The Reliability and Validity of the Alzheimer’s Disease Assessment Scale Cognitive Subscale (ADAS-Cog) among the Elderly Chinese in Hong Kong

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Abstract

Introduction: The Alzheimer’s Disease Assessment Scale cognitive subscale (ADAS-cog) was reported to be a sensitive cognitive function assessment scale for Alzheimer’s Disease (AD). The English, Greek, Spanish but not Chinese versions had been validated previously.

Objectives: The objectives of the present study were to investigate the reliability and validity of an adapted Chinese version of the ADAS-cog among Chinese elderly AD patients in Hong Kong.

Materials and Method: Thirty-nine subjects were recruited during the period July to December 1998. Twenty were AD patients while 19 were non-demented normal subjects. Two raters administered the ADAS-cog scale thrice on different occasions.

Results: The internal consistency (Cronbach’s alpha) of the ADAS-cog were 0.91, 0.88 and 0.65 for the whole group, the AD and normal (i.e. non-demented) subjects respectively. The test-retest reliability as measured by the Spearman’s rho correlation coefficients were 0.96, 0.86 and 0.86 for the whole group, AD and normal subjects, respectively, (all \( P < 0.001 \)).

The Spearman’s rho correlation coefficients for inter-rater reliability were 0.95 (\( P < 0.001 \)), 0.91 (\( P < 0.001 \)) and 0.65 (\( P = 0.003 \)) for the whole group, AD and normal subjects, respectively. The ADAS-cog score was inversely related to the Mini-Mental Status Examination (MMSE) score (Spearman’s rho = –0.91; \( P < 0.001 \)). The ADAS-cog score was directly proportional to the Clinical Dementia Rating (CDR) (rho = 0.89; \( P < 0.001 \)).

Forward stepwise discriminant function analysis between AD and normal subjects yielded a canonical discriminant function with 3-question items (i.e. word recall test, orientation and comprehension of speech; \( P < 0.001 \)). This short version had a sensitivity of 90%, specificity of 94.7% and overall accuracy of 92.3%.

Conclusion: The Chinese version of ADAS-cog subscale is both reliable and valid among the elderly Chinese in Hong Kong.

Key words: Alzheimer’s disease, Assessment, Cognitive impairment, Elderly

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