

eTable 1 Main characteristics of the 19 included articles grouped by the study population

Author Year Country	Study Design	Method	Outcome
Army			
Gun, B. K. et al. 2021 United States [1]	Cross-sectional study	Military Health System's Data Repository (MDR)	Diagnosis of musculoskeletal low back pain identified by having at least one ICD-10 code for low back pain during the study period, and being the first incident of low back pain
Sidiq, M. et al. 2021 Saudi Arabia [2]	Cross-sectional study	Rolland Morris Disability Questionnaire (RMDQ), WHO- Five Well-Being Index	Pain or discomfort originating from the lower back without any known spinal diseases for 12-weeks is termed non-specific chronic low back pain (NSCLBP)
Zack, O. et al. 2018 Israel [3]	Historical cohort study	Israel Defense Forces (IDF) Database	The IDF's book of medical profiles based on reported LBP history, findings on physical examination and radiologic findings (X-ray/CT/ MRI) Newly or exacerbating reported LBP evaluated by certified orthopedic surgeon in accordance with medical parameters defined in the military medical book
Wei, G. et al. 2018 China [4]	Cross-sectional study	Questionnaire	LBP was defined as pain in the lower back extending from the 12th rib to the lumbar or lumbosacral area that is not related to a tumor, inflammation, injury, or lumbar disc protrusion
Seay, J. F. et al. 2017 United States [5]	Historical cohort study	Total Army Injury and Health Outcomes Database (TAIHOD)	Incident LBP identified by ICD-9-CM code (353.4, 720.2, 721.3, 721.42, 722.10, 722.52, 722.73, 722.93, 724.02, 724.03, 724.2, 724.3, 724.4, 724.5, 724.6, 738.4, 739.3, 739.4, 756.11, 756.12, 839.20, 846.1, 846.8, 846.9, 847.2, 847.3)
Moshe, S. et al. 2016 Israel[6]	Historical cohort study	Examination (e.g., medications, X- ray or CT imaging studies, EMG,) Medical Records	LBP was categorized according to criteria written in the Israel Defense Forces 's book of medical profiles: 1 - All subjects that have no evidence of past and/or present LBP; 2 - Mild scoliosis or kyphosis, Negative medical history for LBP; 3- Positive medical history for LBP , no clinical findings, normal X-rays; 4-Positive medical history for LBP , no clinical findings, Xray with mild changes; 5 - Positive medical history for LBP , clinical

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			findings with neurological deficit. CT or MRI showing herniated disks or spinal stenosis or pressure on neurological roots; 6 – Severe back pain with neurological deficit or severe functional limitation but good prognosis for improvement; 7 - Severe back pain with a significant neurological deficit and severe functional limitation.
Nissen, L. R. et al. 2014 Danish [7]	Historical cohort study	Standardized Nordic Questionnaire	The health outcome's part included the SNQ for the analysis of musculoskeletal symptoms, and this was used to assess the presence of LBP in this study
Knox, J. B. 2014 United States [8]	Historical cohort study	Expeditionary Medical Encounter Database (EMED)	US Defense Medical Epidemiology Database for the International Classification of Diseases, Ninth Revision, Clinical Modification code for low back pain (724.20).
Roy, T. C. et al. 2013 United States [9]	Prospective cohort study	Pre-deployment Survey (e.g., APFT)	Self-reported LBP: pain interfering with the performance of occupational tasks
Roy, T. C. et al. 2013 United States [10]	Prospective cohort study	Pre-deployment Survey (e.g., APFT)	New episode of LBP of moderate or worse severity was defined as a report of pain during deployment occupational tasks combined with a rating of - 4 or less on the Global Rating of Change (corresponding with moderate to severe LBP)
Taanila, H. P. et al. 2012 Finland [11]	Prospective cohort study	Computerized Patient Files	LBP occurs during active service hours, leisure time, or on the way to or from the garrison for leave ICD-10 diagnoses: M54 (dorsalgia), M54.5 (LBP), M41 (scoliosis), M54.9 (dorsalgia, unspecified), M54.3 (sciatica) Confirmed by physician based on computerized patient records
Ernat, J. et al. 2012 United States [12]	Historical cohort study	Expeditionary Medical Encounter Database (EMED)	ICD-9-CM code 724.20 for ambulatory patients' initial visits for "lumbago" (LBP)

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Rozali A, et al. 2009 Malaysia [13]	Cross-sectional study	Questionnaire (adopted from Magnusson et al., Nordic Questionnaire, and General, Health Questionnaire (GHQ 12), The Human Vibration Meter	Low back pain (LBP) is defined as back pain or discomfort in the lower back region between the twelfth rib and gluteal folds, with or without radiating pain down one or both legs, lasting one day or longer in the previous seven days (7 days LBP) or the previous 12 months (12-month LBP)
Mattila, V. M. et al. 2007 Finland [14]	Cross-sectional study	Questionnaire	Self-reported LBP: a visit to a physician by the time the person entered the military service and answer question “Have you ever visited physician due to low back pain?”
Strowbridge, N. F. et al. 2005 British [15]	Prospective cohort study	From Colchester Garrison primary care facility and Sports Medicine and Rehabilitation Centre	Low back pain was defined as pain, muscle tension or stiffness located below the costal margin, and above the inferior gluteal folds, with or without leg pain
Hestbaek, L. et al. 2005 Danish [16] Marine	Cross-sectional study; Prospective cohort study	Questionnaire (e.g., modeled on the Nordic low back pain questionnaire)	Pain or discomfort in the lower back (as the area between the gluteal folds and the 12th ribs) during the past year or military service
Monnier, A. et al. 2019 Sweden [17]	Prospective cohort study	Questionnaire, Physical tests	Occurrence of any self-rated pain in the lower back (from twelfth ribs to lower gluteal folds) within the preceding week, as reported during the weekly follow-up LBP limiting work ability: occurrence of any self-rated pain in the lower back within the preceding week that had limited work ability
MacGregor, A. J. et al. 2012 United States [18] Air Force	Historical cohort study	Standard Inpatient Data Record (SIDR), Standard Ambulatory Data Record (SADR) databases, Expeditionary Medical Encounter Database (EMED)	Diagnosis of LBP: presence of an ICD-9-CM code of 724.2 (lumbago) over the course of deployment or within 1 year of end of deployment
Posch, M. et al. 2019 Austrian [19]	Cross-sectional study	Questionnaire (modified Nordic Musculoskeletal questionnaire)	Low back pain was defined as any reported pain experience, ache, or discomfort from lower back

ICD-10, international classification of diseases, 10th revision; SNQ standardized Nordic questionnaire; ICD-9-CM, international classification of diseases, 9th Revision, clinical modification; LBP, low back pain; APFT, army physical fitness test score; RMDQ, Rolland Morris Disability Questionnaire; WHO-5, world health organization – Five; MRI, magnetic resonance imaging; CT, computed tomography;

Reference

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4. **Wei G, Li H, Wang B, Wu J, Wu F, Lin Z.** A retrospective cross-sectional survey of non-specific lower back pain among a cohort of Chinese army soldiers. *International journal of surgery (London, England)* 2018; 56: 288-93.
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6. **Moshe S, Zack O, Finestone AS, et al.** The incidence and worsening of newly diagnosed low back pain in a population of young male military recruits. *BMC musculoskeletal disorders* 2016; 17: 279.
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Marines following combat deployment. *Military medicine* 2012; 177(7): 845-9.

19. **Posch M, Schranz A, Lener M, et al.** Prevalence and potential risk factors of flight-related neck, shoulder and low back pain among helicopter pilots and crewmembers: a questionnaire-based study. *BMC musculoskeletal disorders* 2019; 20(1): 44.