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The incidence and risk factors for the development of fractures in military recruits and qualified personnel: a rapid review

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Poster Presentations Saturday Lunchtime, Exhibition Hall, October 7, 2023, 12:50 PM - 1:32 PM

Aim: To identify and synthesise findings from studies reporting on the incidence of, and risk factors for, traumatic fractures in military personnel.

Design: Rapid review

Methods: Following the PRISMA guidelines, PubMed, EBSCO, CINAHL and ProQuest databases were systematically searched using key terms derived from the following concepts: 'fractures', 'work' and 'risk'. Key findings from the included studies were extracted and tabulated, including risk factors, incidence and risk ratios.

Results: Twenty-eight studies were included, with four studies reporting on recruit/trainees and 24 reporting on qualified military personnel. Recruit incidence ranged from 7.7 – 29.5 cases per 1,000 person-years, while incidence in qualified personnel ranged from 1.9 – 57.6 cases per 1,000 person-years. Enlisted personnel, younger service members (18 – 29 years), and personnel of Army and Marines Corp branches were at increased risk. Fractures predominantly occurred in the lower extremities, although the hands were often a site of traumatic fracture. Risk factors and mechanisms identified for traumatic fractures included NSAID use, sports, physical training, motor vehicle accidents, collisions, blasts from improvised explosive devices, and gunshots, often in combat settings.

Conclusion: The findings highlight the incidence of fractures in recruits and qualified military personnel, and identify a range of risk factors in military environments.

Key Practice Points:

- Army and Marine Corp personnel were at higher risk of fractures, with the lower limbs most affected.
- Sports and physical training are a leading cause of fracture.
- Military populations with history of non-steroidal anti-inflammatory drug use were at increased risk of fractures.