

Abstract

Background: Anxiety in dementia has received little attention over the past decades, despite being a common neuropsychiatric symptom in the elderly population. Anxiety in dementia is associated with high physical dependency, problems in the patient-caregiver relationship, limitations in activities of daily living and increased behavioural problems. Dementia patients with anxiety symptoms are more likely to enter nursing homes and impose high cost and economic burden on the society. A validated instrument for assessing anxiety symptoms in patients with dementia is highly needed in Hong Kong.

Aims: To examine the psychometric properties of the Chinese version of the Rating Anxiety in Dementia (C-RAID) in a cohort of community-living patients with mild to moderate Alzheimer's Disease (AD), and to explore the important clinical correlates of anxiety symptoms among patients with AD.

Method: The C-RAID was developed by using backward and forward translations, and reviewed by an expert panel and a focus group. One hundred and thirty three community-living patients of the Tuen Mun Mental Health Centre (TMMHC) with mild to moderate AD and their caregivers were recruited. The concurrent validity of C-RAID was examined by conducting Spearman's correlation analysis between C-RAID and the anxiety subscales of the Chinese version of Neuropsychiatric Inventory (CNPI) and Behavioural Pathology in Alzheimer's Disease (BEHAVE-AD). Socio-demographic characteristics, global assessment of cognitive impairment, severity of dementia, functional disability, caregiver's burden, depressive symptoms and agitation of the patients were collected for univariate analyses and logistic regression. The

Cantonese version of the Mini Mental State Examination (CMMSE), Clinical Dementia Rating (CDR), Chinese Disability Assessment for Dementia (CDAD), Chinese version of the Zarit Burden Interview (CZBI), Cornell Scale for Depression in Dementia (CSDD) and Chinese version of the Cohen-Mansfield Agitation Inventory (CCMAI) were administered. Receiver Operating Characteristic (ROC) curve analysis was performed to determine the optimal cut-off score for clinically significant anxiety symptoms.

Results: The C-RAID showed high internal consistency (Cronbach's alpha = 0.817), test-retest reliability (intraclass correlation coefficient = 0.943) and inter-rater reliability (intraclass correlation coefficient = 0.988). The concurrent validity was established, with a correlation coefficient of 0.866 and 0.721 between C-RAID and the anxiety subscales of CNPI and BEHAVE-AD respectively. The cut-off point of ≥ 15 in C-RAID (the area under the ROC curve = 0.898) was found to identify demented patients with clinically significant anxiety symptoms, at a sensitivity of 84% and specificity of 85.2%. Higher C-RAID scores were correlated with greater caregiver's burden, depressive symptoms and agitation. Dementia severity and depressive symptoms were independently associated with anxiety in dementia.

Conclusion: The C-RAID is a valid and reliable instrument for assessing anxiety symptoms in local Chinese elderly patients with mild to moderate AD. Factors having independent association with anxiety in dementia were identified. Early recognition of anxiety symptoms in dementia and timely intervention are important to the dementia patients and their caregivers.

Keywords: anxiety, dementia, Alzheimer's disease, Rating Anxiety in Dementia (RAID)