

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

L W Chu,\**MBBS (HK), FRCP (Edin), FHKAM (Med)*, K C Chiu,\*\**MBBS (HK), MRCP (UK)*, S L Hui,\*\*\**B Nurs Studies (Hons)*,  
G K K Yu,\*\*\*\**MBBS (HK), FHKAM, FRCPsych (UK)*, W J C Tsui,†*MSocSc (Clin Psych)*,  
P W H Lee,‡*BSocSc, MSocSc (Clin Psych), PhD (Clin Psych)*

## 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.

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**Key words:** Alzheimer's disease, Assessment, Cognitive impairment, Elderly

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\* Consultant

\*\* Medical Officer

\*\*\* Registered Nurse

Division of Geriatrics, University Department of Medicine, Queen Mary Hospital

\*\*\*\* Chief of Service (Psychiatry)

† Clinical Psychologist

‡ Professor, Clinical Psychology Unit

Department of Psychiatry

The University of Hong Kong, Queen Mary Hospital

Address for Reprints: Dr Leung-Wing Chu, Division of Geriatrics, University Department of Medicine, Queen Mary Hospital, 102 Pokfulam Road, Hong Kong SAR.

E-mail: lwchu@hkucc.hku.hk