

Alcohol-related emergency department presentations and persons proceeded against for assault



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Introduction

- As prevalence of risky alcohol use increases so does the amount of assault
- However the impact of risky alcohol use on the criminal justice system has received far less attention
- Recent decline in risky alcohol use among adolescents and young adults in Australia (household & secondary school surveys)
- Current study examines the relationship between alcohol-related emergency department (ED) presentations & persons proceeded against by police for assault in New South Wales (NSW), Australia

Research Questions

- Is there a positive association between alcohol-related ED presentations and the number of persons proceeded against by police for assault?
- Does this relationship vary by age group and gender?

Method

- Monthly time series: January 2004 - December 2016
- Outcome: persons proceeded against by police for assault
- Study factor: alcohol-related ED presentations
 - * contemporaneous & lagged relationships
- Within age/gender groups (13-17; 18-24; 25-64 years)
- Time series analyses
 - * all series differenced; seasonal terms; autocorrelation
 - * persons proceeded against for 'use/possess amphetamines' as a covariate

Discussion

- There is a positive relationship between alcohol-related ED presentations and persons arrested for assault
 - * particularly strong for males
 - * different trend patterns for age/gender groups
- Some limitations:
 - * 75% of EDs in NSW was available in NSW Health data
 - * interview ED studies provide higher alcohol-related percentages
- Effect of risky alcohol use was found for assault offenders dealt with in the criminal justice system
- Alcohol-related ED presentations can provide a window into future demand for police, court & prison resources

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Results

Males 13-17 years

- Figure 1 shows that among males aged 13-17 years both alcohol-related ED presentations and those proceeded against for assault increased between 2004 and 2009 and then declined until 2016
- The time series model in Table 1 shows that when the no. of alcohol-related ED presentations increased by 10 the no. of persons proceeded against for assault :
 - * increased by 4.1 during same month
 - * increased by 4.5 two months later

Males 18-24 years

- The number of 18-24 year old males with alcohol-related ED presentations and proceeded against for assault increased between 2004 and 2009. There was a decline in both measures from 2010
- When alcohol-related ED presentations increased by 10, the no. of persons proceeded against for assault:
 - * increased by 5.9 during same month
 - * increased by 8.2 one month later

Males 25-64 years

- The number of 25-64 year old males with alcohol-related ED presentations and proceeded against for assault both increased between 2004 and 2009, fell slightly until 2012 and then increased until 2016
- When alcohol-related ED presentations increased by 10, the no. of persons proceeded against for assault:
 - * increased by 5.4 during same month
- When persons proceeded against for use/possess amphetamines increased by 10, the no. of persons proceeded against for assault:
 - * increased by 5.3 during the same month

Females

- No relationship found among 13-17 year old females
- Among 18-24 year old females 10 additional alcohol-related ED presentations was associated with 1.5 proceeded against for assault during the same month
- Among 25-64 year old females 10 additional alcohol-related ED presentations was associated with 2.4 proceeded against for assault during the same month and 1.8 more during the next month

Figure 1. Trends in persons proceeded against by NSW police for assault and alcohol-related ED presentations: Males 13-17 years

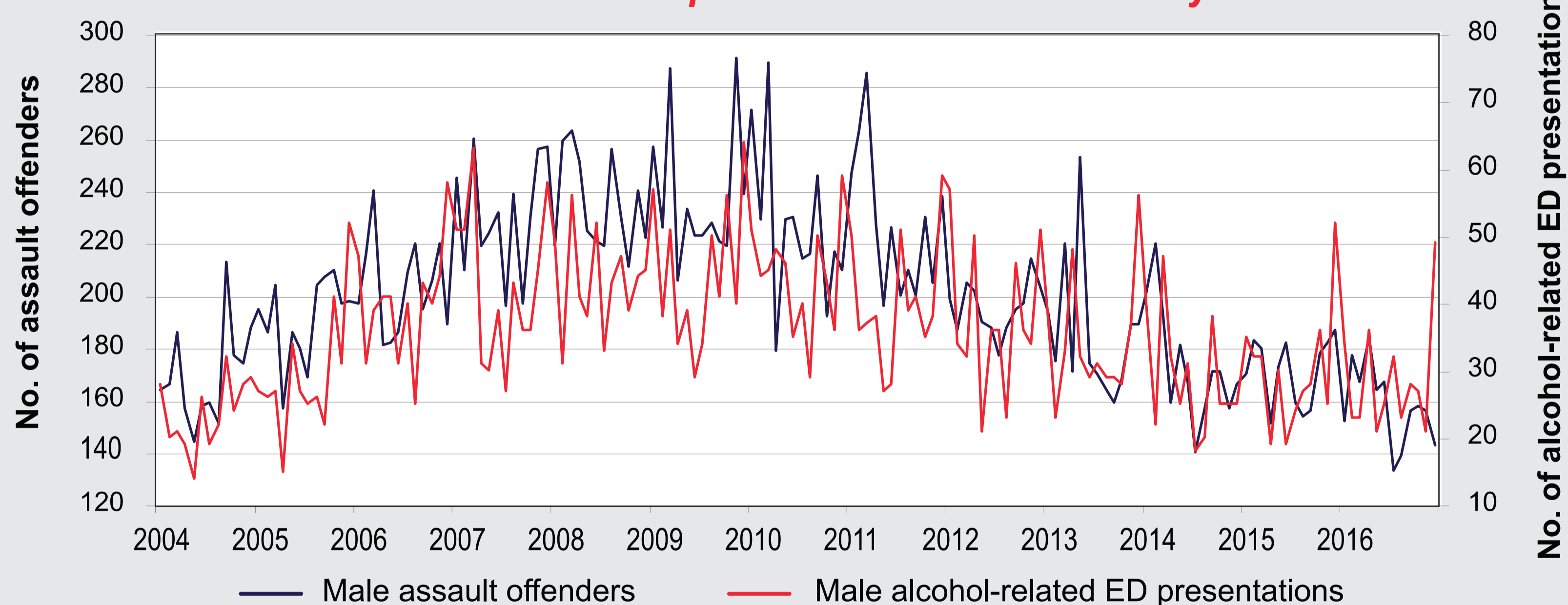


Table 1. Relationship between persons proceeded against for assault and alcohol-related ED presentations: Males 13-17 years[#]

Variable	Estimate	Standard Error	t value	p value
Constant	1.239	0.626	1.98	= .048 *
Alcohol ED presentations (lag 0)	0.410	0.169	2.43	= .015 *
Alcohol ED presentations (lag 2)	0.450	0.173	2.60	= .009 **
March	18.773	5.763	3.26	= .001 **
April	-35.019	6.333	-5.53	< .001 ***
Autoregressive (lag 1)	-0.915	0.046	-20.06	< .001 ***
Moving average (lag 2)	0.728	0.081	9.03	< .001 ***
Moving average (lag 19)	-0.202	0.061	-3.28	= .001 **

AIC = 1343.23; Ljung-Box test: $\chi^2_{21} = 14.89, p = .829$
[#] POIs assault and alcohol-related ED presentations series were differenced once
 * $p < .05$, ** $p < .01$, *** $p < .001$