

Comprehensive Investigation of Epidemiological Indicators and Prognostic Impact of Bone, Joint, and Muscle Disorders: A 20-Year Longitudinal Follow-up of a Community-Based Cohort

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Musculoskeletal disorders impair activities of daily living and quality of life in older adults through gait dysfunction and account for a substantial proportion of causes leading to long-term care. Using the population-based cohort, ROAD study, this study investigated temporal trends in prevalence, incidence, associated factors, and the impact of comorbidities of osteoporosis, frailty, sarcopenia, and osteoarthritis (OA). Long-term follow-up revealed the incidence rates of these conditions, and low quadriceps muscle strength was found to significantly increase the risk of incident osteoporosis, sarcopenia, and related disorders. Knee OA was associated with incidence of long-term care even as a single condition, and the risk increased significantly when combined with osteoporosis. Musculoskeletal disorders frequently coexisted, with knee OA playing a particularly prominent role. Future analyses integrating locomotive syndrome, metabolic syndrome, and nutritional assessments will be conducted to generate evidence for primary prevention and contribute to the extension of healthy life expectancy.