Harmful drinking is associated with mental health conditions and other risk behaviours in Australian young people

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Three million people die worldwide every year as a result of harmful alcohol consumption, making it one of the leading factors for poor health globally.[1,2] In Australia, alcohol is the second leading cause of substance-related death (behind tobacco) with more than 5,500 deaths annually.[1] According to the World Health Organization, current knowledge indicates a causal link between alcohol consumption and more than 200 health conditions.[2] Alcohol not only has a negative impact on people's health and wellbeing but also affects workplace productivity, healthcare service use and road accident frequency, with an estimated annual social cost for Australia of $15–36 billion.[3]

Children and adolescents are especially vulnerable to alcohol-related harm compared to other age groups. The rate of drinking at harmful levels is higher among young people and is linked with the three leading causes of death in this group (unintentional injury, homicide and suicide).[4] Young people under the age of 25 years are at a critical time of brain development, and drinking at harmful levels could have particularly adverse effects during this period.[4] There is no defined 'no risk' level of alcohol consumption; however, the National Health and Medical Research Council Guidelines state that the safest option for children and young people is not to drink, and for adolescents to delay drinking as long as possible.[5]

Research has shown that there is a relationship between harmful alcohol use and mental health issues and other risk behaviours including suicide attempts, self-harm and unprotected sex.[4,6-13] The association between harmful alcohol use and psychiatric disorders has been widely researched; however, their causal relationship is still unclear.[4,6-11] Boden and Fergusson suggest that the most plausible causal relationship between alcohol and depression is that alcohol use increases the risk of depression.[6] This was also analysed by Schuckit, who investigated the onset of alcohol-induced psychiatric disorders, where substance use can trigger latent mental health issues that may then result in permanent and independent disorders.[8] Conversely, other studies suggest that the mental health disorders precede alcohol use disorders, consistent with a self-medication hypothesis.[10]

Only a few studies have analysed the association between mental health and alcohol use in adolescents.[14,15] This study aims to fill the gap in the literature by investigating

Abstract

Objective: To investigate factors associated with alcohol use in adolescents, with the focus on analysing the comorbidities between single-occasion harmful-drinking episodes with mental health issues and risk behaviours.

Methods: This study used data from the Young Minds Matter survey, designed to inform on the prevalence of the seven most common mental health disorders of children and adolescents. Logistic regression modelling was used to assess the odds of harmful drinking behaviour in young people aged 13–17 years in Australia.

Results: We found a strong association between single-occasion harmful drinking and mental health issues, which hold after controlling for sociodemographic characteristics. Young people with severe mental health issues within the past year were four times more likely to have been drinking at harmful levels in the past 30 days.

Conclusions: Alcohol use can have adverse health effects among children and adolescents. Research has found a bidirectional association between alcohol use and mental health conditions where the presence of one issue almost doubles the risk of having the other issue.

Implications for public health: The comorbidity between these issues suggests the need for strategies to integrate policies addressing mental health and alcohol use disorders in young people.

Key words: adolescent alcohol use, mental health, major depressive disorder, alcohol-related harm, harmful drinking behaviour

factors associated with harmful drinking in Australian adolescents, using a nationally representative sample, with a focus on quantifying the association among those with mental health issues and risk behaviours. The central hypothesis of this study is that drinking alcohol at harmful levels will have a stronger association with mental health issues and other risk behaviours compared to non-harmful drinking behaviours for young people aged 13–17 years.

Methods

Young Minds Matter survey

This study used data collected by the second Australian Child and Adolescent Survey of Mental Health and Wellbeing, also called Young Minds Matter survey (YMM), between June 2013 and April 2014. The YMM is a national household survey that collects information from a face-to-face interview with parents/carers of children aged 4–17 years, as well as a self-report questionnaire provided to young people aged 11–17 years.

The YMM survey sample was selected by an area-based sampling method to ensure that the findings were representative of the Australian population aged 4–17 years old. Sample size was determined to be sufficiently large to be representative of each age group. Households were selected if they contained at least one child between the ages of 4–17 usually living there. If more than one child was in scope, only one was randomly selected. Parents/carers were interviewed if they were the child's primary carer, defined as the person in the household who "knows the most about" the selected child. If the selected child was aged 11–17, they were eligible to complete a questionnaire on a tablet computer. Overall, 6,310 parents/carers were interviewed (55% of eligible households) and 2,967 young people aged 11–17 years (89% of eligible adolescents) participated.[16]

The main purpose of the survey was to determine the prevalence of mental health disorders in children and adolescents, the impact of the disorders, and service use.[17] The survey included information on the 12-month prevalence of the seven most common mental health disorders (social phobia, separation anxiety, generalised anxiety, obsessive-compulsive disorder, major depressive disorder, attention-deficit/hyperactivity disorder and conduct disorder). Mental health disorders were identified using the Diagnostic Interview Schedule for Children Version IV (DISC-IV), which is a standardised diagnostic instrument used worldwide to assess mental disorders in large samples by ascertaining the presence of particular symptoms.[17,18]

Additionally, the YMM survey team expanded the survey to assess the impact of mental health issues on children, deriving impact scores and developing a measure of severity of disorders, classifying children's mental health disorders into mild, moderate and severe cases. Cut-off points were determined by applying the National Mental Health Service Planning Framework standard ratio of severity for mental health disorders.[17,19]

This study

Four different measures of alcohol use were used to allow the comparison and better understanding of the association between harmful drinking and the selected predictors. These were: the percentage of young people who had 'never drunk alcohol'; in contrast to those who had 'ever drunk alcohol' or had 'drunk alcohol in the last 30 days'; and those who had 'drunk four or more drinks in a row in the last 30 days' as a measure of single-occasion harmful drinking or drinking at levels of risk of alcohol-related harm.

Mental health-related variables analysed in this study included 'Any mental health issue last year – impairment criteria', which is a comprehensive variable reporting one or more mental health disorders captured by the YMM survey. The measure of severity of disorder associated with this variable was also analysed. Given the extensive literature describing the association between alcohol use and depression,[6,9] 'Self-reported major depressive disorders last year – impairment criteria' was included in the analysis. Finally, risk behaviours were included through self-reported measures of 'Deliberate self-harm without intending to end their life – last year' and 'Suicide attempt – last year'.

Demographic and parent characteristics

Several factors have been associated with alcohol-related harm in adolescents. This study included a range of covariates: child demographics variables as gender; age (young people aged 13–17 years); and socioeconomic status (the Index of Socio-economic Advantage/Disadvantage quintiles developed by the Australian Bureau of Statistics).

Family characteristic variables included: Family Type (includes: 'Original family' – contains at least one natural or adopted child of both parents but no step child; 'Step family' – at least one step child, no natural or adopted child; 'Blended family' – at least one natural or adopted child of both parents and one step child; 'Lone parent family' – a lone parent with at least one child; and 'Other family' – including children who are not natural, adopted or step children).[20]

Parent characteristic variables included: 'Highest level of education of either primary or secondary carer'; and 'Parent risk of alcohol-related harm'. Parent alcohol-use patterns and risk levels of use were classified into no risk/low risk or increased risk of alcohol-related harm according to 2019 NHMRC guidelines: if they have 'never drunk alcohol or drank 1–2 standard drinks' or 'drank three or more drinks' on days when drinking, respectively.[5,16]

Analysis

We investigated single-occasion harmful alcohol use by analysing its association with mental health-related issues, accounting for demographic and parent characteristics, among young people aged 13–17 years in Australia using YMM survey data. Weights based on the 2011 Census were used to expand the results to achieve Australian overall estimates and adjust for non-response patterns and oversampling.

Inferential statistical models were used to assess the odds of single-occasion harmful drinking for young people aged 13–17 years in Australia. Two different approaches were used: first, a univariate logistic regression analysis that investigated the unadjusted association between drinking at risk of alcohol-related harm and each predictor. Second, a multivariate logistic regression analysis accounting for the effect of all predictors to examine each factor's association with harmful drinking behaviour in adolescents.

Given the strong relationship between mental health issues, suicide and self-harm,[17,21] the mental health-related variables analysed in this study were not included simultaneously in the same statistical model. Five multivariate models were fitted using one mental health-related variable at a time. Given the similarities of the odds ratios for demographics and parent characteristic across the four models, only the full model

including 'Any mental health issue last year – impairment criteria' was presented in the main body of this research. The results for the other models can be found in the supplementary material.

A sensitivity analysis was undertaken by adding cigarette smoking and drug use as covariates in the multiple model, given their relationship with single-occasion harmful drinking behaviour among adolescents. Other studies have found that these other substances are often used with alcohol, with use increasing during high school years.[22-24] This can be explained by the 'gateway hypothesis' that suggests sequential onset where alcohol and/or tobacco use in early adolescence is associated with other drug use later in life.[25] These issues make it difficult to separate the effect of each covariate on the outcome, and for this reason, they were not included in the analysis.[26]

Finally, the analysis of the causal relationship between harmful drinking and mental health

disorders was not the objective of this study. However, given the evidence supporting a bidirectional association between these variables, additional models were also run using mental health disorders (Any mental health issues last year – impairment criteria; self-reported major depressive disorders last year – impairment criteria) as an outcome variable.[7] Estimates from these models were very similar to the main analysis and so were not presented.

Ethics

Ethics was obtained through the University of Western Australia Human Research Ethics Committee (RA/4/1/9197).

Results

In total, 2,314 young people aged 13–17 years completed the YMM questionnaire, representative of 1,423,000 young people of the Australian population. From these, 38% reported to have ever drunk alcohol, 18%

have drunk at least once in the last 30 days and 12% have had four or more drinks in a row in the last 30 days (Table 1).

Mental health and alcohol use

This study found that 11% of Australian adolescents aged 13–17 years who never drank alcohol also reported to have had a mental health disorder in the past year. Similarly, mental health issues were reported for 19% of those who have ever drunk (OR:1.08; 95%CI:1.04, 1.11) and 21% of those who did so at harmful levels (OR:1.11; 95%CI:1.05, 1.17), see Figure 1.

In terms of the severity of mental health issues, there were important disparities among those who reported moderate and severe mental health disorders in the past year. Only 2% of young people who never drank alcohol reported a severe mental health disorder last year, compared to 5% of those who have ever drunk (OR:1.04; 95%CI:1.02, 1.05) and 8% of those who drank at harmful

Table 1: Prevalence of sociodemographic characteristics by alcohol use. Young people aged 13–17 years in Australia.										
	All young people		**Never drunk alcohol**		**Ever drunk alcohol**		**Drunk in last 30 days**		**Drunk 4 or more drinks in the last 30 days**	
	Sample (N)	**Population (%)[a]**	**Sample**	**Population[a]**	**Sample**	**Population[a]**	**Sample**	**Population[a]**	**Sample**	**Population[a]**
Overall	2,314	100.0%	1,257	62.1%	1,057	37.9%	518	18.1%	369	12.5%
Gender										
Male	1,192	51.3%	658	52.0%	534	50.0%	266	51.0%	198	51.0%
Female	1,122	48.7%	599	48.0%	523	50.0%	252	49.0%	171	49.0%
Age (years) at interview[a]										
13	310	19.7%	284	29.0%	26	4.8%	5	2.3%	2	1.6%
14	343	20.0%	268	26.0%	75	11.0%	25	8.2%	14	6.8%
15	309	19.7%	207	22.0%	102	16.0%	48	15.0%	30	13.0%
16	718	20.2%	305	14.0%	413	31.0%	193	30.0%	148	34.0%
17	634	20.4%	193	9.9%	441	38.0%	247	44.0%	175	45.0%
Socioeconomic status										
1 (High disadvantage)	348	15.7%	180	15.0%	168	17.0%	77	17.0%	54	17.0%
2	406	17.8%	219	18.0%	187	18.0%	89	18.0%	64	17.0%
3	490	21.2%	258	20.0%	232	22.0%	101	19.0%	78	20.0%
4	512	22.2%	281	23.0%	231	22.0%	131	25.0%	96	26.0%
5 (Low disadvantage)	558	23.1%	319	24.0%	239	21.0%	120	21.0%	77	20.0%
Family type										
Original family	1,468	63.7%	868	69.0%	600	56.0%	288	53.0%	202	52.0%
Step family	140	5.7%	67	5.2%	73	6.6%	35	6.4%	28	7.5%
Blended family	149	6.7%	75	6.2%	74	7.5%	38	8.1%	26	7.2%
Lone parent family	529	22.8%	236	19.0%	293	29.0%	151	32.0%	109	33.0%
Other family	28	1.1%	11	0.8%	17	1.5%	6	1.0%	4	0.9%
Highest level of education of either primary or secondary carer										
Bachelor degree or higher	887	38.0%	524	41.0%	363	33.0%	187	36.0%	142	38.0%
Diploma or certificate III/IV	934	41.0%	492	40.0%	442	42.0%	202	40.0%	138	38.0%
Year 11 or 12	284	13.0%	142	12.0%	142	14.0%	72	13.0%	48	12.0%
Year 10 or below	209	8.5%	99	7.2%	110	11.0%	57	11.0%	41	12.0%

Notes:
a: Percentage calculated from weighted sample
Percentage is calculated against the total number of children in each group.

levels in the last 30 days (OR:1.07; 95%CI:1.03, 1.01), see Figure 1.

Twenty-two per cent of young people who had four or more drinks in a row within the last 30 days also met the criteria for major depressive disorders in the last year, based on self-report, compared to only 6% of those who had never drunk (OR:1.18; 95%CI:1.12, 1.24).

Risk behaviours and harmful alcohol use

The proportion of young people reporting at least one episode of deliberate self-harm and/or suicide attempt during the past 12 months was higher among those who had drunk alcohol. Twenty-one per cent of young people who drank four or more drinks in a row within the past 30 days deliberately self-harmed in the past year and 9% attempted suicide. This compares to 5% (OR:1.16; 95%CI:1.12, 1.23) and 1% (OR:1.09; 95%CI:1.05, 1.13) of those who never drank alcohol, respectively.

Most of the adolescents who never drank alcohol reported to have never had sexual intercourse (98%). In contrast, among those who had drunk at harmful levels in the past 30 days, only 45% reported to have never had sex before, and 36% reported having sex without protection.

Predictors of harmful drinking and associated risk

There were no statistically significant differences between females and males in the odds of drinking at risk of alcohol-related harm among adolescents aged 13–17 years old (Table 2). However, differences in age were very large, with young people aged 13 years having much lower odds of single-occasion harmful drinking than those aged 17 years.

The level of education of carers didn't show a statistically significant association with young people's harmful drinking behaviour in the univariate analysis. However, in the adjusted model, young people whose parent achieved a diploma or certificate III/IV were 34% less likely to be drinking at harmful levels than those with a parent with a bachelor's degree or higher.

Our results showed a strong association between parental risk of alcohol-related harm and their children's harmful drinking behaviour. Young people with both parents at increased risk of alcohol-related harm were

Figure 1: Prevalence of young people who had a MH disorder last year by severity and alcohol use (%).
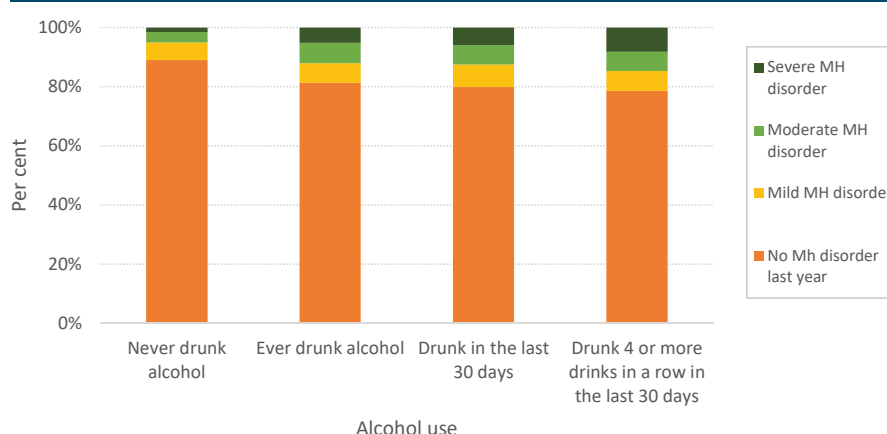
3.4 times more likely to have drunk at harmful levels in the past 30 days.

There was a strong positive association between mental health-related issues and single-occasion harmful drinking among adolescents aged 13–17 years, which holds after accounting for parent and social characteristics. Overall, young people who had any mental health disorder in the past year were 1.6 times more likely to have had four or more drinks in a row within the past 30 days. This association was stronger for young people reporting severe mental health issues in the past year; they were at 4.4 times increased risk of single-occasion harmful drinking. Having a mild or moderate mental health issue didn't show a statistically significant association with harmful drinking behaviour.

Adolescents reporting major depressive disorders in the past year were also at higher risk of alcohol-related harm. They showed, in the adjusted model, 2.5-times increased odds of single-occasion harmful drinking behaviour compared to those who didn't report depression.

Those who deliberately harmed or injured themselves in the past year were three times more likely to have drunk at harmful levels in the past 30 days, and this association was only slightly attenuated when accounting for sociodemographic characteristics. Finally, young people who attempted suicide within the same period had almost six times higher odds of drinking at risk of harm levels.

Discussion

Our study found that 38% of Australian adolescents aged 13–17 years reported ever drinking alcohol, and more than 12%

had drunk at harmful levels at least once in the past 30 days. This is consistent with the National Drug Strategy Household Survey, which estimated that around 32% of Australians aged 12–17 years have ever drunk alcohol, and 13% have had more than four drinks on one occasion at least once a month.[27] Our findings are also consistent with previous Western Australian research, which found harmful levels of drinking in young people with a significant increase in alcohol-related injuries for adolescents aged 13–17 years.[28-30] Together, these results confirm the high prevalence of harmful alcohol use in children and adolescent in Australia and suggest that, given its effects on their health and development, addressing this issue should be a priority among researchers, policy-makers and the broader society.[4,5,28]

Our research found a significant association between harmful alcohol use and mental health-related issues among young people aged 13–17 years old. This association was very strong among the most severe cases and remained significant even after accounting for parent and social characteristics. This supported our hypothesis of an association existing between drinking alcohol at harmful levels and mental health issues. Previous studies investigating this relationship have reported varied findings in relation to the causal direction of their link. The complex relationship between these issues could be attributed to different mechanisms related to individual characteristics, potentially resulting in different aetiology depending on the subgroups under study.[10,31] However, independent of the causal direction, research has found that the presence of a mental health or alcohol-related issue increases the risk of having the other issue.[6,10,32]

Young people who reported a major depressive disorder in the past year were at almost three-fold increased risk of single-occasion harmful drinking. Major depression and its association with alcohol use has been heavily analysed in the literature,[6,10,32] with a cohort study in Victoria indicating that young people with persistent depression and anxiety symptoms have almost two times the risk of having alcohol use issues.[33]

This study found that young people who reported a self-harm and/or suicide attempt in the past year were at three and six times increased risk of drinking at harmful levels, respectively. Drinking at harmful levels was also found to be associated with unprotected sex, which increases the risk of unplanned pregnancies and sexually transmitted infections. During adolescence, young people experience particular developmental change, which places them at increased risk of emotional disorders and undertaking risky behaviours.[21,34] Suicide and self-harm behaviours have been associated in the literature with heavy episodes of drinking, even after adjusting for depression symptoms.[12,21,34]

Young people whose parents had higher education levels were more likely to have reported harmful drinking behaviour. Luthar and Latendresse suggest that one possible rationale behind this finding can be related to the 'achievement pressure' received from their parents leading young people to behavioural problems and substance use.[35] Previous studies have investigated the relationship between family socioeconomic characteristics (measured by family income, parent occupation and/or parent education) and adolescents' harmful alcohol use.[36,37] However, this association is still unclear, with some studies reporting a negative relationship,[38] some finding a positive association[39] and others indicating no significant association.[40] This relationship requires further examination.

Limitations

The YMM survey only collects information on the seven most common mental health disorders, so prevalence for other (less common) mental health disorders are not available. The co-occurrence of other mental health disorders and those captured in the survey may cause underestimation of mental health issues.[17] Additionally, self-reported measures were used for major depressive disorder, self-harm and suicide attempt,

Table 2: Drinking at risk of harm in the last 30 days (4 or more drinks in a row), among young people aged 13–17 years.		
	Univariate	**Multivariate**
	Odd ratio (CI 95%)	**Odd ratio (CI 95%)**
Gender		
Males	1.01 (0.79,1.30)	1.13 (0.86,1.49)
Female	1	1
Age		
13	0.03 (0.01,0.11)**	0.02 (0.01,0.1)**
14	0.11 (0.06,0.21)**	0.10 (0.06,0.19)**
15	0.23 (0.15,0.36)**	0.22 (0.14,0.34)**
16	0.69 (0.53,0.88)**	0.66 (0.51,0.87)**
17	1	1
SES		
First quintile (high disadvantage)	1.24 (0.83,1.87)	1.05 (0.66,1.66)
Second quintile	1.14 (0.75,1.72)	1.13 (0.71,1.78)
Third quintile	1.11 (0.76,1.63)	1.13 (0.74,1.72)
Fourth quintile	1.40 (0.97,2.03)	1.50 (1.00,2.24)
Highest quintile (low disadvantage)	1	1
Family Type		
Original family	1	1
Step family	1.73 (1.06,2.82)*	1.47 (0.87,2.48)
Blended family	1.36 (0.84,2.21)	1.21 (0.72,2.05)
Lone parent family	1.91 (1.44,2.53)**	1.78 (0.85,3.72)
Other family	1.05 (0.34,3.25)	0.74 (0.17,3.17)
Highest level of education of either primary or secondary carer		
Bachelor degree or higher	1.00	1
Diploma or certificate III/IV	0.94 (0.71,1.26)	0.66 (0.48,0.92)*
Year 11 or 12	0.98 (0.67,1.43)	0.82 (0.54,1.24)
Year 10 or below	1.45 (0.96,2.19)	0.83 (0.51,1.35)
Parents – risk of alcohol related harm		
Both carers no risk/low risk	1	1
Both carers increased risk	3.07 (2.11,4.45)**	3.44 (2.29,5.17)**
One care no risk/low risk, one carer increased risk.	2.49 (1.79,3.46)**	2.52 (1.75,3.62)**
Sole carer no risk/low risk	2.55 (1.78,3.65)**	1.43 (0.65,3.11)
Sole carer increased risk	3.97 (2.56,6.15)**	2.94 (1.25,6.91)*
Any mental health issue last year – impairment criteria		
No	1	1
Yes	1.85 (1.32,2.60)**	1.61 (1.09,2.39)*
Severity of any mental health issues last year – impairment criteria		
No MH	1	1
Mild	1.21 (0.77,1.90)	1.07 (0.64,1.77)
Moderate	1.64 (0.95,2.84)	1.18 (0.61,2.27)
Severe	4.08 (2.29,7.29)**	4.40 (1.98,9.75)**
Self-reported – Major depressive disorder		
No	1	1
Yes	3.12 (2.25,4.34)**	2.47 (1.67,3.64)**
Deliberate self-harm in the last year		
No	1	1
Yes	3.38 (2.42,4.71)**	3.09 (2.02,4.72)**
Suicide attempt last year		
No	1	1
Yes	6.16 (3.52,10.78)**	5.84 (2.60,13.09)**

Notes:
**p<0.01 *p<0.05
Reference group OR=1
Bold line: separate model, see Appendix

which can be subject to response bias.[41]

It should be noted that this study uses survey data and it is only able to analyse the relationship between alcohol consumption and mental health issues in a single point in time, including a small range of covariates, and thus only adjusting for certain sociodemographic characteristics. Future studies using longitudinal data may be able to include a broader range of covariates over time to investigate the complex relationship between these issues.

The available information didn't allow us to identify the frequency of drinking episodes for each adolescent before and within the 30-day period. Therefore, it was not possible to distinguish between young people who drank at harmful levels only once from those who had done so repeatedly. This should be considered in future research to determine the frequency of harmful drinking episodes and the association with mental health.

Separate information for Aboriginal young people was not included in the survey, so important cultural issues could not be appropriately measured or addressed by the survey. Additionally, data from the one per cent most remote SA1s were excluded from the survey, as well as information for children experiencing homelessness or placed in institutional care, and children for whom interviews could not be conducted in English. Therefore, these results are not representative of Aboriginal young people and other specific groups of young people.

Implications for policy and practice

Our findings and previous literature regarding the association between alcohol and mental health provide important opportunities for policy and practice. Policies targeting mental health have the potential to reduce substance use, given their strong relationship and comorbidity.[6,11,42] Mental health policy addressing the underlying causes of mental health, including those directed to reduce disadvantage, social exclusion, homelessness and unemployment and improve support networks, education and parenting skills, can therefore contribute to ameliorate both alcohol and mental health issues.[42]

Practice with young people who have mental health issues should also address alcohol use. Young people presenting comorbid alcohol and mental health issues have shown poorer treatment responses and health outcomes overall, with increased hospitalisations and

violence and no adherence to medication, which negatively impacts on the course of the comorbid disorder.[11] Boden and Fergusson suggested that treatment for mental health-related disorders should incorporate alcohol use assessment and treatment, as this might be beneficial for people experiencing both issues as well as for those who use alcohol as self-medication for pre-existing mental health issues.[6]

Suicide and self-harm are identified as a major public health issue in Australia and around the world, with studies suggesting that the age of onset for young people is between 11–17 years.[21,34] As shown by this study, harmful alcohol drinking is an important risk factor for suicide and self-harm in adolescents.[17,34] To reduce suicidal behaviour, policies and strategies need to incorporate the reduction of harmful drinking behaviour in young people into suicide prevention programs. Other studies have discussed the use of school-based policies, such as screening for adolescent harmful alcohol use, as a tool to detect depression and suicidal behaviour in young people.[12,43] For the other risky behaviour of unprotected sex, given the high rates of sexually transmitted infections in young people, the relationship between levels of harmful alcohol use and unprotected sex needs to be incorporated into sexual health education.[13]

It is recognised that there is no single strategy able to reduce alcohol use in young people; rather, a mix of policies directed to reduce harmful drinking behaviour in adolescents is needed.[4,44] Strategies that address both mental health issues and harmful drinking behaviours are required, including the provision of multidisciplinary interventions and support for young people to enable the reduction of these issues.[42,44]

Acknowledgements

Data accessibility

The Young Minds Matter datasets[45] used in this study are available on request. The YMM datasets and support documents are held by the Australian Data Archive (ADA) repository. Further information about accessing the data is available from the ADA website (https://ada.edu.au/accessing-data/) as well as the YMM website (https://youngmindsmatter.telethonkids.org.au/).

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Supporting Information

Additional supporting information may be found in the online version of this article:

Supplementary Table 1: . Odds of drinking at risk of harm in the last 30 days (4 or more drinks in a row), among young people aged 13-17.