
Prevalence of parental alcohol supply and its association with age of alcohol initiation, lifetime drunkenness and frequent drinking in 45 low and middle income countries

Gary Chan¹, Adrian Kelly¹, Jason Connor¹, Wayne Hall¹, Janni Leung¹

¹ Centre for Youth Substance Abuse Research, University of Queensland, Australia

² School of Public Health, University of Queensland, Australia

Alcohol and global burden of disease

- Alcohol use is a significant contributor to global burden of disease
 - 139 million disability-adjusted life years (DALYs) were attributable to alcohol use in 2012
 - One of the biggest preventable cause of mortality
 - 3.3 million deaths were linked to alcohol use in 2012
-

Adolescent alcohol use

Alcohol use commonly starts in early to mid adolescence

- In 2011,
 - 68% of US 12th Graders (17-18 years old) reported lifetime alcohol (Johnston et al, 2012).
 - 74% of 14-year-olds in Australia reported lifetime alcohol use (White and Bariola, 2012).
 - 18.5% Australian 17-year-olds reported a recent heavy drinking episode (4+ drinks in a day) (White and Bariola, 2012).
-

Problems with adolescent alcohol use

- Alcohol related injury and assaults (Kypri et al, 2009)
- Early sexual debut and risky sexual behaviours (Khan et al, 2012; Rothman et al, 2009)
- Adult alcohol abuse/dependence (Grant et al, 2006)
- Other drug use in adulthood (Grant et al, 2006)
- More adversely affect brain function in adolescents than adults (Jacobus and Tapert, 2013)



Why do adolescents drink?

- Peers
 - Peer pressure, peer modelling and reinforcement, etc.
 - Parents and family
 - Parental monitoring, parental disapproval, parental supply of alcohol, etc.
 - School
 - School connectedness, academic achievement, etc.
 - Community
 - Local law enforcement, community norms about alcohol use, alcohol outlet density, etc.
-

Why do adolescents drink?

- Peers
 - Peer pressure, peer modelling and reinforcement, etc.
 - Parents and family
 - Parental monitoring, parental disapproval, **parental supply of alcohol**, etc.
 - School
 - School connectedness, academic achievement, etc.
 - Community
 - Local law enforcement, community norms about alcohol use, alcohol outlet density, etc.
-

Parental supply of alcohol as a risk factor

- Most children know about alcohol through parents
- Parents have an important role in shaping their children's attitude towards alcohol



Why do parents give their children alcohol?

- Allan et al, 2012

“As a kid, I used to get a little bit of beer in a glass. I thought it was great. I let my kids drink at home because they need to know how to drink responsibly (Pre-school teacher).”

“I said to [Son], “Come over here, I’ll teach you how to pour a beer, and then you can go backwards and forwards taking beers to the men.” So he had a great time, and when he was between pouring beers for the blokes, he said, “Can I have a beer, mum?” Anyway, so I said, “Righto, you pour a beer, not a big one.” Anyway, he poured himself – it was a bit bigger than I had anticipated for him because it was a cup about this size – and I tipped about half out and gave it to him. At least he’s asking (Community worker).”

Why do parents give their children alcohol?

- Socialize their children
 - Provide a safe place to drink
 - Teach their children to drink safely and responsibly
-

Why do parents give their children alcohol?

- Socialize their children
- Provide a safe place to drink
- Teach their children to drink safely and responsibly

Harm minimization

Parental supply of alcohol

A system review of current evidence on parental supply suggests that parental supply increases adolescent alcohol use, heavy episodic drinking and alcohol-related problems. (Kaynak et al, 2013)

All these studies examine the direct effect of parental supply – Does giving alcohol to your children directly increase the risk of future alcohol misuse?

No study has examined the contextual effect of parental supply.

Contextual effect of parental supply in Australia

- Examine association between prevalence of parental supply in different regions of Australia and adolescent alcohol use
 - Does the prevalence of parental supply (contextual effect) in an area increase the risk of alcohol misuse in adolescent living in that area?
 - Examine the trends in prevalence of parental supply and adolescent alcohol use
-

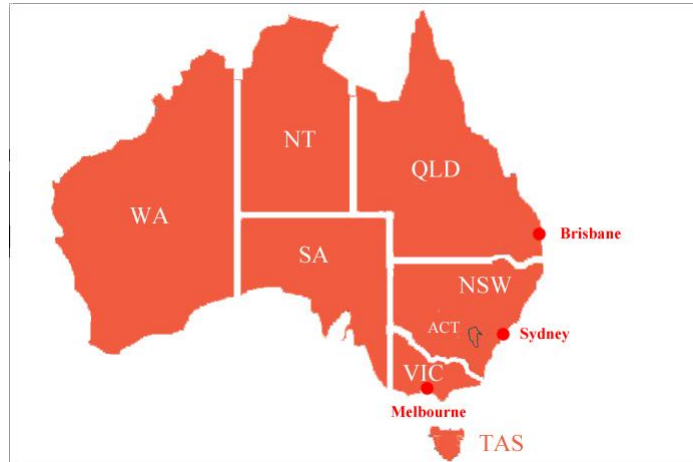
Contextual effect of parental supply in Australia

- National Drug Strategy Household Survey (NDSHS)
 - Data collected in 1998, 2001, 2004, 2007, 2010 and 2013.
 - Largest nationally representative survey on drug use in Australia
 - Overall sample size at each survey was over 20000. Data from 14- to 17-year-olds was extracted (N = 800 – 2000) for this study.
-

Contextual effect of parental supply in Australia

- Multilevel logistic regression analyses
 - 3 DVs:
 - Lifetime alcohol use
 - Heavy episodic drinking (4+ drinks in a day)
 - Frequent drinking (drinking at least weekly)
 - Key IV: Prevalence of parental supply of alcohol in each states and capital cities (point estimates of prevalence of 6 states, 2 territories and 3 state capital cities in 2004, 2007, 2010 and 2013)
-

Contextual effect of parental supply in Australia



Results

	Having 4+ drinks on a day		Drink at least weekly		Having a full serve	
	OR	95% CI	OR	95% CI	OR	95% CI
Gender (Ref: Male)						
Female	0.83**	(0.73, 0.95)	0.94	(0.72, 1.22)	1.09	(0.94, 1.27)
Age	2.12***	(1.91, 2.35)	2.17***	(1.95, 2.43)	2.03***	(1.88, 2.19)
Socio-economic index (Ref: Lowest quintile)						
Second quintile	1.43*	(1.01, 2.02)	1.81**	(1.17, 2.8)	1.37**	(1.1, 1.69)
Third quintile	1.64**	(1.18, 2.28)	1.58**	(1.14, 2.19)	1.45**	(1.1, 1.92)
Fourth quintile	1.41*	(1.03, 1.93)	1.36	(0.95, 1.94)	1.41**	(1.11, 1.78)
High quintile	1.39*	(1, 1.94)	1.62*	(1.12, 2.34)	1.49**	(1.16, 1.91)
Australian born	2.11***	(1.4, 3.19)	1.50	(0.93, 2.43)	1.98***	(1.64, 2.4)
Prevalence of parental supply	1.03***	(1.02, 1.05)	1.02	(1, 1.04)	1.05***	(1.04, 1.06)
Prevalence of peer supply	1.02**	(1.01, 1.04)	1.02	(1, 1.04)	1.04***	(1.03, 1.05)
Survey Year (Ref: 2004)						
2007	0.92	(0.75, 1.14)	0.75	(0.55, 1.02)	0.93	(0.81, 1.06)
2010	1.15	(0.92, 1.44)	0.53*	(0.35, 0.79)	0.80*	(0.66, 0.96)
2013	0.82	(0.64, 1.04)	0.40***	(0.25, 0.65)	0.69**	(0.55, 0.85)

Discussion

A high prevalence of parental supply in a region was associated with heavier adolescent drinking, regardless of whether adolescents obtained their alcohol from their own parents.

Parental supply in low and middle income countries

Most research on adolescent alcohol use and parental supply were done in Western countries.

What about low and middle income countries?

Many low and middle income countries have very different drinking norms

What are the contextual effect of parental supply on in low and middle income countries?

Parental supply in low and middle income countries

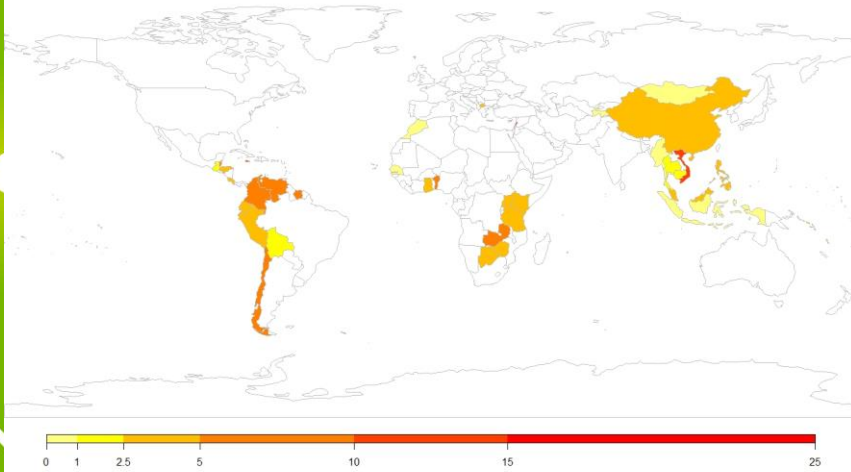
- **Global School-based Student Health Survey**
 - Designed to assess health behaviours of adolescents through cross-sectional school-based surveys
 - Data collected from 45 low and middle income countries between 2002 and 2013
-

Measures

- During the past 30 days, how did you usually get the alcohol you drank?
 - “I got it from my family” (proxy for parental supply).
 - “I got it from friends”.
 - Alcohol use
 - Lifetime drunkenness
 - Lifetime social problem – got into trouble with family or friends, missed school or got into fights as a result of drinking alcohol
 - Early alcohol use (first alcohol before 12)
 - Frequent drinking (10 or more days in a month)
-

Parental supply in low and middle income countries

Prevalence of familial supply of alcohol



Parental supply in low and middle income countries

	Lifetime drunkenness		Early alcohol onset (use alcohol before 12)		Lifetime Social problems		Frequent drinking (past month)	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Within-country (individual level) variables								
Age	1.42***	(1.29, 1.57)	1.00	(0.92, 1.08)	1.23***	(1.11, 1.38)	1.19***	(1.09, 1.30)
Female	0.61***	(0.54, 0.7)	0.49***	(0.43, 0.56)	0.75***	(0.67, 0.85)	0.66***	(0.55, 0.80)
Familial alcohol supply							3.73***	(2.66, 5.24)
Peer alcohol supply							3.74***	(2.87, 4.87)
Between-country variables								
Prevalence of familial alcohol supply	1.07***	(1.03, 1.11)	1.17***	(1.14, 1.21)	1.02	(0.98, 1.06)	1.06*	(1.00, 1.11)
Prevalence of peer alcohol supply	1.12***	(1.08, 1.15)	1.14***	(1.10, 1.18)	1.11***	(1.08, 1.15)	1.11***	(1.05, 1.17)
GNI per capita	0.99	(0.92, 1.07)	0.97	(0.92, 1.02)	0.90*	(0.82, 0.99)	1.01	(0.91, 1.12)
Percentage of urban population	1.00	(0.99, 1.01)	1.00	(0.99, 1.02)	1.00	(0.99, 1.01)	1.00	(0.99, 1.01)

Discussion

- Familial supply of alcohol is a universal risk factor of adolescent alcohol use.
 - High level of familial supply may create a social context that is favorable for adolescent alcohol use.
 - A high prevalence of familial supply in a region was associated with frequent alcohol use, regardless of whether adolescents obtained their alcohol from their own family.
-