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Police injuries in profile

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Introduction

• In tactical populations such as the military and fire-fighters the lower extremity contributes between 31.7% and 66.5%.

• In the current law enforcement literature the lower extremity contributes between 13.2% and 29.7%.
Introduction

• Law enforcement personnel are required to perform tasks carrying loads which can range from 3-15kg.

• They can be required to perform arduous tasks in situations that are unpredictable and can be life threatening in some circumstances.

• Therefore they may be at a higher risk of musculoskeletal injury when compared to many other occupations.
Aim

• To determine the musculoskeletal profile of lower extremity injuries within a state law enforcement agency.
Methods

• Retrospective cohort study
• Data were collected by the NSW Police Force over a 7-year period (2009 - 2016). Data not meeting the specific definitions for musculoskeletal injury were excluded using a tiered system with data cleaned to ensure no incomplete entries and recoded to improve data integrity.
• Ethics approved by Bond University HREC, Protocol Number RO15360, with compliant consent waiver
Methods

• Definitions
  – Injury: ‘harm to the body which occurred as a result of energy applied to the body whilst on duty’
  – MSK injuries: ‘injuries/incidents of a musculoskeletal nature, affecting the muscles, nerves, tendons, joints and cartilage’
  – Lower extremity: ‘injuries to toe/s, foot, ankle, knee, groin, hip/s, leg-upper, leg-lower and leg-not classified’
Methods

• Data Analysis
  – Initially completed descriptively
    • Frequencies determined and means with standard deviations (SD) where applicable
  – Chi-square tests of independence (R x C)
    • Key descriptive variables between genders
  – Cramer’s V then calculated
    • Strength of any significant association
    • Level of significance set at < .001
Results

Of the initial 65,579 incidents:

- 12,452 (19%) were musculoskeletal lower limb incidents.
- The knee was the most commonly injured site (31.4%)
- Sprains and strains were the most common nature of injury (42.3%)
- Arresting offenders (24.2%) was the most common cause of injury.
- Slips/trips/falls (37.8%) were found to be the most common cause of injury.
Results

Body Site by frequency

All Officers

- Leg upper: 31%
- Knee: 1%
- Foot: 0%
- Hip/s: 4%
- Ankle: 10%
- Toe/s: 7%
- Leg not classified: 6%
- Multiple body sites (1 or more lower extremity): 2%
- Multiple body sites (only lower extremity): 2%
- Groin: 5%

Male Officers

- Leg lower: 33%
- Knee: 0%
- Foot: 0%
- Hip/s: 10%
- Ankle: 7%
- Toe/s: 1%
- Leg not classified: 5%
- Multiple body sites (1 or more lower extremity): 2%
- Multiple body sites (only lower extremity): 1%
- Groin: 0%

Female Officers

- Leg lower: 33%
- Knee: 0%
- Foot: 0%
- Hip/s: 10%
- Ankle: 6%
- Toe/s: 1%
- Leg not classified: 4%
- Multiple body sites (1 or more lower extremity): 3%
- Multiple body sites (only lower extremity): 1%
- Groin: 0%
Results

• Variations were found between gender. Most notably within the incident activity (p<.001), where males had a 10.6% higher rate for arresting an offender and females an 8.6% higher rate for walking/running.

• The mean number of hours worked prior to injury was 6.12±3.96, mean shift length = 10.34±3.52 hours.
Discussion

• The leading sites of injuries (knees and ankles) were similar to that of other tactical populations.

• The tendency for injuries to occur later in a shift suggest that fatigue may play a part.
Discussion

• For any Police Force unit, injuries have consequences that can range from a couple of days for recovery and rehabilitation to longer periods of with many lost working days and increased future injury risk.

• Evidence based lower extremity injury reduction measures and return-to-work protocols may be of use in this population. Work hardening should include specific tasks (like arresting an offender) and progress to functionality over a full shift length.
References

References


