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ABSTRACT BOOK

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Sleep Quality and Hormonal Levels of Ghrelin and Leptin in the Elderly: A Cross-sectional Study

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The increase in life expectancy prompts a critical examination of the quality of aging in contemporary societies. Ageing causes alterations in the circadian sleep-wake cycle, which are closely linked to cellular senescence. Research indicates that insufficient sleep can accelerate inflammation and oxidative stress, highlighting the importance of good sleep hygiene for overall health and reducing the effects of ageing. Sleep quality is closely connected to hormonal balance, particularly ghrelin, leptin, melatonin, and serotonin. These hormones play significant roles in regulating appetite, metabolism, sleep patterns, and emotional well-being. This study aimed to evaluate sleep quality in elderly individuals and its relationship with serum levels of ghrelin and leptin. Sleep quality was assessed using the Portuguese version of the Pittsburgh Sleep Quality Index. Blood collection for laboratory tests was performed according to WHO guidelines. Plasma ghrelin levels were measured using a commercial ELISA kit. Informed consent was obtained from all participants. Study approved by the Ethical Council of ULSNE, N°41/2024. In the study, 64% of participants reported poor sleep quality, while 36% reported good sleep quality. Mean ghrelin levels were 3128.42, and mean leptin levels were 19.30, both above their reference levels (150-1500 pg/mL and 3.7–11.1 ng/mL respectively). The Mann-Whitney U test revealed no statistically significant differences in hormone levels between the two groups (poor sleep quality and good sleep quality), with p-values of 0.355 for ghrelin and 0.479 for leptin. Hormone level variations were not significant, likely due to a small sample size. Weak correlations showed minor reductions in ghrelin and leptin with declining sleep quality. No definitive link between sleep quality and hormone levels was found in elderly participants, highlighting the complex relationship between sleep and hormonal regulation. Future research is essential to address these limitations and to further elucidate the mechanisms through which sleep quality may influence hormonal regulation in older adults. Such investigations could lead to targeted interventions aimed at improving sleep and overall health in this demographic.

Keywords: Sleep Quality, Aged, Hormones