The Prospective Outcomes of Injury Study: Overview

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IPRU, Department of Preventive and Social Medicine, University of Otago
HRC-funded Team (2007-2013); & ACC co-funding (2007-2010)

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Associate investigators: Sue Wilson, Ari Samaranayaka et al
What was known?

• Previous studies examining predictors of poor outcomes have focused on:
  – Mainly hospitalised injury
  – Limited range of risk factors

• New Zealand’s unique context: Accident Compensation Corporation (ACC)
  – all injuries & causes; work & outside work; fault & no-fault
  – funded by a variety of levies
In New Zealand?

• Costly

• Little known about outcomes as experienced by injured people
POIS Aims

1) Determine injury, rehab, personal, social and economic factors leading to disability outcomes following injury in New Zealand

2) Qualitatively explore with sub-groups, including Māori, their lived experiences and perceptions of injury and outcomes

Methods

- ACC entitlement claims register
- 5 regions
- 18-64 years (inclusive)
- New Zealand resident
- 4 interviews

**Data**

- **Injury event**
- **Interview 3 months**
- **Interview 12 months**
- **Interview 24 months**

ACC data

NMDS data

Demographic & psychosocial factors

Injury-related factors

Outcomes: 3, 12 & 24 months
Participation

- 3-months (pre-injury & injury-related predictors & sub-acute outcomes)
  - 2856
- 12-months (outcomes)
  - 2282 (80%)
- 24-months (outcomes)
  - 2256 (79%)

Cohort

- 2856 people
- Mean age 41.4 years (SD=13.0)
- 23% born outside New Zealand
- 20% Māori (n=566)
- 8% Pacific ethnicities (n=239)
- 92% in paid employment pre-injury
- 46% reported a pre-injury chronic condition

OVERVIEW OF OUTCOMES IN POIS
**Functional status (EQ-5D)**

- **3 months** (female, chronic conditions, hospitalised, trouble accessing health services)


- **12 months** (pre-injury functioning, female, age, SES, chronic conditions, higher NISS)

Life satisfaction for injured Māori

- Those not satisfied with social relationships
- Poor self-efficacy
- High injury severity (NISS)

3-month outcomes & NISS

• We should not focus on those with ‘high’ NISS injury severity alone
  – >40% with ‘mild’ injuries reported moderate to extreme pain, psychological distress, less participation and 2/3 reported non-recovery


ACC and costs to 12 months post-injury

- ACC performing well; 5-10% costs out of pkt
- HRQoL (QALY) burdens are high


<table>
<thead>
<tr>
<th>Table 3</th>
<th>Accident Compensation Corporation (ACC) and personal spending and quality-adjusted life years (QALYs) lost in the first year after injury by New Injury Severity Score (NISS)-rated injury severity (mean costs reported; median costs in parentheses; costs in New Zealand dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings-related compensation</td>
<td>Other ACC support</td>
</tr>
<tr>
<td>ACC spending</td>
<td></td>
</tr>
<tr>
<td>NISS 1–3 (n=867)</td>
<td>$3555 ($1097)</td>
</tr>
<tr>
<td>NISS 4–6 (n=968)</td>
<td>$4822 ($2162)</td>
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<tr>
<td>NISS &gt;6 (n=311)</td>
<td>$10375 ($6223)</td>
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<td>Hospitalisation status</td>
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<tr>
<td>Not admitted (n=1667)</td>
<td>$4294 ($1296)</td>
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<tr>
<td>Admitted (n=548)</td>
<td>$7731 ($3962)</td>
</tr>
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</table>
Outcomes for Pacific Peoples


Pacific peoples’ outcomes at 3-months

• No evidence to suggest Pacific peoples’ likelihood of paid employment differs from non-Pacific people at 3-months

• However, Pacific peoples have increased likelihood of problems with:
  – disability
  – self-care
  – anxiety/depression
  – social relationships
Vocational outcomes

• POIS worker cohort 2626 participants
• 36% of whom have a work-related injury
• Majority (73%) are working at 3 months
• Of those still absent from work – the majority (71%) anticipate recovery to usual work
• However, 720 (27%) absent from work at 3 months; 18% absent at 24 months
Work-related outcomes

Work status 3 months after injury

• Single item asked at 3 month interview
  “Are you back at work?” Yes/No

• Outcome of interest: “Not working”

Pre-injury characteristics

Socio-demographic (10 factors)

Injury (6 factors)

Health (6 factors)

Work organisation (4 factors)

Lifestyle (5 factors)

Psychosocial (7 factors)

Physical work (5 factors)
Summary of 3-month results

- **Socio-demographic** (low income, financial insecurity, manual occupation)
  - Age, sex

- **Health**
  - General health, comorbidities, pain, prior injury, disability, work capacity

- **Injury** (perceived threat to life, hospitalisation)

- **Work organisation** (long working weeks, temporary employment)

- **Psychosocial**
  - Job strain, support, security, self-efficacy, optimism, prior depressive

- **Lifestyle (obesity)**

- **Physical work** (any painful work, any standing at work)
Other work analyses

• Work-related & non-work-related injuries
  – By 12 months workers with work-related injury have poorer recovery from injury compared to workers with non-work injury

• Work organisational factors
  – Workers from small sized organisation had increased odds of post-injury work absence

• Predictors of work status longer-term

• Work and disability trajectories over 12 months following injury
Socioeconomic outcomes

• Injury:illness comparison
• 60% decline in income 12 months after stroke
• 13% after injury
• 79% of injured back at work
• 49% of stroke group

Disability Outcomes

WHODAS II – 12-item

- Standing
- Household
- Learning new task
- Joining in community activities
- Emotionally affected
- Concentrating

WHODAS score ≥ 10

- Walking
- Washing body
- Getting dressed
- Dealing with people
- Friendships
- Day to day work
Disability outcomes

• Disability pre-injury: 5% overall

• Disability 3 months after injury:
  – 54% of hospitalised & 39% of non-hospitalised

• Disability 24 months after injury: 13% overall
  – 19% for Māori
  – 15% for Pacific Peoples

## Pre-injury and injury-related characteristics

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### Not retained in models

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# Independent predictors of disability

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Adjusted for: age, sex, NISS & 12 injury types
- Functional outcome trajectories
- PTSD
- Comorbidities
- Carers’ experiences
- Re-injury
- Experience of health services
- Longitudinal analyses

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