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RELATIONSHIPS AMONG MENTAL FATIGUE, COGNITIVE FUNCTIONS, AND RETURN TO PRODUCTIVE ACTIVITY IN PATIENTS WITH TRAUMATIC BRAIN INJURY

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INTRODUCTION

To investigate the relationship among mental fatigue, cognitive function, and return to productive activity in patients with traumatic brain injury (TBI).

This was a descriptively cross-sectional study using convenient sampling method.

AIM

1. Correlation between cognitive function and recovery of productive activities after traumatic brain injury.
2. Correlation between cognitive function and mental fatigue after traumatic brain injury.
3. Correlation between mental fatigue and return to productive activities after traumatic brain injury.
4. Whether mental exhaustion after traumatic brain injury is an intermediary factor in the correlation between cognitive function and resumed productive activities.

METHOD

Adult patients diagnosed with TBI over 3 months were enrolled from neurosurgical clinics of a medical center in Northern Taiwan. Measurement tools included the mental fatigue scale (mental fatigue), symbolic digital modal test (information processing speed), Ruff 2 & 7 Selective Attention Test (attention), Rey complex Figure Test (memory function) and Community Integration Questionnaire (return to productive activity). Multivariate linear regression analysis was used for data analyses.

RESULTS

A total of 73 TBI survivors with mean age of 44.9 years were included in the study. Among them, 31 were males (42.5%) and 42 were females (57.5%).

Compared with the norm data, our participants had poorer memory, attention, and information processing speed (all $P < 0.05$). After controlling for confounders, only the recognition ability of memory was significantly associated with return to productive activity ($P = 0.01$). Sustained attention significantly correlated with mental fatigue even after adjustment of confounders ($P = 0.002$). No significant relationship between mental fatigue and return to productive activity was observed ($P = 0.89$). Mental fatigue was therefore not a mediator of the association between cognitive function and return to productivity activity.

limitation

1. Due to the cross-sectional design of this study, the causal relationship between cognitive function, mental exhaustion and recovery of productivity cannot be confirmed.
2. All patients with traumatic brain injury included in this study were within 6 months of brain injury, so the results of this study cannot be extrapolated to patients with traumatic brain injury longer than six months.
3. Some of the questionnaires in this study are self-administered, and some variables are compared before and after the injury, and the data may have recall bias.

CONCLUSIONS

The results of this study confirm that cognitive functions were associated with mental fatigue and return to productive activity. Specifically, other words, memory function was associated with return to productive activity, and attention level correlated with mental fatigue. Cognitive impairments greatly impact on physical, psychological and social problems in patients following TBI. To improve quality of life in patients with TBI, clinical healthcare providers should be informed by our findings and thus designing nonpharmacological interventions for managing cognitive deficits following TBI.

Keywords

COGNITIVE FUNCTIONS, MENTAL FATIGUE, TRAUMATIC BRAIN INJURY

