

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

Increases in consumption and harms among young people in the context of alcohol policy liberalisation

A thesis presented in partial fulfilment of the requirements for the degree of Doctor of
Philosophy in Public Health at Massey University, Albany,
New Zealand.

Taisia Huckle

2011

Abstract

Objective: To assess drinking patterns and alcohol-related harms among young people in the context of substantial liberalising alcohol policy change in New Zealand. Five studies were developed to address this objective which assessed: (i) trends in drinking patterns, alcohol-related problems and harms during the time of the liberalising policy change and (ii) specific policy changes relevant to young people in New Zealand: the lowering of the minimum purchase age, the introduction of ready to drinks and alcohol outlet density (alcohol outlets had proliferated due to the relaxation of the liquor licensing system).

Methods: General population alcohol surveys and routinely collected harms datasets were utilised. Survey measures were: typical occasion quantity, drinking frequency, heavier drinking, self-reported drunkenness, alcohol-related problems and individual demographic measures. Harms measures included: prosecutions for disorder offending, prosecutions for driving with excess breath alcohol, alcohol-involved crashes (all and fatal) and individual demographic measures. Analysis techniques utilised in Studies One through Five were as follows: quantile regression, general linear models, broken stick Poisson regression, logistic regression (and analysis of variance) and multi-level modelling. When possible the wider New Zealand population was considered in relation to young people. Young people were defined as those up to 24 years of age (inclusive).

Results: In the context of alcohol policy liberalisation young people, and in particular teenagers, were observed to experience the greatest increases in typical occasion quantities, alcohol-related problems and harms relative to other groups in the New Zealand population. Specific liberalising policy contexts relevant to young people, including the lowering of the minimum purchase age, ready to drinks and alcohol outlet

density were also associated with increased quantities consumed or increased harms among teenagers.

Conclusion: The public health problem of increased alcohol consumption and related harms among young people in New Zealand can be reduced. It will, however, take effective restrictive alcohol policy controls to achieve this.

Forward

This thesis is based on five individual, but related, published research studies undertaken during my PhD candidature. Two manuscripts are published in *Addiction*, one is *in press* at *Journal of Studies on Alcohol and Drugs* and two are published in *Drug and Alcohol Review*. These manuscripts are drawn together to form a PhD thesis fulfilling Massey University requirements.

A sixth study was undertaken as part of this thesis however, in the end, it did not fit cohesively into the theme. This study is included in Appendix 1 (published in *Addiction*).

I gratefully acknowledge the above journals for allowing these publications to be included in this thesis.

I am first author on all studies and the work I present is my own. My primary supervisor helped me to structure my arguments and statisticians undertook the SAS analysis; therefore Professor Sally Casswell and various statisticians are co-authors on the manuscripts. In one study a Geographical Information Systems analyst was also included as a co-author. Statements of the candidate's contribution to each publication are in Appendix Five.

Results from these studies were presented at scientific conferences, including several Kettil Bruun Society meetings. A presentation was also given at the Alcohol Advisory Council (ALAC) Working Together conference.

Acknowledgements

I would like to acknowledge my supervisors Professor Sally Casswell and Dr Ross Flett. I would particularly like to acknowledge Professor Casswell for commenting on earlier drafts and for her valuable advice and guidance. Thank you to SHORE (Social and Health Outcomes Research and Evaluation) and Whariki Research Centre for providing me with the opportunity to undertake this research and a supportive and innovative research environment from which to work within. Thank you to all agencies that provided data, including New Zealand Transport Agency, formerly LTSA, (David Croft), Ministry of Justice, the New Zealand Police and the Liquor Licensing Authority (Bruce Holmes). Thank you to the statisticians who worked with me: Ryan You (Ru Quan), Dr John Huakau, Dr Megan Pledger, Paul Sweetsur and Simon Moyes. Thank you to SHORE support staff Lisa Morice and Jan Sheeran and to Dr Linda Hill for her advice. Thank you to all the people who took part in the surveys and to the anonymous reviewers who provided valuable comments on my manuscripts.

Table of Contents

Abstract	ii
Forward	iv
Acknowledgements	v
Table of Contents	vi
List of Tables	viii
List of Figures	viii
Introduction	9
The legislative framework for alcohol sales in New Zealand	11
What was known of the effects of policy change in New Zealand 1990-2004?	21
How alcohol policies affect young people (theoretical framing)	26
Focus of this research	28
Thesis structure	32
Link	34
Study One: Increases in typical quantities consumed and alcohol-related problems during a decade of liberalising alcohol policy	35
Introduction	37
Method	41
Measures	43
Analysis	44
Results	46
Discussion	50
Conclusion	53
Link	54
Study Two: Increases in quantities consumed in drinking occasions in New Zealand 1995–2004	55
Introduction	57
Methods	58
Analysis	61
Results	61
Discussion	65
Conclusion	67
Link	69
Study Three: Trends in alcohol-related harms and offences in a liberalized alcohol environment	70
Introduction	72

Methods	74
Analysis	77
Results	78
Discussion.....	84
Conclusion.....	87
Link.....	88
Study Four: Ready to drinks are associated with heavier drinking patterns among young females	89
Abstract.....	89
Introduction	91
Methods	93
Results	96
Discussion.....	100
Conclusion.....	102
Link.....	103
Study Five: Density of alcohol outlets and teenage drinking: living in an alcogenic environment is associated with higher consumption in a metropolitan setting..	104
Abstract.....	104
Introduction	106
Methodology	108
Measures	112
Results	114
Discussion.....	118
Conclusion.....	120
Conclusions and Recommendations	121
Conclusion.....	136
References.....	138
Appendix 1	154
Appendix 2	167
Appendix 3	170
Appendix 4	178
Appendix 5	179

List of Tables

Table 1.1: Model specifications.....	47
Table 2.1: Drinking measures by age and gender and significance testing over time	62
Table 3.1: National resident population estimates from Statistics New Zealand.....	76
Table 3.2: Model coefficients	79
Table 4.1: Estimates for model 1: consumer vs non-consumer of beverages	98
Table 4.2: Estimates for model 2: amount of beverage consumed	98
Table 5.1: Descriptive statistics for measures used in analysis	115
Table 5.2: Model estimates	117

List of Figures

Figure 1.1: Typical occasion quantity	48
Figure 1.2: Threshold problems.....	49
Figure 1.3: Non-threshold problems.....	50
Figure 3.1: Trends in rates of prosecutions for disorder offences.....	80
Figure 3.2: Trends in rates of prosecutions for excess breath alcohol.....	81
Figure 3.3: Trends in rates of all and fatal crashes	83
Figure 4.1: Percentage of drinkers consuming RTD's by age and gender.....	96
Figure 4.2: Volume of beverages consumed by RTD drinkers by age and gender	97