WORK-RELATED INJURIES IN AUSTRALIA, 2005–06

The impact of employment conditions on work-related injuries in Australia

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safe work australia

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Foreword

Safe Work Australia principally uses workers' compensation claims data to measure occupational health and safety (OHS) performance in Australia. The claims data are collated in the *National Data Set for Compensation Based Statistics* (NDS) and are published annually in the *Compendium of Workers' Compensation Statistics*, *Australia*. This publication is a key reference documenting patterns of work-related injuries and diseases and their causes in Australian workers. For the purposes of this report, the expression 'work-related injury' will be used to represent all work-related conditions, including work-related diseases.

While the NDS is a valuable tool for monitoring OHS, it does not provide information on work-related injuries for groups not well covered by workers' compensation schemes, such as self-employed workers. It is estimated that workers' compensation schemes, and therefore the NDS, covered only 88%[1] of the workforce in 2005–06. The NDS is also unable to provide any information on work-related injuries where workers' compensation was not sought. Therefore, although the NDS generally provides a good picture of the characteristics of work-related injuries, it underestimates the true number of work-related injuries occurring each year.

To address this situation, the National Occupational Health and Safety Commission (now known as Safe Work Australia) agreed to contribute funding towards a national survey of work-related injuries run by the Australian Bureau of Statistics (ABS) as part of the Multi-purpose Household Survey. The *Work-Related Injuries Survey* (WRIS) was conducted for the period 2005–06 with results released in December 2006. In this survey, participants aged 15 years and over, were asked to recollect and relate a range of details about their most recent work-related injury or illness, no matter how minor, that occurred within the last 12 months. The survey also collected information on labour force characteristics (e.g. industry, occupation) and personal demographics (e.g. age, sex) which are useful when making comparisons to the NDS. The WRIS also collected information on employment arrangements, such as whether the worker worked under shift arrangements, worked part-time or had access to paid leave. This type of information is not collected in the NDS. Importantly, the WRIS survey also collected information about whether or not workers' compensation was sought, and if not, why not.

This report is one in a series of reports that explore specif c topics related to work-related injuries.

[1] The percentage of employees is calculated from the Australian Bureau of Statistics, *Work-related Injuries Australia* (Cat. No. 6324.0)

Contents

Summary of findings

The following key findings are contained in this report:

Employment status

- Employees accounted for 88% of the total workforce in 2005-06. Employees recorded a higher incidence rate of work-related injury compared to Employers or Own account workers (E/OAWs): 71 injuries per 1000 employees compared to 52 injuries per 1000 E/OAWs.
- Employees recorded higher incidence rates in all industries except the Construction industry where similar rates were recorded for the two employment types.
- Employees recorded higher incidence rates in all occupations except for Managers and administrators where E/OAWs recorded 76 injuries per 1000 workers compared to 53 for Employees.
- Male employees recorded an incidence rate 1.4 times the rate for female employees whereas male E/OAWs recorded an incidence rate twice the rate of female E/OAWs.
- E/OAWs recorded 19 injuries per 1000 E/OAWs for injuries involving five days or more compared to 21 for Employees.

Leave entitlements

- Employees with leave entitlements recorded higher incidence rates of injury (76 injuries per 1000 workers) than employees without leave entitlements (66 injuries per million hours worked).
- When hours of work were examined, it was found that full-time workers experienced the same frequency rate of injury regardless of whether they had access to paid leave or not. The same pattern was observed for part-time workers, though frequency rates for part-time workers were double those of full-time workers.
- Male employees without leave entitlements recorded the highest frequency rates of work-related injury, substantially above male employees with leave entitlements and higher than female employees without leave entitlements. Male and female frequency rates for employees with leave entitlements were similar.
- Employees with leave entitlements recorded higher incidence rates than Employees without leave entitlements in all occupations. However, by industry employees without leave entitlements recorded higher rates in the Agriculture, forestry and fishing and Property and business service industries.

Full-time / Part-time

- Part-time workers recorded a frequency rate of work-related injury more than twice the rate for full-time workers: 74 injuries per million hours worked compared to 35 for full-time workers.
- Male part-time workers had higher rates of injury than female part-time workers.
- Young part-time workers, who were less than 25 years old, had a higher rate of injury than older part-time workers.

Introduction

In line with global changes over the last three decades, the Australian workforce has undergone a transformation with a decline in the proportion of workers in permanent full-time employment, and an increase in what has been termed 'precarious employment' which includes self employed dependent subcontractors, home based workers, casual and part-time workers[2]. Both international and Australian studies suggest that work-related injury and illness outcomes are worse for precarious workers and that these workers are less likely to claim workers' compensation for their injuries than other employees[3]. The ABS *Work-related injury survey* (WRIS) provides an opportunity to assess whether or not precarious workers, across all sectors of employment in Australia, were more at risk of work-related injuries than other workers during 2005-06. This report examines work-related injuries in certain key types of employment arrangements, namely: employment status, access to paid leave entitlements, part-time work and contract work.

A separate report in this series examines factors related to whether or not workers applied for workers' compensation.

Employment status categorises workers according to whether they are Employees, Employers or Own account workers. Employers and Own account workers are not usually covered by workers' compensation schemes and their work-related injuries are therefore not included in statistics derived from workers' compensation data. This information fills an important gap in the coverage of work-related injury statistics for the Australian working population.

The second section of the report examines the impact of leave entitlements on patterns of work-related injury. There is some evidence that employees without leave entitlements are more susceptible to adverse OHS outcomes[4,5]. This section of the report compares employees with and without leave entitlements.

The third section examines full-time and part-time employment. There is some evidence[6] that part-time workers in some occupations are more at risk of work-related injuries than full-time workers. Many part-time and casual workers in Australia are young and inexperienced workers, and possibly less likely to have received OHS training[7]. These factors are explored in relation to work-related injury rates for these workers.

The last section of the report examines work-related injuries incurred by employees on fixed-term contracts (temporary employees) and owner managers who worked on a contract basis and those who did not work on a contract basis.

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[2] Quinlan M. 2004. Workers' compensation and the challenges posed by changing patterns of work: evidence from Australia. *Policy and Practice in Health and Safety*, 2 (1): 25-52

[3] Mayhew C. & Quinlan M. 2001. The effects of changing patterns of employment on reporting occupational injuries and making workers' compensation claims. *Safety Science Monitor*, 5 (1): 1-12

[4] McNamara M. 2006. The hidden health and safety costs of casual employment. http://wwwdocs.fce.unsw.edu.au/orgmanagement/IRRC/CasualEmploy.pdf

[5] Quinlan et al. 2001. The global expansion of precarious employment, work disorganization, and consequences for occupational health: A review of recent research. *International Journal of Health Services, 31(2): 335-414*

[6] Mayhew C. & Quinlan M. op. cit.

[7] Quinlan M. 1999 The implications of labour market restructuring in industrialised societies for occupational health and safety. *Economic and Industrial Democracy*, 20 (3): 427-460

Employment status: Employees, Employers and Own account workers

Employees, Employers and Own account workers are distinct cohorts of workers in the Australian workforce. Employees are def ned as people who work for an employer and receive remuneration or people who operate their own incorporated enterprise with or without hiring employees. Employers and Own account workers are people who operate their own unincorporated enterprise or engage independently in a trade or profession. Employers hire employees but Own account workers do not. As a general rule, only Employees are eligible for workers' compensation.

In 2005–06, Employees made up the majority (8 788 900 workers - 88%) of the workforce while 3% (276 900 workers) were Employers and 9% (958 600 workers) were Own account workers. Since Employers and Own account workers encompass only a small proportion of the workforce, the ABS combined the data regarding their work-related injuries. Therefore, throughout this report Employers/Own account workers collectively will be referred to as E/OAWs.

Despite comprising 88% of the workforce, Employees incurred 91% of the injuries. Employees therefore had a higher incidence rate of work-related injury than E/OAWs. Employees incurred 71 injuries per 1000 employees compared to 52 injuries per 1000 E/OAWs. The following sections examine whether demographic factors have inf uenced the difference in overall incidence rates of Employees and E/OAWs.

Age

The f rst point to note is that Employees had a younger age prof le than EOAWS. Figure 1 shows that 20% of Employees were aged 15 to 24 years compared to just 5% of E/OAWs. On the other hand, 24% of E/OAWs were 55 years or over compared to just 13% of Employees.

Figure 1 Workers: Percentage by employment status and worker age

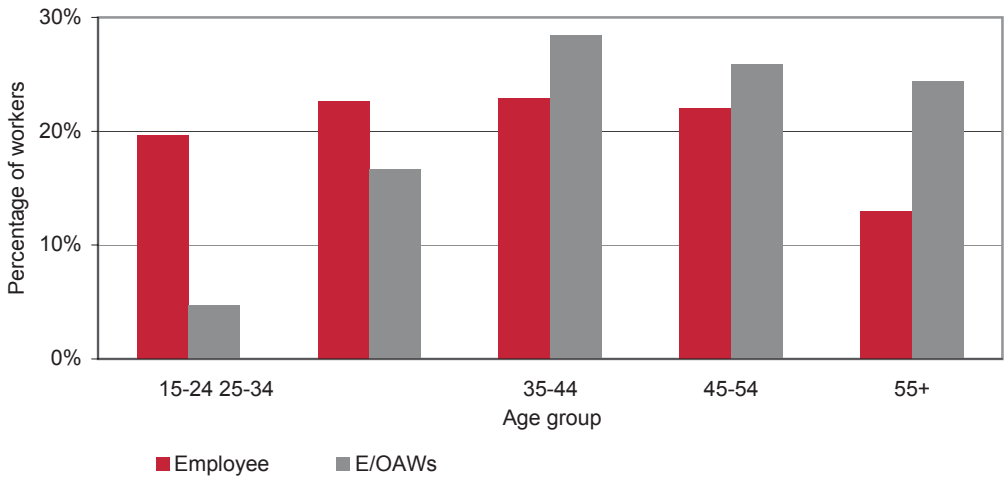
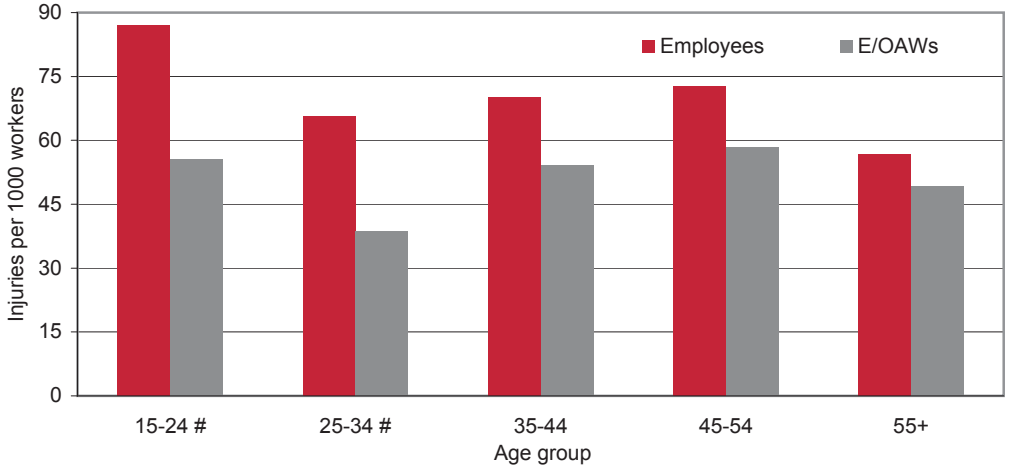


Figure 2 shows that Employees recorded higher incidence rates of work-related injury than E/OAWs for all age groups. This resulted in Employees incurring work-related injuries at a higher rate overall than E/OAWs. However, the overall rate for Employees was affected by the particularly high incidence rates recorded by the 15 to 24 years age group, who accounted for a much greater percentage of the Employee workforce than the E/OAW workforce.

While the difference in rates was greatest for the two youngest age groups, the data for the E/OAWs had high relative standard errors and the difference between the two employment groups for these age groups should be interpreted with caution. However, even if the incidence rates for E/OAWs for these younger age groups were similar to the rates for Employees, Employees would still record a higher overall incidence rate due to the greater number of young Employees.

Figure 2 Work-related injuries: Incidence rates by employment status and worker age



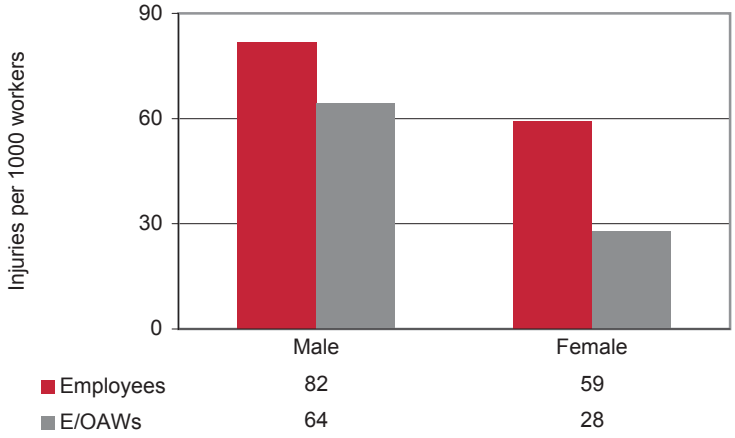
 # The E/OAW data for these age groups have relative standard errors between 25 and 50% and should be used with caution.

Sex

The effect of worker sex was investigated to determine whether it was associated with differences between work-related injuries incurred by Employees and E/OAWs. In 2005-06, 54% of Employees were male compared to 65% of E/OAWs . We know from other reports in this series that the incidence rate for male workers of 79 injuries per 1000 workers was 1.4 times the rate for female workers (56 injuries per 1000 workers). Since Employees make up 88% of workers it is expected that the incidence rates for this group to be similar to the all worker rates but are incidence rates by sex for E/OAWs different?

Figure 3 shows that male Employees had 1.4 times the incidence rate of female Employees, however, for E/OAWs the difference between male and female rates was greater. These data show that male E/OAWs recorded an incidence rate more than twice the rate of female E/OAWs. This is likely to be due to the different tasks undertaken by male and female E/OAWs. The following sections will look at the data to see if differences exist within occupations and industries.

Figure 3 Work-related injuries: Incidence rates (injuries per 1000 workers) by employment status and sex

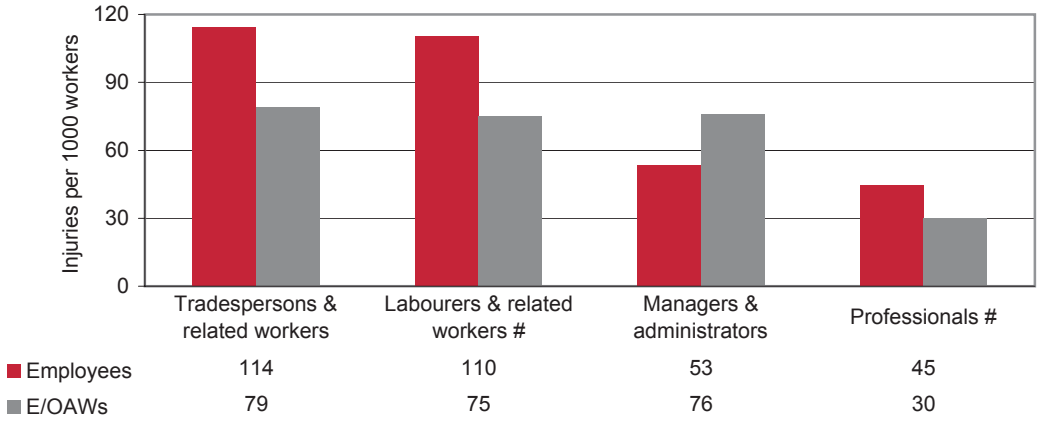


Occupation

Unfortunately due to the low number of injured E/OAWs, data by occupation is not reliable for most occupation groups. Figure 4 shows four occupation groups where the data is considered reliable enough to draw comparisons between the incidence rates for Employees and E/OAWs. These data show that the highest incidence rates by both employment status groups were recorded for Tradepersons and related workers and Labourers and related workers. Employees recorded higher incidence rates for both these occupations. These two occupations accounted for one-third of E/OAW workers and one-f fth of Employees.

The only occupation group where E/OAWs recorded a higher incidence rate than Employees was for Managers and administrators. E/OAWs employed as Managers and administrators recorded an incidence rate of 76 injuries per 1000 as compared to 53 for Employees. This reversal may be explained by the fact that farm managers are included in this group and farmers are likely to undertake higher risk work than Managers and administrators who are Employees. Around one-sixth of E/OAWs are in this Occupation group compared to just 7% of Employees.

Figure 4 Work-related injuries: Incidence rate by selected occupations*



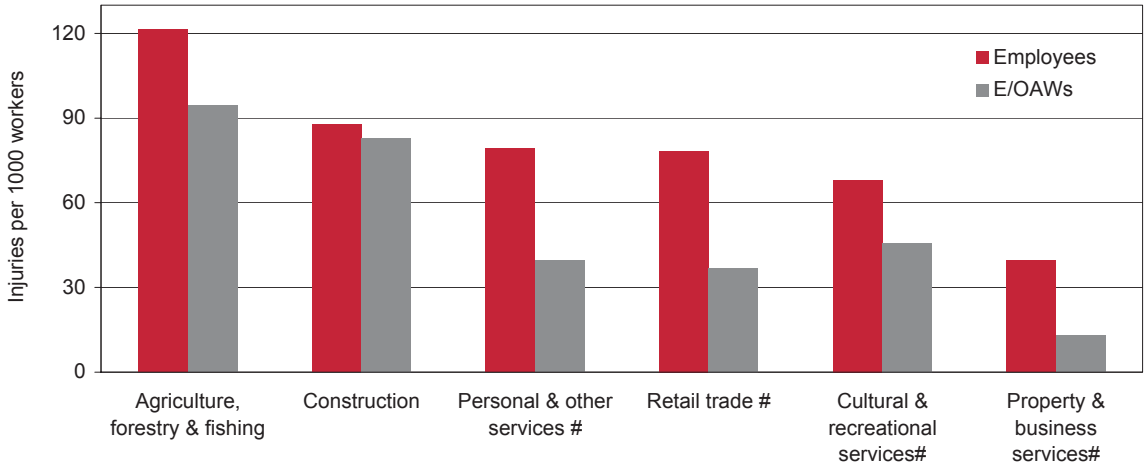
** Not all Occupations are presented in this figure due to high relative standard errors associated with small sample sizes.*

Industry

There was considerable variation between industries in terms of the proportional composition of Employees and E/OAWs. Figure 5 presents data on most of the industries in which 10% or more of workers were E/OAWs. The Agriculture, forestry and f shing and Construction industries had the highest proportions of E/OAWs, with 47% and 30% of workers respectively.

The data by industry continues the pattern seen previously in this report, with Employees recording higher incidence rates of work-related injury than E/OAWs. The Construction industry was the only industry where there was very little difference in the incidence rates recorded by Employees and E/OAWs. In this industry, the majority of both Employees (61%) and E/OAWs (79%) were involved in providing construction trade services. Most of the Employees worked in the installation trade sector which is made up of plumbers and electricians. E/OAWs were mostly in the building completion sector working as plasters, tilers and painters. The similar rates of injury between Employees and E/OAWs in this industry may be due to these workers undertaking work of similar OHS risk.

Figure 5 Work-related injuries: Incidence rate by employment status and selected Industries*



** The industries presented in this figure were selected on the basis that 10% or more of workers were E/OAWs. However, some industries that met this criterion are not presented because of high relative standard errors associated with small sample sizes in the survey.*
 # The incidence rates for E/OAWs for these industries should be used with caution due to high relative standard errors.

The Agriculture, forestry and f shing industry recorded the highest incidence rates of all the industries for both employment groups, with rates 70% higher than the average for all industries. The lowest incidence rate of injuries for E/OAWs (13 injuries per 1000 E/OAWs) was found in the Property and business service industry. In this industry 90% of E/OAWs were involved in 'Business services', which included legal and accounting services, cleaning and pest control services.

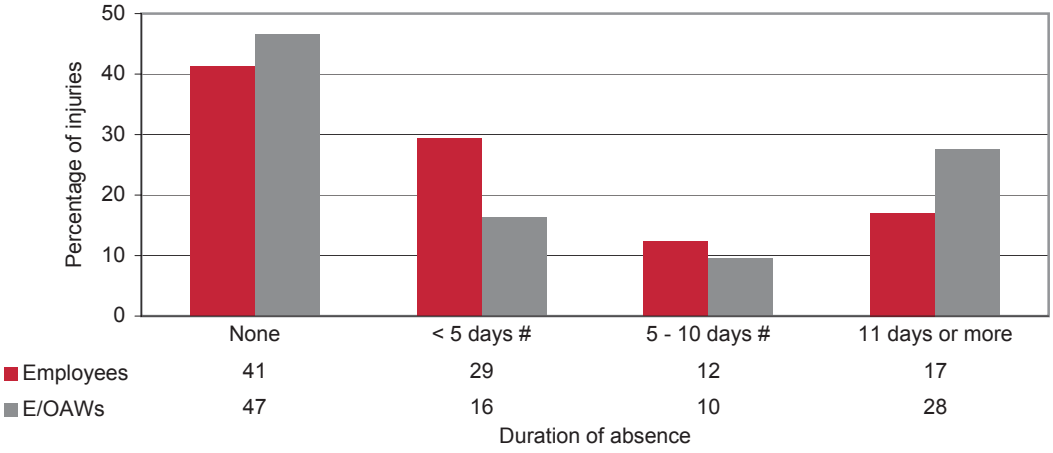
The lower incidence rates of work-related injury for E/OAWs may be due to a variety of factors. E/OAWs may undertake different, lower risk work than employees in general. For instance, the difference in rates between Employees and E/OAWs in the Personal and other services industry could be due to the different types of jobs they undertake. Approximately 60% of Employees in this industry were engaged in 'Other services', which includes high risk jobs such as being a member of the police force or f re brigade. In

contrast, 95% of E/OAWs in this industry were involved in personal services such as hairdressing, photographic services or funeral direction, which may be less hazardous in terms of work-related injuries.

Duration of absence from work

It is known from the overall survey data that substantial numbers of injuries reported in the survey resulted in no time off work. However, was there a difference in the amount of time taken off work by Employees and E/OAWs following a work-related injury? The data presented in Figure 6 show that a slightly higher percentage of injuries incurred by E/OAWs resulted in no time lost from work (47% of injuries incurred by E/OAWs compared to 41% of injuries incurred by Employees). However, Employees were more likely than E/OAWs to incur an injury that resulted in some time off work but requiring less than f ve days off work. In contrast, 28% of injuries incurred by E/OAWs involved 11 days or more absent from work compared to 17% of injuries for Employees.

Figure 6 Work-related injuries: Percentage by duration of absence from work and employment status.

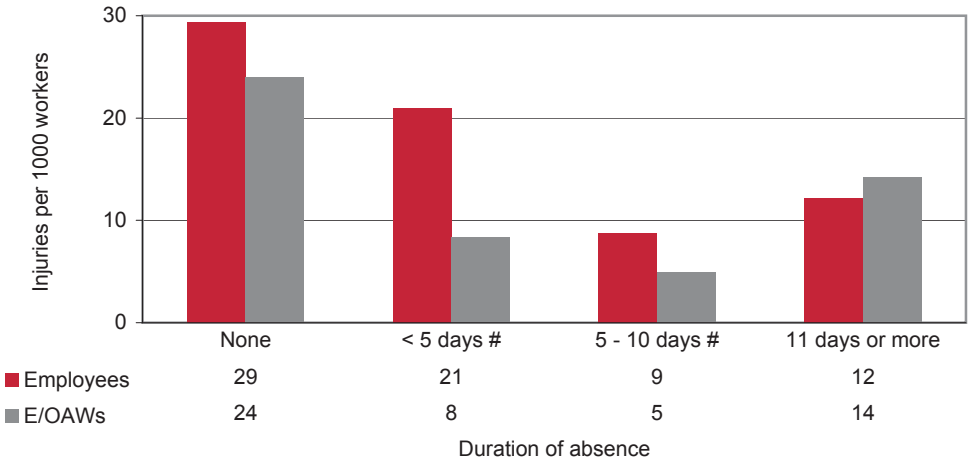


 # The number of injuries for E/OAWs for these duration groups have a relative standard error >25% and should be used with caution.

Although E/OAWs had a greater percentage of injuries that required no time off work than Employees, Figure 7 shows that E/OAWs had a lower incidence rate of injuries (24 injuries per 1000 E/OAWs) that required no time off work than Employees (29 injuries per 1000 Employees). So, per capita, E/OAWs had fewer minor injuries but more serious injuries (resulting in more than 11 days absence from work) than Employees.

These results should be interpreted with caution. The ability to work may have a direct impact on the continued viability of a business operated by an E/OAW. It is therefore possible that E/OAWs may be more likely to continue working or may return to work sooner following a relatively minor injury than Employees. The data showing that E/OAWs had a higher proportion of injuries resulting in 11 days or more off work (28%) compared to Employees (17%) is interesting as it is possible that these injuries were of a severity that made it impossible for E/OAWs to work. An examination of the types of injuries incurred by Employees and E/OAWs may provide some answers in this area.

Figure 7 Work-related injuries: Incidence rates by duration of absence from work and employment status



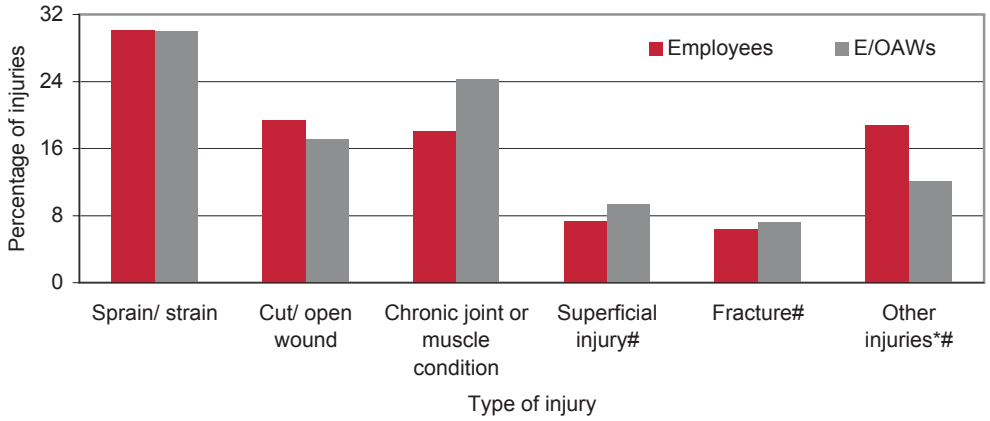
 # The incidence rates for E/OAWs for these duration groups have a relative standard error >25% and should be used with caution.

Type of work-related injury

Figure 8 shows that on the whole, there was very little difference in the proportional composition of the types of injuries incurred by Employees and E/OAWs. The most common work-related injury for both Employees and E/OAWs was *Sprains and strains*. This nature accounted for 30% of injuries in each employment group.

For Employees, the second most common injury was *Cut/open wound* (19% of injuries). However, the second most common injury for E/OAWs was *Chronic joint or muscle condition* (24% of injuries), which accounted for just 18% of injuries to Employees. This sort of injury may be more common in E/OAWs because they were older on average than Employees.

Figure 8 Work-related injuries: Percentage by employment status and type of injury.



** Other injuries includes Stress or other mental conditions and Crushing injuries, internal organ damage and amputation.*
 # The percentages for E/OAWs for these duration groups have a relative standard error >25% and should be used with caution.

This section indicates that there were some differences in injury rates between Employees and E/OAWs in part due to the different worker profiles in the two groups. The following sections will examine other employment groups and their rates of work-related injury.

Leave entitlements

In addition to the employment split shown above, the Australian workforce can also be segregated based upon workers' leave entitlements i.e. whether the worker had access to paid holiday and/or sick leave. This creates three groups of workers; employees with access to paid leave entitlements, employees without access to paid leave entitlements and owner/managers. People employed in their own business (owner/managers of either incorporated or unincorporated enterprises) were not asked about their leave entitlements in the WRIS, so their injuries have been excluded from this section of the report.

During 2005-06, 62% of workers were employees with access to paid leave (EWLs). This group accounted for 68% of the work-related injuries (467 400 injuries) which equates to 76 injuries per 1000 employees with paid leave entitlements.

Employees without access to paid leave (EWOLs) accounted for 19% of workers in 2005-06. This group accounted for 18% of the work-related injuries (126 500 injuries) which equates to 66 injuries per 1000 employees without access to paid leave. These data therefore suggest that workers without access to paid leave had a lower incidence rate of injury.

However, EWOLs worked fewer hours per week than EWLs. The data show that 60% of EWOLs normally worked 30 or less hours per week compared to just 14% of EWLs. To control for this difference in working hours, frequency rates, expressed as injuries per million hours worked, were calculated. The calculation of frequency rates revealed that EWOLs incurred higher rates of injury per hour worked than did EWLs. Overall, EWOLs recorded a frequency rate of 56 injuries per million hours worked compared to 38 injuries per million hours worked for EWLs.

Part-time/Full-time status

Since it was found there was a big difference in working hours between EWLs and EWOLs, it is only fair to compare the data for groups that worked similar numbers of hours per week. A broad split can be made by looking at those who worked part-time (less than 35 hours per week) and those who worked full-time.

Three quarters of full-time workers had access to paid leave entitlements compared to just one-third of part-time workers. As is shown in Figure 9, part-time workers with paid leave entitlements had the highest incidence rate of work-related injury with 81 injuries per 1000 workers while part-time workers without leave entitlements had the lowest incidence rate (62 injuries per 1000 workers). In contrast there was very little difference in the incidence rates of work-related injury between full-time workers with and without paid leave entitlements.

The pattern was quite different when frequency rates of work-related injury were examined. As can be seen in Figure 10, part-time workers had considerably higher frequency rates of work-related injury than full-time workers and there was very little difference in the rates of workers with or without paid leave entitlements. Part-time workers without paid leave entitlements had the highest frequency rate of injury, with 82 injuries per million hours worked.

Figure 9 Work-related injuries: Incidence rates by full time/part time status and leave entitlements

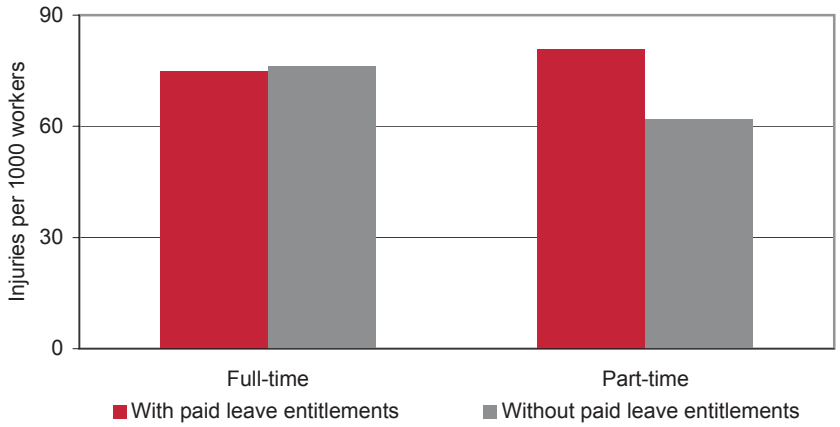
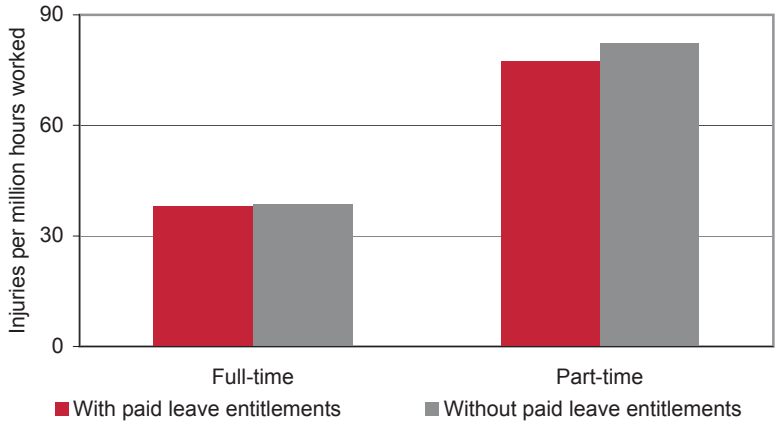


Figure 10 Work-related injuries: Frequency rate by full-time/part-time status and leave entitlements

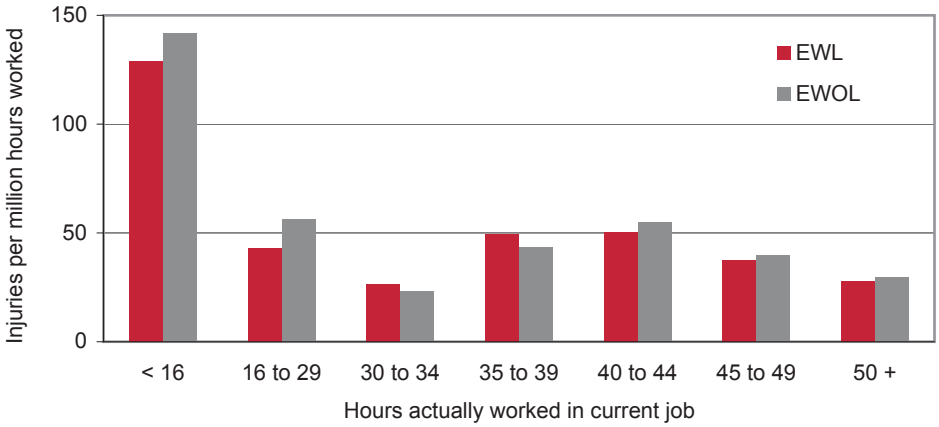


Normal working hours

A more detailed investigation of the impact of working hours on work-related injuries was undertaken. However, this investigation was hampered by survey design issues. It was found that 5% of employees had more than one job but that the WRIS only asked injured workers how many hours they had worked in the job in which they were injured. However, it was not possible to determine if the worker was injured in their main job or other job. For the following analysis it has been assumed that the injury occurred in the main job and therefore these data should be used to represent a general trend rather than actual rates of injury.

This analysis showed that, per hour worked, EWOLs incurred higher rates of injury. Overall EWOLs recorded a frequency rate of 58 injuries per million hours worked compared to 42 injuries per million hours worked for EWLs. This difference is due to the very high frequency rates recorded for EWOLs who worked less than 16 hours per week. While EWLs also recorded a very high frequency rate for this group of workers, it did not impact greatly on the overall frequency rate as they only accounted for 1% of the total working hours compared to 14% of the total working hours for EWOLs. Figure 11 also shows there was little difference in the frequency rates between the two employment groups in any of the hours worked groups.

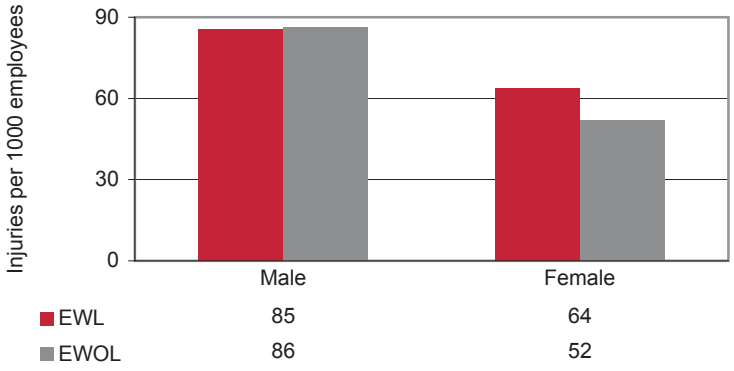
Figure 11 Employees with work -related injuries: Frequency rates by leave entitlement and hours actually worked in main job



Sex

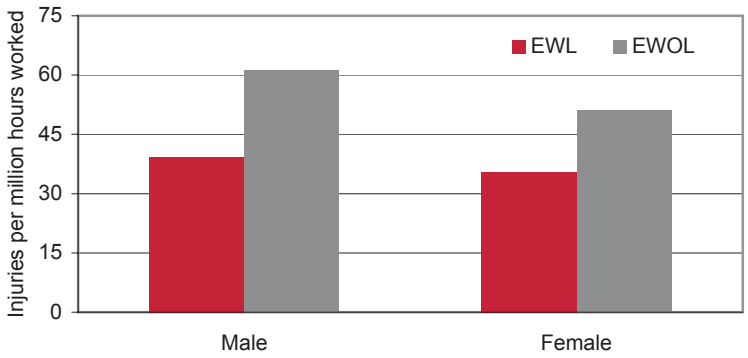
Apart from working hours it is also likely that sex had a major impact on injury rates. In 2005-06, 45% of EWOLs were female compared to 37% of EWLs. Figure 12 shows that male EWLs had almost the same incidence rate of injury as male EWOLs (85 and 86 injuries per 1000 male EWLs / EWOLs respectively). In contrast, female EWLs had 64 injuries per 1000 female EWLs but female EWOLs had a lower rate of 52 injuries per 1000 female EWOLs. Therefore the difference in overall incidence rates between EWLs and EWOLs is due to the greater proportion of female EWOLs and the fact they incurred fewer injuries than female EWLs.

Figure 12 Employees with work-related injuries: Incidence rates by leave entitlement and sex



Frequency rates were also calculated to control for the impact of the lower number of hours worked by EWOLs. Figure 13 shows that both male and female EWOLs recorded higher frequency rates of work-related injury than EWLs. It also shows that the gap between the rates for males and females has narrowed with male and female EWLs recording similar frequency rates, though female EWOLs continued to record lower frequency rates than male EWOLs.

Figure 13 Employees with work -related injuries: Frequency rate* by leave entitlement and sex



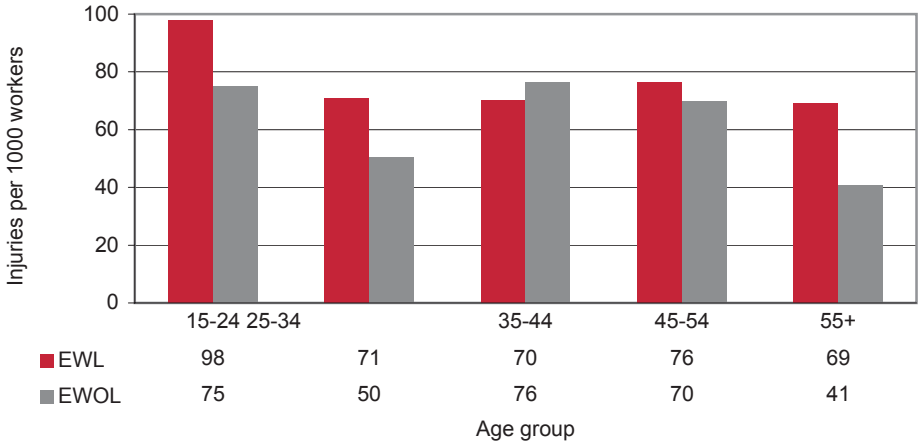
** Due to the way in which total hours worked have been calculated, these data should be used to drawn general conclusions rather than to determine precise values.*

Age

Age is another demographic that can impact heavily on injury rates. It was not unexpected to f nd that 15 to 24 year olds accounted for around 40% of EWOLs and only 15% of EWLs. Consequently, EWOLs had a lower percentage of workers in all other age groups compared to EWLs, with the exception of the 55 and over group, which recorded similar percentages of workers for both EWLs and EWOLs.

Despite the dissimilar worker prof le, the incidence rates of work-related injury for the two groups followed similar patterns with high rates for the youngest workers which then fell and increased and fell again as age increased. Figure 14 shows that EWLs recorded higher incidence rates for all age groups except the 35 to 44 years group. The greatest difference in incidence rates occurred in the youngest and oldest worker groups with around 20 more injuries per 1000 workers occurring to EWLs than to EWOLs.

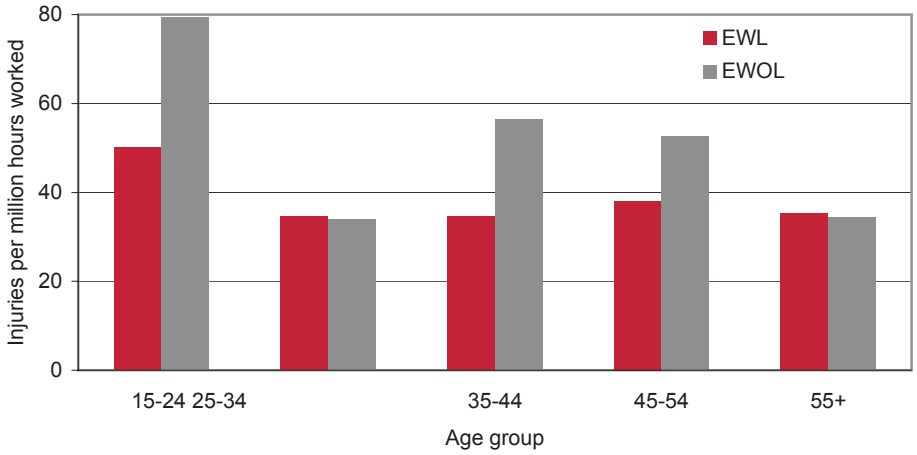
Figure 14 Employees with work -related injuries: Incidence rates by leave entitlement and age



However, as we have seen before, when frequency rates of work-related injury are calculated the pattern changes with EWOLs recording higher or equal rates per million hours worked than EWLs. Figure 15 shows that EWOLs aged 15 to 24 years recorded the highest rate per million hours worked. Frequency

rates generally decreased with age for EWOLs except for the 25 to 34 years age group. For EWLs, similar frequency rates were recorded for age groups over 25 years and, like EWOLs, the highest frequency rate of work-related injury was recorded by the 15-24 years age group.

Figure 15 Employees with work -related injuries: Frequency rates* by leave entitlement and age



** Due to the way in which total hours worked have been calculated, these data should be used to drawn general conclusions rather than to determine precise values.*

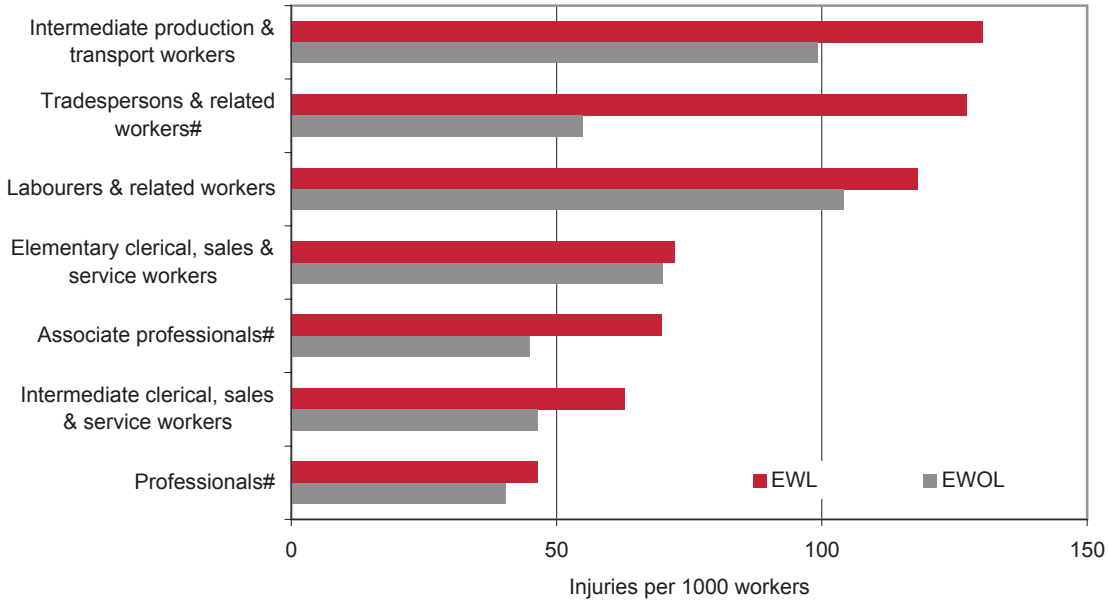
Occupation

Worker occupation was investigated next in an effort to determine whether or not there was a link between occupation and access to paid leave on work-related injury rates. The data showed that in 2005-06, EWOLs were concentrated in the Elementary clerical, sales and service, Labourers and related worker, Intermediate clerical, sales and service and Intermediate production and transport worker occupations. EWLs were concentrated in the Professional and Intermediate clerical, sales and service worker occupations.

Figure 16 shows that work-related injury incidence rates by occupation continued the pattern we have seen elsewhere, with EWLs recording higher incidence rates than EWOLs. The greatest difference in rates was recorded by Tradespersons and related workers with EWLs recording more than twice the rate of EWOLs. It is not possible with the data available to determine whether or not this difference in rates was due to different tasks undertaken by employees with and without leave entitlements or whether EWOLs genuinely had a lower rate of injury. Only 15% of employees in this occupation group were EWOLs.

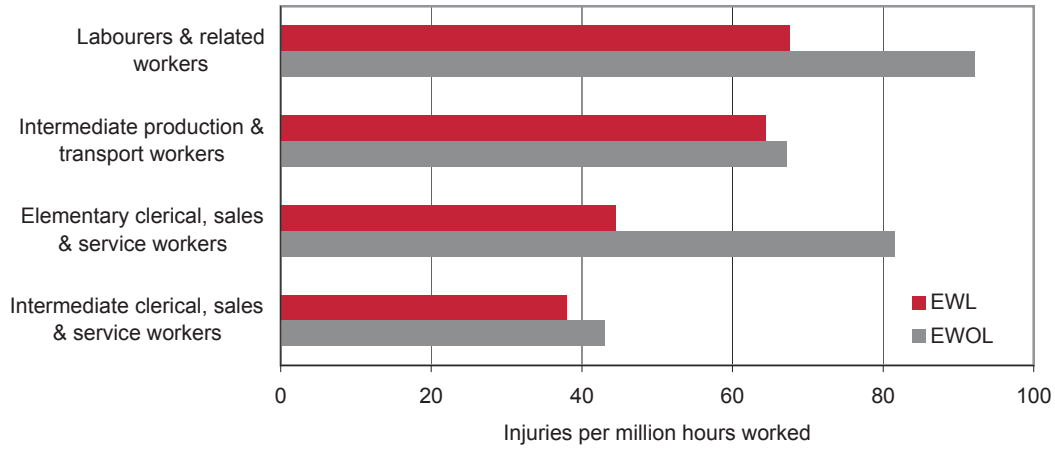
In contrast, around half of the employees working as Labourers and related workers and Elementary clerical, sales and service workers received paid leave and incidence rates for the two employment groups were similar. However, the frequency rates of injury depicted in Figure 17 showed that EWOLs in both these occupations had considerably more injuries per million hours worked than EWLs. In contrast, EWOLs and EWLs in the Intermediate production and transport worker and Intermediate clerical, sales and service worker occupations had similar frequency rates of injury.

Figure 16 Employees with work -related injuries: Incidence rates by leave entitlement and selected occupations*



** Some occupations are not shown due to high relative standard errors*
 # The incidence rates for E/OAWs for these occupation groups have a relative standard error >25% and should be used with caution.

Figure 17 Employees with work -related injuries: Frequency rates by leave entitlement and selected occupations*



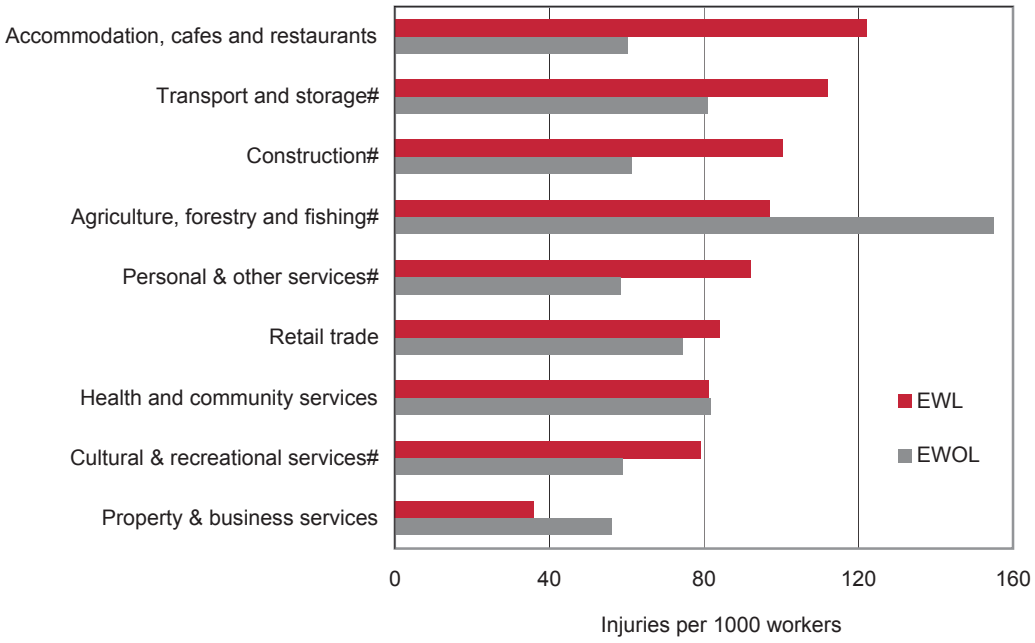
Industry

Similar to worker occupation, worker industry was investigated in an effort to determine whether or not industry, in conjunction with worker access to paid leave, was linked to work-related injury rates. In 2005-06 over 60% of EWOLs worked in just four of the seventeen industries. The Retail trade industry accounted for the greatest percentage of EWOLs (27%) followed by the Accommodation, cafes and restaurants (12% of EWOLs), Health and community services (10%) and Property and business services industries (10%).

Consistent with the occupation data, Figure 18 shows that EWOLs recorded lower incidence rates of work-related injury than EWLs in most industries. The Agriculture, forestry and f shing industry was one of the main exceptions to this rule with EWOLs recording an incidence rate 1.6 times the rate of EWLs at 155 injuries per 1000 employees. This was also the highest incidence rate across industries and was more than double the incidence rate for all EWOLs (66 injuries per 1000 workers). EWOLs represented nearly half (44%) of all employees in the Agriculture, forestry and f shing industry. However, unfortunately the data is not detailed enough to determine if these injuries are being incurred by itinerant workers such as seasonal fruit pickers etc.

Property and business services was the other industry where EWOLs recorded an incidence rate of work-related injury 1.6 times the rate for EWLs. However, the rates in this industry were below the average for all industries, particularly for EWLs who recorded an incidence less than half the rate for all industries (36 injuries per 1000 EWLs compared to the average of 76 for all industries). One in f ve workers in this industry did not have access to paid leave and they recorded an incidence rate of 56 injuries per 1000 EWOLs, which was only slightly lower than the rate for EWOLs across all industries of 66 injuries per 1000 EWOLs.

Figure 18 Employees with work-related injuries: Incidence rates by leave entitlement and selected industries*



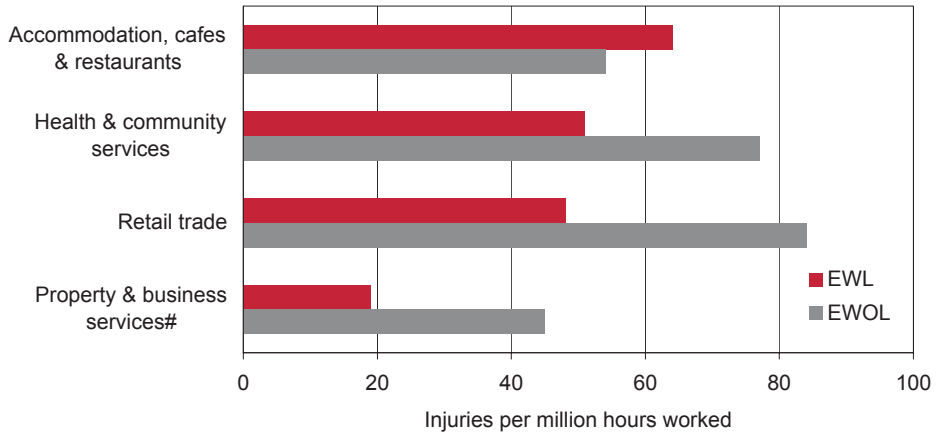
** Some industries are not shown due to high relative standard errors*
 # The incidence rates for E/OAWs for these industries have a relative standard error >25% and should be used with caution.

There was no difference in the incidence rates recorded by EWLs and EWOLs in the Health and community services industry. This may indicate that EWLs and EWOLs undertook similar types of work. In this industry, one in f ve employees had no access to paid leave.

The highest incidence rate recorded by EWLs occurred in the Accommodation, cafes and restaurants industry. EWLs in this industry had twice the rate of injury of EWOLs. Nearly 60% of employees in this industry did not have access to paid leave.

The frequency rates of work-related injury in the four industries that accounted for the greatest percentages of EWOLs are shown in Figure 19. EWLs in the Accommodation, cafes and restaurants industry retained higher rates of injury than EWOLs. In contrast, EWOLs in the remaining industries presented all had considerably more injuries per million hours worked than EWLs.Figure 19 Employees with work-related injuries: Frequency rates by leave entitlement and selected industries*

Figure 19 Employees with work-related injuries: Frequency rates by leave entitlement and selected industries*



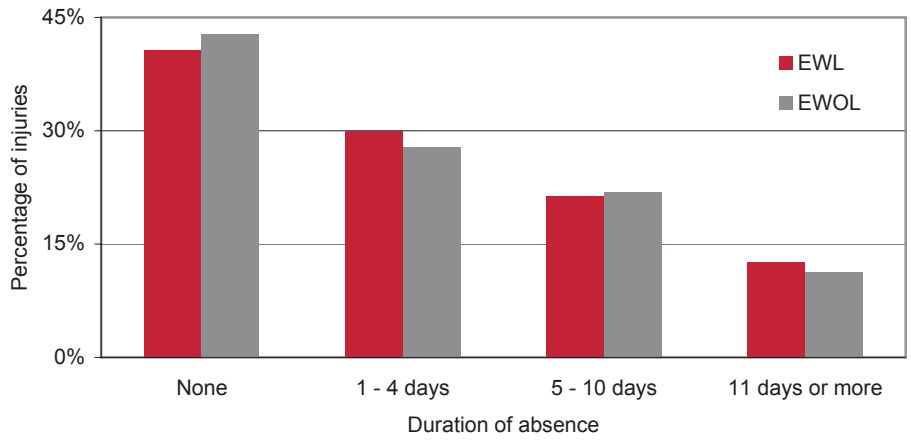
** Some industries are not shown due to high relative standard errors*

Duration of absence from work

In addition to worker demographics, the characteristics of the work-related injury can also be used to compare employees with and without paid leave entitlements. Figure 20 shows that there was very little difference between EWLs and EWOLs in terms of the duration of absence from work following a work-related injury. What this data suggests is that for employees, leave entitlements do not affect how much time employees are absent from work. This is surprising given that it might be predicted that EWOLs would take less time off work than EWLs because their income depends on them working.

However, an important consideration here is the number of hours normally worked per week by EWLs and EWOLs. If EWOLs worked fewer hours per week it is possible that the duration of absence data has been biased towards shorter absences from work for this group of workers. This is because the number of days absent from work does not perfectly match the duration of time workers are unf t for work if a worker does not work full time. In other words, a part-time worker may be injured and unf t for work on a day they are not scheduled to work, but in the survey, this day would not be counted as a day absent from work.

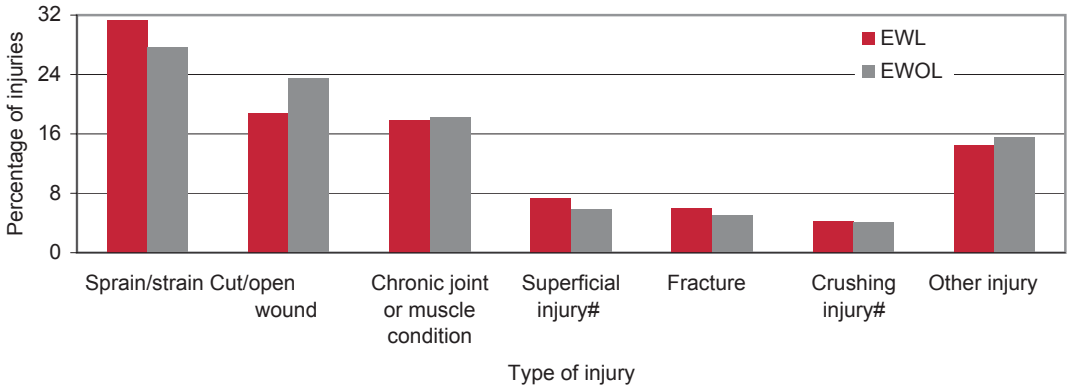
Figure 20 Employees with work-related injuries: Percentage by leave entitlement and duration of absence from work



Type of injury

In support of there being little difference in the severity of injuries sustained by EWOLs and EWLs, as measured by duration of absence from work, EWOLs and EWLs did not differ substantially in terms of the types of work-related injuries they incurred. As can be seen in Figure 21 the main difference between the two groups of workers was that EWLs had a slightly greater proportion of *Sprains or strains* while EWOLs had a greater proportion of *Cuts or open wounds*. These data indicate that access to leave does not affect the type of injury incurred.

Figure 21 Employees with work-related injuries: Type of work-related injury by leave entitlement



 # The data for employees with no leave entitlements have high relative standard errors and should be interpreted with caution

This section has shown that employees with and without paid leave entitlements differed in their rates of work-related injury. Although per capita EWLs generally had higher rates of injury than EWOLs, EWOLs had higher frequency rates of injury than EWLs due to the large number of EWOLs who worked part time. Indeed, when only part-time workers were considered there was little difference between the EWLs and EWOLs in the frequency rate of work-related injuries. These data therefore partially support the current literature on precarious workers (i.e. workers without paid leave entitlements and/or part-time workers), in which precarious workers are generally

considered to be more at risk of work-related injury. However, in this case, it seems likely that the part-time / full-time status of employment is the most important correlate of work-related injury frequency rates.

The following section will examine differences in rates of injury between full-time and part-time workers in more detail.

Full-time and part-time workers

During 2005–06, 71% of workers were employed full-time. Full-time workers are def ned as employed persons who usually worked 35 hours or more per week. While there was little difference in incidence rates with full-time and part-time workers respectively recording 71 and 63 work-related injuries per 1000 workers, part-time workers recorded a frequency rate more than double the rate for full-time workers: 74 injuries per million hours worked by part-time workers compared to 35 injuries per million hours worked for full-time workers.

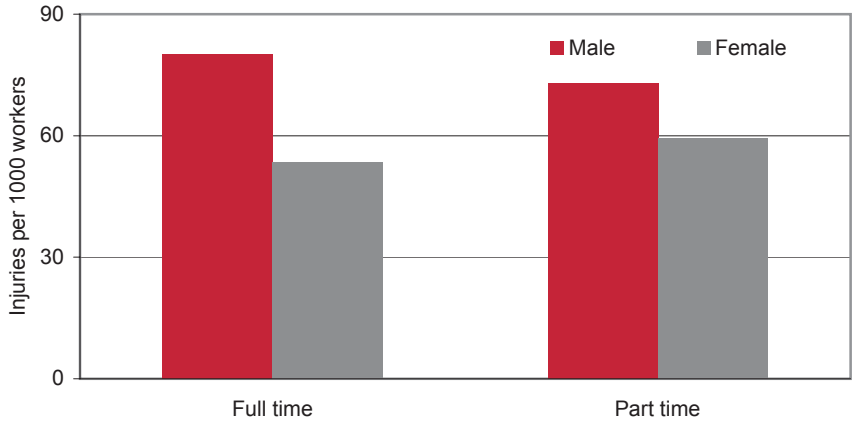
Sex

The other sections of this report have shown that sex had a notable impact on injury rates with male workers generally reporting higher incidence rates than female workers. Overall, male workers recorded an incidence rate 1.4 times that of female workers (79 injuries per 1000 male workers compared to 56 injuries per 1000 female workers). But was this difference associated with the full-time / part-time status of employment?

In 2005-06, two-thirds of full-time workers but only one quarter of part-time workers were male. Therefore, since three-quarters of part-time workers were female, this has led to a lower incidence rate of work-related injury amongst female workers overall.

However if we look at the groups individually we see that male full-time workers recorded an incidence rate one and half times that of female full-time workers but that male part-time workers recorded an incidence rate only 1.2 times the rate for female part-time workers. Figure 22 also shows that male part-time workers recorded a slightly lower rate of injury than full-time workers but for females this pattern was reversed with part-time female workers recording an incidence rate higher than full-time female workers.

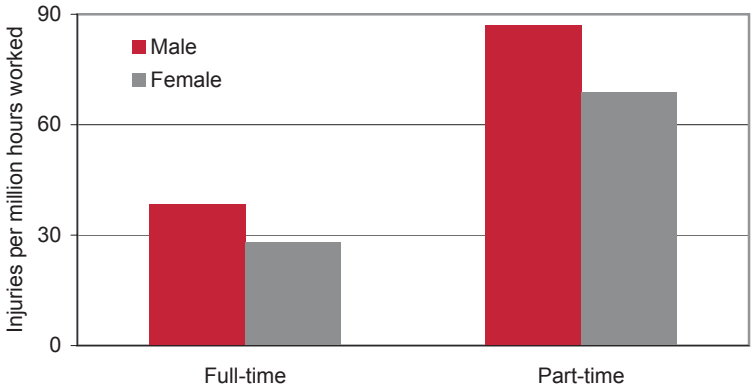
Figure 22 Work-related injuries: Incidence rates by full-time/part-time status by sex



When frequency rates were used to control the differences in normal working hours between part-time and full-time workers, the relative difference between the frequency rates of male and female full-time workers remained similar to the difference in incidence rates with male full-time workers recording a frequency rate 1.4 times that of female full-time workers. For part-time workers the relative difference between males and females was 1.2. However, whereas incidence rates were similar for the sexes irrespective of the full time or part-

time status of employment, the frequency rates showed that both male and female part-time workers recorded much higher frequency rates of work-related injury than their full-time working counterparts.

Figure 23 Work-related injuries: Frequency rates by full-time/part-time status by sex



Age

Young workers have been shown to have higher rates of injury than older workers in other sections of this report. This has important implications for the injury rates of full-time and part-time workers because the age distributions of these groups differ. Figure 24 shows the percentage of full-time and part-time workers within each age group. The percentage of full-time and part-time workers were similar for the older age groups, however, there was considerable difference in the younger groups. Part-time workers dominated the 15-24 years group whereas the pattern reversed for the 25-34 years group where there was a much larger proportion of full-time workers. This corresponds with young people working part-time while studying and then entering full-time employment on the completion of their studies.

Figure 24 Workers: Percentage by full-time/part-time status and age

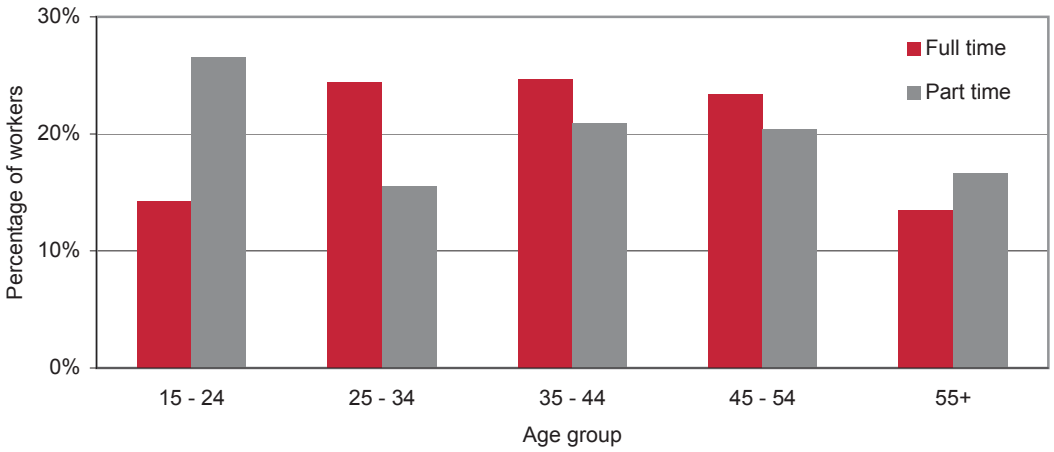
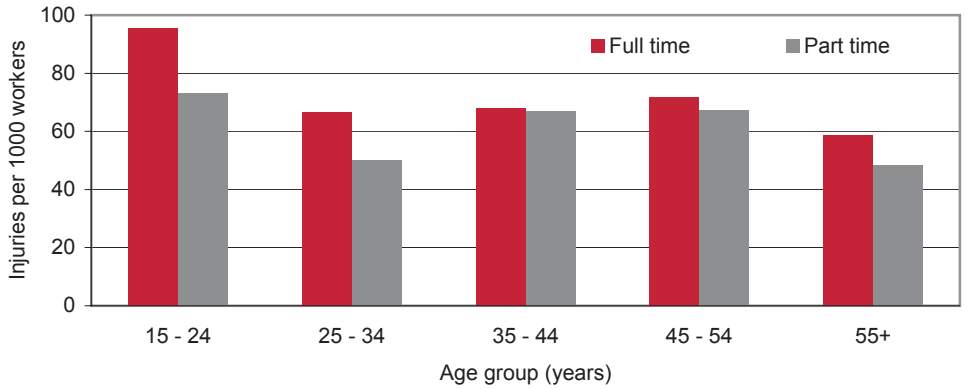


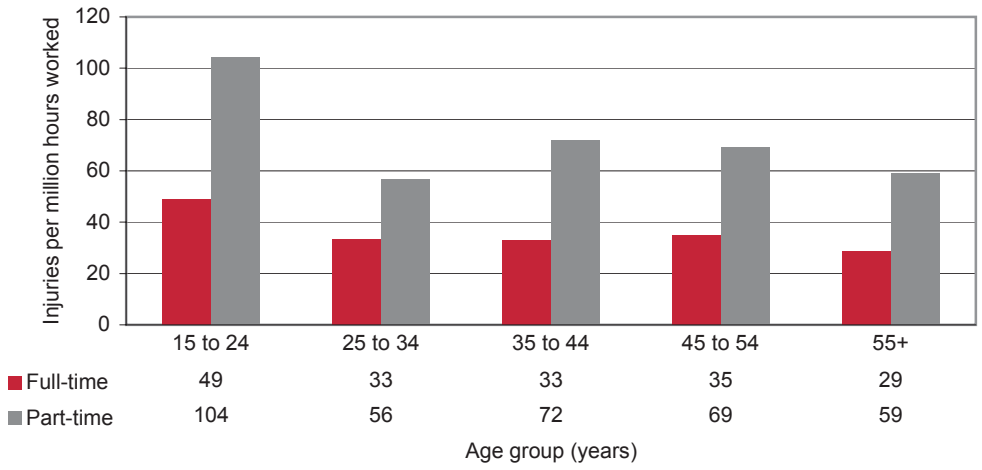
Figure 25 shows that there was an overall decline in the incidence rate of injury with increasing age of workers, irrespective of the part-time or full-time status of employment. While full-time workers typically recorded higher incidence rates than part-time workers, the biggest differences were found in the younger age groups, with full-time workers aged 15 to 24 years and 25 to 34 years recording substantially higher rates than part-time workers.

Figure 25 Work-related injuries: Incidence rate by full time/part time status and age



In contrast, Figure 26 shows that part-time workers had higher frequency rates of injury than full-time workers, irrespective of age and that overall, frequency rates declined with increasing age of workers. These data also show that young (15-24 year old) part-time workers had the highest frequency rates of work-related injury recording more than twice the frequency rate of full-time workers of the same age and more than 1.4 times the rate of part-time workers aged 35-44 years, who had the second highest frequency rate of injury.

Figure 26 Work-related injuries: Frequency rate by full-time/part-time status and age

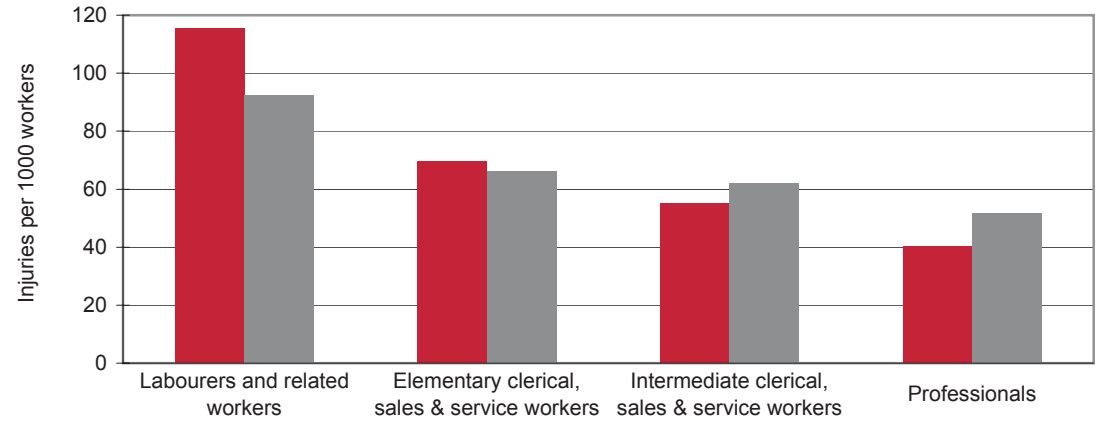


Occupation

Worker occupation was investigated in an effort to determine whether or not part-time workers dominated any particular type of work, and whether or not occupation affected rates of injury for part-time and full-time workers. There were four broad occupation groupings that each accounted for at least 12% of all part-time workers; Intermediate clerical, sales and service workers (23%), Elementary clerical, sales and service workers (19%), Professionals (17%), and Labourers and related workers (12%). Within these occupations between 30% and 57% of workers were employed part-time. Only one other occupation, Advanced clerical and service workers, recorded a percentage of part-time workers in this range but the occupation accounted for only 1% of all part-time workers so it has not been included in the following analyses.

As can be seen in Figure 27, with the exception of Labourers and related workers, the incidence rates of full-time and part-time workers were similar across the occupations presented.

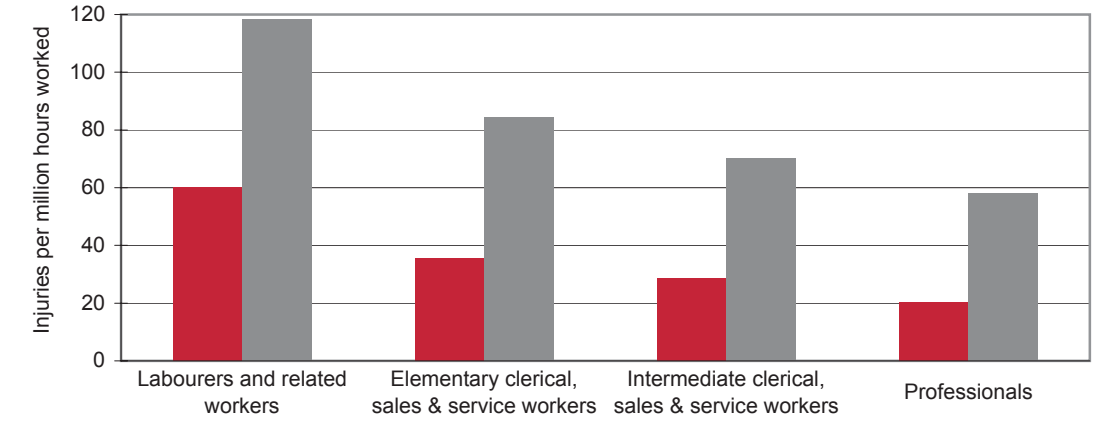
Figure 27 Work-related injuries: Incidence rates by full-time/part-time status by selected occupations



	Labourers and related workers	Elementary clerical, sales & service workers	Intermediate clerical, sales & service workers	Professionals
Full-time	115	69	55	40
Part-time	92	66	62	52

However, as has been shown previously, the frequency rates for part-time workers were consistently and signif cantly higher than the frequency rates for full-time workers. Figure 28 shows that part-time worker frequency rates were between two and three times higher than the rates for full-time workers. Although Labourers and related workers who worked part time had the highest frequency rates of work-related injury, the relative difference between part-time and full-time workers in this occupation was the smallest of occupations presented. The largest relative difference between full-time and part-time workers occurred in the Professionals occupation.

Figure 28 Work-related injuries: Frequency rates by full-time/part-time status by selected occupations



	Labourers and related workers	Elementary clerical, sales & service workers	Intermediate clerical, sales & service workers	Professionals
Full-time	60	35	28	20
Part-time	118	84	70	58

This section has shown that full-time/part-time status has a major impact on injury rates. This conf rms the predictions in the academic literature that part-time workers have worse OHS outcomes than full-time workers. However, it is important to note that part-time workers are not worse off per capita but per hour worked.

The next section will brief y investigate people working under contracts to see if that working arrangement had any impact on injury rates.

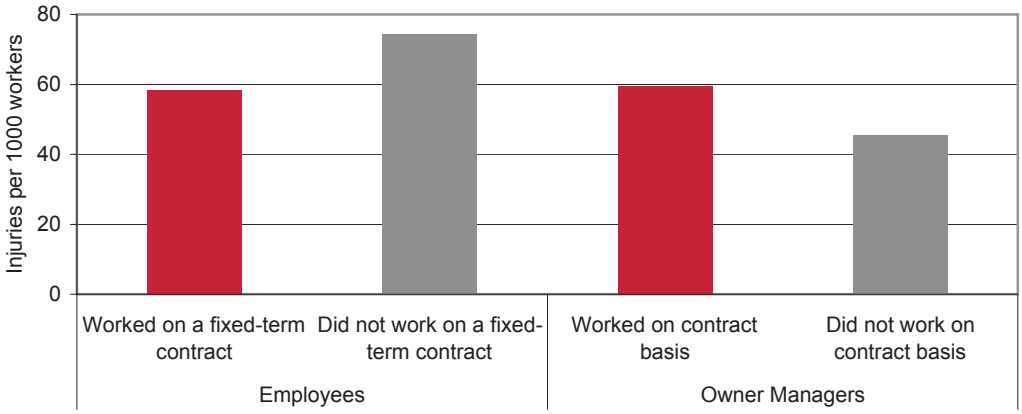
Contract workers

People who worked on f xed term contracts were def ned as employees with a contract of employment that specif ed the termination of that employment. People who worked on a contract basis, on the other hand, were Owner managers who were engaged by an organisation to provide a service at an agreed price and usually for a specif ed period. Only 4% of workers worked on f xed term contacts and 5% of workers worked on a contract basis in 2005–06.

Figure 29 shows that employees who worked on a f xed term contract recorded an incidence rate of 58 injuries per 1000 workers which was lower than the rate for employees who did not work on a f xed-term contract of 74 injuries per 1000 workers.

In contrast, Owner managers who worked on a contract basis recorded a higher incidence rate than those not working on a contract basis (59 injuries per 1000 contract workers compared to 45 injuries per 1000 workers for non-contract workers). Owner managers working on a contract basis accounted for 25% of all Owner managers.

Figure 29 Work-related injuries: Incidence rates by contractual nature of employment

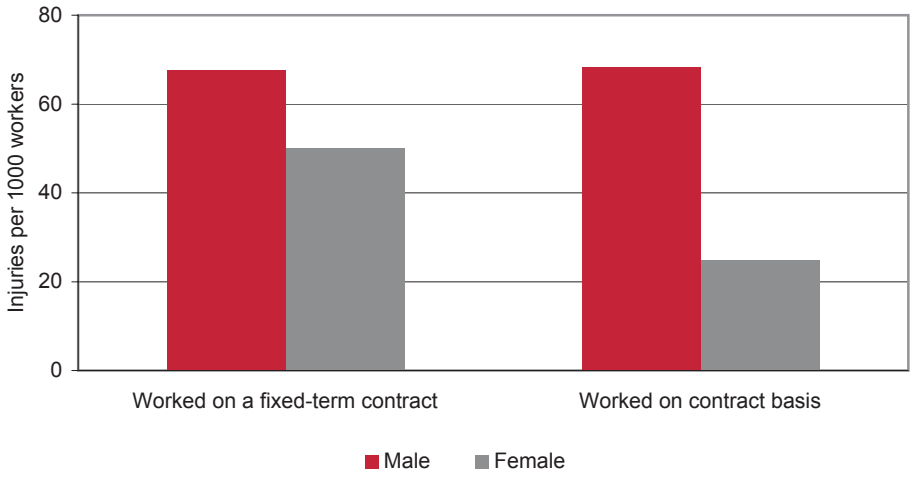


Sex

An analysis of contract workers by sex showed that Employees were split almost equally between the sexes, however, only 20% of those who worked on a contract basis were female. Figure 30 shows that males recorded higher incidence rate than females for both working on f xed term contracts and working on a contract basis: 68 injuries per 1000 workers for both groups of contractors. This is lower than the incidence rate recorded for all male workers of 79 injuries per 1000 male workers and indicates that male contract workers have a lower rate of injury to those not working on contract.

Females working on f xed term contracts recorded an incidence rate of 50 injuries per 1000 workers which is only slightly lower than the incidence rate of 56 injuries per 1000 recorded for all female workers. The incidence rate for females working on a contract basis has a relative standard error of around 50%, however, even doubling the rate of 25 injuries per 1000 female contract workers still means the incidence rate is much lower that the rate for male contract workers.

Figure 30 Work-related injuries: Incidence rates by sex and contractual nature of employment



Industry

An analysis of contract workers by industry was restricted by the small sample sizes. The analysis that could be undertaken concluded that the only industry where signif cant numbers of injured workers worked on a contract basis was the Construction industry. The data for this industry showed that those involved in contract work recorded a similar incidence rate to those not working on contract (91 injuries per 1000 workers involved with contracts compared to 85 for those not involved with contracts).

Occupation

The analysis by occupation was similarly restricted by the sample size. The analysis that could be undertaken concluded that the only occupations where signif cant numbers of injured workers worked on a contract basis were Professionals and Trades and related workers. Similar to the situation with the industry data, the incidence rates of those involved in contract work were similar to those that did not involve contract work.

Since the investigation on contract work could not be undertaken at a f ne level, the analysis above needs to be used with caution.

Conclusion

This report has investigated the impact of various employment arrangements on rates of work-related injury in Australian workers. The current literature suggests that people in precarious employment (the self employed, part-time, casual or contracted worker) have worse OHS outcomes than other workers. The data in this report supports some but not all of the predictions associated with the various employment arrangements.

There was no evidence that self employed workers (Employers and Own account managers) had higher rates of injury than employees, indeed self-employed workers typically had lower rates than Employees.

It is clear from this report that the part-time/full-time status of employment is associated with different rates of work-related injury. Per capita, part-time workers do not appear to have worse OHS outcomes than full-time workers. However, when the rate of injury ref ects the amount of time worked, part-time workers had dramatically higher frequency rates of injury. A number of demographic and employment factors appear to have affected the rates of injury. In particular male part-time workers and young part-time workers had higher rates of injury than female and older part-time workers respectively.

While the frequency rate of injuries incurred by part-time workers was twice as high as that recorded for full-time workers, employees with and without leave recorded similar frequency rates within the each category. Therefore, it can be said that casual workers do not incur greater rates of injury but that working part-time does.

Readers interested in the impact of leave entitlements on workers' compensation applications and the reasons for not claiming workers' compensation are encouraged to read another report in this series: Factors affecting workers' compensation applications for work-related injuries in Australia.

Explanatory notes

Definitions

ABS	Australian Bureau of Statistics
Contract basis	Owner managers who were engaged by an organisation to provide a particular service or undertake a particular task at an agreed price or rate, and generally for a specif ed period
Fixed term contract	Employees (excluding Owner managers of incorporated enterprises) with a contract of employment which specif es that the employment will be terminated on a particular date or on completion of a specif c task
Employees	People who work for a public or private employer and receive remuneration in wages, salary, a retainer fee from their employer while working on a commission basis, tips, piece rates, or payment in kind, or people who operate their own incorporated enterprise with or without hiring employees.
Employers	People who operate their own unincorporated economic enterprise or engage independently in a profession or trade, and hire one or more employees.
E/OAWs	Employers and Own account workers
EWLs	Employees with leave entitlements
EWOLs	Employees without leave entitlements
Incidence rate	The number of injuries per 1000 workers
Frequency rate	The number of injuries per million hours worked
Mechanism of injury	The mechanism of injury is the action, exposure or event that was the direct cause of the injury, or how the injury was sustained.
Type of injury	Refers to the type of injury sustained
Non-shiftworkers	Did not work under shift arrangements
OHS	Occupational Health and Safety
Own account workers	A person who operates his or her own unincorporated economic enterprise or engages independently in a profession or trade, and hires no employees.
Owner Managers	People who work in their own business, with or without employees, whether or not the business is of limited liability.
Paid leave entitlements	The entitlement of employees (excluding owner managers of incorporated enterprises) to either paid holiday leave or paid sick leave (or both) in their job. People employed in their own business or who were contributing family workers were not asked about their leave entitlements.
Shift arrangements	A system of working whereby the daily hours of operation at the place of employment are split into at least two set work periods (shifts), for different groups of workers
Shiftworkers	Worked under shift arrangements
WRIS	ABS Work-related injury survey (ABS Cat. No. 6324.0)

Confidentiality

The numbers of injuries presented in this publication have been rounded to the nearest 100 in adherence with the practice of the ABS work-related injuries publication (ABS Cat. No. 6324.0)

Industry classification

The industry of the worker has been classif ed in accordance with the Australian and New Zealand Standard Industrial Classif cation (ANZSIC), 1993 edition (ABS Cat. No.1292.0).

Mechanism of injury classification

The mechanism of injury classif cation is based on the Type of Occurrence Classif cations System (TOOCS) used by Safe Work Australia but with modif cations. Refer to Appendix 1 in ABS Cat. No. 6324.0 for the def nitions of each mechanism of work related injury.

Type of injury classification

In the WRIS this variable is referred to as 'Work-related injury or illness'. This variable is based on the Nature classif cation in the Type of Occurrence Classif cations System (TOOCS) used by Safe Work Australia but with modif cations. Refer to Appendix 1 in ABS Cat. No. 6324.0 for the def nitions of of each type of work related injury.

Occupation classification

The occupation of the worker has been classif ed in accordance with the Australian Standard Classif cation of Occupations (ASCO), Second Edition, July 1997, (ABS Cat. No. 1222.0)

Relative Standard Errors (RSEs)

All data presented in this report conform to the ABS guidelines regarding data quality. Unless otherwise marked, all data presented have RSEs below 25%. Data with RSEs above 50% have not been published. Comprehensive information about RSEs can be found in the ABS Work- related injuries publication (ABS Cat. 6324.0)

Rounding

Data have been rounded to the nearest 100. Due to the rounding process, discrepancies may occur between sums of the component items and totals.

Inquires

For further information regarding the contents of this publication contact:

The Data & Analysis Section
Safe Work Australia
(02) 6121 9115