Transitions Across Physiological and Psychosocial Alcohol-related Harms in Adolescence

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Introduction

Alcohol-related harms can be classified into different dimensions[1,2]:

- **Physiological**, such as having a hangover or vomiting; or
- **Psychosocial**, such as having your relationships impacted by drinking or having a physical fight while drunk.

It is unclear whether the experience of these different harms dimensions throughout adolescence differs amongst individuals. Examination of these developmental patterns of harm, in addition to predictors of escalating harm, may assist in the identification of high-risk individuals for early intervention.

Aims

i. Identify patterns of transition in alcohol-related harms across adolescence.
ii. Examine whether factors in early adolescence predict adolescent harms transition patterns.
iii. Examine whether transition patterns predict alcohol use disorder (AUD) symptoms in early adulthood.

Method

Data from the **Australian Parental Supply of Alcohol Longitudinal Study**[3] (n = 1828) were used to model patterns of transitioning across different forms of alcohol-related harm over three biennial years of follow-up (mean age = 14.8, 16.9, and 18.8 years, respectively). Regression models ($p < 0.005$) were used to determine:

i. Whether early adolescent (mean age = 12.9 years) sociodemographic data predicted harms transition patterns.
ii. Whether harms transition patterns predicted self-reported AUD symptoms in early adulthood (mean age = 19.8 years).

Results – Latent Classes

Latent class analysis showed three consistent class profiles across the three timepoints (Figure 1):

- No harms
- Predominantly physiological harms
- Physiological and psychosocial harms (i.e. all harms)

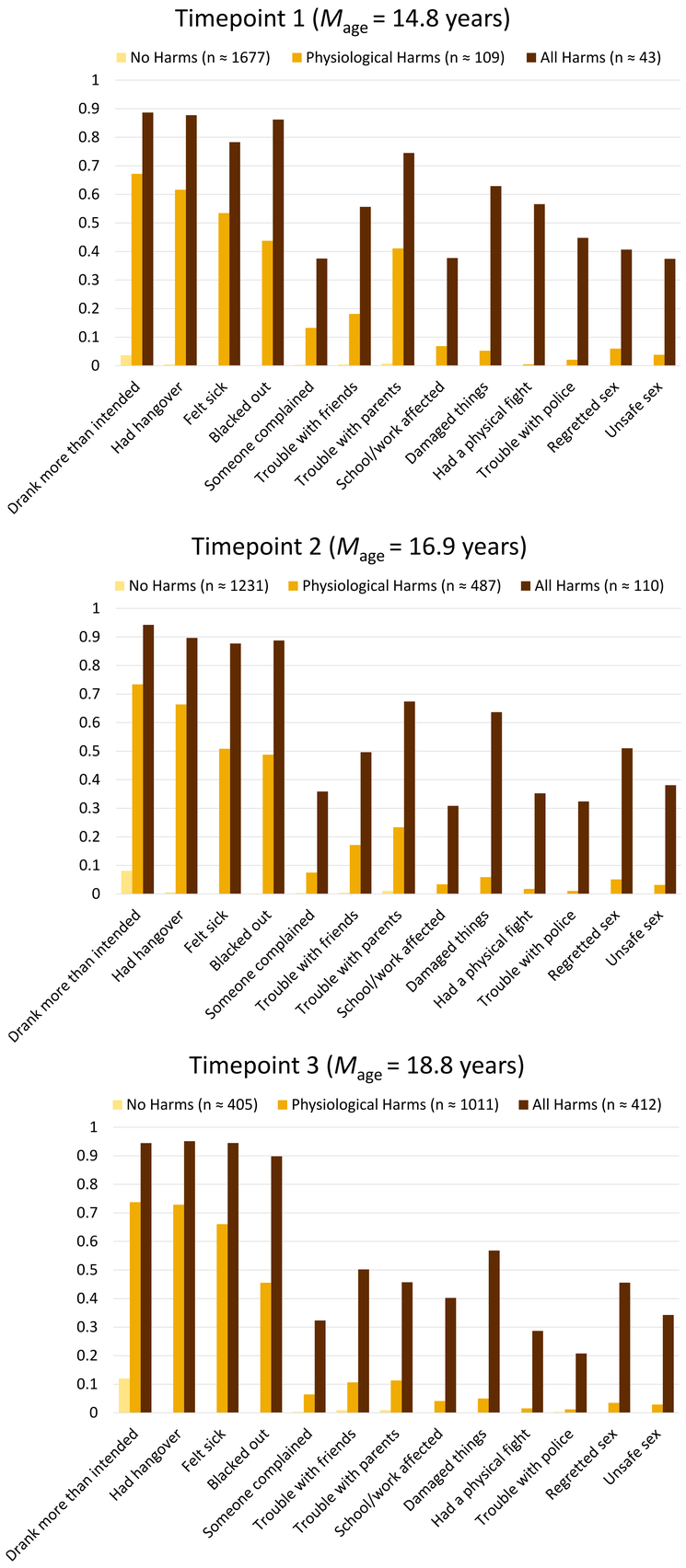
Of the 27 possible transition patterns across the profiles listed above, the majority of the cohort (n ≈ 1609, 88.0%) were represented across five patterns.

Table 1. Five main transition patterns.

Pattern Label	Timepoint 1	Timepoint 2	Timepoint 3	n (%)
No harms	No harms	No harms	No harms	381 (23.7)
Late escalation to physiological harms	No harms	No harms	Physiological harms	702 (43.6)
Early escalation to physiological harms	No harms	Physiological harms	Physiological harms	226 (14.0)
Late escalation to all harms	No harms	No harms	All harms	131 (8.1)
Gradual escalation to all harms	No harms	Physiological harms	All harms	169 (10.5)

Latent Classes of Alcohol-related Harms

Figure 1. Proportion of participants in each latent class who experienced alcohol-related harms at least once in the past 12 months at each timepoint.



Results – Predictors and Outcomes

Early-adolescent predictors of transition patterns

- Those who were **female** had over two times the risk of experiencing *early escalation to physiological harms* compared to *late escalation to physiological harms*.
- Those who had **more substance using peers** had around 1.2 times the risk of *early escalation to physiological harms* and of *gradual escalation to all harms* compared to *late escalation to physiological harms*.

Transition patterns as a predictor of AUD outcomes in adulthood

Table 2. Logistic regression predicting AUD outcomes by transition pattern, adjusted for all Wave 1 predictor variables.

Transition Pattern	DSM-IV Alcohol Dependence		DSM-IV Alcohol Abuse		DSM-5 AUD	
	OR	99.5% CI	OR	99.5% CI	OR	99.5% CI
No harms	0.48	(0.14, 1.61)	0.21*	(0.07, 0.61)	0.19*	(0.07, 0.56)
Late escalation to physiological harms	(Reference)		(Reference)		(Reference)	
Early escalation to physiological harms	1.34	(0.45, 3.94)	1.77	(0.95, 3.29)	1.78	(0.98, 3.23)
Late escalation to all harms	1.28	(0.33, 4.93)	3.52*	(1.31, 9.46)	3.68*	(1.16, 11.65)
Gradual escalation to all harms	1.37	(0.44, 4.28)	3.98*	(1.64, 9.65)	4.52*	(1.56, 13.06)

Conclusions & Discussion

- Adolescents display heterogenous transition patterns across **physiological** and **psychosocial** alcohol-related harms.
- Experience of **physiological** harms is common amongst older adolescents, with the majority of our cohort experiencing their first alcohol-related harm after age 17 years.
- Adolescents who are **female** and adolescents with **more substance using peers** are particularly at risk of experiencing early physiological harms.
- Combined experience of **physiological** and **psychosocial** harms is an important indicator of clinically-relevant alcohol problems in adulthood.

References

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Acknowledgements

National Health and Medical Research Council; Australian Research Council; Australian Rotary Health; Foundation for Alcohol Research and Education; Australian Government Department of Health

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