

Bond University  
Research Repository



## Load Carriage Injuries in Chinese Military Soldiers: An Investigatory Review

Orr, Rob Marc; Wang, Da-lei; Schram, Ben; Pope, Rodney

*Licence:*  
CC BY-NC-ND

[Link to output in Bond University research repository.](#)

*Recommended citation(APA):*

Orr, R. M., Wang, D., Schram, B., & Pope, R. (2019). *Load Carriage Injuries in Chinese Military Soldiers: An Investigatory Review*. Poster session presented at World Confederation for Physical Therapy Congress 2019, Geneva, Switzerland. <https://www.abstractstosubmit.com/wcpt2019/archive/#/viewer/634>

**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.

## Background

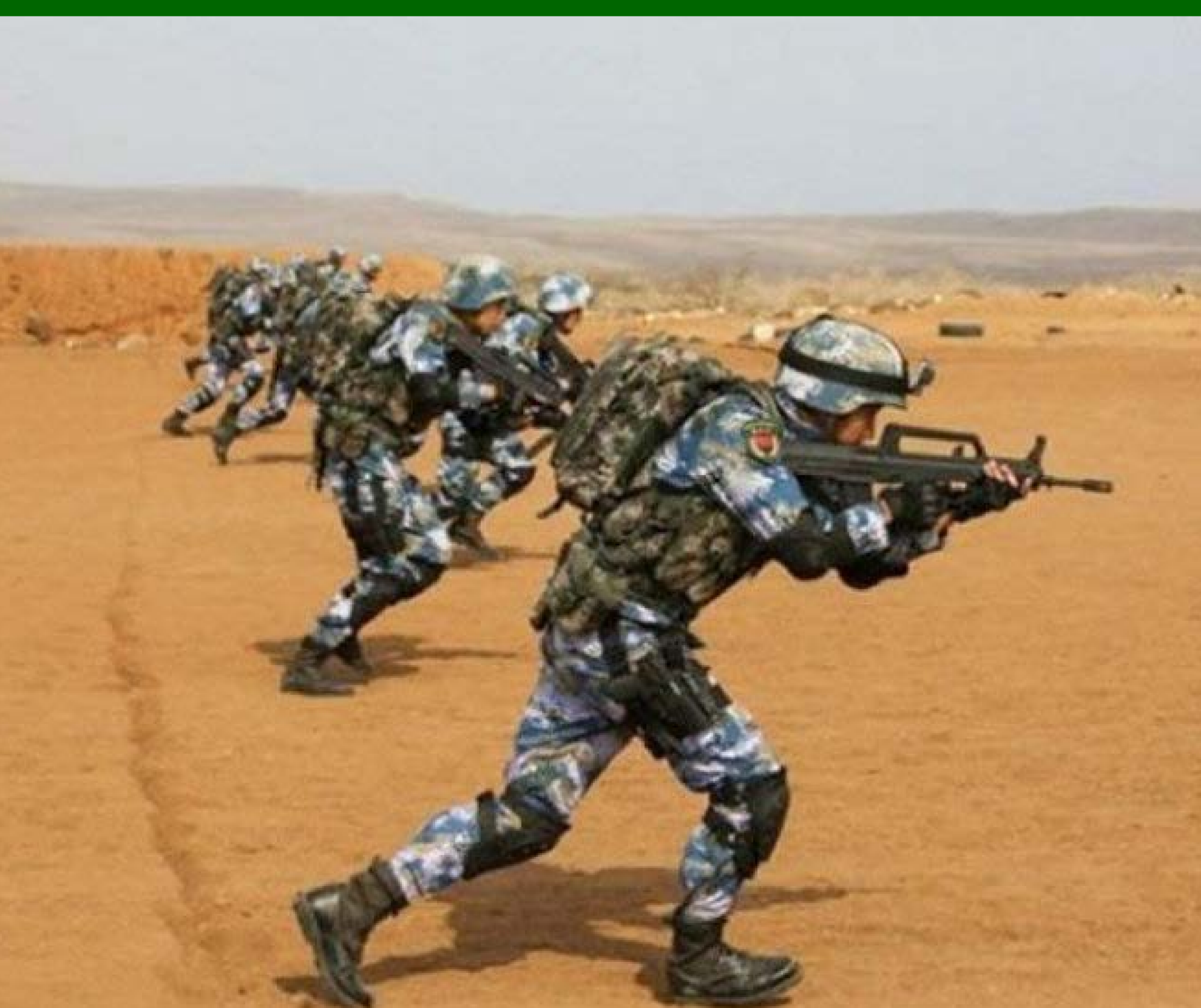
In a review by Orr et al.<sup>1</sup>, on soldier load carriage injuries, no research investigating load carriage injuries in Chinese military soldiers was included.

A potential reason for this lack of inclusion of studies of Chinese soldiers may have been language bias, as only papers published in English were included in the review and all of the search terms were English language terms.

In order to address this gap, a bi-lingual review including both English and Chinese search terms and academic databases were used to identify studies of load carriage injuries in Chinese military soldiers.

## Purpose

To investigate research reporting on load carriage injuries in soldiers from the Chinese Army.



## Methods

Using a three stage approach, English and Chinese search terms were entered into online databases including: English-language databases (PubMed, EBSCO and Web of Science) and Chinese-language databases (CNKI and CQVIP) (See Table 1).

Titles and abstracts of all articles identified in the searches were screened to remove duplicates and articles that clearly did not meet eligibility criteria for the review.

The remaining full text articles subject to dedicated inclusion criteria and exclusion criteria (See Figure 1).

## Results

A total of 1613 records were extracted from the databases (See Figure 1).

- English n=1538,
- Chinese n=75

Following initial screening, 127 full-text articles were assessed for eligibility.

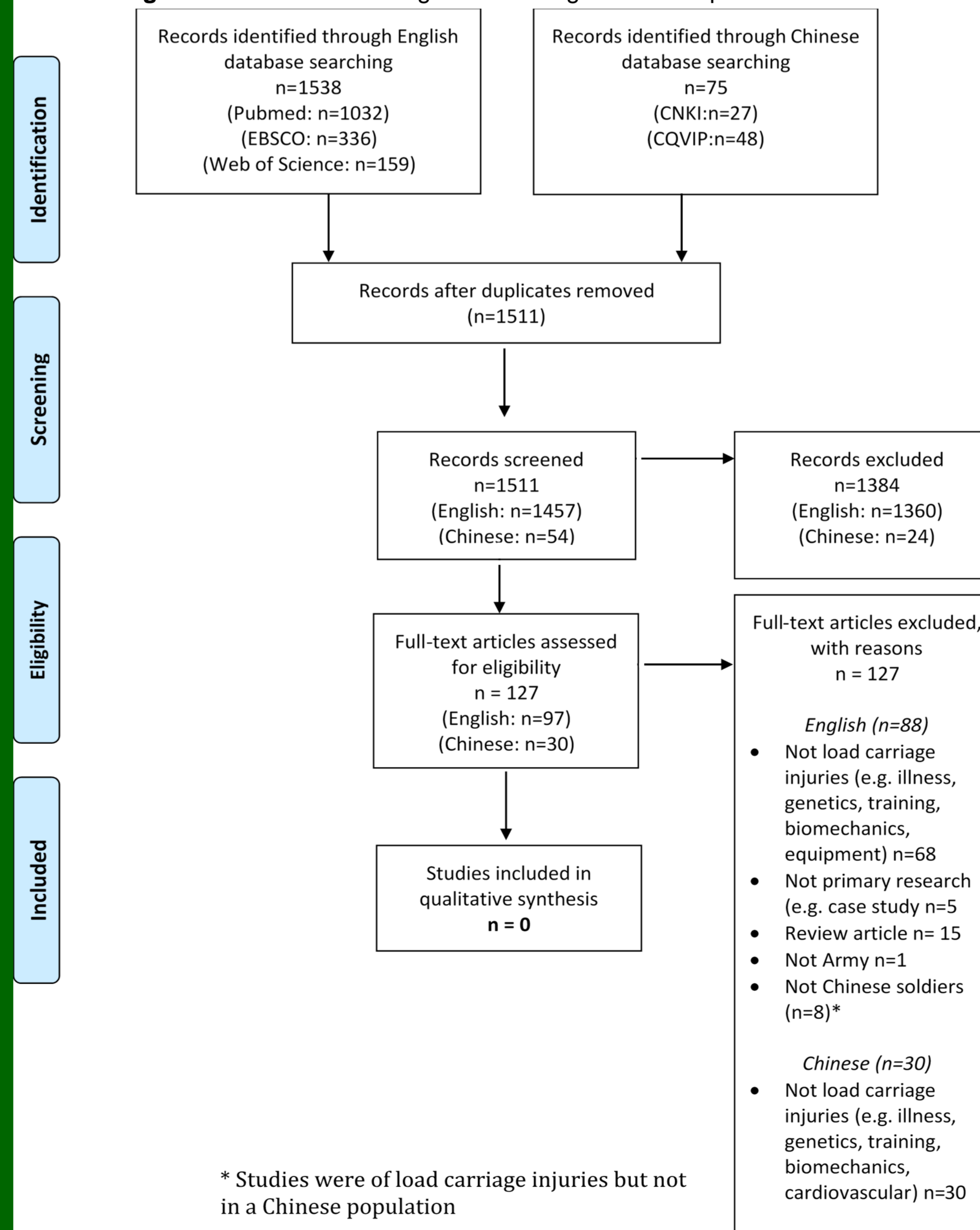
While eight (n=8) English research studies reported on load carriage injuries, no research investigating load carriage injuries was identified in either the Chinese literature databases or in the Chinese Army as a population.

None of the eight (n=8) studies published in English were found on the Chinese databases, while none of the Chinese articles found to discuss load carriage biomechanics were found on English databases.

Stage	Search terms – English	Search terms – Chinese
Stage 1:	((military OR Army OR defence OR defense)) AND injury) AND (load carriage)	((军事 OR 军队 OR 防御 OR 防卫)) AND 损伤) AND (负重)
Stage 2:	((Chinese Army OR Chinese Armed Forces OR Chinese soldier)) AND (injury OR exercise Injury OR training injury) AND (load OR load carriage)	((军队 OR 武警 OR 士兵 OR 战士)) AND (损伤 OR 运动伤 OR 训练伤) AND (负重 OR 负荷)
Stage 3a	((Chinese Army OR Chinese Armed Forces OR Chinese soldier)) AND (injury OR exercise Injury OR training injury)	((军队 OR 武警 OR 士兵 OR 战士)) AND (损伤 OR 运动伤 OR 训练伤)
Stage 3b	((Chinese Army OR Chinese Armed Forces OR Chinese soldier)) AND (load OR load carriage)	((军队 OR 武警 OR 士兵 OR 战士)) AND (负重 OR 负荷)

Table 1: Search terms in English and Chinese and the respective stages of the search

Figure 1: PRISMA flow diagram detailing the search process and results



## Discussion

No research investigating injuries associated with load carriage in a Chinese soldier population was identified in the literature review. Research in Western and Chinese Armies strongly suggest similarities in biomechanical impacts of load carriage.

As such, the patterns of injuries that are sustained by Western armies would conceivably be quite similar and incurred by Chinese Army soldiers.

However, potential differences in equipment type and other cultural and morphological differences may potentially lead to differences in potential for, and nature of, load carriage associated injuries.

This research demonstrates the potential for language bias in reviews employing single language databases.

## Implications

Chinese soldiers may suffer similar load carriage injuries to soldiers of Western armies.

Injury prevention and mitigation strategies and rehabilitation and return-to-work practices, like those used by Western armies<sup>2</sup>, may be of value when treating load carriage induced injuries in Chinese soldiers.

Epidemiological studies, focusing specifically on load carriage injuries sustained by Chinese soldiers, are needed to validate the assumption that rates and patterns of load carriage injuries in the Chinese Army are similar to those in Western armies.

## References

- <sup>1</sup> Orr, R. M., Pope, R., Johnston, V., & Coyle, J. (2014). Soldier occupational load carriage: a narrative review of associated injuries. *Int J Inj Contr Saf Promot*, 21(4), 388-396. doi:10.1080/17457300.2013.833944
- <sup>2</sup> Wang, D., & Orr, R. M. (2018). A review of the Physical Conditioning Program on Load Carriage Performance of Soldiers. *Journal of Military Physical Education and Sports*, 37(1), 33-37