the preparation of a paper that has been accepted for publication in the *Drug and Alcohol Review*. The work was also presented at the 37th Annual Alcohol Epidemiology Symposium of the Kettil Bruun Society, Melbourne, in May 2011.

1.2. Parent attitudes, family dynamics and adolescent drinking – qualitative component

As part of this component, a series of interviews and focus groups were held with parents (refer Appendix B for interview protocols), exploring their attitudes and behaviours surrounding adolescent alcohol consumption and the supply of alcohol to their adolescent children. The qualitative component of this work has been analysed and published in the international scientific journal *BMC Public Health*.

1.3. Parent attitudes, family dynamics and adolescent drinking – quantitative component

The quantitative component of this work with parents involved a web-based survey exploring parental norms and attitudes. A portion of our grant was used to purchase software for the production of the web-based survey, and to cover the technical support associated with setting up the software on a local server. This has since been reimbursed due to the intended use of resource by other researchers in our School. Research assistant time was also used in the development of the web-based tool.

Using this tool, data was collected from a small sample of parents during 2011. This data and process has been used as a pilot for the adaptation of the survey instrument for use in a larger study with Australian parents in 2012, as well as an international comparative study. An international collaboration has been established and preparation is underway to extend the pilot work conducted as part of the present project into a new, larger study exploring parental norms and pluralistic ignorance surrounding the supply of alcohol to adolescents. A collaboration has also been established whereby these data will be compared with similar data collected as part of a larger study with parents in the Netherlands. This comparison is likely to enhance the value of our results and potentially lead to further publications using this data.

1.4. Future research

The study originally aimed to estimate volumes of alcohol obtained by drinkers under 18 years of age from various sources such as parents, other adults, siblings, friends, and via commercial purchase. Through the survey with students, information was obtained about the sources of alcohol and where 'most' of the adolescent's alcohol was obtained but not the actual volumes obtained. This area has been explored with parents but thus far, only qualitative information has been obtained. The web-based survey with parents seeks to clarify this, and further work will endeavour to collect more detailed quantitative information to answer this research question.

The knowledge gained from this work is being used to inform the design of an intervention project; working with parents to reduce adolescent risky drinking. Our findings suggest that targeting parents and linking parents together in social networks is likely to be a useful approach to addressing risky drinking behaviour among adolescents.

A small grant from the Australian Rechabite Foundation has been obtained to trial the use of Facebook to recruit parents to complete a web-based survey, and to test the acceptability of Facebook as a means of connecting parents and providing support and guidance regarding adolescent alcohol initiation. This study will act as a proof-of-concept pilot for a larger grant application in 2013.

The research team is also currently collaborating with groups in Canada and Switzerland, using the web-survey instrument developed as part of this project to collect data from parents and compare social norms and explore norm misperceptions across the three regions.

The research

2. Introduction

2.1. Young people and alcohol

Risky drinking among young people is a matter of public concern globally. In Australia, in 2005, a third to half of 15-17 year-olds reported drinking at risky levels (at that time defined as seven or more standard drinks on one occasion for males) at least weekly [1]. Risky drinking is associated with a substantial burden of alcohol-related harm; negative social consequences, violence, intentional and unintentional injury, risky sexual behaviour and neuropsychiatric conditions [2, 3]. In Australia, while trends in alcohol consumption estimated from various national and state (Victorian) surveys are inconsistent [1, 4, 5], alcohol-related harms recorded in hospital and emergency department data more consistently show increases in recent years [6].

By age 12, 75% of the Australian population have tried alcohol, and from age 14 an increasing proportion report more frequent (last week or last month) use [7]. Accordingly, we focused our review on adolescents aged 13-17 years to capture those at the age at which drinking in social situations (beyond sips and tastes provided by parents) is likely to begin, and while purchase of alcohol (if not drinking *per se*) remains illegal. While evidence on the long-term consequences of adolescent alcohol consumption and its impact on adult health and wellbeing is inconclusive [8], the high prevalence of alcohol-related harm during late adolescence makes this a potentially important point for intervention. A variety of terms are used to describe drinking behaviour and patterns of drinking. Here, we use the term '*risky drinking*' to encompass the consumption of large amounts (more than four standard drinks) of alcohol on a single occasion, as well as drinking in situations likely to result in harm for young people.

The environmental factors that determine an adolescent's propensity to engage in risky drinking may be classed as social (including community, cultural, marketing, and economic influences), peer, or family/parental. Children are exposed to, and learn about alcohol from an early age from their parents and families, the wider community, and the media. Children recognise alcoholic beverages and develop an attitude towards alcohol from as early as pre-school [9]. While there is a shift in emotional attachment during early adolescence and an increase in the importance of peer approval [10-12], there is evidence to support the continuing influence of parents on development [13] through late adolescence and into early adulthood [12, 14]. Evidence suggests that positive family relationships and parental behaviours have the capacity to directly influence the drinking choices and behaviours of adolescents, as well as their choice of peer group [15] and thus the influence of peers on drinking behaviour [16].

2.2. The role of parents

In a systematic review of longitudinal studies investigating parenting factors associated with adolescent drinking, Ryan et al. identified several predictors of delayed alcohol initiation and lower levels of later drinking [17]. Key parental factors included parental modelling of drinking behaviour, alcohol-specific communication, disapproval of adolescent drinking, general discipline, rules about

alcohol, parental monitoring, parent-child relationship quality, family conflict, parental support, parental involvement, and general communication [17].

These risk and protective factors were explored in a Delphi consensus study [18] and have since formed the basis of the '*Parenting Guidelines for Adolescent Alcohol Use*' (hereafter referred to as 'the guidelines') designed to help parents delay or reduce their adolescent's alcohol use as recommended by the Australian National Health and Medical Research Council (NHMRC) (www.parentingstrategies.net [19]).

2.3. Laws and guidelines

The legal age of alcohol consumption and legislation relating to the secondary supply of alcohol are presently contentious issues in Australia. The purchase of alcohol by persons under the age of 18 years (minors) is prohibited in all states, but current laws do not prohibit consumption *per se*. In most states it is legal for minors to be supplied with alcohol in a private setting, and currently there is no legal requirement for responsible supervision of drinking by minors. In New South Wales (NSW) parents/guardians or other adults who have the permission of parents/guardians can legally supply alcohol to children under 18 years in private settings (*Liquor Act 2007 (NSW)*). The Victorian State Government has recently introduced a law making it an offence to supply alcohol to minors in a private setting without parental consent, bringing this state's laws in line with those of Queensland, Tasmania, and NSW. In Queensland and Tasmania a second offence of 'irresponsible supply' occurs when a person provides an excessive amount of alcohol or does not supervise the minor to ensure the alcohol is consumed safely [20].

3. Parental supply of alcohol and adolescent risky drinking

This section of the report is an excerpt from the following publication:

Gilligan C, K Kypri, N Johnson, M Lynagh, & S Love: **Parental supply of alcohol and adolescent risky drinking**. *Drug and Alcohol Review* 2012. DOI: 10.1111/j.1465-3362.2012.00418.x

Many Australian parents see it as their responsibility to teach their children when, where, and how to drink alcohol [21, 22]. Parents often supply alcohol believing that it teaches responsible drinking and controls the quantity consumed [23]. There is, however, little research evidence to support this belief. It is plausible that parental supply reduces barriers to, and/or encourages drinking, prompting a progression to unsupervised and harmful patterns of consumption [24]. Previous research reveals a positive association between parental provision of alcohol and children's drinking frequency [25-29] but the circumstances of such provision in terms of supervision, and the links with volume of alcohol consumption have not been extensively explored.

For adolescents under the age of 18, the most common locations for drinking are private parties, their own homes, and friends' homes respectively [7], however, the level of adult supervision of drinking, particularly outside the home is not known and probably varies substantially. The most recent Australian School Students' Alcohol and Drug Survey (ASSAD survey) found that parents were the most common source of alcohol, with 34% of students reporting that their parents gave them their last drink [7].

3.1. Aim

In this study, we aimed to determine whether there is an association between parental supply and risky drinking. Previous research has generated limited evidence about such an association. Two hypotheses were tested: (1) that minors whose parents supply them with alcohol *per se* have increased odds of risky drinking, and (2) where supply occurs for drinking without parental supervision, the odds of risky drinking are greater again.

3.2. Methods

3.2.1. Sampling

Catholic and Independent High Schools in the Lower Hunter Region of New South Wales (NSW) were invited to participate. Permission was granted by the Maitland-Newcastle Diocese to approach Catholic schools. All 13 eligible Catholic and Independent (i.e. private) schools in the region were invited and seven agreed to participate. Ethical approval for the project was granted by the University of Newcastle Human Research Ethics Committee (approval number H-2009-0357).

Each school was asked to invite students in years 8-12 (aged 13-17 years) to participate. Parental consent was sought either via letters sent home with students and signed consent forms returned to school, or via email sent to parents with the participant information sheet attached and an invitation to provide consent via return email.

3.2.2. Questionnaire

The questionnaire (attached as Appendix A) included items on: demographics (age, gender, ethnic background), life-time prevalence of drinking, past two-week and past month prevalence of risky drinking (defined as more than four drinks on a single occasion as per the 2009 NHMRC guidelines [30]), whether a parent had supplied alcohol for supervised or unsupervised drinking, sources of alcohol in the preceding month, experience of harms associated with alcohol (for example, getting into fight or being sick), and perception of peers' drinking behaviours. Questions about the sources of alcohol and alcohol related harms were modelled on questions used in the ASSAD [7]. Parental monitoring measures were taken from the parenting styles scale developed by Kremers et al [31] and translated into English by Pearson et al [32]. Two items were used from this scale with five point Likert scale responses; 'when I get a low mark at school my parents encourage me to do better' and 'my parents know exactly where I am most afternoons after school'. Students were asked on how many occasions their parent gave them alcohol to drink while they were present, while they weren't present but there was other adult supervision, and when there was no adult supervision. These questions, along with the past two week alcohol consumption and perceptions of peers drinking were taken from a survey with school-aged youth in New Zealand [33].

The survey was pilot tested with 31 students in two schools. Small groups completed the draft instruments, and then participated in focus group discussions to identify problems with language, issues with interpretation of questions, or topic areas that should be included. These discussions led to minor changes to the instructions for completion of some questions.

3.2.3. Survey administration

A research assistant visited schools in terms 3 and 4 (July to October) of 2010 to collect data during normal lesson times. Questionnaires were distributed, instructions provided, and then collected upon completion. Questionnaires were completed anonymously. Class teachers were present for supervision purposes only.

3.2.4. Statistical analysis

Respondents were classified as 'non-drinkers' (never had a full glass of alcohol), 'moderate drinkers' (had a full glass but not more than four drinks on a single occasion in the last month), or 'risky drinkers' (had more than four drinks on one or more occasions in the last month) on the basis of their self-reported drinking behaviour. Drinking status (non-, moderate-, or risky-drinker) was then used as a continuous variable to examine possible correlations with 'number of close friends who drink' and the 'level of alcohol consumption by adults in the participants' home'. Data was tested for normality and was found to be skewed by age/school year. Non-parametric Spearman's tests were therefore used for correlation analyses. Alcohol-related consequences were not included in subsequent analyses due to their low frequency among the participants.

Characteristics that were likely to be associated with adolescent risky drinking were examined univariately. Only those characteristics with a $p < 0.25$ in the simple model were tested in a subsequent multiple regression model. A generalised linear model (GLM) was used to determine whether certain characteristics were associated with adolescent risky drinking. In order to adjust for clustering within schools ($n=7$) and different years at school (8-12), these terms were added to the

model to inflate standard errors due to clustering effects. A logistic regression was then conducted with 'risky drinking' (versus moderate/no drinking) as the predictor outcome. Stepwise backward elimination was used to exclude variables not associated with adolescent risky drinking. Variables with the highest p-value were removed one at a time, until the model contained only those variables with of $p < 0.05$.

3.3. Results

The recruitment rate within schools varied from 23% to 81%, with participant numbers in each school ranging from 31 to 145 and a total of 530 students completing the questionnaire (overall response 43%). Differing consent rates between schools may reflect school culture and whether a staff member acted as a champion for the study and encouraged participation [34].

3.3.1. Participants

Of the 530 participants, 281 were female (53%) and 26 failed to indicate their gender. Students were in years 8 ($n=76$, 14.3%), 9 ($n=112$, 21.1%), 10 ($n=121$, 22.8%), 11 ($n=138$, 26.0%), or 12 ($n=83$, 15.7%) and were aged between 13 and 17 at the time of the survey.

The majority of students were Australian born ($n=507$, 95.7%) and spoke only English at home ($n=453$, 85.5%). A minority of students were born in various Asian, African, and European countries and predominantly spoke their respective native languages at home. Fifteen students identified as Aboriginal or Torres Strait Islander (3.1%).

3.3.2. Alcohol consumption

Patterns of alcohol consumption and mean volume by school year are presented in Table 3.1 (p.16). Most students reported they had tried 'at least a sip of alcohol' ($n=494$, 93.2%), two thirds reported consumed at least a full glass ($n=351$, 66.2%), and 213 (40%) reported consuming more than four drinks on one occasion or more in the preceding month (defined as 'risky drinking'). Subsequently, participants were grouped into three categories; non-drinkers ($n=179$, 33.8%), moderate drinkers ($n= 138$, 26.0%), and risky drinkers ($n=213$, 40.2%).

Table 3.2 (p.17) presents the sources of alcohol (all sources and main sources respectively) obtained by participants who drank in the preceding month stratified by school year. Although 'risky drinkers' reported that they obtained alcohol mainly from friends ($n=103$, 48%) and parents ($n=41$, 19%), parents were the main source of alcohol for a higher proportion of moderate drinkers ($n=38$, 18.7%) than risky drinkers ($n=24$, 11.8%). Risky drinkers more commonly cited friends as their main source of alcohol ($n=62$, 30.5%) compared to moderate drinkers ($n=23$, 11.3%).

3.3.3. Parental supply

Parental behaviour regarding the supply of alcohol to school students is summarised in Table 3.3 (p.18). The percentage of students who reported that their parents had given them alcohol increased by school year, as did the percentage whose parents had discussed how they felt about their children drinking, and who had supplied alcohol for consumption under all circumstances. The frequency of each of these parental behaviours was higher among risky drinkers than moderate

drinkers. Supply of alcohol for drinking without parental supervision (other adult supervision or no supervision), was less prevalent than supply for drinking under parental supervision.

3.3.4. Perceptions of peers' drinking

There was a strong positive association between the number of close friends who students believed to have consumed alcohol in the last month and self-reported risky drinking ($r=0.67$, $p<0.0001$). The number of close friends who were thought to have consumed alcohol in the preceding month, and the percentage of young people of the participants' age thought to drink regularly both increased with increasing school year (data not shown). From year 8, most students indicated that they had some close friends who drank or were aware of others their own age drinking.

3.3.5. Testing hypotheses

The results of the simple and multivariate regression analyses are presented in Table 3.4 (pp.19f). Univariately, the odds of risky drinking was increased for Aboriginal or Torres Strait Islander students, those whose parents drank every day or 2-3 days per week, students who didn't know their parent's or household rules regarding the frequency or amount of alcohol they were permitted to consume, or who reported that their parents allowed them to drink 'as much as they like', those who had more than five close friends who had consumed alcohol in the preceding month, and those who believed that more than 70% of people their age drink alcohol regularly. Parental supply of alcohol in all supervision circumstances was also strongly associated with risky drinking.

In the full multivariate regression model, parental supply for drinking without parental supervision, as well as the number of close friends believed to have consumed alcohol in the past month remained significant. Odds of risky drinking also remained significantly higher for Aboriginal or Torres Strait Islander students. The final model accounted for 46.4% of the variance in risky drinking. The Hosmer and Lemeshow test was not significant (Chi-square with 8, DF = 3.779; $P = 0.877$) indicating that the model fits the data well. Furthermore, a comparison of the observed and expected values in each of the 20 cells indicated the model fits well within each decile of risk (see Table 3.5, p.21).

3.4. Discussion

This cross-sectional survey of high school aged students showed 'risky drinking' was common and increased sharply by school year: from 7.9% in Year 8 to 77% in year 12 (i.e. in students turning 18 in the survey year). Friends (41.9% and parents (30.5%) were the main sources of alcohol among students who reported (risky?) drinking. Our hypothesis that students whose parents supply them with alcohol *per se* would have increased odds of risky drinking was not supported. Our second hypothesis, however, was supported: students whose parents supplied them with alcohol for consumption without parental supervision had four times the odds of risky drinking.

3.4.1. Limitations

This study has a number of limitations. First, data collection for this study was restricted to Catholic and Independent schools because the NSW Department of Education and Training policy is to deny researchers access to public schools unless the research is deemed to have educational value. While Catholic and Independent schools are attended by students from a broad range of socioeconomic

and religious backgrounds, the generalisability of the findings to the broader Australian community is uncertain. Second, an Ethics Committee ruling meant that active parental consent had to be obtained in order for students to participate, despite the anonymity of the data collection. This requirement and the consequent low response rates mean that the reported percentages should not be taken as prevalence estimates. This limitation is less problematic in relation to estimates of associations between variables given the good heterogeneity in the sample's exposure to explanatory variables of interest.

Third, data was collected from schools over several months, on different weekdays depending on timetabling and convenience. The timing of data collection in relation to weekends, school holidays and events such as exam periods may have influenced the results for students' drinking in the previous month. The impact of this variation is minimal, however, as no direct comparisons were made between schools. The reliance upon self-report and the potential influence of socially desirable reporting are also possible sources of information bias. We expect that the tendency to misreport was minimised through the anonymity of data collection and the non-judgemental framing of questions. The interpretation of what constitutes parental supervision may also vary, both between students, and between parents and students [33].

Finally, the regression analysis presents the results of a binary comparison between risky drinkers and all others, including both moderate- and non-drinkers. This comparison is based on the fact that drinking more than four drinks on a single occasion is substantially riskier for young people than even frequent, low level consumption [35]. This is not meant to imply that no risk is associated with moderate drinking, particularly for younger participants, but the volume of alcohol consumed by moderate drinkers was very low in this sample. Notably, our participants span an age range within which the NHMRC recommendation changes from no drinking below 15 years of age, to delaying the initiation of drinking for 15-17 year olds [30]. The risk associated with drinking at a moderate level is likely to differ by age. Combining moderate drinkers with non-drinkers in the regression analysis was considered a conservative approach, as it will have reduced the strength of associations. The analysis was performed with risky and moderate drinkers grouped together, and while the associations were strong, they generated less generalizable results.

The recruitment of 15 Aboriginal and Torres Strait Islander students (3.1% of total sample) is consistent with the proportional enrolment of this group in the participating schools as well as other schools in the region. While the implications of the association of risky drinking with Aboriginal or Torres Strait Islander status are not explored here, this finding is consistent with the rate of risky drinking among this population group overall [36].

3.4.2. Family- and peer-level correlates of risky drinking

While this study cannot demonstrate a causal relationship between parental supply of alcohol and risky drinking, a strong association, controlled for several confounders, has been established. The perceptions of peers' drinking were also strongly associated with risky drinking, with little evidence of confounding in this association. This correlation between risky drinking and perception of peers' drinking is consistent with previous literature regarding the strong influence of peer groups and normative beliefs [37], but it remains unclear to what extent family factors may have the capacity to alter or override peer factors and vice versa. There is some evidence to suggest that good quality

social networks can play a preventive role in adolescent substance use [38] and that close parent-child bonds can discourage substance use directly, as well as through the influence on choice of friends [39, 40]. The influence of parental supply behaviour on risky drinking may be mediated or overridden by peer influences operating in conjunction, or may be associated with maturation.

3.4.3. Circumstances of parental supply

In support of hypothesis two, the association between risky drinking and parental supply of alcohol for drinking without parental supervision was stronger than that between risky drinking and supply *per se*. Students were asked about the number of occasions parents had supplied alcohol under various circumstances but not about the volume supplied in each circumstance. Further research is needed to explore these variables. One study has suggested that drinking is likely to increase through adolescence, irrespective of parental supervision of alcohol use, or whether alcohol is consumed with friends, inside or outside the home [41]. It is possible, however, that by permitting children to drink at a young age, even under their supervision, parents are speeding up the progression to higher levels of drinking [24].

Supply for supervised consumption increased across school years, suggesting that this type of supply may represent parents' attempts to introduce their children to alcohol in a safe and controlled environment. Accordingly, it is plausible that supply for consumption under parental supervision is associated with smaller volumes than supply for consumption in other circumstances. This hypothesis is consistent with previous work suggesting that parental supply is associated with a lower quantity of alcohol consumed per episode when it occurs for drinking under supervision [42]. Australian school students who reported drinking alcohol supplied by their parents, and drinking at home, drank less than those who sourced alcohol from friends or elsewhere, and drank outside the home [7]. Ward and Snow recently reported an association between parental monitoring and the supply of full serves of alcohol, hypothesising that parents were likely to be supplying small amounts of alcohol in the family home [43]. Findings in this area are unclear, however, with several studies reporting a positive association between parental supply and risky drinking [28, 29]. While the strength of the association between supply for drinking under parental supervision and risky consumption was reduced in the full regression model in this study, it is critical to note that supply for drinking under supervision did not have the protective effect that may have motivated the behaviour.

3.5. Conclusion

This study has demonstrated that 13-17 year olds whose parents supply them with alcohol for drinking without parental supervision have substantially increased odds of risky drinking. While peer factors were also associated with risky drinking, the findings suggest that parents and families may represent a practical target for intervention to reduce adolescent risky drinking and that the impact of parental supply may vary according to the circumstances of supervision under which alcohol is supplied. Future research needs to verify the temporal sequence of parental supply and risky drinking (i.e. determine whether parental supply of alcohol precedes the onset of risky drinking behaviour among adolescents), and whether varying frequency or volume in different circumstances of supply affects the association with adolescent drinking behaviour.

TABLE: 3.1 – MEAN AGE AND DRINKING STATUS STRATIFIED BY SCHOOL YEAR, AND MEAN NUMBER OF DRINKS CONSUMED BY MODERATE AND RISKY DRINKERS IN THE PRECEDING TWO WEEK PERIOD STRATIFIED BY SCHOOL YEAR.

School year	Mean age* (years, SD)	Drinking status			Number of full glass drinks in the last 2 weeks.			
		Non drinkers %	Moderate %	Risky %	Moderate		Risky	
					Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)
8 (n=76)	14 (0.4)	63.2	29.0	7.9	0 (0-2.0)	1 (1.1)	2.5 (0-4)	9.5 (18.9)
9 (n=112)	15 (0.4)	55.4	27.7	17.0	0 (0-1)	1.5 (3.1)	8 (0-26.0)	54.5 (178.4)
10 (n=121)	16 (0.4)	34.7	28.1	37.2	0 (0-3.0)	5.1 (18.2)	4.0 (0-14.0)	10.3 (15.9)
11 (n=138)	16.9 (0.4)	16.0	26.8	57.3	0 (0-2.0)	2.6 (7.7)	8.0 (2.0 - 13.0)	9.5 (10.2)
12 (n=83)	18 (0.4)	6.0	16.9	77.1	0.5 (0-2.0)	1.3 (2.2)	10.0 (4.0-21.0)	14.9 (13.9)
All years (n=530)	16 (1.3)	33.8	26.0	40.2	0 (0-2.0)	2.5 (9.5)	8.0 (2.0-16.0)	15.0 (52.7)

*Age presented is the age that participants turned in the survey year

TABLE: 3.2 – SOURCES OF ALCOHOL IN THE PRECEDING MONTH.

<i>Sources of alcohol (% of drinkers in each year*)</i>										
<i>School year</i>	<i>Friends</i>	<i>Parent</i>	<i>Older Sibling</i>	<i>Bottle shop</i>	<i>Friend's parents</i>	<i>Pub/Bar/Cafe</i>	<i>Another adult</i>	<i>Stranger</i>	<i>Stolen</i>	<i>Other</i>
8	21.4	42.9	17.9	0.0	10.7	3.6	17.9	7.1	7.1	0.0
9	46.0	40.0	28.0	12.0	14.0	12.0	22.0	8.0	12.0	4.0
10	64.6	32.9	26.6	11.4	16.5	8.9	16.5	6.3	22.8	10.1
11	67.2	40.5	26.7	18.1	27.6	6.0	16.4	5.2	6.9	6.0
12	55.1	48.7	12.8	46.2	15.4	48.7	14.1	0.0	10.3	3.8
All years (n=203)	57.3	40.7	23.1	20.5	19.1	16.8	16.8	4.8	12.0	5.7
<i>Main source of alcohol (% of drinkers in each year)</i>										
<i>School year (valid responses**)</i>	<i>Friends</i>	<i>Parent</i>	<i>Older Sibling</i>	<i>Bottle shop</i>	<i>Friend's parents</i>	<i>Pub/Bar/Cafe</i>	<i>Another adult</i>	<i>Stranger</i>	<i>Stolen</i>	<i>Other</i>
8 (n=18)	16.7	61.1	16.7	0.0	0.0	0.0	0.0	0.0	5.6	0.0
9 (n=27)	44.4	33.3	7.4	0.0	3.7	0.0	0.0	0.0	3.7	7.4
10 (n=46)	60.9	17.4	8.7	2.2	0.0	0.0	2.2	2.2	4.4	2.2
11 (n=68)	36.8	32.4	11.8	7.4	5.9	0.0	4.4	0.0	0.0	1.5
12 (n=44)	38.6	27.3	0.0	25	0.0	6.8	0.0	2.3	0.0	0.0
All years (n=203)	41.9	30.5	8.4	8.4	2.5	1.5	2.0	0.5	2.5	2.0

*Participants were able to select as many options as apply, therefore percentages do not add to 100.

**Participants who did not drink, responded incorrectly, or did not respond are not shown.

TABLE: 3.3 – PARENTAL SUPPLY BEHAVIOUR STRATIFIED BY SCHOOL YEAR.

<i>School year</i>	<i>Parents supplied alcohol %</i>	<i>Parents supplied alcohol to drink when present %</i>	<i>Parents supplied alcohol to drink when other adult present %</i>	<i>Parents supplied alcohol to drink when no adult present %</i>	<i>Parents discussed how they feel about their children drinking %</i>
8 (n=76)	52.6	30.3	4.0	1.3	52.0
9 (n=112)	70.5	41.1	9.8	7.1	56.8
10 (n=121)	66.9	38.8	14.1	14.1	73.6
11 (n=138)	73.2	44.2	21.0	18.1	88.4
12 (n=83)	88.0	47.0	30.1	27.7	85.5
All years (moderate drinkers n=138)	86.7	58.1	7.6	7.6	72.2
All years (risky drinkers n=213)	81.7	64.7	41.0	37.6	82.6
All years (all drinkers n=351)	83.6	62.2	28.4	62.2	78.8
All years (all participants n=530)	70.6	40.8	16.0	14.0	72.5

TABLE: 3.4 – UNIVARIATE AND MULTIVARIATE REGRESSION FOR RISK OF RISKY DRINKING.

<i>Covariate</i>	<i>Univariate Regression</i>		<i>Multivariate Regression</i>	
	<i>Unadjusted odds ratio (95% CI)</i>	<i>p-value</i>	<i>Adjusted odds ratio (95% CI)</i>	<i>P-value</i>
Aboriginal or Torres Strait Islander	5.7 (1.5-21.7)	0.01	6.2 (1.3-28.3)	0.02
Parents have given alcohol	1.8 (1.1-2.9)	0.022		
Alcohol supplied for consumption under parental supervision	2.2 (1.5-3.5)	0.0002		
Alcohol supplied for consumption under other adult supervision	8.2 (4.1-16.5)	<0.0001	3.9 (1.6-9.9)	0.004
Alcohol supplied for consumption under no supervision	8.8 (4.1-19.3)	<0.0001	3.9 (1.4-10.3)	0.007
Parents have discussed how they feel about their child drinking	1.2 (0.7-2.1)	0.437		
<i>Alcohol consumption by adults in the home</i>				
Only on special occasions/never	Reference			
1 day per week	2.0 (0.9-4.3)	0.086		
2-3 days per week	2.1 (1.1-3.9)	0.029		
4-5 days per week	1.3 (0.6-2.7)	0.469		
Every day	4.2 (2.2-7.9)	<0.0001		
<i>How much alcohol permitted to consume at home</i>				
Don't know rules	2.4 (1.3-4.5)	0.007		
As much as I like	15.0 (4.1-55.3)	<0.0001		
Don't drink alcohol (and/or drink at home) ^a	0.1 (0.03-0.2)	<0.0001		
Not allowed to drink alcohol	1.1 (0.6-2.0)	0.823		
Small/moderate	Reference			
<i>How often permitted to drink alcohol at home</i>				
As often as I like	6.8 (2.0-22.4)	0.002		
Don't drink alcohol (and/or drink at home) ^a	0.05 (0.01-0.2)	<0.0001		
Don't know rules	2.7 (1.3-5.4)	0.005		
Never allowed to drink alcohol	1.1 (0.6-2.1)	0.823		
Sometimes/special occasions	Reference			
<i>Number of close friends who drink</i>				
1-5	Reference		Reference	
6-10	7.3 (3.6-14.8)	<0.0001	6.2 (2.8-14.0)	<.0001
More than 10	17.3 (9.4-31.9)	<0.0001	15.0 (7.5-30.1)	<.0001
<i>Percentage of people participant's age estimated to drink</i>				
0-29%	0.7 (0.3-1.5)	0.381		
30-69%	Reference			
70-100%	1.7 (1.1-2.8)	0.025		

<i>Covariate</i>	<i>Univariate Regression</i>		<i>Multivariate Regression</i>	
	<i>Unadjusted odds ratio (95% CI)</i>	<i>p-value</i>	<i>Adjusted odds ratio (95% CI)</i>	<i>P-value</i>
<i>Parents know where I am after school</i>				
Completely disagree	37.6 (3.7-385.4)	0.0022		
Disagree		0.0002		
Neutral	23.4 (4.6-120.8)	<0.0001		
Agree	7.7 (3.2-18.7)	0.0096		
Completely agree	1.9 (1.2-3.1)			
	Reference			
<i>Alcohol MAINLY obtained from</i>				
Friend	Reference			
Older sibling	0.8 (0.3-2.7)	0.757		
A stranger	3.1 (0.04-230.1)	0.605		
Another adult I know		0.359		
Bought at bottle shop	4.4 (0.2-105.0)	0.2		
Bought at pub/bar	4.2 (0.5-37.5)	0.3		
Friends parents or siblings	0.3 (0.02-3.4)	0.943		
Other	0.9 (0.1-6.3)	0.006		
Parent/guardian	0.05 (0.01-0.4)	0.0001		
Stole/sneaked	0.2 (0.1-0.5)	0.489		
	2.1 (0.3-17.1)			

TABLE: 3.5 – COMPARISON OF OBSERVED AND EXPECTED VALUES DERIVED FROM THE HOSMER AND LEMESHOW TEST OF THE REGRESSION MODEL

<i>Decile of risk</i>	<i>Number of subjects</i>	<i>Observed number of events</i>	<i>Expected number of events</i>
1	47	0	0.35
2	46	1	1.09
3	50	2	2.21
4	42	5	4.15
5	50	10	10.33
6	51	26	22.66
7	46	27	28.96
8	40	28	29.95
9	46	39	39.64
10	44	44	42.67

4. Parent attitudes, family dynamics and adolescent drinking: Qualitative study of the Australian Parenting Guidelines for Adolescent Alcohol Use

This section of the report is an excerpt from the following publication:

Gilligan C, and K Kyri: **Parent attitudes, family dynamics and adolescent drinking: Qualitative study of the Australian Parenting Guidelines for Adolescent Alcohol Use.** *BMC Public Health*, 2012, 12:491. DOI: 10.1186/1471-2458-12-491 URL: <http://www.biomedcentral.com/1471-2458/12/491>

While legislation concerning secondary supply of alcohol exists in most Australian states, and the NHMRC recommends delaying initiation of drinking for as long as possible for 15 to 17 year-olds [30], this information is not widely disseminated to parents. It appears that many parents fail to follow this advice and often provide adolescents with alcohol as a harm minimisation measure with the aim of controlling the type and quantity of alcohol they consume [21, 22]. How well the normal practices of Australian parents fit with the more extensive recommendations in the *Parenting Guidelines for Adolescent Alcohol Use* ('the guidelines') [19] is unclear.

4.1. Aim

The aim of this study was to explore the experiences and attitudes of parents of adolescents in a community sample to gain insight into: (1) the extent to which the behaviours of parents follow the recommendations made in the guidelines; and (2) parents' approaches to adolescent drinking and alcohol initiation.

4.2. Methods

We adopted a qualitative approach, conducting one-on-one interviews with parents to capture, as much as possible, parents' honest views and opinions. The study was designed to capture rich information about parents' experiences and attitudes to enable a thorough analysis of the decisions made by parents, and their justification for these decisions, and to evaluate this information in relation to its adherence or otherwise with the guidelines. Parents were recruited through posters displayed in local cafés and at the University of Newcastle, and through University of Newcastle staff networks.

A semi-structured interview schedule was developed, based on the issues emerging from current literature and the guidelines. Parents were asked about their own alcohol consumption, the nature of their relationships with their children, the behaviour and attitudes of their children in relation to alcohol, their behaviours in terms of supply of alcohol, attitudes toward their children drinking, and household rules about alcohol consumption. These question areas were largely based on assumptions derived from the systematic review of longitudinal studies by Ryan et al. [17]. The interview protocols are attached as Appendix B.

4.2.1. Qualitative data analysis

Each interview, conducted by CG or a research assistant was conducted according to the semi-structured interview schedule. Discussions were held between the authors after initial review of

individual interview notes, and again after each author had evaluated parents' adherence to the guidelines. The authors were generally in agreement at both steps, though some additional points and interpretation of parents' statements were added at the first discussion step. Authors agreed about the categories into which parental adherence to the guidelines fell, and thus proceeded to group the behaviours and guidelines into three categories as described below.

4.2.2. Ethical approval

Ethical approval was granted by the University of Newcastle Human Research Ethics Committee (Approval number H-2010-1144). Each participant was provided with an information statement and was asked to sign a consent form prior to participating. All participants received a \$30 shopping voucher toward the costs associated with their participation.

4.3. Results and Discussion

4.3.1. Participants

Twenty face-to-face and 12 telephone interviews were conducted at times and places convenient for each participant, and each lasted approximately one hour. Parents had an average of 2.4 children, and the child/ren on whom they were reporting were aged 15 on average. The demographic characteristics of participants are summarised in Table 4.1 (p.31).

Parents' frequency of alcohol consumption ranged from 'never' through to 'four or more times a week'. Average consumption was between 2-4 times a month and 2-3 times a week, with parents typically drinking one to four standard drinks per occasion. Parents generally reported having more than four drinks on one occasion never or less than monthly.

4.3.2. Adherence to guidelines

The guidelines are summarised in Box 1 (pp.32f). We did not ask parents about their knowledge of or adherence to the guidelines. Most topics covered in the guidelines were, however, raised by participants in almost all interviews, and many parents reported behaviours that were consistent with the guidelines. Parents' behaviours in relation to the guidelines fell into three categories:

- a) Those followed reasonably closely, with some deliberate thought (parent-child relationships, parental monitoring);
- b) Those often followed but not necessarily in a conscious fashion (household rules, communication about alcohol, parental modelling); and
- c) Those followed less often and apparently more difficult for parents to adhere to (protection from peer influence and supply of alcohol).

Here we present the results of our interviews with parents according to these three categories, and explore the results in the context of their adherence to the guidelines.

4.3.3. Closely followed rules

4.3.3a. Establish and maintain a good relationship with your adolescent child

Central for most of the parents we interviewed was a desire to maintain a good relationship with their child, and encourage communication. While each of the parents had their own approach to maintaining a good relationship with their child, in general, the approaches taken closely matched the suggestions made in the guidelines. For example, parents attempted to talk to their children, showed interest in their lives, and encouraged them to be open about the presence of alcohol at parties and in other social situations, in order to cultivate trust. These sentiments are reflected in the following comments:

“it’s important to keep the communication lines open” and *“the bottom line is that you have to trust them”* (Mother of a 16 year-old girl);

“it happens anyway so I would rather they tell me” (Mother of a 14 year-old girl and 16 and 18 year-old boys); and

“We have a good relationship with their friends...we try to make it pretty cool for them to hang out at our place” (Mother of 13 year-old girl and 15 year-old boy).

4.3.3b. Monitor your adolescent when you are not around

Parental behaviour in relation to parental monitoring matched reasonably well with the guidelines. Parents generally attempted to know where their children were, and who they were with. Often, parents used dropping-off and picking-up children as a way of monitoring their whereabouts and behaviours. Many parents acknowledged that it is difficult to monitor what happens at parties and other events, but they focused on building a trusting relationship whereby their adolescent communicates with them about such events. One mothers’ comment *“I want them to feel that they can talk to me”* (Mother of a 17 year-old boy and 15 year-old girl) echoed the sentiments of many. A harm minimization approach was mentioned by several parents, ensuring their children could get home safely, discouraging drink driving, and making themselves *“accessible 24-7”* if needed. Messages such as *“never get in a car with someone who has been drinking”* (Mother of 13, 16 and 18 year-old boys) were common. One mother (of a 13 year-old girl and 16 year-old boy) talked about telling her children *“No mucking around, if you are out of your depth, I can be there in a flash to pick you up”*.

4.3.4. Guidelines followed to some extent

4.3.4a. Establish family rules

While some families did have rules that matched with those suggested in the guidelines, these rules were rarely planned or established through family discussion as the guidelines recommend. In further discordance with the guidelines, parents often expressed a reluctance or incapacity to punish their children, and consequences were rarely enforced if household rules were broken. Some parents reflected:

"I feel like punishing him is a bit draconian, it is going to happen anyway...and I am trying to minimise the damage...". (Mother of a 17 year-old boy)

"I don't think I would punish her, I don't think that would work, but I would let her know that I was really disappointed". (Father of a 16 year-old girl)

A number of parents recalled 'one-off' incidents where their child had come home drunk or been drunk when they were collected from a party. The most common reaction among parents in both groups was disappointment, with anger being secondary. Several parents also said their greater concern or reaction was in relation to their child's dishonesty rather than the drinking itself. In cases where children had been drunk, parents commonly stated that punishment wasn't necessary because the sense of shame and the hangover were enough to teach their child a lesson.

4.3.4b. Model responsible drinking and attitudes towards alcohol

Parents consistently cited their family background as a strong influence on their drinking behaviours and attitudes. Several participants cited parents' or grandparents' alcoholism having 'put them off'; that it influenced their choice to become non-drinkers or very light drinkers. A majority of parents reported that they and/or their partners drank relatively frequently, often having one or two drinks after work or when hosting friends or family for dinner. This was simply reported as the normal household pattern of drinking, with only a small minority of parents indicating that they consciously modelled a particular approach to drinking or level of consumption – *"we really try not to drink around the kids much"* (Mother of a 13 year-old girl and a 15 year-old boy).

Several parents cited heavy drinking by their children's fathers or step-parents as influences on divorce or separation. According to the parents, these behaviours had mixed impacts on their children. Some children expressed anger and were deterred from drinking by their parents' or step-parents' heavy drinking, others have become heavy drinkers themselves. This contrast is highlighted in comments such as *"The oldest was never curious as a child – she was probably put off by seeing Dad come home drunk too often"* (Mother of 14, and 16 year-old boys and an 18 year-old girl) and *"the older boys don't seem to have been put off at all by seeing their dad drunk so often – they both drink [on] most if not all weekends"* (Mother of 15, 18 and 20 year-old boys and separated from what the mother described as an alcoholic husband). The influence of older siblings was also important for both parents and adolescents, which is consistent with evidence from large cohort studies [44, 45].

While there was some matching between parents' behaviour and the guidelines (not getting drunk around children or modelling having a good time without alcohol), most parents discussed their own alcohol consumption as personal preference rather than a plan to model certain behaviour. In discordance with the guidelines, many parents cited associating having a drink with stress relief, or referred to the "need" for a glass of wine in conversation with their adolescent: *"I just tell them that Mum's had a stressful day and needs a wine"* (Mother of 14 and 16 year-old boys and an 18 year-old girl), *"I joke that I need a glass of wine to cope with them [children]"* (Mother of a 14 year-old boy and a 16 year-old girl). Some parents also referred to asking older adolescents to pick them up when they had been drinking.

4.3.4c. Talk to your child about alcohol

Many parents were careful to deliver clear messages to their children about alcohol, some presenting the context of use (e.g. drinking large amounts when in public and potentially exposed to violence or other risks) as the danger rather than the alcohol itself; *"I do a lot of talking to about alcohol – it's not cool to be drunk...the impact on the liver, the brain, etc etc"* (Mother of 14 and 18 year-old boys and a 16 year-old girl). Others *"wait until [their] children bring up the issue with [them]"* and have only discussed alcohol in the context of their adolescent raising the issue. Several parents indicated that an incident with drinking or comment about others' drinking was the initial trigger for discussions about alcohol and the household rules.

4.3.5. Guidelines followed less often

4.3.5a. Delay your adolescent's introduction to drinking alcohol

The guidelines recommend delaying the use of alcohol for as long as possible; not giving children any alcohol when they are under 15 years of age, and delaying their first drink for as long as possible. Overall, parents' behaviour matched poorly with this suggestion. Most of the parents did not supply alcohol to their children for consumption outside the home, and reported making it clear to their children that they would not do so. Many, however, saw a certain inevitability that their children would be exposed, or gain access to alcohol prior to turning 18. One mother said *"I can't prevent the drinking; I have to accept that it will happen, but I won't supply it"*. Another who refused to supply her son with alcohol knew his older sister was giving it to him – *"the transaction happens in front of me"*. Parents' sense of powerlessness to prevent alcohol consumption was common: *"we do not supply alcohol to them...I know that my 17 year-old is drinking at parties, and he comes home smelling of alcohol...I can't stop him"* (Mother of a 17 year-old boy).

A sense of inevitability was also expressed by those parents who did supply their children with alcohol. One parent, reflecting on having provided her sons with a six pack of beer to take to parties from age 16 said *"I don't like doing it but I see it as a way of keeping a limit on it"*. Even parents who claimed to have reasonably strict rules and close monitoring of their children admitted they would allow some drinking from around age 16 or 17; *"I would let them drink with a small group of friends...in a safe environment. I wouldn't want them to be social outcasts from their peer group"* (Mother of a 15 year-old boy and younger girl). Other parents refer to their impression of the law and have adopted *"you don't drink until you're 18"* as their rule. However, many of these parents were also aware that their children were drinking from a younger age and expressed a sense of powerlessness to prevent it. One mother, when discussing drinking at a party with her 17 year-old son, told him *"we won't allow you, but we can't stop you"*.

The provision of sips or tastes of alcohol at home was generally regarded as quite separate to the provision of alcohol for consumption outside the home. Comments such as *"we have given him half a glass of beer with us, but basically they are not allowed to drink"* (Mother of 15 year-old boy) and *"might be allowed to have a sip, but we never give them alcohol...I would never give them alcohol to take to a party"* (Mother of a 13 year-old girl and 16 year-old boy) capture the views of many parents. Even some of the strictest parents, who regarded themselves as *"disciplinary...not their friend"* (Mother of 16 and 17 year-old boys) and report having strict household rules, have allowed their older adolescents to try *"a little sip"* of alcohol. Two main opposing views were expressed; one

that children should not drink at all before they turn 18, and the other that a gradual, safe introduction would likely prevent excessive, harmful drinking later on. The latter view was articulated clearly by the father of a 16 year-old boy who explained *“over the next two years we will be introducing him to alcohol. We don’t want him to be suddenly 18 and go on a rampage”* (Father of a 15 year-old boy). Interestingly, one of the strictest proponents of the former view reported that her son *“has indicated that he is going to have an 18th and get drunk”* (Mother of a 17 year-old boy), highlighting a potential desire for those who are deprived from trying alcohol to rebel when the opportunity arises.

Some parents said they provided their children with small amounts of alcohol from a young age to avoid demonising alcohol or fuelling curiosity that may lead to rebellion. This is consistent with reports of parents providing children with alcohol in order to control consumption and encourage safe use [22]. Views on the conditions under which parents would supply alcohol were consistent with research conducted in New Zealand where parents generally expressed responsible attitudes on the subject [24]. It should be noted that in that research, involving 872 teenagers aged 13-17 and 748 parents in the same school communities, there were large discrepancies between teenagers’ and parents’ reports concerning supply of alcohol for unsupervised drinking [33]. The authors suggested that the discrepancy may reflect differences in understanding of the survey questions but was more likely the result of socially desirable responses from parents.

4.3.5b. Prepare your adolescent to deal with the influence of peers

Parents expressed great difficulty in protecting their children from the influence of peers. Generally, parents viewed the choice of peer group as a significant influence upon their adolescents’ behaviours, but parents felt that they had minimal influence over these choices. One parent said of her 16-year-old son: *“he’s probably more influenced by the pack leader than by us [parents] now”*. Parents of adolescents who didn’t drink frequently cited close friendship groups that *“just aren’t interested”* or are *“not into that”*. Some parents commented on their children’s peer groups: *“the circle of friends that he hangs with are all good kids”* (Father of a 15 year-old boy), *“the group are the same, they do not drink”* (Father of a 16 year-old girl), *“he is going through with a peer group that have been drinking for a couple of years”* (Mother of a 17 year-old boy).

Those who chose not to drink or who had not yet begun experimenting with alcohol often commented on the behaviour of *“other kids at parties and at their school”* and expressed negative attitudes towards drunkenness among peers at age 14 to 16. One parent relayed her daughter’s description of drunken 14 year-olds as *“disgusting and stupid”*. A clear differentiation was made between close friendship groups and the wider group of ‘kids at school’. One parent discussed the dramatic positive change in the behaviour of her two sons when they moved areas and therefore moved away from the peer groups that she perceived to be a bad influence on them.

Parents also frequently commented on personality differences between children and indicated that some children just weren’t interested; and even between siblings, differences often existed. Several parents recalled their children calling to be collected, or coming home early from parties where there was a lot of alcohol consumption because they felt uncomfortable. Discussions about perceptions of alcohol and drinking appeared to be more difficult for parents when they knew their child’s peers had engaged in alcohol consumption.

4.3.5c. Enlist the support of other parents

Several parents described “*making an effort*” to know other parents. This was commonly referred to as an effort rather than something that happened naturally or easily. One parent whose son had started a new school in a new area in year 10 (age 15) discussed the fact that she knew very few of his friends or the parents of his friends, and that she felt “*less comfortable with that*”. It was a common theme among parents that they didn’t know many of the other parents, and it was not easy to change this situation. Most parents knew some of their children’s friends, but this was expressed more as a product of their child’s personality and extra-curricular activities than a deliberate effort. For example: “*They have a community of kids...90% are elite athletes...most weekends we spend with these kids...do not drink at all because they are so focused on their goals*”.

When asked if they would call parents they didn’t know to discuss alcohol being supplied at a party, parents had very mixed views. Some indicated that they would feel more comfortable doing so if they did not know the parents, others suggested that doing so would not be helpful with parents who obviously had differing values to their own, and others still put the responsibility on their adolescent children to make their own informed decisions and deal with the situation as they saw fit. The difficulty of engaging with other parents was evident in the following comments:

“It can be who they hang around. I think it depends on the other parents’ morals. Some people are more liberal than others. I think with high school they mix with a lot of people that are not in your social circle...” (Mother of 16 year-old girl);

“If you ring the police...or confront them, it puts you in an awkward position...I think the best thing you can do is talk to your children and...just ask them to be sensible” (Mother of a 17 year-old boy).

The guidelines recommend that parents ‘build a support network with other parents’, but this was not common among the parents in the study. Parents did refer to friends with older or similar aged children and were often influenced in their parenting decisions by strategies they had observed among their own peers. Interestingly though, it was often the pressure imposed by other parents’ behaviour that was often raised:

“...my friend gave her 13 year-old a sip...and my daughter looked at me and asked the question...I probably would have told her ‘no’ if she was on her own but I didn’t want her to feel left out” (Mother of a 13 year-old girl).

“...all the parents were saying that they gave their kids alcohol” (Mother of a 17 year-old boy).

“I don’t want my child to miss out on things. We are teaching our children to be individuals but we, as parents have issues with the peer pressure” (Mother of a 13 year-old boy and a 16 year-old girl).

4.3.6. Laws about adolescents and alcohol

When discussing household rules about alcohol or the approach adopted, parents rarely referred to any externally provided guidelines. While several parents spoke about the ‘law’, they generally

referred to their understanding that drinking under 18 years of age is illegal. This was a commonly held misinterpretation of the law in Australia. One parent questioned the message her son received from a school talk which he interpreted as “...I’m allowed to give him alcohol”. The parents generally had little understanding of the law surrounding alcohol consumption in private settings and secondary supply. Several parents described their impressions of the law, indicating clear misinterpretation e.g. one mother who reported that she would give her 16 year-old son two light beers to take to a party, and that she gave her 10 year-old a glass of orange juice with a splash of champagne in it for a birthday treat said “I know legally I’m not supposed to”. Many parents referred to drinking ‘underage’ and interpreted the law as “when they are 18 they can drink”. Similarly, parents had little knowledge of guidelines regarding adolescent alcohol consumption, saying their decisions were based on their own values and discussions with friends, rather than external guidance.

4.3.7. Limitations

Convenience sampling was used to recruit parents for this study, potentially limiting the representativeness of the sample and generalizability of results. Further, while the guidelines were deliberately not explicitly mentioned in interviews, it may be that parents were more aware of them than was apparent, or that parents' attitudes and adherence to them could have been more accurately explored had we prompted discussion of them specifically. It is a strength of the study, however, that by avoiding explicit mention, the parents were less likely to be biased by any pressure to provide what they may have thought we wanted to hear. Finally, the study relies purely on the perceptions and reports of parents, without direct link to adolescent behaviour. Parents' perceptions of their control over their adolescents' behaviour or the impact of their household rules and approaches on their adolescents' drinking were not explicitly explored. The primary aim of this study was to investigate the views and behaviours of a heterogeneous group of parents. There would be value in further research to estimate the impact of adherence to the guidelines on adolescent alcohol consumption.

4.4. Conclusion

This study has shown that while parenting styles and approaches to adolescent alcohol consumption vary, the intentions of parents are generally consistent. Most parents report using strategies they believe will minimise harm to their adolescents and promote their healthy and safe development in a society where experimentation with alcohol is seen as inevitable. Parents' approaches, however, don't always match the recommendations of the parenting guidelines for adolescent alcohol use. While the guidelines address key areas of concern for parents, parents' awareness of them, and level of adherence to the suggested approaches is low. Consistent with the lack of knowledge of the NHMRC guidelines for reducing the harm of drinking for Australian adults [46], it seems that parents' knowledge of these guidelines is poor.

There were two key areas in which the approaches used by parents deviated most from the guidelines. Firstly, the recommendation to delay the introduction to drinking alcohol was not consistently adopted by parents. Even parents who reported being very strict with, and who closely monitored, their children allowed them to try small amounts of alcohol, and in later adolescence, allowed them to drink in a safe environment with friends. Similarly, while parents discussed drinking

as 'uncool' and ensured that their adolescents knew to call to be collected if they were in uncomfortable situations, parents found it difficult to protect their children from peer influence and were disinclined to stop their children from attending parties where alcohol was consumed. Several parents said they would allow some drinking to prevent their children from feeling socially isolated.

There was no obvious relationship between the rules set by, or 'strictness' of, parents and the drinking behaviours or attitudes to drinking among adolescents. To some extent, this validates the sense of inevitability expressed by many parents. It was common for parents to express powerlessness to prevent their adolescents from drinking and being exposed to alcohol, and also, to express their own sense of peer pressure, with the knowledge that their children's friends were drinking and that other parents may allow some drinking and supply their children with alcohol.

Further dissemination of the guidelines to parents may be the first step in providing assistance, but it is likely that parents would require support to effectively adopt them. With many parents having referred to the guidance of friends, and with the guidelines recommending the development of a support network of parents, establishing and strengthening parental networks may help parents to implement positive behaviours.

TABLE: 4.1. – CHARACTERISTICS OF PARTICIPATING PARENTS

Characteristic		N (%) or mean (SD)
Gender of the parent	Male	5 (16%)
	Female	27 (84%)
Age	35-44	10 (31%)
	45-54	19 (59%)
	55-64	2 (6%)
	65 or over	1 (3%)
Marital status	Married	25 (78%)
	Divorced/Separated/Single	7 (22%)
Parents' education	Less than yr 10	1 (3%)
	Completed yr 10	5 (16%)
	Completed Yr 12	8 (25%)
	Tertiary diploma or degree	9 (28%)
	Post graduate degree/s	8 (25%)
Employment	Full time/part time	28 (88%)
	Unemployed	2 (6%)
	Retired	1 (3%)
	Full-time study	1 (3%)
Australian born		22 (69%)
Overseas born (one Canada, one Netherlands, one Fiji, one Ireland, two New Zealand, one South Africa, two USA and one Zimbabwe)		10 (31%)
Language spoken at home	English only	31 (97%)
	English and another language	1 (3%) - Hindi

BOX: 1—SUMMARY OF THE PARENTING GUIDELINES FOR ADOLESCENT ALCOHOL USE (WWW.PARENTINGSTRATEGIES.NET).

Delay your adolescent's introduction to drinking alcohol

Aim to keep your adolescent child from experimenting with alcohol for as long as possible. Do not give them any alcohol while they are under the age of 15, and delay their first alcoholic drink for as long as possible.

Model responsible drinking and attitudes towards alcohol

Model responsible drinking by establishing and following your own rules for drinking responsibly. Tips include:

- Limit your alcohol use, especially in front of your children
- Do not get drunk, especially in front of your children
- Sometimes decline the offer of alcohol
- Provide food and non-alcoholic beverages if making alcohol available to guests
- Never drink and drive
- Do not let other adults drive after they have been drinking
- Do not convey to your children the idea that alcohol is fun or glamorous through stories about your own or others' drinking
- Do not portray alcohol as a good way to deal with stress, such as by saying, "I've had a bad day, I need a drink!"
- Use healthy ways to cope with stress without alcohol, such as exercise, listening to music, or talking things over

Talk to your child about alcohol

- Before talking to your child, take some time to prepare for the conversation.
- What to talk about: Don't present a permissive approach, talk about alcohol-related harms, the health benefits of choosing not to drink, and explain that their brain is still developing and is therefore more vulnerable to harm caused by alcohol.

- Emphasise the short-term harms associated with alcohol.
- Discuss perceptions: Ask your child what they think about alcohol. Ask them why they think young people drink.
- Your expectations (with older adolescents): Discuss how, if your adolescent does drink, they should do so in moderation.
- Explain your expectations for specific situations, such as at family celebrations, adolescent parties or "Schoolies Week". Discuss how risks associated with alcohol can be minimised

Establish family rules

- Involve your adolescent in developing family rules for them to follow. Once established, make sure the family is clear on exactly what the rules are and that each member understands them.
- Be prepared to negotiate on rules regarding minor matters, but do not change the family rules or consequences without first discussing it with your adolescent.
- Review rules as your adolescent shows more maturity and responsibility.
- Parents should support each other regarding family rules and present a united front in enforcing them.
- Establish realistic consequences for when family rules are broken.
- Enforce established consequences consistently every time that family rules are broken

Monitor your adolescent when you are not around

Before your adolescent goes out, you should:

- Ask them where they will be, what they will be doing, and who they will be with
- Set a curfew and know what time to expect them home
- Make arrangements with them about how they will get home safely
- Ask them to contact you if their plans change
- Make sure they have a way to contact you

If giving them money, discuss how much they will need and how it will be spent

Prepare your adolescent to deal with the influence of peers

Encourage positive friendships, enlist the support of other parents, and help them deal with peer pressure to drink.

Preparing for unsupervised adolescent drinking

- Discuss situations adolescents may be faced with where other people are misusing alcohol.
- Help your adolescent to develop strategies for handling or removing themselves from situations involving alcohol misuse – offer to pick them up, talk about ways to minimise any potential embarrassment that may be associated with getting picked up.
- Discuss drink spiking and other dangers

Establish and maintain a good relationship with your adolescent child

There are a number of things you can do to establish and maintain a good relationship with your adolescent, such as:

- Support them in pursuing their interests and in dealing with problems
- Show an interest and be involved in their life
- Work to create open communication between yourself and your adolescent
- Cultivate their trust by being consistent in following through on promises and enforcing rules
- Regularly demonstrate that you care about them
- Regularly tell them that you love them

The Guidelines also include help-seeking advice for parents concerned about their adolescent's drinking - medical emergencies and the need for mental health first aid, as well as tips for hosting a party

5. Changing parental behaviour to reduce risky drinking among adolescents: Current evidence and future directions

This section of the report is an excerpt from the following publication:

Gilligan C, K Kypri, D Lubman: **Changing parental behaviour to reduce risky drinking among adolescents: current evidence and future directions.** *Alcohol and Alcoholism* 2012, **47**:349-54.

There is debate about the onset of alcohol consumption and advice to parents on delaying the age of initiation. Epidemiological evidence supports the notion that the age of initiation of alcohol use is associated with the risk of alcohol-related problems [47] but it seems that the risk factors for drinking alcohol *per se* differ from those for drinking at risky levels and developing alcohol-related problems [48, 49]. Some evidence suggests that the age of first drunkenness is more important than the age of first drink in predicting a progression to heavy drinking [48, 50] and the number of episodes of intoxication prior to age 16 has been found to be a strong predictor of adult alcohol problems [49].

The complex influences upon adolescent drinking onset and patterns are difficult to study. Much of the existing literature has examined individual factors, and has not adequately investigated the context of alcohol consumption. Marked differences are likely to occur in the progression of alcohol use among adolescents introduced to small amounts of alcohol in the home, as opposed to initiating drinking outside the home, which is often associated with larger amounts of alcohol being consumed [48, 51].

5.1. Aim

In the final component of this project, we aimed to review the parental supply literature, and investigate the association between the volume and context of parental supply and alcohol initiation. We then explored possible targets for intervening with parents to reduce potentially risky supply.

5.2. The role of parental social networks in supply of alcohol

Parental decisions about introducing their children to alcohol and their attitudes towards alcohol consumption are fundamentally social phenomena but they have not previously been studied as such. Just as the drinking behaviour of adolescents appears to be associated with perceptions of their peers' drinking [52], it is likely that parental behaviours are influenced by their understanding of the behaviours of other parents. Social pressure associated with misperceived norms regarding what other parents do (behavioural norms) and their attitudes on what is acceptable (injunctive norms) may be modifiable. Such normative beliefs may be determinants of parental permission regarding attendance at events, adolescent drinking, supply of alcohol, and the imposition of restrictions. Misperceived injunctive norms among parents refer to the belief that one's peers are more liberally minded or more restrictive than they really are. The perceptions that parents have about other parents' behaviour are probably informed by what they are told by their children, and are likely to be inaccurate. Parents' understanding of the behaviours of others may be described as a

form of *pluralistic ignorance* – a social phenomenon in which individuals share a false belief about the attitudes or behaviours of other group members [53]. Correcting the misperceptions that parents have regarding the degree of other parents’ permissiveness may lead to a re-evaluation of behaviour or adoption of more effective rules in relation to alcohol.

Analysis and exploration of social networks has been used extensively in social research in relation to the spread of information, the impact of social media [54], and the spread of disease and behaviours such as smoking cessation [55]. While strong social networks and cliques exist among adolescents [56], the parents of the individuals in each social group are less strongly associated and often don’t know each other. It has been demonstrated in studies of smoking cessation [55] and other behaviour change that even unrelated individuals are able to influence the behaviour of each other through their common social links. The behaviour of the parents of a group of teenagers may be a classic example of such influence, with the parents of child A being influenced to behave in a certain way based on what their child (A) tells them that parents of children B and C are doing. In this way a proximal network of children may be able to influence an entire more distal network of parents by feeding inaccurate information into that network. If the parents in the distal network can be connected, information is likely to travel directly between them and maintain its integrity. It may also be argued that information could be given to individual parents without the need to connect them, but such an approach is unlikely to be sustainable.

An exploration of the knowledge and attitudes of parents in rural Australia regarding their adolescents’ drinking reported that parents see an advantage in situations where the parents of their children’s friends have similar values and beliefs to them. Parents found that setting and enforcing rules, and monitoring alcohol use were easier in such situations [57]. There is evidence to suggest that parents would welcome advice and assistance about how to enforce rules and promote safe behaviours [58] and that they feel somewhat powerless to do anything about adolescent alcohol consumption [59].

Establishing networks with other parents is a suggestion made to parents in guidelines designed to help manage adolescent alcohol use [19], but it is not made clear how parents should go about this. After their children reach a certain age, parents may be reluctant to intervene in their social life, and to make contact with other parents to discuss concerns or circumstances surrounding social events. Anecdotal evidence from parents suggests that they are reluctant to behave in a way that might embarrass their child and lead to them not fitting in with social groups [57].

5.3. The potential to intervene with parents

Low recruitment rates and high rates of attrition have plagued many efforts to address adolescent alcohol consumption through parents and families, with some reports of parents who drop-out being more likely to have lenient attitudes towards youth alcohol consumption than those who continue in an intervention program [60]. Acceptability is a requisite feature of public health interventions that require the active cooperation of participants. Some parents may welcome guidance on how to deal with the difficulties of raising adolescent children, but strategies that encourage parents to change behaviour may meet resistance. High attrition rates in various programs are likely to reflect, to some extent low acceptability of the programs to the parents involved. Haggerty et al. [61] explored parental engagement with two different formats of the ‘Parents Who Care’ program and reported a higher frequency of program initiation among parents

allocated to the self-administered format which was implemented by families in their own homes, on their own schedules. Lower age of initiation was reported for the group allocated to attend evening meetings in local schools.

The parental programs trialled to date are largely high intensity interventions requiring active and sustained involvement of individual parents. Perhaps a more acceptable and potentially cost-effective approach to intervening with parents would be to implement less intensive interventions, which utilise parents' existing resources. Web-based approaches offer an alternative, whereby parents can engage with guidance and educational materials in a safe environment in their own time. Thorough evaluations of the effectiveness and acceptability of web-based programs have not been conducted. Several examples can be found for parents in Australia (<http://www.parentingstrategies.net/modules/>), and the USA (<http://www.byparents-forparents.com/resources.html>, <http://www.madd.org/underage-drinking/the-power-of-parents/>, <http://www.outsidetheclassroom.com/solutions/higher-education/alcooledu-for-parents.aspx>).

5.4. Future directions

Our review identified a number of knowledge gaps that, if filled, would provide a more complete understanding of the role of parents in adolescent drinking and the most appropriate approaches for intervention. A research agenda designed to further explore these issues and ultimately address or reduce heavy episodic drinking among adolescents via their parents may include investigation of the following.

5.4.1. The volume and contexts of parental supply of alcohol.

Some studies suggest that parental supply of alcohol for consumption without parental or adult supervision is riskier than supply for drinking under parental supervision [62]. Large-scale cohort studies suggest that the volume of alcohol supplied by parents is smaller than that sourced elsewhere [7, 63]. This requires further exploration, including quantification of the volumes of alcohol given to children as well as the circumstances of supervision. Previous studies have been limited by a failure to explore parental and child perceptions of supervision in detail [24]. For example, are parents sitting at a dinner table while their children drink, or are they inside the house while their children drink in the backyard?

5.4.2. The structure of social networks among adolescents and their parents.

Mapping social networks would enable an understanding of the relationship between the social networks that exist among adolescents and those that exist among their parents. Studies can be constructed to explore the strength of connectivity and the nature of connections between parents [64]. It is hypothesised that while adolescents are connected by multiple, strong connections, their parents are more tenuously connected with other parents, and fewer connections are likely to exist between them. By mapping these structures and exploring the culture of parental connections, it would be possible to explore the possibility of intervening through the creation, strengthening, or modification of parent networks.

5.4.3. The accuracy of parents' perceptions of other parents' behaviours and beliefs.

It is hypothesised that pluralistic ignorance exists among parents about the degree to which others permit their adolescents to drink or supply them with alcohol. If pluralistic ignorance is confirmed, the acceptability of a norm correction program should be assessed. Exploratory work would be needed to investigate the appropriateness of intervening with parents in this manner. It is possible that by linking parents together and providing them with accurate information about social norms and the behaviours of their adolescent children, pluralistic ignorance may be reduced. While pluralistic ignorance itself could be addressed temporarily with a single public announcement or provision of information, the creation of social networks may lead to a more sustainable change in the behaviours of parents at a community level. Such a concept is consistent with the recommendation made by Schor, that parents need support to carry out their parenting roles [65], and is likely to be more acceptable for parents than an individual approach. Such an approach would not rely on much active involvement of parents, but could continue to function with relatively passive involvement, simply through the dissemination of information, thus potentially overcoming the issues of low recruitment and high attrition that have plagued previous intervention efforts.

5.4.4. An analytic approach for quantifying aspects of parental networks.

Accurately characterising norms among a population requires the recruitment of representative population samples. If the norms of interest exist in small subgroups (e.g. social networks within parents of children at particular schools) then the examination of norms in several small subgroups may be appropriate [66]. Identifying these networks, exploring the behaviours and attitudes that exist within them, and establishing appropriate access points in order to disseminate information about the norms, would be the first steps to designing interventions in this area.

5.4.5. Low-intensity parental interventions including web-based programs.

Web-based interventions have shown promising results in various areas of healthcare and public health, including interventions for problem drinking [67], tailored feedback interventions for smoking [68], diet change [69], and decisional-support systems [70]. With advancing technology and the widespread use of social media, web-based interventions represent an opportunity for interventions in which parents can participate in a safe environment at times and levels that suit their needs. It is also possible that web-based approaches could be used to bring together parents from diverse backgrounds and with diverse views about adolescent drinking. The acceptability, uptake, and effectiveness of web-based interventions in changing parent behaviour and impacting upon adolescent behaviours requires study. For an intervention targeting parental social networks, a cluster randomised controlled trial would require a large number of parental networks to be recruited as the focus of intervention, and the effect upon drinking behaviours among the adolescent children of the network members would be estimated [71].

5.5. Conclusion

Parental supply of alcohol and parental monitoring have been linked to initiation to drinking as well as levels of later use and are likely to be influenced by the behaviours of other parents and their perceptions of social norms. Sufficient evidence already exists to indicate that intervening with parents, and possibly via parental social networks may be effective in reducing adolescent risky drinking. Future research directions have been suggested, which include the exploration of the volume and contexts of parental alcohol supply, the structure of parent and adolescent social networks, and the existence of pluralistic ignorance. The findings of such research could inform the design and evaluation of interventions.

Summary and future directions

This series of projects, enabled by our FARE project grant has generated valuable knowledge and evidence to inform future work. Arising from these projects, we have developed a web-based survey for parents, exploring social norms and potential norm misperceptions regarding parental attitudes towards alcohol and the supply of alcohol to adolescents. This survey will be used in a pilot study to explore the potential for social media sites to be used to contact and intervene with parents in relation to the supply of alcohol. It is intended that along with the findings reported here, current work testing this approach will further inform the design of an information-based, social networking intervention aiming to reduce the acceptability of parental supply of alcohol to adolescents.

Further work will attempt to address some of the methodological limitations encountered in the studies reported here; the use of social media is expected to generate higher response rates and a more representative sample of parents than that which would be expected through the use of school contacts for recruitment or convenience sampling as reported above. Further, future work will clarify the details regarding the circumstances of parental supply of alcohol; the situations of supervision and volumes of alcohol supplied.

Appendices

Appendix A: Questionnaire for students

Appendix B: Parental Interview Protocols

Appendix A: Questionnaire for students



QUESTIONNAIRE

Sources of alcohol for teenage binge drinking

This research is being conducted by Dr Conor Gilligan, Lecturer, School of Medicine and Public Health.

The Research Team also includes: Dr Kyp Kypri from the Centre for Clinical Epidemiology and Biostatistics, and Dr Natalie Johnson and Dr Marita Lynagh from the Discipline of Health Behaviour Sciences.

1. Gender (please circle)

MALE

FEMALE

2. Date of birth:

month year

--	--

--	--	--	--

3. Postcode

--	--	--	--

4. Year at school:

--	--

5. a. Were you born in Australia?

Circle:

YES

NO

b. If no, what is your ethnic background (where were your parents born)?

6. What language/s do you speak at home: _____

7. Are you of Aboriginal or Torres Strait Islander Origin?

<input type="checkbox"/>	Aboriginal
<input type="checkbox"/>	Torres Strait Islander
<input type="checkbox"/>	Both Aboriginal and Torres Strait Islander
<input type="checkbox"/>	Non-indigenous

8. Have you ever tried alcohol, even a sip? This includes beer, wine, cider, spirits, liqueurs and pre-mixed drinks such 'Cruisers' and 'Bacardi Breezes'. (circle your answer)

YES

NO

If yes, go to question 9. If no, go to question 18

9. Have you ever had a **full** 'glass' of alcohol? For example, a whole can or bottle of beer, a whole glass of wine, or full pre-mixed drink. (*circle your answer*)

YES

NO

10. Have you had 4 or more drinks on one occasion? By a drink we mean a whole can or bottle of beer, a whole glass of wine, or a whole pre-mixed drink.

a) In the **past two weeks?**

YES

NO

b) In the **past month?**

YES

NO

11. In the **past month**, from whom or where did you get alcohol to drink? (**tick all that apply**)

<input type="checkbox"/>	Bought it at a bottle shop
<input type="checkbox"/>	Bought it at a pub/bar
<input type="checkbox"/>	Bought it at a café or restaurant
<input type="checkbox"/>	From friends
<input type="checkbox"/>	From an older brother or sister
<input type="checkbox"/>	From parent/guardian
<input type="checkbox"/>	From a friend's parents or siblings
<input type="checkbox"/>	From another adult I know
<input type="checkbox"/>	From a stranger
<input type="checkbox"/>	Stole it/sneaked it
<input type="checkbox"/>	I did not drink alcohol in the past month
<input type="checkbox"/>	Other (please write here) _____

12. In the past month, who have you asked to buy alcohol for you? (*tick all that apply, leave all blank if you have not asked any of these people to buy alcohol for you*)

<input type="checkbox"/>	A friend aged 18 years or over
<input type="checkbox"/>	A brother or sister aged 18 years or over
<input type="checkbox"/>	A friend aged under 18 years
<input type="checkbox"/>	A brother or sister under 18 years
<input type="checkbox"/>	A stranger
<input type="checkbox"/>	A parent or guardian
<input type="checkbox"/>	Other _____

13. In the **past month**, from whom or where did you **mainly** get alcohol to drink? (**please tick one box only**)

<input type="checkbox"/>	Bought it at a bottle shop
<input type="checkbox"/>	Bought it at a pub/bar
<input type="checkbox"/>	Bought it at a café or restaurant
<input type="checkbox"/>	From friends
<input type="checkbox"/>	From an older brother or sister
<input type="checkbox"/>	From parent/guardian
<input type="checkbox"/>	From a friend's parents or siblings
<input type="checkbox"/>	From another adult I know
<input type="checkbox"/>	From a stranger
<input type="checkbox"/>	Stole it/sneaked it
<input type="checkbox"/>	Other (please write here) _____

14. In the past month, from whom or where did you get money to buy alcohol? (tick as many as apply, leave blank if not applicable)

<input type="checkbox"/>	From parents for something else i.e. food or movie tickets
<input type="checkbox"/>	From parents for alcohol
<input type="checkbox"/>	From parents as pocket money
<input type="checkbox"/>	Saved change from last time parents gave me money
<input type="checkbox"/>	From friends
<input type="checkbox"/>	From an older brother or sister
<input type="checkbox"/>	From a younger brother or sister
<input type="checkbox"/>	From a friend's parents or siblings
<input type="checkbox"/>	From another adult I know
<input type="checkbox"/>	From a stranger
<input type="checkbox"/>	Stole it/sneaked it
<input type="checkbox"/>	From a job
<input type="checkbox"/>	Other (please write here) _____

15. In the past month, how much money have you spent on alcohol? (Please give your best estimate):

\$			
----	--	--	--

16. Have your parents ever given you alcohol to drink?

YES

NO

If yes, go to question 16. If no, go to question 17.

17. In the past month, on how many occasions did your parent or guardian give you alcohol in the following situations? (Please give your best estimate):

A - *To drink while they were present...* On ____ occasions

B - *To drink when they weren't present but there was adult supervision...* On ____ occasions

C - *To drink when there was no adult supervision...* On ____ occasions

18. How often is alcohol consumed by the adults in **your home**? (*Give your best estimate*)

- | | |
|--------------------------|---------------------------|
| <input type="checkbox"/> | Every day |
| <input type="checkbox"/> | 4-5 days per week |
| <input type="checkbox"/> | 2-3 days per week |
| <input type="checkbox"/> | 1 day per week |
| <input type="checkbox"/> | Only on special occasions |
| <input type="checkbox"/> | Never |

19. In **your home**, what are the rules about **how much** alcohol you are allowed to drink?

- | | |
|--------------------------|----------------------------------------------------------|
| <input type="checkbox"/> | I am allowed to drink as much as I like |
| <input type="checkbox"/> | I am allowed to drink a moderate amount (1-2 glasses) |
| <input type="checkbox"/> | I am allowed to drink a small amount (less than 1 glass) |
| <input type="checkbox"/> | I am not allowed to drink any alcohol |
| <input type="checkbox"/> | I don't know what the rules are |
| <input type="checkbox"/> | I don't drink alcohol |

20. In your home, what are the rules about **how often** you are allowed to drink alcohol?

- I am allowed to drink alcohol anytime, or as often as I like
- I am allowed to drink only on special occasions
- I am allowed to drink sometimes (not just on special occasions)
- I am never allowed to drink alcohol
- I don't know what the rules are
- I don't drink alcohol

21. Have your parents told you how they feel about you drinking alcohol?

YES

NO

22. When I get a low mark at school my parents encourage me to do better.

Circle the best response

Completely agree

Agree

Neutral Disagree

Completely disagree

23. My parents know exactly where I am most afternoons after school.

Circle the best response

Completely agree

Agree

Neutral Disagree

Completely disagree

If you do not drink, please go to question 32.

24. In the **past month**, when you drank alcohol, **how often** did you drink at the following places? (Please **place a number** in the appropriate boxes to indicate how many times. You can mark all the boxes that apply. Please give your best estimate)

<input type="checkbox"/>	At home
<input type="checkbox"/>	At a café or gaming venue
<input type="checkbox"/>	In a pub, club, or disco/social
<input type="checkbox"/>	At a friend's home
<input type="checkbox"/>	At school, school sport, or a school function (e.g. before or after a school social)
<input type="checkbox"/>	In the street
<input type="checkbox"/>	In the bush, paddock, or a park
<input type="checkbox"/>	At a sporting event
<input type="checkbox"/>	At a restaurant
<input type="checkbox"/>	While travelling in a car or other vehicle
<input type="checkbox"/>	Somewhere else – where? _____

25. In the **past month**, have you experienced any of the following during or shortly after a drinking session? (tick any that apply):

<input type="checkbox"/>	Felt drunk?
<input type="checkbox"/>	Vomited or felt ill?
<input type="checkbox"/>	Become upset or cried?
<input type="checkbox"/>	Had a heated argument?
<input type="checkbox"/>	Got into a fight (physical)?
<input type="checkbox"/>	Had an accident (fallen over or bumped into something)?
<input type="checkbox"/>	Got into a sexual situation you later regretted?
<input type="checkbox"/>	Had unsafe sex?
<input type="checkbox"/>	Drove a car or motorcycle?

- Were a passenger in a car where the driver was probably over the limit?
- Gone swimming?
- Walked along the edge of a road or crossed a bitumen road?
- Ridden a pushbike?
- Gone in a boat?

26. In the **past month**, have you experienced any of the following **the day after** a drinking session?

- Realised there were periods of time you couldn't remember?
- A hangover (e.g. a headache, nausea)?
- Got into trouble with your parents?

27. Have your parents ever found out about any of the experiences you ticked in questions 25 or 26?

YES

NO

If no, go to question 30.

28. What were the consequences?

- I was grounded
- My pocket money was taken away
- I lost my privileges
- I was lectured / my parents yelled
- Other – what? _____

29. How did you feel after your parents found out?

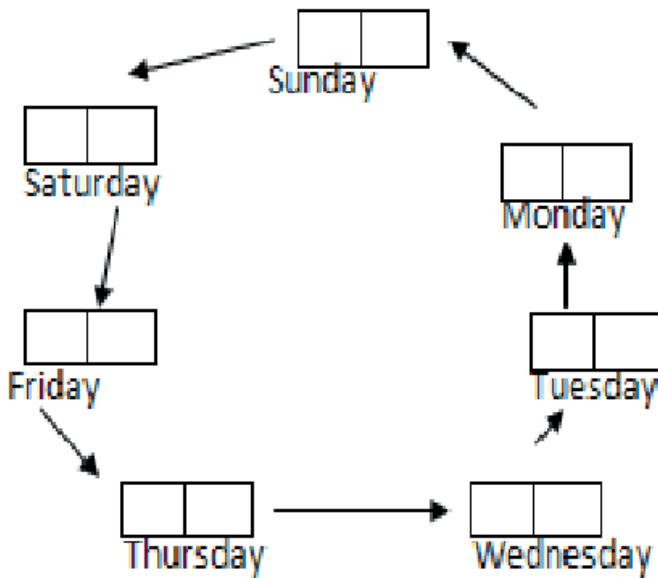
<input type="checkbox"/>	Ashamed/guilty
<input type="checkbox"/>	Sad/upset
<input type="checkbox"/>	Angry
<input type="checkbox"/>	Thought it was funny
<input type="checkbox"/>	Other – what? _____

30. In the **past month**, have you experienced any of the following as a result of drinking alcohol?

<input type="checkbox"/>	Feeling sad, blue, or depressed?
<input type="checkbox"/>	Nervousness, irritability?
<input type="checkbox"/>	Feeling bad about yourself?
<input type="checkbox"/>	Problems with appetite or sleeping?

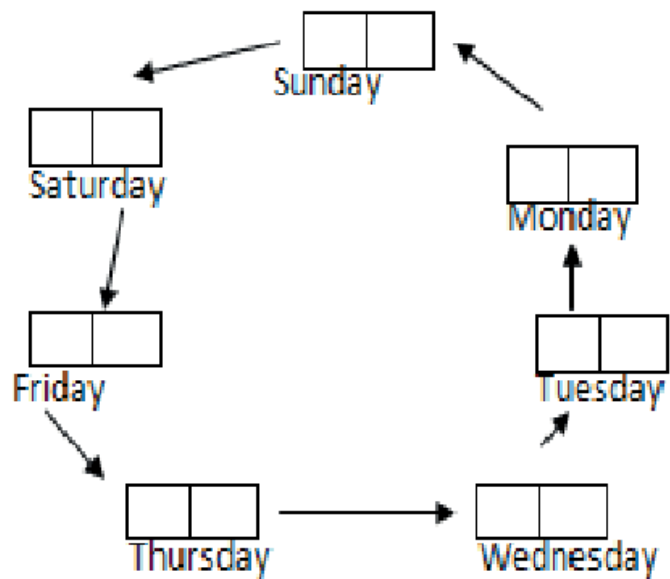
31. This question asks you to write down how many drinks you have had in the past two weeks. One drink refers to a whole can or bottle of beer, a whole glass of wine, or a full pre-mixed drink.

Step 1. Starting with yesterday, write the **number of drinks** you had yesterday. If yesterday was Sunday, and you had 3 drinks, write 3 in the box above Sunday.



Step 2. Follow the arrows around the circle until you have recorded how many drinks you had on each of **the last seven days**.

Step 3. Move on to circle 2. Start on the same day as you started circle one. If yesterday was Sunday, start on Sunday.



32. How many of your close friends do you think drank alcohol in the **past month**?

(Circle one number only)

1 2 3 4 5 6 7 8 9 10 More than 10

33. Roughly what percentage of people your age do you think drink alcohol regularly? *(Circle one number only)*

0% 1-9% 10-19% 20-29% 30-39% 40-49% 50-59% 60-69% 70-79% 80-89% 90-100%

Thank you for taking the time to complete this questionnaire.

Appendix B: Parental Interview Protocols

Sources of supply for teenage binge drinking

Questions will be modified based on the direction of the discussion.

Introduction

Interview

Welcome and introduction.

Before we start I would like to clarify a few things about how the interview will proceed. There are no right or wrong answers to any of the questions I am going to ask, and you will not be judged in any way. You were invited today because you have knowledge that may help us design an intervention to prevent alcohol-related harm of young people.

The information provided by you will be treated confidentially and you will not be identified personally in any results or reports arising from our discussion. I also need to ask if you mind me recording today's conversation so I can make some notes afterwards. The recording won't be fully transcribed. Some quotes might be used in reports, but won't be linked with you individually. I can send you a copy of my notes so you can review and edit them afterwards. Is that ok?

Today's discussion is purely voluntary and you can withdraw at any time. The Information Statement you received contains contact details if you have any problems with this research. I also have some information here about support services available to you if you'd like to speak to someone about any concerns. In the unlikely event that I hear about something in the discussion that suggests that you or another person might be in danger or exposed to violence then we have an obligation to report that. Do you have any questions before we start?

Questionnaire:

Pass participant the demographic and drinking behaviour questionnaire – ask them to complete it.

Semi-structured interview:

What is normal for your family in relation to alcohol consumption?

- How often is alcohol consumed?
- Alcohol at celebrations etc.

Do or have your children expressed an interest in alcohol/sharing drinks with you?

- Curiosity
- Children's attitudes when younger – now as teenagers.

How would you describe your relationship with you teenage children at the moment?

- Respect/trust
- Friendship
- Discipline
- Tension/disagreement

Have you discussed the rules about alcohol for your children with your partner/spouse/other parent?

- Do you agree about the rules?
- If not, how do you overcome this?

What are the rules about alcohol for your children?

- Have you explicitly discussed these with your child?
- Have they tried alcohol?
- When are they allowed to drink alcohol?

Do you ever give your children alcohol? Under what circumstances do you give your child alcohol?

- Special occasions
- At home
- To take to a party
- Never

If you give your children alcohol to take to a party, what are your reasons for doing this?

Do you think your children respect the rules you have set in place? How can you tell if they are breaking them? What are the consequences for this?

- Are your children following the rules?
- If not, how have they been punished?
- What was their reaction to the consequences you set?

Do you think your children could talk to you about their alcohol consumption, and what happens as a result?

Do you think there is pressure to supply alcohol to your children? Where do you think this comes from?

Scenarios:

Your 16 year old child is going to a party where the parents have supplied alcohol. What do you do?

Your child is going to their best friend's 18th birthday, but they are not yet 18. The parents supervising the party have not supplied alcohol, and your child is asking you to get them some alcohol to take with them to the party. What do you do?

On a Sunday after apparently staying over at a friend's house to watch movies the night before, your fifteen year old is showing signs of a hangover (you think they have been throwing up, are obviously very tired, not eating etc). What do you do?

5 minute summary to end:

Question:

Did I correctly describe what was discussed today?

Close

Thank you for your comments today. You've provided me with some really useful information which we'll use to help design a project to tackle some of the issues faced by young people regarding alcohol and its harms.

Question:

Is there anything we should have talked about today but didn't?

References

1. AIHW, *2004 National Drug Strategy Household Survey: First Results.*, in *AIHW (Drug Statistics Series No. 13)*. AIHW cat. no. PHE 572005, Australian Institute of Health and Welfare: Canberra.
2. Anderson, P., *Binge drinking and Europe*, 2007, Institute of Alcohol Studies: London.
3. Rehm, J., et al., *Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders*. *Lancet*, 2009. **373**(9682): p. 2223-33.
4. Victorian Government, *2004 Victorian Youth Alcohol and Drug Survey*, 2005, Victorian Drug and Alcohol Prevention Council, Department of Health.
5. White, V. and G. Smith, *Australian secondary school students' use of licit and illicit substances in 2005*, 2006, Centre for Behavioural Research in Cancer Cancer Control Research Institute; The Cancer Council Victoria. Report prepared for: Drug Strategy Branch Australian Government Department of Health and Ageing.
6. Livingston, M., *Recent trends in risky alcohol consumption and related harm among young people in Victoria, Australia*. *Australian and New Zealand Journal of Public Health*, 2008. **32**(3): p. 266-271.
7. White, V. and G. Smith, *Australian secondary school students' use of tobacco, alcohol, and over-the-counter and illicit substances in 2008*, 2009, Centre for Behavioural Research in Cancer Cancer Control Research Institute; The Cancer Council Victoria. Report prepared for: Drug Strategy Branch Australian Government Department of Health and Ageing.
8. McCambridge, J., J. McAlaney, and R. Rowe, *Adult consequences of late adolescent alcohol consumption: a systematic review of cohort studies*. *PLoS Med*, 2011. **8**(2): p. e1000413.
9. Noll, R.B., R.A. Zucker, and G.S. Greenberg, *Identification of alcohol by smell among preschoolers: evidence for early socialization about drugs occurring in the home*. *Child Dev*, 1990. **61**(5): p. 1520-7.
10. Patton, G.C., et al., *Puberty and the onset of substance use and abuse*. *Pediatrics*, 2004. **114**(3): p. e300-6.
11. Harris, J.R., *The Nurture Assumption: Why Children Turn Out the Way They Do* 1998: Bloomsbury Publishing.
12. Carter, M., et al., *Health outcomes in adolescence: associations with family, friends and school engagement*. *Journal of adolescence*, 2007. **30**(1): p. 51-62.
13. Srteinberg, L., *We know some things: parent-adolescent relationships in retrospect and prospect*. *Journal of Research on Adolescence*, 2001. **11**: p. 1-19.
14. Turrisi, R. and A.E. Ray, *Sustained parenting and college drinking in first-year students*. *Developmental Psychobiology*, 2010. **52**(3): p. 286-94.

15. Engels, R.C.M.E., et al., *The Impact of Parents on Adolescent Drinking and Friendship Selection Process*, in *Youth Drinking Cultures: European Experiences*, M. Jarvinen and R. Room, Editors. 2007, Ashgate Publishing: Hampshire, England.
16. Bauman, K.E. and S.T. Ennett, *On the importance of peer influence for adolescent drug use: commonly neglected considerations*. *Addiction*, 1996. **91**(2): p. 185-98.
17. Ryan, S.M., A.F. Jorm, and D.I. Lubman, *Parenting factors associated with reduced adolescent alcohol use: a systematic review of longitudinal studies*. *Aust N Z J Psychiatry*, 2010. **44**(9): p. 774-83.
18. Ryan, S.M., et al., *Parenting strategies for reducing adolescent alcohol use: a Delphi consensus study*. *BMC public health*, 2011. **11**: p. 13.
19. *Parenting Guidelines for Adolescent Alcohol Use*, 2010, Orygen Youth Health Research Centre (University of Melbourne) and Turning Point Alcohol and Drug Centre (Monash University and Eastern Health) Melbourne.
20. ADF, *Position Statement on Secondary Supply of Alcohol to Young People on Private Property*, 2010, Australian Drug Foundation.
21. Hayes, L., et al., *Parenting influences on adolescent alcohol use*, in *Research report no.10 2004* 2004, Australian Government, Institute of Family Studies.
22. Taylor, J. and T. Carroll, *Youth Alcohol Consumption: Experiences and Expectations*, in *Alcohol, young persons and violence*, P.S. Williams, Editor 2001, Australian Institute of Criminology: Canberra.
23. Roberts, R., M. Beckwith, and D. Watts, *Mothers' intentions to introduce their adolescent to alcohol use: does mothers' alcohol use effect intentions?* *Aust N Z J Public Health*, 2010. **34**(3): p. 281-7.
24. Kypri, K., J.I. Dean, and E. Stojanovski, *Parent attitudes on the supply of alcohol to minors*. *Drug Alcohol Rev*, 2007. **26**(1): p. 41-7.
25. Dent, C.W., J.W. Grube, and A. Biglan, *Community level alcohol availability and enforcement of possession laws as predictors of youth drinking*. *Prev Med*, 2005. **40**(3): p. 355-62.
26. Fisher, S.L., et al., *Teenagers are right--parents do not know much: an analysis of adolescent-parent agreement on reports of adolescent substance use, abuse, and dependence*. *Alcohol Clin Exp Res*, 2006. **30**(10): p. 1699-710.
27. Jackson, C., L. Henriksen, and D. Dickinson, *Alcohol-specific socialization, parenting behaviors and alcohol use by children*. *J Stud Alcohol*, 1999. **60**(3): p. 362-7.
28. Komro, K.A., et al., *Effects of home access and availability of alcohol on young adolescents' alcohol use*. *Addiction*, 2007. **102**(10): p. 1597-608.
29. Lundborg, P., *Young people and alcohol: an econometric analysis*. *Addiction*, 2002. **97**(12): p. 1573-82.

30. *Australian Guidelines to reduce health risks from Drinking Alcohol*, 2009, National Health and Medical Research Council.
31. Kremers, S.P., et al., *Parenting style and adolescent fruit consumption*. *Appetite*, 2003. **41**(1): p. 43-50.
32. Pearson, N., et al., *Parenting styles, family structure and adolescent dietary behaviour*. *Public Health Nutr*, 2009. **13**(8): p. 1245-53.
33. Kypri, K., et al., *'Think before you buy under-18s drink': evaluation of a community alcohol intervention*. *Drug Alcohol Rev*, 2005. **24**(1): p. 13-20.
34. Wolfenden, L., et al., *Obtaining active parental consent for school-based research: a guide for researchers*. *Aust N Z J Public Health*, 2009. **33**(3): p. 270-5.
35. Gmel, G., E. Kuntsche, and J. Rehm, *Risky single-occasion drinking: bingeing is not bingeing*. *Addiction*, 2011. **106**(6): p. 1037-45.
36. AIHW, *The health and welfare of Australia's Aboriginal and Torres Strait Islander people, an overview 2011*. *Cat. no. IHW 42.*, 2011, Australian Institute of Health and Welfare Canberra.
37. Kypri, K. and J.D. Langley, *Perceived social norms and their relation to university student drinking*. *J Stud Alcohol*, 2003. **64**(6): p. 829-34.
38. Mason, M.J., *Mental health, school problems, and social networks: modeling urban adolescent substance use*. *J Prim Prev*, 2010. **31**(5-6): p. 321-31.
39. Kandel, D.B. and K. Andrews, *Processes of adolescent socialization by parents and peers*. *Int J Addict*, 1987. **22**(4): p. 319-42.
40. Velleman, R.D., L.J. Templeton, and A.G. Copello, *The role of the family in preventing and intervening with substance use and misuse: a comprehensive review of family interventions, with a focus on young people*. *Drug Alcohol Rev*, 2005. **24**(2): p. 93-109.
41. van der Vorst, H., R.C. Engels, and W.J. Burk, *Do parents and best friends influence the normative increase in adolescents' alcohol use at home and outside the home?* *J Stud Alcohol Drugs*, 2010. **71**(1): p. 105-14.
42. Foley, K.L., et al., *Adults' approval and adolescents' alcohol use*. *J Adolesc Health*, 2004. **35**(4): p. 345 e17-26.
43. Ward, B.M. and P.C. Snow, *Factors affecting parental supply of alcohol to underage adolescents*. *Drug Alcohol Rev*, 2011. **30**(4): p. 338-43.
44. Gossrau-Breen, D., E. Kuntsche, and G. Gmel, *My older sibling was drunk - younger siblings' drunkenness in relation to parental monitoring and the parent-adolescent relationship*. *Journal of adolescence*, 2010. **33**(5): p. 643-52.
45. Kuntsche, E., D. Gossrau-Breen, and G. Gmel, *The role of drunken older siblings and drunken peers in the alcohol-violence nexus*. *European journal of public health*, 2009. **19**(4): p. 394-9.

46. Livingston, M., *Perceptions of low-risk drinking levels among Australians during a period of change in the official drinking guidelines*. Drug and alcohol review, 2012. **31**(2): p. 224-30.
47. Warner, L.A., H.R. White, and V. Johnson, *Alcohol initiation experiences and family history of alcoholism as predictors of problem-drinking trajectories*. Journal of studies on alcohol and drugs, 2007. **68**(1): p. 56-65.
48. Donovan, J.E., et al., *Children's introduction to alcohol use: sips and tastes*. Alcoholism: Clinical & Experimental Research, 2008. **32**(1): p. 108-19.
49. Clapper, R.L., et al., *Adolescent problem behaviors as predictors of adult alcohol diagnoses*. The International journal of the addictions, 1995. **30**(5): p. 507-23.
50. Kuntsche, E., et al., *Not Early Drinking but Early Drunkenness is a Risk Factor for Problem Behaviors among Adolescents from 38 European and North American Countries*. Alcoholism: Clinical and Experimental Research, In press.
51. Hellandsjo Bu, E.T., et al., *Teenage alcohol and intoxication debut: the impact of family socialization factors, living area and participation in organized sports*. Alcohol and alcoholism, 2002. **37**(1): p. 74-80.
52. Carter, M., et al., *Health outcomes in adolescence: associations with family, friends and school engagement*. J Adolesc, 2007. **30**(1): p. 51-62.
53. O'Gorman, H.J., *The discovery of pleurastic ignorance: An ironic lesson*. Journal of the History of the Behavioural Sciences, 1986. **22**: p. 333-347.
54. Gibbons, F.X., et al., *Media as social influence: racial differences in the effects of peers and media on adolescent alcohol cognitions and consumption*. Psychol Addict Behav, 2010. **24**(4): p. 649-59.
55. Christakis, N.A. and J.H. Fowler, *The collective dynamics of smoking in a large social network*. N Engl J Med, 2008. **358**(21): p. 2249-58.
56. Witvliet, M., et al., *Change and stability in childhood clique membership, isolation from cliques, and associated child characteristics*. J Clin Child Adolesc Psychol, 2010. **39**(1): p. 12-24.
57. Graham, M.L., et al., *Rural parents, teenagers and alcohol: what are parents thinking?* Rural Remote Health, 2006. **6**(1): p. 383.
58. Srebnik, D.S., D. Kovalchick, and L. Elliott, *Initial findings from Parent Party Patrol: an intervention to reduce adolescent substance use through reduced involvement in unchaperoned parties*. J Drug Educ, 2002. **32**(1): p. 13-23.
59. Stronach, B., *Enough is enough*, in *Australian Drug Info Clearinghouse Newsletter* 2003. p. 1.
60. Koutakis, N., H. Stattin, and M. Kerr, *Reducing youth alcohol drinking through a parent-targeted intervention: the Orebro Prevention Program*. Addiction, 2008. **103**(10): p. 1629-37.

61. Haggerty, K., et al. *Participation in 'Parents Who Care': Predicting Program Initiation and Exposure in Two Different Program Formats*. 2006 *Journal of Primary Prevention* 27 (1): 47-65.
62. Livingston, J.A., et al., *Can parents prevent heavy episodic drinking by allowing teens to drink at home?* *Addict Behav*, 2010. **35**(12): p. 1105-12.
63. Dietze, P.M., et al., *The relationship between alcohol supply source and young people's risky drinking and alcohol-related problem behaviours in Victoria, Australia*. *Australian & New Zealand Journal of Public Health*, 2010. **34**(4): p. 364-7.
64. Granovetter, M.S., *The Strength of Weak Ties*. *The American Journal of Sociology*, 1973. **78**(6): p. 1360-1380.
65. Schor, E.L., *Adolescent alcohol use: social determinants and the case for early family-centered prevention. Family-focused prevention of adolescent drinking*. *Bull N Y Acad Med*, 1996. **73**(2): p. 335-56.
66. Opsahl, T. and P. Panzarasa, *Clustering in Weighted networks*. *Social Networks*, 2009. **31**(2): p. 155-163.
67. Kypri, K., et al., *Randomized controlled trial of proactive web-based alcohol screening and brief intervention for university students*. *Arch Intern Med*, 2009. **169**(16): p. 1508-14.
68. Cijljak, M., et al., *Internet-based interventions for smoking cessation*. *Cochrane Database Syst Rev*, 2010(9): p. CD007078.
69. Poddar, K.H., et al., *Web-based nutrition education intervention improves self-efficacy and self-regulation related to increased dairy intake in college students*. *J Am Diet Assoc*, 2010. **110**(11): p. 1723-7.
70. Krist, A.H., et al., *Patient education on prostate cancer screening and involvement in decision making*. *Ann Fam Med*, 2007. **5**(2): p. 112-9.
71. Rothman, K.J., S. Greenland, and T.L. Lash, *Modern Epidemiology* 2008, Philadelphia: Lippincott Williams & Wilkins.

