



## Research paper

## Profile of fall injury in the New South Wales older adult population

Jenny Miu<sup>a</sup>, Kate Curtis<sup>b,c,\*</sup>, Zsolt J. Balogh<sup>d</sup><sup>a</sup> NSW Institute of Trauma and Injury Management, Agency for Clinical Innovation, Australia<sup>b</sup> Sydney Nursing School, University of Sydney, Australia<sup>c</sup> Trauma Service, St. George Hospital, University of NSW, Australia<sup>d</sup> Department of Traumatology, John Hunter Hospital and University of Newcastle, Newcastle, NSW, Australia

## ARTICLE INFO

## Article history:

Received 30 March 2016

Received in revised form 1 June 2016

Accepted 8 July 2016

## Keywords:

Epidemiology

Falls

Older adult

Trauma

## ABSTRACT

**Background:** A previous report from the New South Wales (NSW) Trauma Registry identified falls and increasing age of severely injured patients as highly prevalent, but detailed injury and demographic profiles, outcomes and their predictors are poorly reported. This study describes the fall-injury profile in the older adult major trauma patient in NSW.

**Methods:** A retrospective registry based study between 2010 and 2014 on patients aged 55 years and over who sustained a moderate to critical injury from a fall, examining mortality and length of stay using regression analyses.

**Results:** There were 4263 major trauma falls between 2010 and 2014, most occurring at home (55.4%), on the same level (46.7%) and resulting in head injury (63.2%). Significant predictors for mortality following a fall were increased age, male gender, falls in residential care institutions, isolated head injuries and injury classified as critical (ISS 41–75).

**Conclusions:** The outcomes of falls in the older adult are very poor and a focused prospective study is required to identify areas for intervention and prevention. The predictors of mortality following a fall identified in this study can be used with existing research to develop tools and design care pathways for implementation in the emergency context to improve patient care and outcomes.

Crown Copyright © 2016 Published by Elsevier Ltd on behalf of College of Emergency Nursing Australasia. All rights reserved.

## What is currently known?

Falls are an increasing burden on the healthcare system and cause of Emergency presentations. Mechanisms of injuries classified as minor in the general population can be severe in older adults. There is some evidence of successful falls prevention programs, but gaps in the evidence remain.

## What this study adds?

Increasing age and injury severity are predictors of poor outcomes following falls, with two distinct patterns of injury indicating a need for separate care pathways. Nurse-led interventions incorporating screening, patient education, falls assessments, mul-

tidisciplinary referral tools and revised trauma triage protocols that incorporate age-specific parameters would enhance planning and management of falls in the elderly.

## Introduction

Falls in older adults (i.e those aged 65 years and over) are increasing as a burden on health systems world-wide, including Australia [1]. In developed countries, falls have been identified as a major cause of injury, exceeding motor vehicle collisions [2], a trend reflected in New South Wales (NSW) [3]. Older person trauma attracts greater costs and length of stay [4], with the latest available data showing falls as the greatest individual patient cost for any mechanism of injury [4], while total healthcare for falls-related injuries in older persons cost NSW \$558.5 million in 2006–2007 primarily from hospital and emergency admissions [5]. While regarded as a minor mechanism of injury, low level (<1 m) and low velocity falls in the elderly can lead to severe injury. As

\* Corresponding author at: Sydney Nursing School, University of Sydney, Australia.  
E-mail address: [kate.curtis@sydney.edu.au](mailto:kate.curtis@sydney.edu.au) (K. Curtis).

**Table 1**  
Descriptive Statistics, Mortality and Unadjusted Odds Ratios.<sup>a</sup>

	Frequency	Proportion (group)	Mortality (%)	UOR
<b>Age group</b>				
55–59 years	332	7.8	6.9	1.00
60–64 years	428	10.0	10.5	1.58
65–69 years	466	10.9	9.2	1.37
70–74 years	516	12.1	14.2	2.21
75–79 years	629	14.8	15.6	2.48
80–84 years	755	17.7	20.8	3.53
85–89 years	707	16.6	24.2	4.28
90 years and over	430	10.1	26.3	4.79
<b>Gender</b>				
Male	2573	60.4	18.2	1.00
Female	1690	39.6	15.0	0.79
<b>Locality</b>				
Metropolitan	3386	81.7	18.4	1.00
Rural	760	18.3	11.7	0.59
<b>Facility</b>				
Major trauma service	3595	84.3	15.0	1.00
Rural/regional trauma service	668	15.7	17.3	0.84
<b>System</b>				
Direct from scene	3031	71.8	18.9	1.00
Transfer	1192	28.2	12.3	0.60
<b>Place of injury</b>				
Home	2149	55.4	18.4	1.00
Outdoors	806	20.8	11.5	0.58
Residential Care Institution	520	13.4	26.0	1.56
Indoors	224	5.8	18.3	1.00
Other	181	4.7	8.3	0.40
<b>Mechanism of injury</b>				
Fall, same level	1234	46.7	19.2	1.00
Fall, stairs and levels	623	23.6	16.1	0.80
Fall, ladders	366	13.8	8.7	0.40
Fall, heights	214	8.1	10.3	0.48
Fall, beds and chairs	124	4.7	25.0	1.40
Fall, other	83	3.1	14.5	0.71
<b>Height of injury</b>				
<1 m	2624	66.8	18.0	1.00
1–5 m	1187	30.2	13.9	0.73
>5 m	117	3.0	13.7	0.72
<b>Body region of injury</b>				
Head	2695	63.2	20.2	1.00
Thorax	523	12.3	3.3	0.13
Spine	309	7.3	11.0	0.49
Multiple regions (head)	287	6.7	24.0	1.25
Multiple regions (other)	226	5.3	15.5	0.72
Lower extremity	136	3.2	10.3	0.45
Other	87	2.0	10.3	0.46
<b>ISS</b>				
Moderate (12–15)	763	17.9	4.6	1.00
Serious (16–24)	1945	45.6	7.8	1.76
Severe (25–40)	1516	35.6	34.0	10.73
Critical (41–75)	39	0.9	51.3	21.89

<sup>a</sup> Reference groups are: 55–59 age group, male gender, metropolitan locality, major trauma service facility, direct transport from scene system, home as place of injury, same level falls, falls <1 m, isolated head injury and moderate ISS (12–15). UOR, unadjusted odds ratio.

these injury presentations may not result in trauma team activation and the associated early multidisciplinary response, high rates of re-admissions and mortality [6,7] can occur. Poorer functional outcomes in the older trauma person are frequent, due to the high incidence of co-morbidities and polypharmacy, and under-triage is common [8,9].

In Australia, falls are increasing despite growing research and prevention efforts. Although a number of single interventions can effectively reduce falls in defined groups [10,11] there remain gaps in the evidence for successful translation across the population. Data registries are an important source of systematically captured data that can be used to inform the healthcare response, as well as research and prevention efforts. This study describes the injury pro-

file of older adult major trauma patients who presented to trauma centres across the state of NSW following a fall. Identification of the predictors of poor outcomes following a falls-related injury can guide prospective interventional studies, particularly aimed at prevention at the secondary and tertiary level.

The aims of this study are to describe the fall-injury profile in the older adult major trauma patient in NSW using prospectively collected data in the NSW Trauma Registry.

## Materials and methods

The NSW Trauma Registry prospectively collects a Minimum Dataset on major trauma (including moderate, serious, severe and

Download English Version:

<https://daneshyari.com/en/article/5562791>

Download Persian Version:

<https://daneshyari.com/article/5562791>

[Daneshyari.com](https://daneshyari.com)