

## Poor Sleep Quality is the Major Determinant of Health-related Quality of Life among Familial Hypercholesterolemia Patients in Taiwan

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**Background/Synopsis:** Insomnia is identified as risk factors of adverse cardiovascular events. However, the impact of inadequate sleep on maladaptive health outcomes and health-related quality of life in familial hypercholesterolemia (FH) population remained unknown.

**Objectives/Purpose:** This study aims to evaluate the association between sleep and health-related quality of life among FH patients with a longitudinal observation.

**Methods/Results:** This study was a hospital-based design, we conducted a prospective FH cohort to recruit clinical diagnosis of phenotypic FH since 2014 for the Ten Countries Study in the Asia-Pacific region. We consecutively recruited 302 FH patients from the special lipid clinic of National Taiwan University Hospital, Taipei. All participants received cardiovascular health examinations and self-reported questionnaire, including Pittsburgh sleep quality index (PSQI), and SF-12 health-related quality of life questionnaire. All outcomes were compared between insomnia and non-insomnia groups. Among FH patients, insomnia presented in 19.2% (n=58) of our sample. The patients with insomnia were significantly older, having higher BMI, having lower educational literacy, and more dominated in women, and patients with a medical history of hypertension. All PSQI dimensions scored higher in the insomnia group compared to non-insomnia group. Gender and hypertension disease were also shown statistically significant difference between PSQI higher and lower scored group. There is a strong association between sleep quality and health-related quality of life (QoL, SF-12), especially in all of the mental health domains. Among FH subjects, those who had poor sleep quality, sleep duration, and habitual inefficiency also got lower QoL scores than those with sleep well. Adjusted by multiple logistic regression, there are significant interaction effects on ageing and gender difference in PCS ( $p < 0.01$ , respectively). There are significant obesity and low literacy effect in MCS, in those poor sleep who were getting lower QoL (-3.225,  $p=0.026$ ; -6.886,  $p < .001$ ; respectively) than those with sleep well.

**Conclusion:** Patients with the clinical phenotype of FH is associated with subjectively poor physical and mental health, particularly among FH patients with insomnia. Health-related quality of life may be affected by sleep before adverse clinical consequences.