A Profile of Ankle Injuries in Australian Army Soldiers
Schram, Ben; Orr, Rob Marc; Canetti, Elisa

Unpublished: 11/02/2020

Document Version:
Peer reviewed version

Link to publication in Bond University research repository.

Recommended citation (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

For more information, or if you believe that this document breaches copyright, please contact the Bond University research repository coordinator.
A Profile of Ankle Injuries in Australian Army Soldiers

Ben Schram¹, Robin M Orr¹, Elisa Canetti¹
¹Tactical Research Unit, Bond University, Queensland, Australia.

Background
Injuries in the military are associated with interruptions in service, detract from capability and present a high financial and resource burden. Prior to injury prevention strategies being implemented, research is needed to further understand the circumstances of these injuries. Ankle injuries are among the most common injuries reported in military training (1, 2, 3). The ankle in particular is a problematic area as many perceive it to not be a serious injury, despite the potential to lead to long term disability (4). The risk of recurrence is also considered to be high, with estimates of double the risk of a recurrent ankle sprain within the 12 months after an initial injury with further risk of ongoing pain and instability (5). In military personnel, risk ratios of recurrence of 2.8 [2.02-3.87] in males and 2.83 [1.89-4.23] in females have been reported. The aim of this investigation was to profile ankle injuries suffered by both full time and part time Army personnel over a two-year period.

Methods
Data from a two-year period 2012–2014 was obtained from the Department of Defence, detailing the locations, activities, natures and mechanisms of ankle injuries. Minor Personal Injuries (MPI) were injuries which did not require immediate hospitalization, whereas Serious Personal Injuries (SPI) did. Descriptive analyses were performed to determine the lead contributors of these types to ankle injuries, and ankle injury rates were calculated for each service type relative to days of exposure.

Results
A total of 1315 ankle injuries were reported, giving an incidence rate of 2.1 recorded ankle injuries per 100 soldier years of service. Of these injuries, 1291 were deemed Minor Personal Injuries (MPI) and 24 as Serious Personal Injuries (SPI). MPIs were most commonly trauma to the ankle joint and ligaments (n=693), soft tissue (n=491) or due to fractures (n=54), with the ankle injuries most commonly occurring in Physical Training (n=457), Combat Training (n=267) or while walking (n=109). Ankle injuries were commonly due to Falls (n=832), gradual onset muscular stress (n=284) and muscular stress from handling objects (n=45). SPIs affecting the ankle were primarily fractures (n=10), soft tissue injuries (n=6) or dislocations (n=4), and occurred during Physical Training (n=4), while playing touch football (n=3) or while walking (n=3), due primarily to falls (n=12), contact with objects (n=4), or cumulative muscular stress (n=5).

Background
The ankle in particular is a problematic area as many perceive it to not be a serious injury, despite the potential to lead to long term disability (4). The risk of recurrence is also considered to be high, with estimates of double the risk of a recurrent ankle sprain within the 12 months after an initial injury with further risk of ongoing pain and instability (5). In military personnel, risk ratios of recurrence of 2.8 [2.02-3.87] in males and 2.83 [1.89-4.23] in females have been reported. The aim of this investigation was to profile ankle injuries suffered by both full time and part time Army personnel over a two-year period.

Methods
Data from a two-year period 2012–2014 was obtained from the Department of Defence, detailing the locations, activities, natures and mechanisms of ankle injuries. Minor Personal Injuries (MPI) were injuries which did not require immediate hospitalization, whereas Serious Personal Injuries (SPI) did. Descriptive analyses were performed to determine the lead contributors of these types to ankle injuries, and ankle injury rates were calculated for each service type relative to days of exposure.

Results
A total of 1315 ankle injuries were reported, giving an incidence rate of 2.1 recorded ankle injuries per 100 soldier years of service. Of these injuries, 1291 were deemed Minor Personal Injuries (MPI) and 24 as Serious Personal Injuries (SPI). MPIs were most commonly trauma to the ankle joint and ligaments (n=693), soft tissue (n=491) or due to fractures (n=54), with the ankle injuries most commonly occurring in Physical Training (n=457), Combat Training (n=267) or while walking (n=109). Ankle injuries were commonly due to Falls (n=832), gradual onset muscular stress (n=284) and muscular stress from handling objects (n=45). SPIs affecting the ankle were primarily fractures (n=10), soft tissue injuries (n=6) or dislocations (n=4), and occurred during Physical Training (n=4), while playing touch football (n=3) or while walking (n=3), due primarily to falls (n=12), contact with objects (n=4), or cumulative muscular stress (n=5).

Background
Injuries in the military are associated with interruptions in service, detract from capability and present a high financial and resource burden. Prior to injury prevention strategies being implemented, research is needed to further understand the circumstances of these injuries. Ankle injuries are among the most common injuries reported in military training (1, 2, 3). The ankle in particular is a problematic area as many perceive it to not be a serious injury, despite the potential to lead to long term disability (4). The risk of recurrence is also considered to be high, with estimates of double the risk of a recurrent ankle sprain within the 12 months after an initial injury with further risk of ongoing pain and instability (5). In military personnel, risk ratios of recurrence of 2.8 [2.02-3.87] in males and 2.83 [1.89-4.23] in females have been reported. The aim of this investigation was to profile ankle injuries suffered by both full time and part time Army personnel over a two-year period.

Methods
Data from a two-year period 2012–2014 was obtained from the Department of Defence, detailing the locations, activities, natures and mechanisms of ankle injuries. Minor Personal Injuries (MPI) were injuries which did not require immediate hospitalization, whereas Serious Personal Injuries (SPI) did. Descriptive analyses were performed to determine the lead contributors of these types to ankle injuries, and ankle injury rates were calculated for each service type relative to days of exposure.

Results
A total of 1315 ankle injuries were reported, giving an incidence rate of 2.1 recorded ankle injuries per 100 soldier years of service. Of these injuries, 1291 were deemed Minor Personal Injuries (MPI) and 24 as Serious Personal Injuries (SPI). MPIs were most commonly trauma to the ankle joint and ligaments (n=693), soft tissue (n=491) or due to fractures (n=54), with the ankle injuries most commonly occurring in Physical Training (n=457), Combat Training (n=267) or while walking (n=109). Ankle injuries were commonly due to Falls (n=832), gradual onset muscular stress (n=284) and muscular stress from handling objects (n=45). SPIs affecting the ankle were primarily fractures (n=10), soft tissue injuries (n=6) or dislocations (n=4), and occurred during Physical Training (n=4), while playing touch football (n=3) or while walking (n=3), due primarily to falls (n=12), contact with objects (n=4), or cumulative muscular stress (n=5).

Conclusions
Targeted approaches to minimizing these ankle injuries should focus on reducing risks of slips, trips and falls during both Physical Training and Combat Training. Previous ankle injuries need to be rehabilitated completely so they do not contribute to re-injury.

Operational Relevance
Injuries to the ankle are common in tactical environments and recurrence rates are the highest of all lower limb musculoskeletal injuries. Attempts should be made to identify causes and minimize first time occurrences where possible.

References: