

Work-Related Musculoskeletal Disorders among Public Bus Drivers in Kerala: A Cross-Sectional Study Linking Ergonomic Strain to Road Safety Risk

Highlights

- Lumbar musculoskeletal disorder prevalence is 85.7% among 405 Kerala bus drivers; 37% report excessive daytime sleepiness.
- Sleep duration independently predicts lumbar discomfort severity after controlling for age, BMI, experience, and workload.
- Exploratory factor analysis identifies a 3-factor structure underlying discomfort: postural demand, workload, and sleep-discomfort linkage.
- Short sleep (less than 6 hours) is associated with 2.3 times higher odds of clinically significant lumbar musculoskeletal disorder.
- Findings support multi-domain intervention strategies combining ergonomic redesign with driver scheduling and fatigue management.