*International Psychogeriatrics* (2007), 19:2, 333–335 © 2006 International Psychogeriatric Association
Printed in the United Kingdom

LETTER

doi:10.1017/S1041610206004340

# Concurrent validity of the Geriatric Anxiety Inventory in late-life depression

The Geriatric Anxiety Inventory (GAI) is a newly developed instrument specifically designed to measure common symptoms of anxiety in older adults (Pachana *et al*., 2006). It contains 20 items with a dichotomous response format "agree/disagree". The GAI can be self-rating or administered by a trained health professional. Pachana *et al*. reported the GAI to have sound psychometric properties in both normal older people and in a sample of geriatric psychiatry patients. The geriatric psychiatry patients consisted of 46 older people attending a community geriatric psychiatric service and were free of clinically significant cognitive impairment. In this sample, a cut-off point of 8/9 (out of 20) has a sensitivity of 73% and a specificity of 80% in identifying patients with an anxiety disorder. The GAI, however, was not designed to diagnose specific anxiety disorders but to assess the severity of anxiety symptoms across a range of presentations in older adults.

The aim of our study was to investigate the concurrent validity of the GAI in a group of 32 older people with a history of depression who participated in another study (Cheung, unpublished). The subjects were community patients of the Mental Health Services for Older People in Hamilton, New Zealand. The inclusion criteria were: (1) age 65 years or more; (2) a diagnosis of major depressive disorder according to the DSM-IV (American Psychiatric Association, 1994) in the past two years; (3) a standardized Mini-mental State Examination (MMSE) score of 24 or more; (4) living at home; and (5) fluency in English. The exclusion criteria were: (1) the presence of a psychotic, bipolar or dementia disorder; and (2) severe vision or hearing impairment which would impact on completing self-rating scales/inventories.

The mean age of the 32 subjects (20 females, 12 males) was 75.5 (SD 5.0; range 66–85) years. The mean Standardized MMSE score was 28.1 (SD 1.8; range 24–30). All participants were of European descent.

The subjects completed the GAI, the Goldberg Anxiety Scale (GAS), the State Trait Anxiety Inventory (STAI) and the Geriatric Depression Scale-15 items (GDS-15). Pearson correlation coefficients were calculated to determine concurrent validity.

First published online 28 September 2006.

The mean GAI score for this group of patients (N = 32) was 7.59 (SD 6.5; range 0–20). For those patients (N = 14) who were considered to be depressed on the GDS-15 (i.e. GDS-15 score > 5), the mean GAI was 12.29 (SD 5.2; range 3–20); while for those patients (N = 18) who were not depressed on the GDS-15 (i.e. GDS-15 score ≤ 5), the mean GAI was 3.94 (SD 5.0; range 0–15). This suggests that patients who were depressed also appeared to have more anxiety symptoms, and vice versa. This phenomenon of inter-related anxiety and depressive symptoms among the older adults has been reported (Jacoby and Bergmann, 1995). Anxiety disorders are also highly co-morbid with depressive disorders (Lenze *et al*., 2001).

Results from this study were similar to those reported by Pachana *et al*. The mean GAI score for their geriatric psychiatry patient sample was 5.22 (SD 5.83). The mean GAI score for patients who met the DSM-IV criteria for any current anxiety disorder (N = 11) was 10.64 (SD 5.87). The cut-off point of 8/9 suggested for the GAI to identify patients with anxiety disorder also seems to be useful to identify the presence of significant anxiety symptoms in late-life depression.

The Pearson correlation coefficients for GAI × GAS and GAI × STAI were 0.82 ($p < 0.001$) and 0.69 ($p < 0.001$) respectively. The results suggested that the GAI has good concurrent validity in this group of older people with a history of depression.

The sample size of this study was small. However, it provided additional information on the newly developed GAI in a different clinical sample from an independent research setting. Future research using a larger sample size and with other clinical samples will certainly be useful in providing further psychometric properties and clinical utility for the GAI.

## Acknowledgments

Dr. Nancy Pachana and her team granted permission for this study to use the Geriatric Anxiety Inventory. The study was funded by a grant from the Waikato Clinical School, University of Auckland, New Zealand.

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