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## Associations of sleep, anxiety and salivary cortisol profile under different stressful conditions in healthy female college students

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Although cortisol is widely used a marker of stress, less attention has been paid to associated factors with cortisol secretion. The purpose of this study was to investigate associations among sleep, anxiety and cortisol profile under different stressful conditions. A total of 36 healthy female college students participated in the study. The salivary specimens were collected 6 times a day to examine cortisol profile. Total cortisol level during awakening response and during the day were derived from the computation of the area under curve. Subjective stress and anxiety were evaluated using the Global Assessment of Recent Stress and the Spielberger State Trait Anxiety Inventory, respectively. Sleep characteristics were measured using an actigraph. The procedure of data collection above was carried out again in a different stressful situation. In the routine situation, greater mean wake episode during sleep was significantly associated with greater total cortisol level during awakening response ( $p=.044$ ). In the stressful situation, poorer sleep efficiency ( $p=.008$ ), greater wakes after sleep onset ( $p=.006$ ) and greater mean wake episode during sleep ( $p=.044$ ) were associated with less total cortisol level during awakening response. Higher level of trait anxiety was associated with greater total cortisol level during the day only in the stressful situation ( $p=.008$ ). Thus, it is recommended to consider quality of nocturnal sleep as an important factor to evaluate total cortisol level during awakening response in the morning. Trait anxiety is involved with increased total cortisol level during the day in the stressful situation.

### Biography

Minhee Suh has completed her PhD from Seoul National University, South Korea and her postdoctoral study from University of North Carolina School of Nursing, USA. She is now an assistant professor at Inha University Department of Nursing. She is interested in the biobehavioral research area including emotional problems, sleep disturbance and stress. In particular, she focuses on the study of biological measurement involving the psychoemotional issues and reconciling those with nursing. She has published more than 15 papers in reputed journals and has been serving as an editorial board member of reputed.

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