NDARC

National Drug & Alcohol Research Centre

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Parental supply of alcohol and adolescent drinking, harms, and alcohol use disorder symptoms: Six years later

Richard P Mattick et al.

Australian Parental Supply of Alcohol Longitudinal Study (APSALS)

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APSALS

- Part 1: Introduction to APSALS cohort
- Part 2: 4-year parental supply study
- Part 3: 6-year harms study
- Part 4: 6-year sips/whole drinks study

Why is parental supply important?

Parents are the major supplier of alcohol to their early teen children

- Introduce alcohol in a “safe” environment
- Promote moderate drinking behaviours
- Sometimes reference is made to European/Mediterranean countries introduction of alcohol
- Permissive attitude?

Underage alcohol use is associated with acute and longer-term risks

- Injury/trauma, intoxication/alcohol poisoning, high-risk/unwanted sexual activity, brain function
- Alcohol use is the single leading risk factor for disability adjusted life years in 10-24 year-olds
- Risk of alcohol use disorder/non-communicable disease

Ministerial Council on Drug Strategy interest in secondary supply

- –> NDARC review
- –> that review concluded there was no evidence of better drinking outcomes from parental supply
- but, the research literature was limited in scope and quality …….. –>

Grant funded in 2010 until 2014, with subsequent funding through to 2017

Parental supply has been poorly researched

Reviews indicate an ongoing lack of clear evidence (Kaynak et al., 2014) (Sharmin et al., 2017)

- 20+ studies
- Majority are cross-sectional
- 7 studies were longitudinal – but of brief duration 1-2-3 years of observation
- Concluded that parental supply seemed to predict heavier drinking, however:
    - poor control for the major likely confounders/covariates,
    - specifically, lack of control for: cultural background; parental demographics; child psychosocial risk factors; parental heavy drinking; parental rules and monitoring of child activities

So ……. Does parental supply lead to more moderated drinking, or to greater alcohol consumption?

Predictors of early drinking, beyond parental supply

- Child **age**, **sex**
- Child **anxiety**, **depression**, **social problems**, **rule-breaking/aggression**
- Child **money to buy alcohol**, child **tobacco smoking**
- **Peer alcohol/tobacco use** and **attitudes to use**
- Parental **strictness/demandingness**/**responsiveness**/**relationship quality**
- Parental **parental rules about alcohol use**
- Household **availability of alcohol**
- Family **history of heavy drinking**, and **parental alcohol use**
- Familial **conflict/positive relations**
- Parental **monitoring** of child activity, parental **consistency of rule enforcement**
- Demographics (parental **country of origin**; **parental education**; family **religiosity**; family **income**; family **SES**; **single parent household**; presence of **older siblings**)
- **Other sources of supply** and **passage of time**

The APSALS cohort

- Six-year longitudinal project, assessing parental and other sources of supply
- Controlling for the known predictors of teenage drinking
- 1927 adolescent/parent dyads recruited in NSW, TAS, WA
- From 49 schools (government - 39%, independent - 49%, catholic - 12%)
- Adolescent sex - 45% female
- Measured in grades 7 to 12 of high school
- Adolescents aged 13 to 18 years of age
- Assessed annually on-line or paper
- Retention: 85% at Wave 6

Adolescent / household compared to Australian population

Baseline sample matched the Australian population in important ways:

Adolescent sample was 55.3% male

- versus 51.2% of the population (ABS, 2012)

80.4% of adolescents living in a two-parent household

- versus 80% of adolescents in general population (ABS, 2011)

Socioeconomic status (SES) index of the current sample is 1023.6 (SD=79.9)

- close to the Australian standardised mean SES index of 1000

Limitations

- Self-selected sample, but similar to population
- Not generalizable beyond the Australian context
- No diagnosis of AUD, based on self-report
- No control for some predictors (e.g., density of liquor outlets; alcohol advertising)
- Possible self-report bias

Retention over 6 years

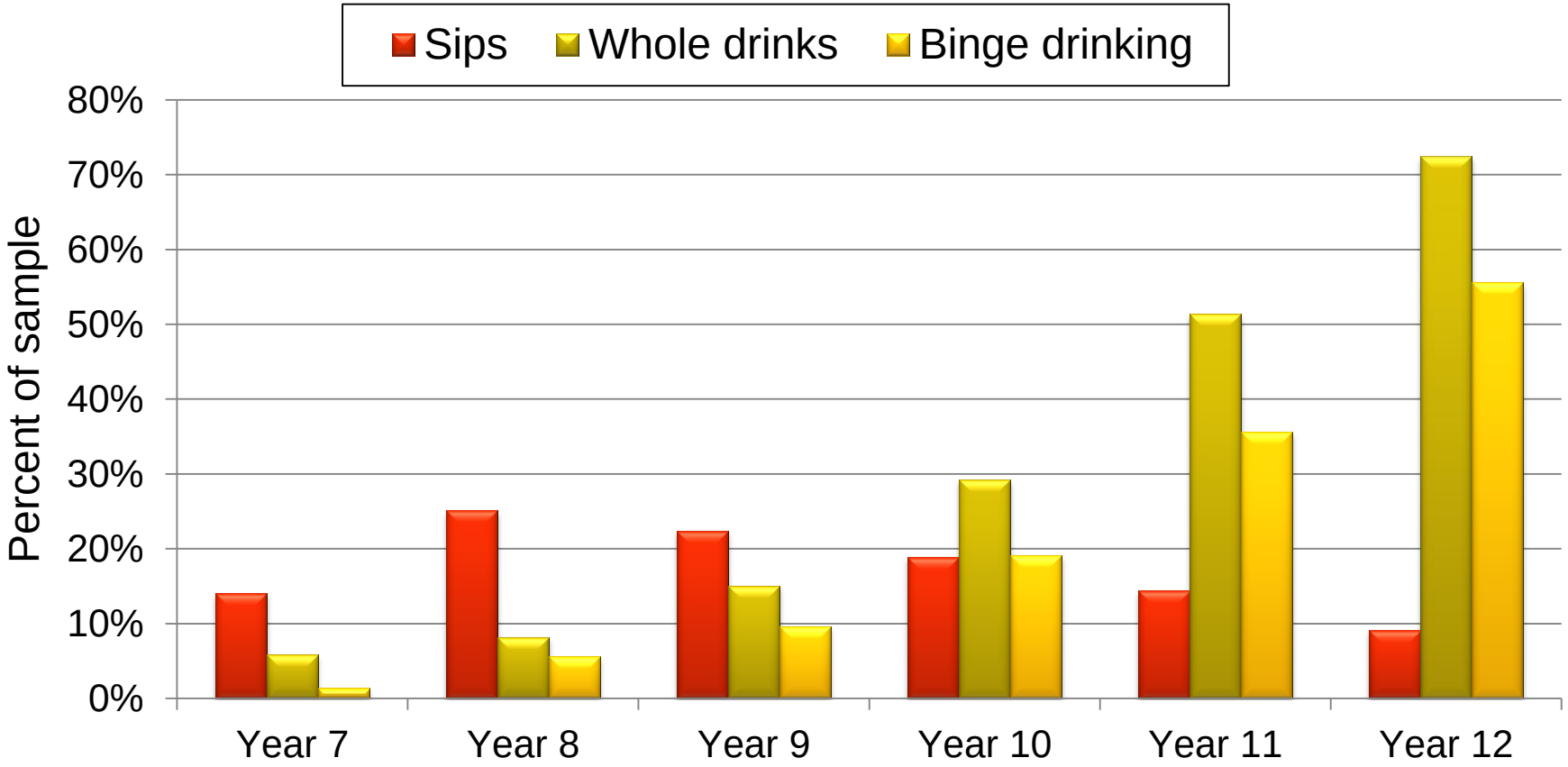
Surveys completed by:

- Wave 1: 99.1% adolescents & 99.3% parents
- Wave 2: 95.3% adolescents & 94.8% parents
- Wave 3: 92.2% adolescents & 92.2% parents
- Wave 4: 88.5% adolescents & 89.8% parents
- Wave 5: 86.8% adolescents & 87.3% parents
- Wave 6: 84.5% adolescents. Parents not assessed

Percent of adolescents supplied alcohol from parents

School Grade	Sips only	Full serves	Total
Grade 7	14.8%	1.5%	16.3%
Grade 8	22.9%	4.0%	26.9%
Grade 9	21.7%	7.3%	29.0%
Grade 10	20.7%	15.1%	35.8%
Grade 11	14.8%	31.5%	46.3%
Grade 12	11.1%	49.6%	60.7%

Percent of adolescents consuming alcohol



4-year study: Parental supply of alcohol and adolescent alcohol consumption

4-year study: Sample

- 4 year of data
- 1706 adolescent surveys
- School grades 7-10

At Grade 10:

- Mean age 15.8 years
- 54% male
- 29% of adolescents reported drinking whole drinks
- 19% reported binge drinking

4-year study: Aims

- Investigated associations between parental supply and other supply of alcohol (sips or whole drinks), and adolescent drinking and binge drinking.

- Adjusted for known adolescent, peer, parent and family covariates.

4-year study: Results

	Odds of DRINKING WHOLE DRINKS		Odds of BINGE DRINKING	
Variables	Unadjusted odds ratios	Adjusted odds ratios	Unadjusted odds ratios	Adjusted odds ratios
Current wave PARENTAL supply	OR: 5.71* 95% CI: 4.41-7.39	OR: 1.80* 95% CI: 1.33-2.45	OR: 4.66* 95% CI: 3.48-6.24	OR: 1.12 NS 95% CI: 0.80-1.55
Current wave OTHER supply	OR: 12.73* 95% CI: 10.01-16.19	OR: 2.53* 95% CI: 1.86-3.45	OR: 15.39* 95% CI: 11.66-20.32	OR: 3.51* 95% CI: 2.53-4.87

4-year study: Results

- Parental supply of alcohol was associated with increased odds of drinking whole drinks (1.8x), but not with binge drinking
- Other supply of alcohol was associated with increased odds of both drinking (2.5x) and binge drinking (3.5x)
- Adolescents supplied alcohol by parents drank less on a typical drinking occasion than adolescents supplied alcohol from non-parental sources
- Our results showed a dose-response relationship: adolescents supplied alcohol by parents in one, two, or in all three initial years, were increasingly more likely to drink whole beverages in grade 10.

4-year study: Conclusions

- The findings do strongly suggest the potential for parental supply to accelerate adolescent alcohol consumption, compared to no supply
- However, while adolescents supplied alcohol by parents were more likely to drink than those not supplied, *parental supply* was not associated with increased bingeing
- Parentally supplied adolescents drank less per typical drinking occasion than those sourcing their alcohol from other suppliers
- *Does parental supply set-up patterns of moderate (non-binge) drinking into adulthood, or lead to heavier drinking as adolescents approach the legal age to purchase alcohol?*

6-year study: Parental supply of alcohol and adolescent drinking, harms, and alcohol use disorder symptoms

6-year study: Sample

- 6 years of data
- 1,629 adolescent surveys
- School grades 7-12

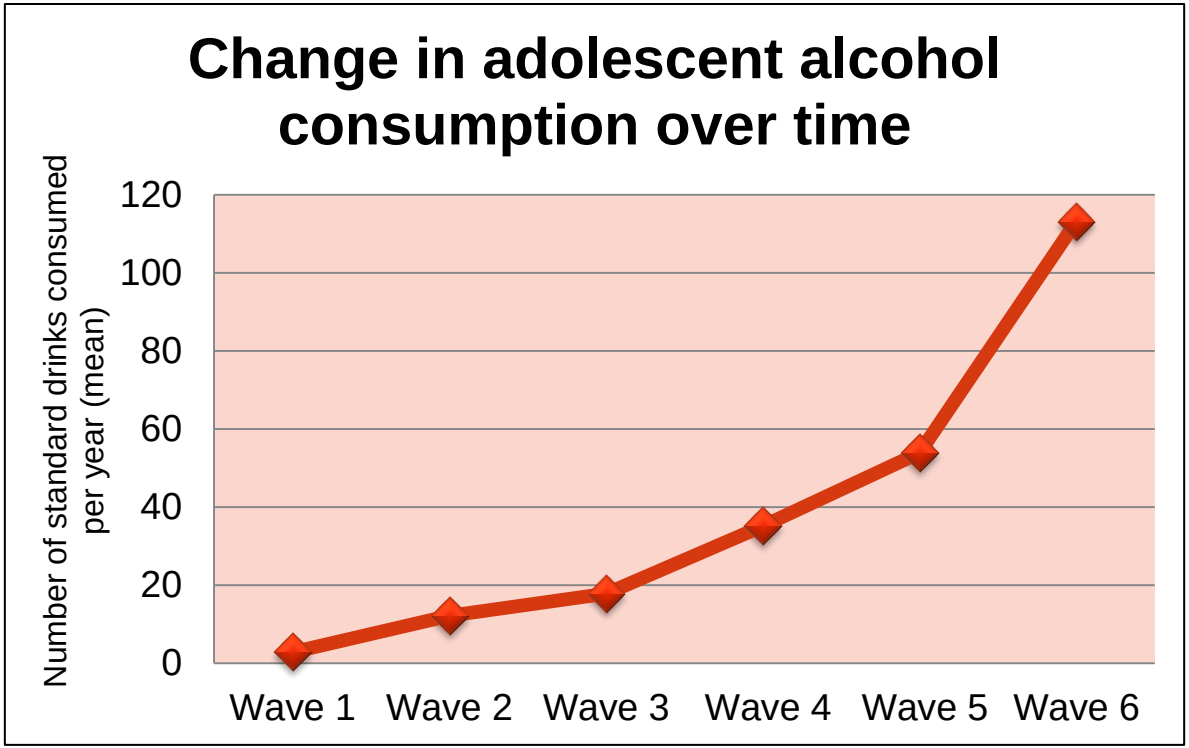
At grade 12:

- Mean age of 17.8 years
- 53% male
- 70% of adolescents reported drinking whole drinks
- 56% reported binge drinking

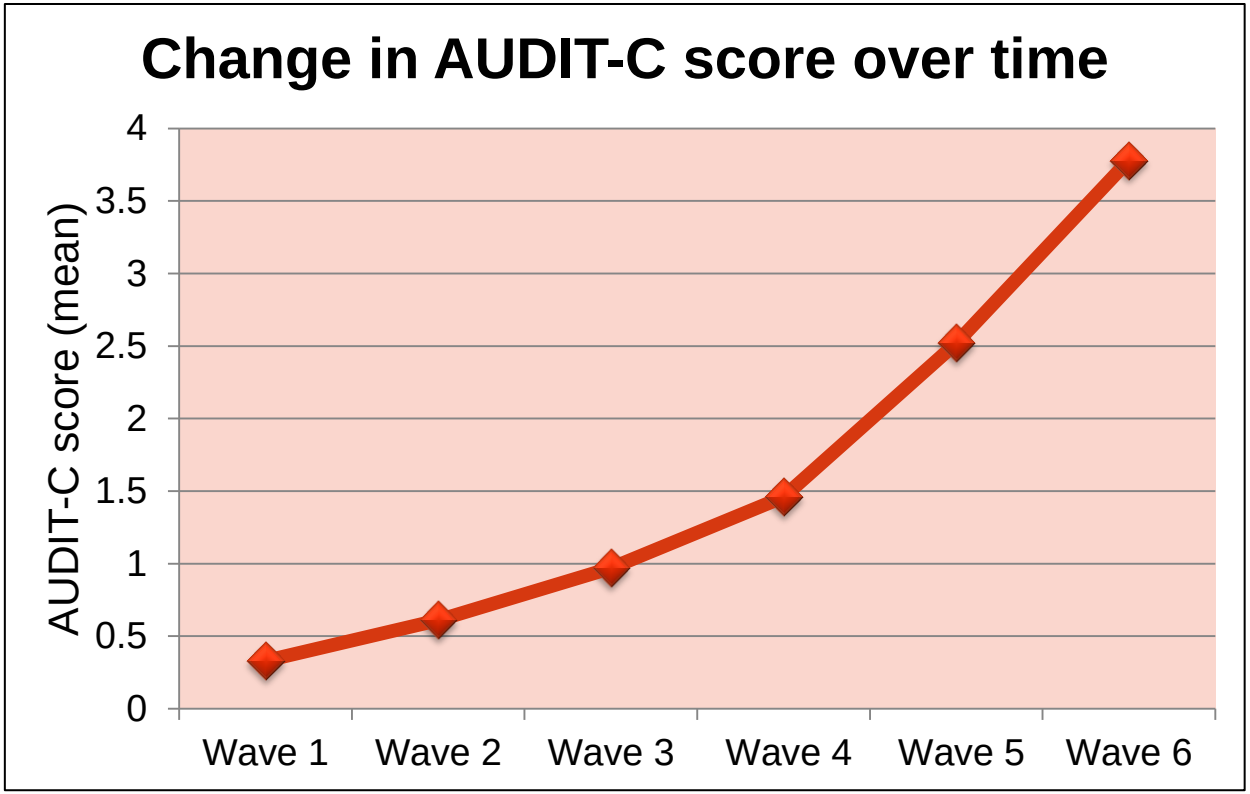
6-year study: Aims

- Prospectively investigate longer-term associations between parental/other supply of alcohol and
  - adolescent binge consumption
  - alcohol-related harms
  - DSM-IV symptoms of
    - alcohol abuse
    - dependence
  - DSM-5 alcohol use disorder

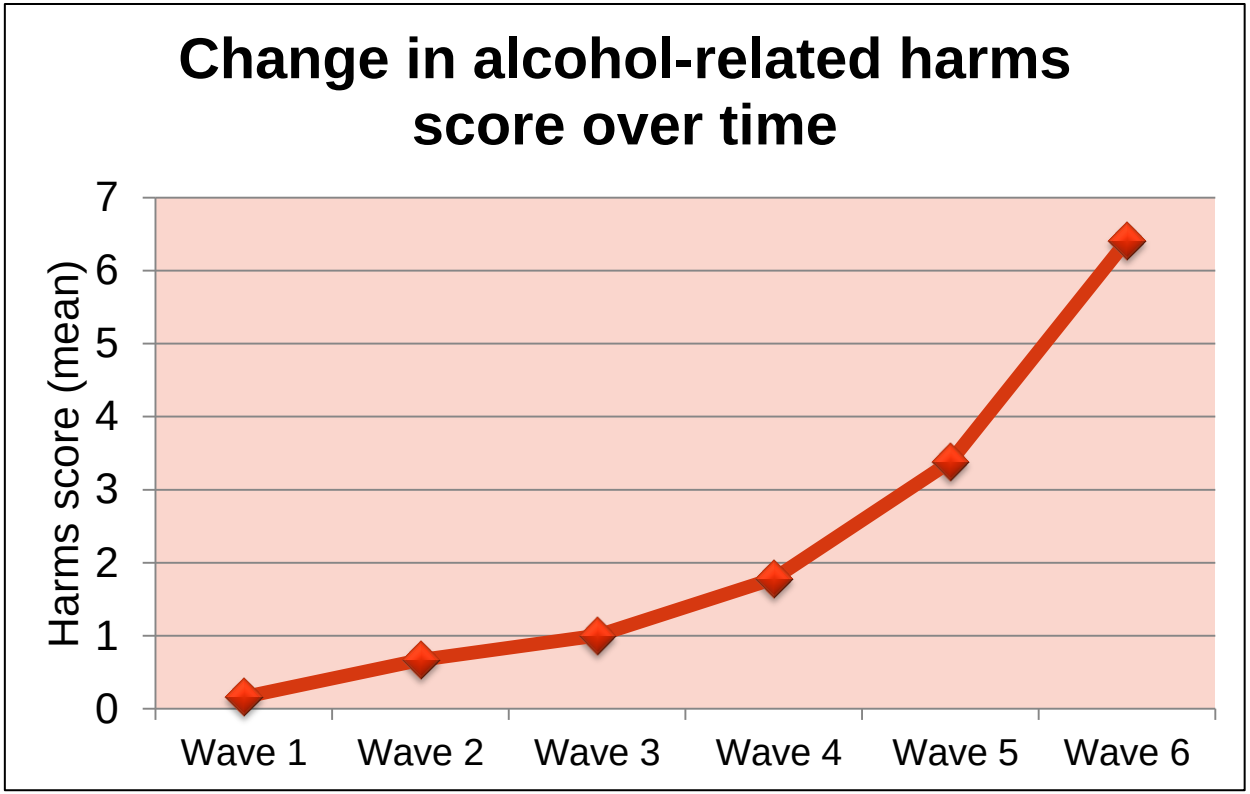
Quantity/frequency of standard drinks



AUDIT-C Score (range = 0–12)



Change in alcohol-harms (range = 0–85)



6-year study: Results

Adjusted Odds of:	BINGE DRINKING	ALCOHOL HARMS	≥ 1 ABUSE SYMPTOM	≥ 3 DEPENDENCE SYMPTOMS	≥ 2 ALCOHOL USE DISORDER SYMPTOMS
Current wave PARENTAL supply	OR: 1.53* 95% CI: 1.23-1.89	OR: 1.88* 95% CI: 1.55-2.29	OR: 0.90 NS 95% CI: 0.64-1.28	OR: 1.67* 95% CI: 1.08-2.59	OR: 1.76* 95% CI: 1.29-2.39
Current wave OTHER supply	OR: 3.43* 95% CI: 2.79-4.22	OR: 2.47* 95% CI: 2.04-3.00	OR: 6.18* 95% CI: 3.87-9.86	OR: 3.01* 95% CI: 1.80-5.03	OR: 3.07* 95% CI: 2.18-4.32

6-year study: Results

- Adolescents supplied alcohol by parents had higher odds of binge consumption, alcohol-related harm, and DSM symptoms of alcohol dependence and of DSM alcohol use disorder, but parental supply was not associated with symptoms of DSM alcohol abuse, after control for covariates.
- Supply from non-parental sources was associated with significant risks of all these outcomes.

6-year study: Conclusions

- Parental provision of alcohol to children is associated with subsequent binge drinking, alcohol-related harm(s), and symptoms of alcohol use disorder
- There is **no evidence** of any benefit or **protective effect**; i.e., parents do not reduce risk of adverse drinking by providing alcohol to their child prior to the legal age of purchase
- Parents should be advised that this practice is not associated with any benefit to the child's health, and that accessing alcohol from non-parental sources also increases risk of harms

6-year follow-up study: Does the quantity of alcohol supplied by parents influence adolescent outcomes: Sips versus whole drinks?

6-year follow-up study: Aims

- The previous study did not look at the quantity of alcohol parents were supplying to their children
- This follow-up study investigated if supply of
  - sips versus
  - whole drinks

  is differentially associated with adolescent drinking, harms, abuse and dependence, and alcohol use disorder symptoms.

6-year follow-up study: Results

Parental Supply	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
None	1,601 83.8%	1,347 73.4%	1,262 71.1%	1,095 64.3%	897 53.8%	669 41.3%
Sips	281 14.7%	417 22.7%	385 21.7%	352 20.7%	245 14.7%	174 10.7%
Whole Drinks	28 1.5%	72 3.9%	129 7.3%	257 15.1%	526 31.5%	777 48.0%
Total N	1,910	1,836	1,776	1,704	1,668	1,620

6-year follow-up study: Results

Adjusted Odds of:		BINGE DRINKING	ALCOHOL HARMS	≥ 1 ABUSE SYMPTOM	≥ 3 DEPENDENCE SYMPTOMS	≥ 2 ALCOHOL USE DISORDER SYMPTOMS
Current wave PARENTAL supply	Sips	**OR: 1.35***	**OR: 1.80***	OR: 0.82 ***NS***	OR: 0.87 ***NS***	OR: 1.42 ***NS***
	Full	**OR: 2.72***	**OR: 2.74***	OR: 1.26 ***NS***	**OR: 2.01***	**OR: 2.28***
Current wave OTHER supply	Sips	**OR: 1.84***	**OR: 1.47***	**OR: 3.13***	OR: 1.75 ***NS***	OR: 1.44 ***NS***
	Full	**OR: 5.83***	**OR: 4.22***	**OR: 9.80***	**OR: 4.21***	**OR: 4.77***

6-year follow-up study: Results

Adjusted Odds of:		BINGE DRINKING	ALCOHOL HARMS	≥ 1 ABUSE SYMPTOM	≥ 3 DEPENDENCE SYMPTOMS	≥ 2 ALCOHOL USE DISORDER SYMPTOMS
Current wave PARENTAL supply	Sips	**OR: 1.35*** 95% CI: 1.07-1.69	**OR: 1.80*** 95% CI: 1.47-2.21	OR: 0.82 ***NS*** 95% CI: 0.52-1.28	OR: 0.87 ***NS*** 95% CI: 0.48-1.56	OR: 1.42 ***NS*** 95% CI: 0.96-2.10
	Full	**OR: 2.72*** 95% CI: 2.02-3.67	**OR: 2.74*** 95% CI: 2.02-3.71	OR: 1.26 ***NS*** 95% CI: 0.83-1.91	**OR: 2.01*** 95% CI: 1.21-3.32	**OR: 2.28*** 95% CI: 1.58-3.29
Current wave OTHER supply	Sips	**OR: 1.84*** 95% CI: 1.41-2.40	**OR: 1.47*** 95% CI: 1.16-1.87	**OR: 3.18*** 95% CI: 1.62-6.23	OR: 1.75 ***NS*** 95% CI: 0.76-4.02	OR: 1.44 ***NS*** 95% CI: 0.82-2.54
	Full	**OR: 5.83*** 95% CI: 4.61-7.36	**OR: 4.22*** 95% CI: 3.33-5.34	**OR: 9.80*** 95% CI: 5.79-16.59	**OR: 4.21*** 95% CI: 2.42-7.33	**OR: 4.77*** 95% CI: 3.27-6.96

6-year follow-up study: Results

- Adolescents supplied sips of alcohol only by parents had higher odds of binge consumption and alcohol-related harm, but parental supply of sips was not associated with DSM symptoms of alcohol dependence, abuse or alcohol use disorder
- Supply of full serves of alcohol by parents increased risk of all of adverse outcomes, with the exception of symptoms of abuse.
- The patterns were similar for non-parental supply; with sips associated with binge consumption, alcohol-related harms and DSM abuse symptoms, but not DSM dependence or alcohol use disorder symptoms.
- Non-parental supply of full serves of alcohol was associated with significant risks of all these adverse outcomes.
- There is no protective effect from parents supplying sips

6-year follow-up study: Conclusions

- While parental supply of sips was not associated with all of the adverse outcomes, there was increased risk of bingeing and of experiencing alcohol-related harms
- Providing sips did not provide any benefit or protective effect compared with supplying full serves of alcohol
- There is no evidence that parents reduce risk of adverse drinking outcomes by providing alcohol to their child in the years prior to the legal age of purchase.

Implications

- Providing alcohol to children increases risk of a range of harms
- Parents are important to prevention – over 60% of adolescents in this study reported receiving some alcohol from their parents
- The results are consistent over time
- Governments are in a position to bring this to parental attention

Questions?