



Full length article

Age-related patterns in work-related injury claims from older New Zealanders, 2009–2013: Implications of injury for an aging workforce



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ABSTRACT

Objectives: This study describes the incidence, nature and cause of work-related injuries in older New Zealand workers to understand the risks of work-related injury in this rapidly aging population.

Methods: Data for the period 2009–2013 from 25,455 injured workers aged 55–79 years, extracted from national work-related injury entitlement claims, were stratified by age group and analysed by sex, industry, injury type and cause. Age-specific claims rates were calculated by year, sex and ethnicity.

Results: Patterns of injury differed by age: 70–79 year olds had the highest injury rates and proportion of claims due to falls (45%), for the self-employed (32%), for the agriculture sector (24%), and for fatal injuries (5%).

Discussion: The burden of work-related injuries in older workers, particularly in those aged over 70, will increase with their increasing participation in work. Workplace injury prevention strategies and interventions need to consider the specific characteristics and vulnerabilities of older workers.

1. Introduction

Like many other OECD industrialised nations the New Zealand workforce is aging rapidly. The rates of workforce participation in later working life are high in New Zealand, currently ranked fourth highest in the OECD and growing rapidly, with the number of workers aged 55 years or older projected to grow 1.6 times by 2036 (Boyd and Dixon, 2009; Statistics New Zealand, 2009; Ministry of Social Development, 2005). New Zealand is one of the first western countries to show this pattern with economic activity of older workers increasing rapidly following the introduction of anti-age discrimination legislation under the Human Rights Act (Jackson et al., 2013). Patterns of employment for older workers, aged 55 years or more, differ from the rest of the working population with older workers more likely to be employed in temporary employment relationships, be self-employed or to be employed in healthcare, education and community service sectors if female, or the agriculture and fisheries sectors if male (Boyd and Dixon, 2009). The transition from full-time work to retirement is increasingly bridged by part-time (less than 30 h per week) work (Alpass, 2008; Dulin et al., 2011; Farrow and Reynolds, 2014), with around one third of New Zealand workers aged 60 or more years working part time (Davey, 2007).

Published research on the health of older workers is relatively sparse (Farrow and Reynolds, 2014). New Zealand research published in 2001 showed that older males had higher rates of work-related fatal

injury than younger males (Feyer et al., 2001). International research suggests older workers are more vulnerable to occupational safety risks than the rest of the working population (Bohle et al., 2010). Some studies report older workers are at higher risk of fatal work-related injuries than younger workers, but face a lower risk of serious, non-fatal work-related injury than do younger workers (Rogers and Waitrowski, 2005; Salminen, 2004). Others have found while older workers are not at increased risk of work-related injury, there have been marked increases in the number of work-related injury claims from these workers as the labour market participation rates increase for this group (Workplace Safety and Insurance Board of Ontario, 2000; Workplace Safety and Insurance Board of Ontario, 2013). Contradictory to these findings others have found workers aged 55 and over have a higher risk of serious work injury and the highest rates of fatal work injury and non-fatal injuries, resulting in a longer time away from work compared to younger workers (Berecki-Gisolf et al., 2012; Farrow and Reynolds, 2014; Personick and Windau, 1995; Rogers and Waitrowski, 2005; Smith and Berecki-Gisolf, 2014). Furthermore, the serious consequences and costs of work injury are suggested to be greater in older workers when compared with younger working cohorts (Pransky et al., 2005). Older males are the most likely to suffer serious work injuries compared with older females (Fan et al., 2012; Wuellner et al., 2011). We are not aware of any detailed examination of injury risk by ethnicity.

The rapid aging of the workforce potentially has implications for the

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burden of work-related injury in New Zealand, however these implications are poorly understood. Recent New Zealand work-related injury data that account for increased numbers of part-time workers at the extreme ends of the working-age spectrum indicates older workers aged 65 years or more are over-represented in work-related injury (and illness) claims, with the second highest rate of claims due to work injury, after the youngest group of 15–24 year olds (Statistics New Zealand, 2016). The consequences of injury are serious for older workers with this group carrying a high burden of disability due to injury, accounting for over a third of injury-related health loss in the New Zealand workforce (Statistics New Zealand, 2007). In addition, injury represents a key pathway out of work for many injured older workers in New Zealand (Pond et al., 2010; Statistics New Zealand, 2007; Statistics New Zealand, 2014). Given that older workers are over-represented in work-related fatal injury claims in New Zealand it is important to understand how the patterns of work-related injuries may differ for older workers, from younger workers, to inform injury prevention actions.

The aim of this paper is to examine work-related injury claims in detail for New Zealand workers aged 55–79 years by establishing the incidence of work-related injury claims and describing the patterns of work-related injuries, by five year age categories in the five year period from 1 January 2009–31 December 2013.

2. Methods

This analysis utilises accepted work injury entitlement claim data from New Zealand's no-fault universal injury rehabilitation and compensation system, the Accident Compensation Corporation (ACC), for the five year period 1 January 2009–31 December 2013. Work injury entitlement claims include claims from employees and the self-employed working for pay, and excludes claims from volunteers. The ACC system provides universal coverage of the entire New Zealand population, regardless of age and working status, for the medical treatment, wage replacement and rehabilitation costs associated with their injury. An entitlement claim involves compensation such as income support after the first seven days of incapacity and/or rehabilitation services such as vocational rehabilitation, therefore an entitlement claim can be considered to be a subset of moderate to severe work-related injuries requiring support beyond medical treatment of the initial injury only (ACC, 2008).

This analysis focuses on accepted moderate/severe work-related injury claims from older workers, defined in this study as workers aged 55–79 years of age with entitlement claims for traumatic work injuries ($n = 25,455$) and excluded 17,720 claims for occupational Noise-Induced Hearing Loss, gradual onset injuries and other occupational diseases such as leptospirosis. Less than one percent of ACC's work injury entitlement claims were made by workers aged 80 years of age or over for this period. For in-depth analysis of older workers' claims by age the following age groups were used: 55–59, 60–64, 65–69 and 70–79 years. The 70–79 age group was wider than the other three age groups in order to capture sufficient numbers of workers for analysis.

Socio-demographic and employment data for each work injury entitlement claim included the age of the claimant at the time of the injury, sex, ethnicity, industry and employment type. Industry was coded to major level one of the Australian New Zealand Standard Industrial Classification 2006 (Statistics New Zealand, 1999). Ethnicity data was already prioritised meaning a single ethnicity category was assigned to claimants reporting multiple ethnicities according to the following hierarchy: Māori, Pacific, other minority ethnicities and New Zealand European. Injury-related data included the injury site, type, the mechanism and agent of injury and if the injury was fatal.

Incidence rates were calculated for each full calendar year for the period 2009–2013. Estimates of workforce Full Time Equivalent (FTE) workers obtained from Statistics New Zealand's Household Labour Force Survey were used as denominators. Rates per 1000 FTE workers

Table 1

Number, proportion and rates of work-related injury entitlement claims by New Zealand workers aged 18–79 years and workers aged 55–79 years for the period 2009–2013.

	Age groups				Total
	55–59	60–64	65–69	70–79	
Number of claims	11,864	8918	3343	1330	25,455
Claim rate per 1000	8.4	8.7	9.5	14.1	8.8
FTEs (95%CI)	(8.2,8.5)	(8.6,8.9)	(9.1,9.7)	(13.4,14.9)	(8.7,8.9)
Proportion of total claims	10	7	3	1	21
18–79 years (%)					
Proportion of total claims	47	35	13	5	100
55–79 years (%)					

were calculated with exact Poisson 95 percent confidence intervals for overall work injury entitlement claims by age group.

A descriptive epidemiological analysis of the employment and injury characteristics of work injury entitlement claims in older workers was undertaken by comparing characteristics by age group. Differences in the distribution of these employment and injury characteristics by age group were analysed using chi-square tests. Stata SE v13 was used for the analysis (StataCorp, 2013).

3. Results

A total of 119,175 entitlement claims were accepted by ACC for traumatic work injury from 1 January 2009–31 December 2013, of which 25,455 were made by workers aged 55–79 years of age. Table 1 outlines the patterns of ACC entitlement claims by age of older workers. Overall, one in five (21%) ACC entitlement claims for work injury in this study period were attributed to workers aged 55–79 years of age.

Fig. 1 presents the age-specific claim rates by year. The work injury claim rate was highest in the 70–79 year old group. Injury claim rates were one and a half to two times higher for the 70–79 year old group when compared with the remaining age groups. The rates for the remaining age groups were more similar to each other with the highest consistent rate observed for the 65–69 year old group. The claim rates in the 70–79 year old group fluctuated over the time period examined, being as high as 20.6 claims per 1000 FTE workers in 2009 to as low as 11.0 claims per 1000 FTE workers in 2011. Overall there was a declining trend in injury claim rates for the 70–79 year age group while there was no distinct trends in age-specific work injury claims by year for the remaining age groups examined with rates fairly consistent across the period examined.

The number and rate of work injury entitlement claims by sex and ethnicity are stratified by age group in Table 2. Across all older worker age groups examined, the accepted claim rate for males was at least double that of the rate for females. Among males, workers aged 70–79 years had the highest work injury claim rate (24.4 per 1000 FTEs), over twice the rate of male workers aged 55–59 years. The rate for females was relatively consistent across the first three age groups (55–59, 60–64 & 65–69), however, the rate for the 70–79 age group was highest with 8.6 claims per 1000 FTEs. Differences in accepted claims rates were also observed by prioritised ethnicity. Older New Zealand European workers had the lowest claim rates across all age groups until 70–79 years where it had the highest rate. Workers with a Māori, Pacific or "other" ethnicity had markedly elevated rates up to age 65–69 years. Rates were not calculated for workers with a Pacific or "other" ethnic grouping beyond age 65 years due to problems with the denominator estimates for these age groups. Maori showed considerable declines in claim rates beyond 65 years of age with the rate for 70–79 year olds close to half the rate experienced at age 60–64 years. For New Zealand European the claim rates increased with increasing age group with workers aged 70–79 years with the highest rate of work

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