The University of Hong Kong
Department of Psychology

Departmental Seminar

Cognitive Functioning in the Community Elderly: The Role of Sleep and Caffeine

Date: **September 9, 2013 (Monday)**

Time: **12:00 p.m. – 1:00 p.m.**

Venue: **Room 813, 8/F, The Jockey Club Tower, Centennial Campus, HKU**

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Deteriorations in cognitive functioning and sleep are the inevitable parts of the ageing process, and they are two very common complaints among the elderly population. Given their high relevance and great impact on daily functioning, many studies have attempted to address the associations of sleep problems and cognitive functioning with ageing, but the direction of associations remained unclear. Several recent studies suggested that caffeine might have a beneficial effect on age-related decline in cognitive functioning. Nonetheless, the dose-dependent effect of caffeine intake on specific domains of cognitive functioning, and the potential cost of compromised nocturnal sleep at high dose of caffeine remained to be investigated. In view of the lack of study on identifying the correlation and interaction between sleep, cognitive functioning, caffeine consumption habit, and age, two studies were conducted to clarify these relationships in the elderly population.

The first study was a retrospective study aimed to examine the relationship between sleep, habitual caffeine consumption, cognitive functioning, and mood in the young adult and the elderly. Findings revealed changes in multiple domains of sleep and cognitive functioning upon ageing. The age-related differences in sleep and cognitive functioning were correlated. Moreover, results suggested that regular caffeine consumption has a dose-dependent gender-specific beneficial effect on cognitive functioning. The second study was built on the relationship between sleep, cognitive functioning, and caffeine as found in the first study. It aimed to investigate the effect of caffeine and daytime nap on the cognitive functioning in the healthy elderly adopting a repeated measure, double-blind, placebo-controlled, within-subject design. Analysis revealed an effect of nap and caffeine on improving subjective feeling of sleepiness and fatigue. Behavioural measurements revealed no effect on daytime nap on cognitive functioning, yet specific sleep stage and certain sleep oscillations were associated with post-nap changes in cognitive functioning.

The present studies demonstrated the associations of sleep and caffeine consumption with cognitive functioning in the elderly. Habitual caffeine consumption was associated with a female-specific beneficial effect on cognitive functioning. Furthermore, daytime nap combined with the use of acute dose of caffeine might not enhance cognitive functioning, but could improve mood and well-being in the elderly. Findings from the present studies suggested that further research could explore ways to maximise the benefit of napping and caffeine use in the elderly.

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