

Quantifying morbidity attributable to traumatic injury using a population-based matched cohort in Australia

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Objective

This study aims to quantify 12-month morbidity attributable to traumatic injury using a population-based matched cohort in Australia.

Approach

A population-based matched cohort study of individuals ≥ 18 years using linked emergency department (ED) presentation, hospital separation and mortality records from three Australian states during 1 January 2008 to 31 December 2010. Injury admissions were identified using a principal diagnosis of injury (ICD-10-AM: S00-T75 or T79). The first injury-related hospital admission during 2009 was identified as the index injury admission and pre and post-index injury health service use was examined. The non-injured comparison cohort was randomly selected from the electoral roll and was matched 1:1 on age, gender, and postcode of residence at the date of the index injury admission of their matched counterpart. Comorbidities were identified using diagnosis classifications and a 1-year lookback period. Injury severity was estimated using the International Classification of Injury Severity Score (ICISS): minor (≥ 0.99), moderate (0.942– <0.99) and serious (<0.942).

Negative binomial and Poisson regression methods will be used to quantify associations between injury and counts of hospital admissions 12-month post-index injury health service use.

Results

There were 166,032 individuals injured in 2009 and admitted to hospital in New South Wales, South Australia or Queensland with a matched comparison. Males represented 57% of those injured, 30.1% were aged 18–34 years, 37.9% were aged 35–64

years, 32.1% were aged ≥ 65 years and 65.1% resided in an urban location. Comorbidities were more common in the injured cohort ($\chi^2 = 9384.5$, df (2), $p < 0.0001$). The most common injuries were fall-related (38.4%) and as a result of road trauma (12.4%). The majority of injuries were minor (43.9%) or moderate (37.2%), with 18.9% serious injuries. Attributable risk and adjusted rate ratios for injured versus matched non-injured comparison will be presented for pre and post health service use controlling for key confounding characteristics.

Conclusion

Through the use of national data linkage, this study contributes to informing research efforts on better quantifying the attributable burden of injury-related disability in Australia.

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