



Global Burden of Musculoskeletal Conditions

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The Global Burden of Disease Study (GBD) has, for some decades, informed our understanding of the contribution of a wide range of conditions and injuries to the global burden of disease. In this context, the burden of disease is the effect of specific conditions or injuries (or groupings of these) on premature death and/or disability (1). During the last decade, the relative contribution of disability to the overall burden of disease globally has become the larger contributor compared to premature mortality.

Painful musculoskeletal conditions are the leading cause of disability globally, based on estimates of Years Lived with Disability (YLDs) for common musculoskeletal conditions (including low back pain (LBP); neck pain; hip, knee, hand, and other osteoarthritis; rheumatoid arthritis; gout and selected other musculoskeletal conditions combined) (2). Low back pain continues to be the greatest cause of disability burden worldwide. In 2020, there were an estimated 619 million prevalent cases of LBP globally and an estimated 69 million YLDs due to LBP representing 7.7% of all YLDs globally, and is the greatest specific contributor to the world's burden of disability (3).

Based on 2019 GBD data, globally, there were 2.41 billion people who had health conditions that would be suitable for, and benefit from, rehabilitation for selected conditions (4). Musculoskeletal conditions were the largest contributors, with an estimated 1.71 billion people in need of rehabilitation. For specific conditions included in this study, LBP had the largest number of YLDs overall (64 million), followed by neck pain (22.0 million), osteoarthritis (19.0 million), and rheumatoid arthritis (2.4 million).

Low back pain was found to be the leading condition for rehabilitation needs in 134 of the 204 countries included in the analysis. It is noteworthy that currently, GBD does not include the burden of disease for a comprehensive set of musculoskeletal conditions.

Musculoskeletal conditions are prevalent across the lifespan and are significantly associated with increasing age. A recent secondary study based on the 2019 GBD data showed that the burden of disease was higher in females compared with males for LBP, neck pain, osteoarthritis, and rheumatoid arthritis, while there was a reverse gender difference for gout (burden higher in males compared with females) (5).

A further societal and economic impact of musculoskeletal conditions stems from its high prevalence and substantial burden on working-age people. In a systematic review of the prevalence of persistent LBP in 28 countries from Africa, Asia, the Middle East, and South America, chronic LBP was 2.5 times more prevalent in the working population than in non-working populations (6). In Australia, individuals who exit the workforce early because of LBP have substantially less wealth by age 65 years, even after adjustment for education (7). The consequences of LBP in working-age people are substantial, and in many countries contributes to inequality, poverty, and poor well-being.

In addition to estimating the relative burden of disease across different conditions, GBD also includes data on the contribution of specific modifiable risk factors to disease burden. For LBP, three risk factors play an important role in the global burden.

Across all ages and both sexes, 22% of YLDs were attributable to occupational ergonomic factors, 13% of YLDs to smoking, and 11.5% of YLDs to high body-mass index (3). Together, modifiable risk factors explained 39% of YLDs (1). Although both smoking (8) and obesity (9) have been shown to be associated with the occurrence of LBP and the development of persistent LBP, the specific causal mechanisms for these associations remain uncertain. Likewise, there is a lack of evidence on the effectiveness of preventive strategies targeting these two risk factors.

Challenges in addressing the burden of musculoskeletal conditions in high-income and low- to middle-income countries are different. In many middle- and low-income countries, high-quality, primary country-level data is needed to address gaps in population studies, and approaches based on strengthening health systems are the primary focus (10). Across all settings, there is a need to increase the scope of musculoskeletal conditions considered in primary epidemiological studies and to better capture the level of severity and disability for each condition..

Despite these gaps, the burden of disease for musculoskeletal conditions is globally significant. Demographic factors (overall aging of populations globally and increasing total population size) and condition-specific factors (age-related incidence and prevalence, long duration, relative level of disability) will sustain the size of this burden and underline the importance of prioritizing musculoskeletal conditions in global health contexts.

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