

Poster

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[P-35-02] Exploring the Association Between rs17110690 of the TPH2 Gene and Positive and Negative Affects in Thai Preclinical Medical Students

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Keywords : Emotional regulation、 Medical students、 Psychological resilience、 Single nucleotide polymorphism (SNP)、 TPH2 gene

Purpose: Medical students are often exposed to intense academic leading to significant stress, which can significantly impact their mental health and emotional well-being. The Tryptophan Hydroxylase 2 (TPH2) gene, which regulates serotonin synthesis in the brain, plays a key role in emotional regulation. Genetic variations in TPH2 may influence individual differences in emotional responses. However, the rs17110690, located in intron 8 of TPH2, remains largely understudied. This study aimed to examine the association between rs17110690 and emotional traits in Thai preclinical medical students.

Patients and Methods: A cross-sectional study was conducted among 364 preclinical medical students (1st -3rd year) at Srinakharinwirot University, Thailand. Emotion was self-reported using the Thai adaptation of the Positive and Negative Affect Schedule (PANAS). The rs17110690 genotypes (G/G, G/A, A/A) was genotyped using TaqMan SNP Genotyping Assays with StepOnePlus® Real-Time PCR Systems. Generalized linear models were used to evaluate associations between rs17110690 genotypes and positive, negative, and anxious affect, adjusting for psychosocial stressors, preferred coping strategies, and demographic variables.

Results: Participants carrying the variant genotypes (G/A or A/A) reported significantly higher positive affect ($B = 2.21$, $p = 0.001$) and lower negative affect ($B = -0.863$, $p = 0.001$) compared to G/G homozygotes. No significant difference was found for anxious affect ($p = 0.870$).

Conclusion: The rs17110690 of TPH2 was associated with a more favorable emotional profile, underscoring the potential role of genetic factors in contributing to the psychological resilience and capacity to adapt and recover from adversity. These findings support further investigation into TPH2 variation in mental health research, particularly in relation to emotional resilience.