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The Long Shadow of Trauma: Comparing the Prevalence and Risks of Chronic Health Conditions among orthopaedic and other injury types 1-5 Years Post-Injury Using Population-Level Data Linkage

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Background and Objectives

Major trauma survivors experience a substantial long-term health burden, yet trajectories of chronic physical conditions across injury types remain poorly understood. This study used linked administrative datasets to determine (1) the prevalence of chronic conditions before injury, at injury, within one year, and one to five years postinjury; and (2) the risk of developing new chronic conditions one to five years after major trauma.

Keywords

linked data; trauma; chronic disease; long-term outcomes; population data science

Methods

We conducted a retrospective cohort study using linked records from the Victorian State Trauma Registry (VSTR), Victorian Admitted Episodes Dataset (VAED), Victorian Emergency Minimum Dataset (VEMD), and Victorian Registry of Births, Deaths and Marriages (BDM). Adults aged ≥ 18 years ($N = 28,522$) with major trauma between 2007–2016 who survived ≥ 1 year were included. Trauma was classified as orthopaedic injury, severe traumatic brain injury (s-TBI), spinal cord injury, or other trauma. Chronic conditions were identified from diagnostic codes, and cumulative prevalence and adjusted relative risks were estimated.

Results

Overall, 69.3% developed at least one chronic condition within five years. Preinjury conditions were most common in s-TBI (19.3%) and least in other trauma (6.6%). New-onset conditions were highest in s-TBI (21.7%) and orthopaedic trauma (21.4%), most frequently arthritis, cancer, and cardiovascular disease. Adjusted analyses showed no significant difference in long-term risk between orthopaedic and other trauma groups.

Conclusions

Chronic conditions are highly prevalent among trauma survivors. Linked population data highlight the need for long-term, integrated rehabilitation and chronic disease management after injury.

