Pre-injury health status of major trauma patients with orthopaedic injuries

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Outlines

- Background and statement of the problem
- Objectives
- Methods
- Results and discussion
- Conclusion
Why do we need to study pre-injury health status?

- **Pre-injury health status** is a key component of **trauma outcomes** measurement
  - important **to make valid estimates** of the **change from pre to post-injury health status**

- Impact of pre-injury health on **short and long term outcomes and recovery** following injury
  - survival, morbidity, service delivery costs

Corrigan et al., 2015
Scholten et al., 2017
What are the Gaps

- There has been **minimal research** on the pre-injury health status of people with orthopaedic injuries

- **Methodological limitations**, in particular small sample sizes, and the exclusion of older patients

- No detailed investigation of **factors** associated with pre-injury health status

- Little empirical evidence of **how time post-trauma impacts** on self-reported pre-injury health status

- Gabbe et al., 2007
- Cameron et al., 2005
- Scholten et al., 2017
- MacKenzie et al., 1993
Objectives of the study

- To describe the pre-injury health status of people with orthopaedic injuries reported 6, 12 and 24 months post-injury and to compare this with Australian population normative values;

- To identify factors associated with reporting better pre-injury health status
Methods

• A registry-based cohort study

• Orthopaedic major trauma patients (aged 18+) from Victorian State Trauma Registry (VSTR) were taken

• At least any one of the following criteria:
  ✓ an Injury Severity Score (ISS) > 12; or
  ✓ admission to intensive care unit (ICU) > 24 hr; or
  ✓ urgent surgery

Exclusions

• Spinal cord injury
• Traumatic brain injury
• Burn injury
Data collection

- **Pre-injury health status** was assessed by the EuroQuol – Visual analogue Scale (EQ-VAS).

- The **EQ-VAS** is the evaluative component of EQ-5D, a standardised measure of health status.

- The EQ-VAS provides important information on **patients’ views about their own health status**.

- It was collected by trained telephone interviewers at 6, 12 and 24 months post-injury.

- Pre-injury health status filled by **proxies** were excluded.
Statistical methods

- Summary statistics
- Mixed effects ordinal logistic regression
Result

Total number of patients registered by the VSTR 1 January 2009 to 31 December 2016 (n=21,966)

Excluded patients
- Patients who did not survive to discharge (n=2,764)
- Patients with traumatic brain injury (n=7,422)
- Patients with spinal cord injury (n=2,409)
- Patients with burn injury (n=448)
- Patients with other non-orthopaedic injury (n=98)

Survivors to discharge eligible for the study (n=8,825)

Interviewed at 6 months post injury (n=5,414)
- Deaths between discharge and 6 months post injury (n=143)
- Proxy interviewed (n=1,308)
- Pre-injury EQ-VAS missing at 6 month interview (n=1,960)

Interviewed at 12 months post injury (n=5,362)
- Deaths between 6 and 12 months post injury (n=230)
- Proxy interviewed (n=1,281)
- Pre-injury EQ-VAS missing at 12 month interview (n=1,952)

Interviewed at 24 months post injury (n=5,014)
- Deaths between 12 and 24 months post injury (n=365)
- Proxy interviewed (n=1,224)
- Pre-injury EQ-VAS missing at 24 month interview (n=1,992)

Interviewed at all time periods post injury (n=3,701)
Characteristics of study participants

- 77.8% Male
- 75.0% Working/studying prior to injury
- Median age (IQR) 49 (32-68) years
- 93.6% Unintentional injuries
- 63.6% Transport related injuries
- 22.2% Living with comorbidities
Comparison of mean pre-injury EQ-VAS for the study participants and Australian normative values

![Graph showing comparison of mean pre-injury EQ-VAS for different age groups and time post injury compared to Australian normative values.](image-url)
Factors associated with reporting better pre-injury EQ-VAS
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People with orthopaedic trauma are either healthier than the general population before injury, or have an inflated impression of their pre-injury health.

Values of pre-injury health status reported 6, 12 and 24 months post-injury are comparable.

There exists a significant association between reporting pre-injury health status and patient’s age, comorbidities, injury related factors, socioeconomic status and work related factors.

During retrospective pre-injury health evaluation, researchers need to consider factors associated with pre-injury health and should be aware of the bias that may happen due to encountering injury.
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