

Cultural Adaptation and Validation of the Everyday Cognition Scale-12 (ECog-12) in a Multiethnic Asian Population

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BACKGROUND

Everyday Cognition Scale (ECog-12) is widely used to identify cognitive concerns reported by informants during routine evaluations. However, validation has largely focus on Western populations. Evidence on its applicability in non-Western settings—where cultural norms and functional expectations differ—remains scarce. This study addresses this gap by evaluating the English ECog-12 in a large, multiethnic Asian population, providing one of the most comprehensive validations of this measure in the region.

METHODS

- **Informants** of community-dwelling older adults in Singapore (n=1,520) completed questionnaires, including ECog-12, AD8, and the Modified Lawton scale.
- **Participants** underwent cognitive screening (Montreal Cognitive Assessment [MoCA] and neuropsychological tests), global dementia severity (Clinical Dementia Rating [CDR]), and mood and anxiety assessments (Patient Health Questionnaire-9 [PHQ-9]; Generalized Anxiety Disorder-7 [GAD-7]).
- ECog-12 was culturally adapted through cognitive interviews to assess clarity and comprehension.
- Psychometric evaluation included factorial validity (confirmatory factor analysis), convergent and discriminant validity (Pearson's correlations with cognitive, functional, and neuropsychiatric measures), known-group validity (diagnostic group comparisons), and internal consistency (Cronbach's α).

RESULTS

Confirmatory factor analysis

Original six-factor model (Memory, Language, Visuospatial, Planning, Organization, Divided Attention) demonstrated the best fit.

CFI=0.972 | RMSEA=0.053

Table 1. Construct Validity

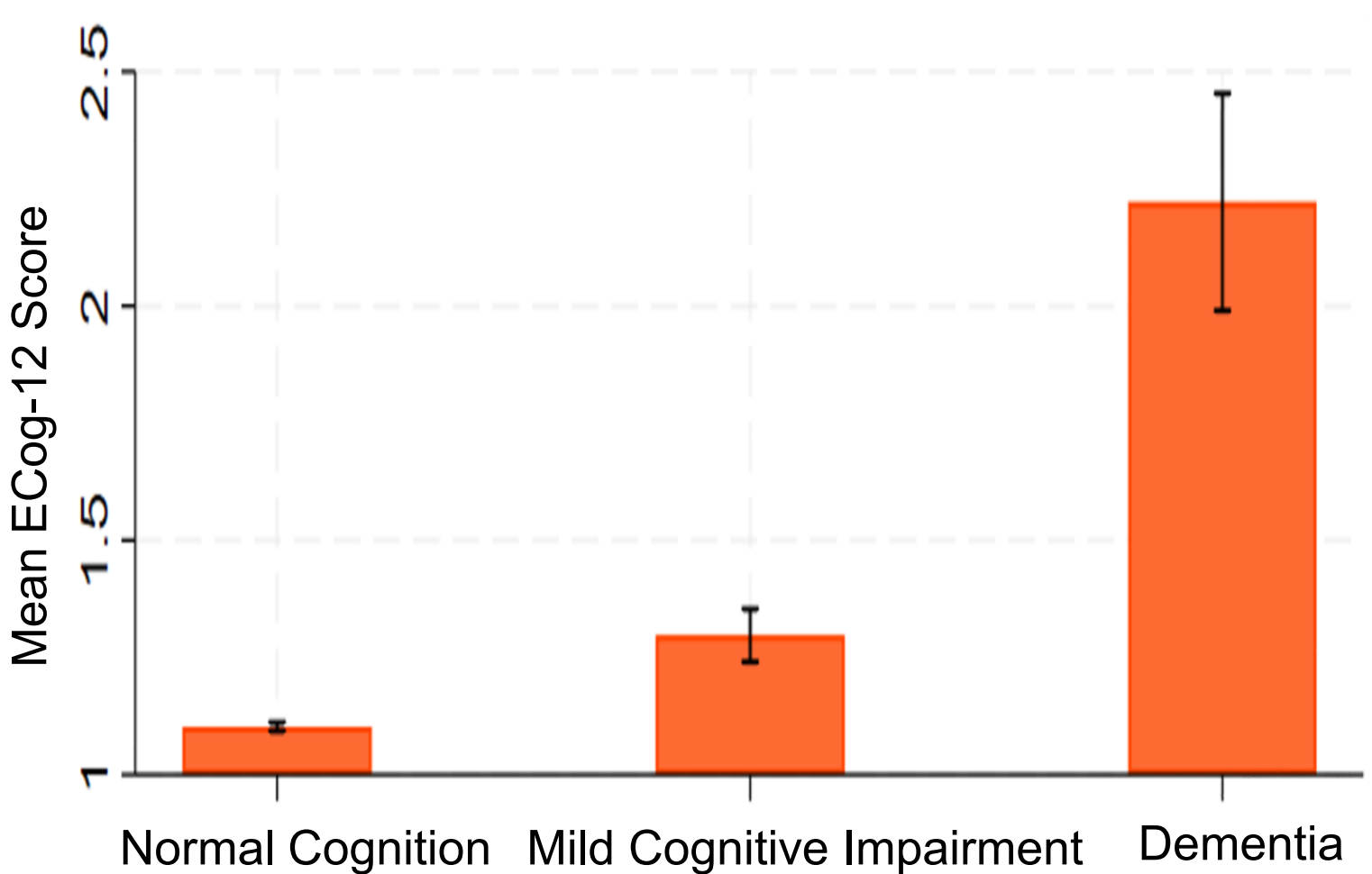
Associations among measures were assessed using Pearson's correlation.

Measures	ECog-12
AD8	0.75
CDR-SOB	0.73
Modified Lawton Scale	-0.64
MoCA	-0.43
Global Z-scores	-0.42
PHQ-9	0.10
GAD-7	0.09

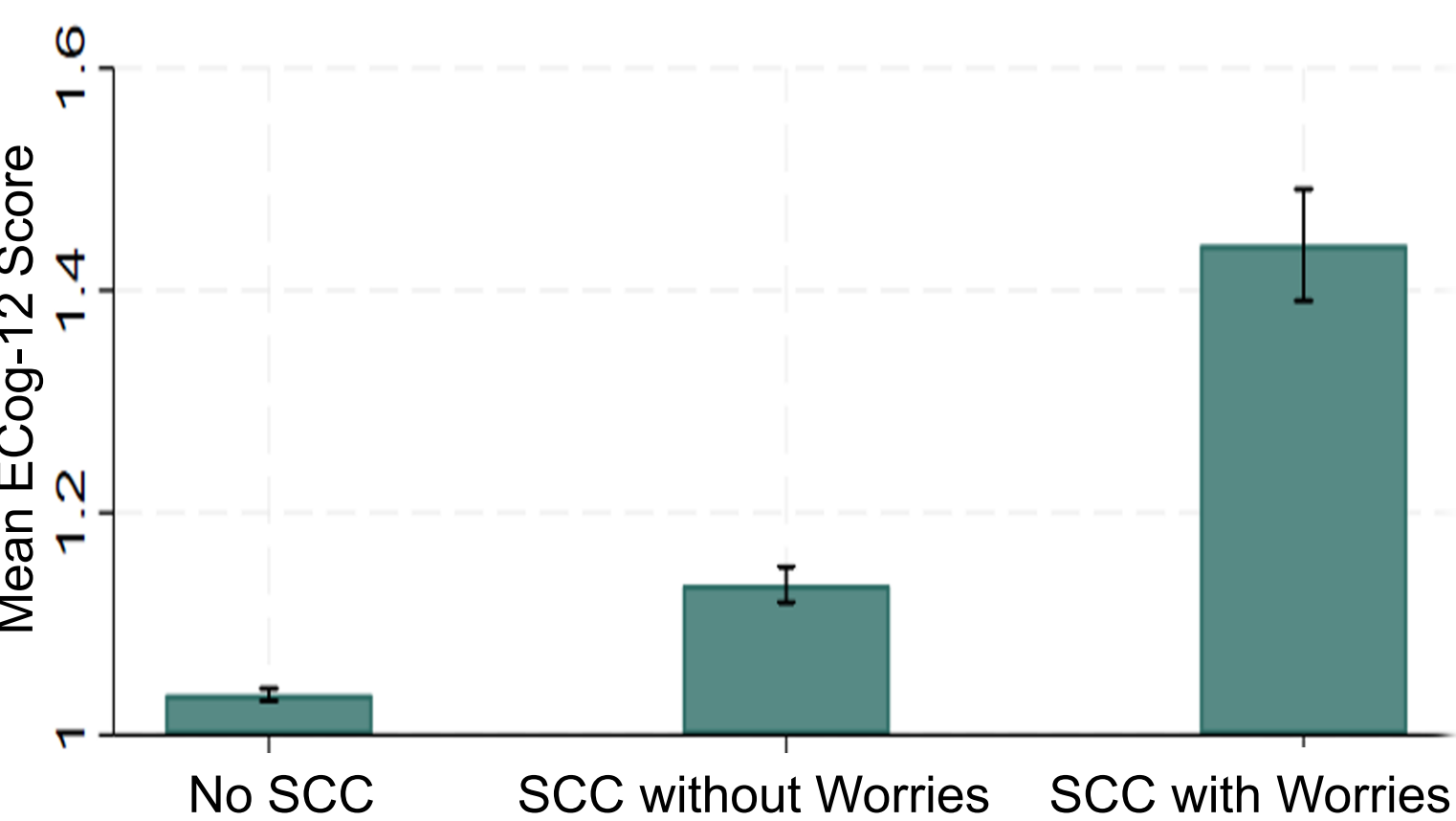
RESULTS

Figure 1. Known-Group Validity

A. Mean ECog-12 Scores by Diagnostic Group



B. Mean ECog-12 Scores by Presence of Subjective Cognitive Complaints (SCC)



RESULTS

- **Table 1** shows that ECog-12 correlated strongly with AD8, CDR-SOB, and Modified Lawton; moderately with MoCA and global neuropsychological z-scores; and weakly with PHQ-9 and GAD-7.
- Known-group validity (**Figure 1**) was supported by significant differences across diagnostic groups, as well as across participants with no SCC, SCC without worries, and SCC with worries ($p < .001$).
- Internal consistency was high (Cronbach's $\alpha = 0.85$); however, the item 'ability to plan outdoor activities according to weather changes' showed a weaker item-rest correlation ($r = 0.37$) and slightly improved α when removed.

CONCLUSION

- The adapted ECog-12 is a valid and reliable informant-rated measure of everyday cognition in multiethnic Asian populations.
- It demonstrates strong alignment with dementia severity and everyday functioning, moderate overlap with conventional cognitive tests, and minimal influence from psychiatric symptoms.
- The weaker performance of the weather related item possibly due to weather-based planning is less variable in a tropical context.
- This item should be interpreted in conjunction with other items to ensure accurate representation of the Everyday Planning domain.

- The adapted ECog-12 is a valid and reliable informant-rated measure of everyday cognition in multiethnic Asian populations.
- ECog-12 demonstrates strong associations with dementia severity and everyday functioning, while remaining relatively unaffected by psychiatric symptoms.
- The weather-related planning item may be less informative in tropical settings and should be interpreted alongside other Everyday Planning items.