

Association of Physical Inactivity with Cardiopulmonary Health Among Academic Employees: A Cross-Sectional Study

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Abstract:

Background: Prolonged sedentary behavior has become increasingly prevalent among university academic staff, contributing to a heightened risk of cardiopulmonary dysfunction and diminished physical performance. Although previous studies have addressed general metabolic risks, limited research has integrated both subjective and objective health indicators to assess functional health outcomes within this professional group.

Objective: This study aims to assess the association between physical inactivity and cardiopulmonary health indicators, as well as functional endurance, among academic staff. It focuses on identifying the predictive value of perceived exertion and sedentary patterns on physiological and functional outcomes.

Methods: A cross-sectional design will be employed, targeting academic staff from selected universities. Subjective data will be collected using the International Physical Activity Questionnaire (IPAQ) and the Sedentary Behavior Questionnaire (SBQ). Objective measures will include vital signs (blood pressure, heart rate, respiratory rate), anthropometric data (BMI, WHR), perceived exertion using the Borg CR10 scale, and physical performance via the 30-second sit-to-stand test.

Statistical Analysis: Data will be analyzed using SPSS. Descriptive statistics will summarize participant characteristics. Normality will be tested using the Shapiro-Wilk and Kolmogorov-Smirnov tests. Pearson correlation and multiple linear regression will be applied to examine associations between subjective and objective variables.

Expected Results: It is anticipated that higher sedentary time and perceived exertion will correlate with poorer cardiopulmonary and functional indicators. Step count data will be collected for exploratory purposes but is not expected to serve as a primary predictor. The findings are expected to inform evidence-based interventions targeting sedentary behavior in academic environments.

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Conclusion: This study proposes a comprehensive evaluation of how sedentary work habits and physical inactivity influence cardiopulmonary health and functional capacity among university academic staff. By integrating subjective and objective tools, the research is expected to offer a clearer understanding of key predictors affecting physical performance. The anticipated outcomes will support the development of tailored health strategies aimed at reducing sedentary-related risks in academic institutions and promoting long-term employee well-being.

Keywords:

Sedentary behavior, cardiopulmonary health, perceived exertion, physical activity, university staff, functional performance, IPAQ, SBQ, Borg CR10, STS test.