

Association between vitamin D level and sleep quality in the elderly population – a prospective cohort study

Wei-Hsuan Lee^{a,b}, Yu-His Chen^{a,b}, Li-Pang Chuang^{c,*}

^a Department of Medicine, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan, ROC

^b Graduate Institute of Clinical Medical Sciences, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan, ROC

^c Sleep Center, Department of Pulmonary and Critical Care Medicine, Chang Gung Memorial Hospital, Tao-Yuan, Taiwan, ROC

Background: This study explored the association between serum vitamin D levels and sleep quality in individuals aged 60 and above living in Taipei, Health & Culture village, and Active Aging center. Vitamin D is essential not only for skeletal health but also for regulating sleep. Recent studies suggest a link between vitamin D deficiency and poor sleep quality, including lower sleep efficiency and shorter sleep duration. This study aimed to investigate the relationship between sleep quality through PSQI and the serum vitamin D level in the health elderly.

Methods: A total of 465 participants were enrolled in the ISDHA program. The participants were aged 60 or above, and those with specific organ abnormality or dysfunction were excluded. Each participant was asked to answer Pittsburgh Sleep Quality Index (PSQI) questionnaire and assessed with blood test for vitamin D level. After analyzing the relationship between vitamin D level and PSQI score, we further divided the participants into two groups based on whether they had PSQI daytime dysfunction or not. Other factors including gender, age and total sleep time were also analyzed.

Results: The results showed that among 7 domains of PSQI, the daytime dysfunction domain exhibited strongest statistical association with serum vitamin D levels ($p=0.044$). Those participants without PSQI daytime dysfunction had higher vitamin D level compared to those with PSQI daytime dysfunction with statistically significant ($p=0.04$). After further investigated other factors like gender and age, there were no significant difference between different gender or age.

Conclusion: Higher serum vitamin D levels are linked to better sleep quality in the elderly population, especially in no perceived daytime dysfunction. This finding underscores the potential importance of maintaining adequate vitamin D levels to promote healthy sleep patterns in the elderly population.

中文題目：老年族群 Vitamin D 和睡眠品質的關係研究

作者：李維瑄*、陳羽哲*

(報告者請以*表示，如許美鈴*)

服務單位：林口長庚紀念醫院 醫學生