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Unintentional falls at home among young and middle-aged adults: the influence of alcohol

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A thesis submitted for the degree of Doctor of Philosophy,
The University of Auckland, 2009
Abstract

Aim
To investigate the epidemiology of unintentional fall-related injuries at home among young and middle-aged adults (25 to 59 years) and to investigate the contribution of alcohol to these injuries.

Methods
Routinely collected national fall injury data were analysed to describe the incidence and characteristics of falls at home resulting in death or hospital inpatient treatment among this age group in New Zealand.

A systematic review of the published literature evaluated the epidemiological evidence quantifying the risk of falls associated with acute and usual alcohol consumption in this age group.

A population-based case-control study was conducted in Auckland, New Zealand over a 12-month period. Cases were 335 people aged 25 to 59 years who were admitted to hospital or died as a result of unintentional non-occupational falls at home. Controls were 352 people randomly selected from the electoral roll from the same age group as the cases. The participants or next-of-kin completed a structured interview to ascertain data on personal and lifestyle factors including alcohol consumption.

Findings
The review of national injury data found that almost a third of unintentional falls resulting in an in-patient admission among working-age people were recorded as occurring at home. For every death there were about 150 in-patient hospital admissions.

The systematic review identified only a small number of studies but showed an increased risk of unintentional falls in this age group with increasing exposure to alcohol use. The magnitude of this risk varied considerably across studies with most estimates being relatively imprecise. There was modest evidence of a dose-response relationship with acute alcohol use. The association between usual alcohol use and fall risk was inconclusive.

The case-control study revealed that after controlling for confounding, the consumption of two or more standard alcoholic drinks in the preceding six hours relative to none is associated with a significantly increased risk of fall-related injury. Approximately 21% of unintentional non-occupational falls at home in this population was attributed to this risk.
No association between hazardous drinking as a usual pattern and falls was found when the analyses were adjusted for confounders.

**Conclusion**

A significant proportion of unintentional fall-related injuries among the working-aged New Zealanders occur at home. Consuming two or more drinks in the previous six hours was strongly associated with unintentional non-occupational falls at home that result in admission to hospital or death in this age group. This largely unrecognised problem should be addressed in further research and in falls prevention programmes.
Acknowledgements

Firstly I would like to thank my supervisors Associate Professor Shanthi Ameratunga, and Professor Rod Jackson. I am extremely grateful for their support, encouragement, mentoring and guidance throughout my PhD journey.

The research presented in this thesis was the main component of the Auckland Falls Study, funded by the Accident Compensation Corporation (ACC). Associate Professor Shanthi Ameratunga (Principal Investigator) and Elizabeth Robinson (co-investigator) from the Section of Epidemiology and Biostatistics gave critical input to the design and development of the Auckland Falls Study. I would like to acknowledge the contribution of the other co-investigators: Professor Rod Jackson, Mr Alex Ng, Mr John Cullen, Dr Wayne Hazell, and Dr Sue Crengle; and the Study Advisory Group: Paula Eden, Marilyn Jones, Catherine Gilhooly, Jane Sherard, Kerri Hiini, Malakai Ofanoa, Dr Michael Baker, Associate Professor Ngaire Kerse, Vili Nosa, and Graham Liggins. I am grateful to the study personnel who contributed to the implementation of the study: Cherie Lovell, Mildred Lee, and Katrina Lawson. I would like to thank the participants who agreed to take part in the Auckland Falls Study and who have contributed to the findings and recommendations. I greatly appreciate the assistance provided by the Trauma Services staff who assisted with the identification of cases at the three recruiting hospitals: Rangi Dansey (Auckland City Hospital), Rhondda Paice (Auckland City Hospital), Helen Naylor (Middlemore Hospital), and Jodie Orchard (North Shore Hospital).

I am most grateful for the financial support provided to me through my ACC Career Development Award.

Finally, I would like to thank my husband Tom and our four children Charlotte, George, Rosie, and Phoebe for helping to make this all possible through their unwavering support and belief in me.
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List of Abbreviations

ACC       Accident Compensation Corporation
ACCIS     Auckland Car Crash Injury Study
AUDIT     Alcohol Use Disorders Identification Test
BAC       Blood Alcohol Concentration
BMI       Body Mass Index
CI        Confidence Interval
DALY      Disability Adjusted Life Year
ED        Emergency Department
ICD       International Classification of Diseases
IPRU      Injury Prevention Research Unit
ISS       Injury Severity Score
MeSH      Medical Subject Headings
NICE      National Institute for Clinical Excellence
NIQS      National Injury Query System
NMDS      National Minimum Dataset
NZHIS     New Zealand Health Information Service
NZIPS     New Zealand Injury Prevention Strategy
OR        Odds Ratio
PAR       Population-Attributable Risk
ProFaNE   Prevention of Falls Network Europe
RR        Relative Risk
SD        Standard Deviation
TLA       Territorial Local Authority
UK        United Kingdom
US        United States
Vs.       Versus
WHO       World Health Organisation