

International Conference on Orthopedics and Musculoskeletal Disorders

November 13-14, 2025 | Lisbon, Portugal



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Burden of Knee Osteoarthritis in South Asia, 1990–2021: Findings from the Global Burden of Disease Study

Background and Aim

Knee osteoarthritis (OA) is a major cause of pain and disability worldwide, but its burden in South Asia is not well understood. This study looked at trends in prevalence, incidence, years lived with disability (YLDs), and disability-adjusted life years (DALYs) due to knee OA in South Asia from 1990 to 2021.

Methods

Data on knee OA were obtained from the Global Burden of Disease (GBD) 2021 Results Tool for six South Asian nations. Knee osteoarthritis was defined as symptomatic Kellgren-Lawrence grade 2-4 disease. Using the WHO standard population, we derived age-standardized rates (ASRs) per 100,000 people for prevalence, incidence, YLDs, and DALYs. Joinpoint regression was used to examine temporal trends and produce annual percentage change (APC) with 95% confidence intervals.

Results

The number of prevalent knee OA cases increased from 21.0 million (95% UI: 17.9–24.1) in 1990 to 58.8 million (95% UI: 50.3–67.1) in 2021 (180% rise). Regional ASRs rose for prevalence (3,441.8 to 3,818.0 per 100,000; 10.9%), incidence (296.2 to 324.2 per 100,000; 9.5%), and DALYs (108.6 to 120.8 per 100,000; 11.3%). Women consistently showed higher rates than men. Bangladesh, Nepal, and Pakistan exhibited the fastest relative increases. Joinpoint analysis revealed significant APC increases across all time segments, with the steepest growth after 2010.

Conclusion

The burden of knee OA in South Asia has increased markedly over the last three decades, emphasising the need for locally tailored prevention, early diagnosis, and improved care to reduce disability.

Keywords

Knee osteoarthritis; United Kingdom; Global Burden of Disease; temporal trends; regional disparities

Biography

Dr Muhammad Tayyab (MBBS, MRCS – UK) is a Senior Clinical Fellow in Trauma and Orthopaedics at Bradford Teaching Hospitals NHS Trust, United Kingdom. He has over four years of clinical experience in Trauma&Orthopaedics.

Dr Tayyab has authored fourteen publications in PubMed-indexed journals and remains actively involved in clinical research and audit aimed at improving patient outcomes. In addition to his clinical work, he is committed to medical education, regularly teaching and mentoring junior doctors and medical students.