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Frank Ho-yin Lai

The Hong Kong Polytechnic University, Hong Kong

Study on reticular activating system (RAS) functioning in dementia with behavioral and psychological symptoms (BPSD)

Behavioral and psychological symptoms of dementia (BPSD) are an integral part of dementia syndrome. They increase caring burden and impact cost of care. BPSD are not uncommon in demented patients whom featured with depressed and withdrawn, having irrational beliefs and become more easily irritable. This study aimed to explore the relationship between the RAS functioning and demented patients with BPSD. The Kendrick Object Learning Test (KOLT) is a test of recall of everyday objects after viewing for a brief period, an immediate recall of briefly perceived visual data. The Kendrick Digit Copying Test (KDCT) is a test of speed in processing and recording information. These tests suggested cortical excitation mediated by both the RAS and the hypothalamic limbic network which deteriorate in demented patients with BPSD. Fifty demented patients with BPSD and fifty depressive patients were recruited in this study. They are matched in age (mean age 78, SD 5.2) and shared similar demographic background. The participants are tested with the Kendrick Object Learning Test (KOLT) and the Kendrick Digit Copying Test (KDCT). To observe the short term longitudinal change of their RAS functioning, these tests were administered again 4 weeks following the initial assessment. With in-patient treatment for 4 weeks, the depressive group showed improvement in KOLT ($p < 0.1$), but not on KDCT ($p = 0.82$). However, in the dementia group, there were no significant difference noted in both KOLT and KDCT ($p < 0.5$). Some reports had confirmed the above trend between demented patients with BPSD and depression. RAS did not function properly as in the demented patients with BPSD. They would have limited motivation, difficulty learning and with limited memory improvement. As the reticular system is not involved in group of depressive patients, there would be improvement in object learning, but no significant difference on speed in processing and recording information as measured by speed-performance tests (KDCT). Therefore, proper rehabilitation trainings and care giving techniques could be arranged in meeting the specific patients' needs.

Biography

Frank Ho-yin Lai is an Occupational Therapist by Profession. He has been working in the Hospital Authority (HA) of Hong Kong for more than twenty years. He has ample experience in clinical and teaching which covered both psychiatric and physical rehabilitation. Moreover, he had been working actively in geriatric and orthopaedic rehabilitation research. In recent years, his research direction is on the implementation of holistic dementia care. Different clinical and research projects have been commenced. These include "Psychometric Properties Comparison of Cognitive Function in Patients With Delirium and Dementia", "Reticular Activating System Functioning in Demented Patients with Behavioral and Psychological Symptoms (BPSD)", "Assessment of Capacity for Everyday Decision Making (aced) for People with Dementia", "Study on the Execution of Daily Living Activities in Relation to Cognitive Function in Dementia Subtypes". Moreover, he is the instructor for the dementia supporter program which is a co-joint community volunteer training project between HA and Salvation Army Hong Kong. A resource guidebook had been published as the training material. More than one thousand volunteers in Tai Po district will be trained in providing community care service for clients with dementia.

frank.hy.lai@polyu.edu.hk