

Sex-specific Association of Sleep Quality with Cardiovascular Markers in Young Adults: A Pilot Study

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ABSTRACT

Introduction: Sleep quality affects cardiovascular, mental, and reproductive health. However, we know little about the specific factors influencing young adults based on sex. Aim: This pilot study aimed to look at the connections between sleep quality and cardiovascular markers in young adults, focusing on differences between males and females.

Materials and Methods: The cross-sectional comparative study included a total of 30 participants and divided the sample into two groups (15 male and 15 female) based on inclusion and exclusion criteria. The study was conducted at the faculty of physiotherapy, S.G.T.U., after receiving informed consent. Standardised blood pressure using the JNC-7 protocol and short-term heart rate variability with a 5-minute recording according to the international Heart Rate Variability (HRV) guidelines were measured. Sleep quality, physical activity, and perceived stress with Pittsburgh Sleep Quality Index (PSQI), International Physical Activity Questionnaire (IPAQ), and

Perceived Stress Questionnaire (PSQ), respectively, were assessed. Results: Data were collected in a controlled environment with consistent participant preparation. The obtained physiological and questionnaire data were scored, analysed, and compared across groups to explore differences in cardiovascular and psychosocial parameters. The study explored associations between sleep indices and cardiovascular parameters using Pearson or Spearman correlation as appropriate. We conducted statistical analyses in SPSS (version 26), setting significance at $p < 0.05$.

Conclusion: In this pilot sample, sleep disturbances were more significant in females, likely due to hormonal, psychosocial, and circadian factors. These findings support the need for larger studies that consider sex differences and targeted efforts to improve sleep and cardiovascular health in young adults.

Keywords: Cardiovascular health, Pittsburgh Sleep Quality Index, Sleep disturbance

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