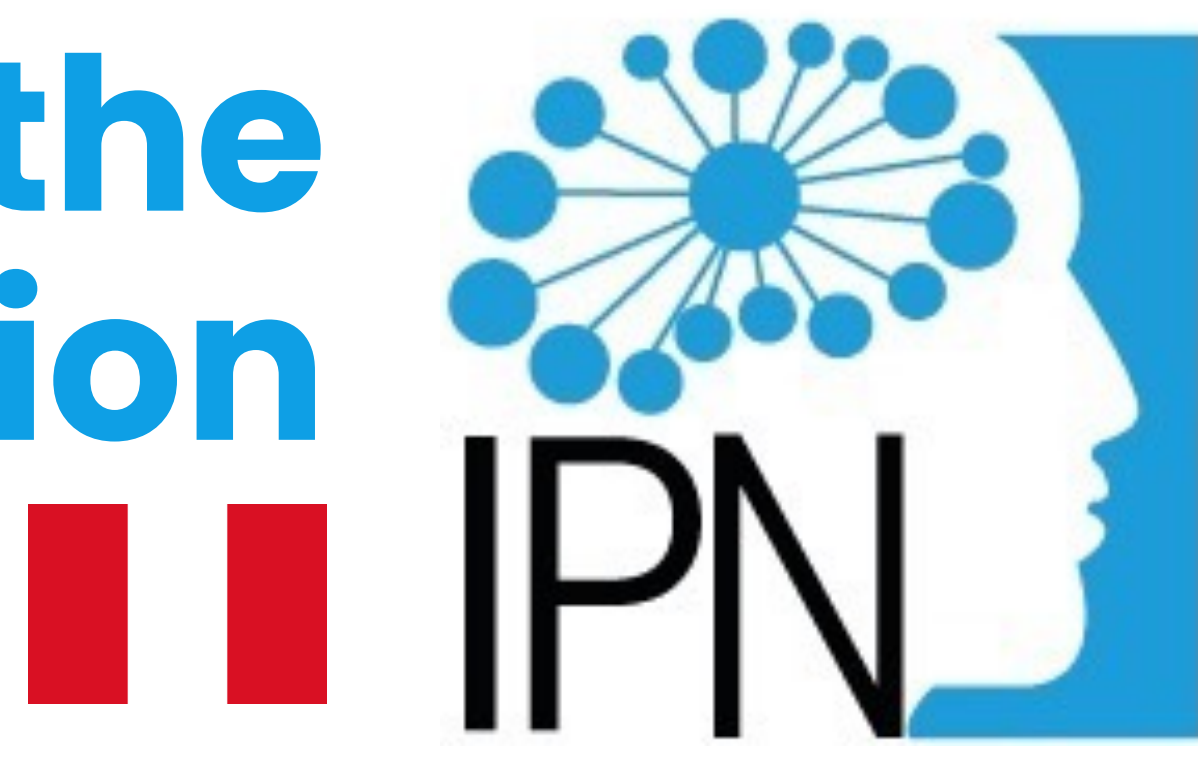


Validity of the two different scoring methods of the Clinical Dementia Rating scale in staging and detection of cognitive impairment in the Peruvian population



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BACKGROUND

- In Peru, the **Global Deterioration Scale is the only available tool for assessing dementia severity.**
- Although a Spanish translation and cultural adaptation of the Clinical Dementia Rating (CDR) scale is used locally, its formal psychometric validation, specific to the Peruvian socio-cultural and linguistic context, is still lacking.
- This study aimed to formally validate two different scoring methods of the CDR within the Peruvian population, ensuring its accuracy and reliability as the essential staging tool.**

METHODS

- A total of 1,600 older adults: 902 controls, 271 mild cognitive impairment (MCI), and 427 Alzheimer's disease patients (AD)** were assessed to validate two CDR scoring methods: CDR Global Score (CDR-GS) and CDR Sum of Boxes Score (CDR-SB).
- Discriminative validity, inter-item reliability, and concurrent validity were evaluated** using the Mini-Mental State Examination (MMSE), Rowland Universal Dementia Assessment Scale (RUDAS), Pfeffer Functional Activities Questionnaire (PFAQ), and Uniform Data Set (UDS) v3 Neuropsychological Battery.

RESULTS

- The CDR demonstrated **high reliability and validity in distinguishing among normal cognition, mild cognitive impairment, and Alzheimer's Disease.**

Table 1: Demographic Data of Participants in Each Diagnostic Group According to CDR classification

Characteristics	CDR-GS = 0	CDR-GS = 0.5	CDR-GS ≥ 1	Total sample	Chi-squared / ANOVA
Gender (F/M)	640/262	178/93	308/119	1126/474	p<0.001
Age	65.74±7.83	72.64±8.28	75.95±8.37	69.63±9.25	p<0.001
Education	11.47±6.06	8.56±6.45	10.42±5.62	10.70±6.11	p<0.001
CDR-SB	0.01±0.24	1.47±1.121	7.99±4.16	2.39±4.07	p<0.001
MMSE	26.62±3.61	24.87±3.65	18.38±5.79	24.49±5.56	p<0.001
PFAQ	0.25±1.38	2.80±4.39	16.48±9.20	5.17±8.79	p<0.001
MoCA	23.91±3.51	18.10±4.89	9.60±6.07	17.12±8.43	p<0.001
RUDAS	26.37±2.62	23.18±3.63	15.04±7.65	22.65±7.09	p<0.001

Note. Mean ± standard deviation. Analyses of variance between CDR-GS groups.

Table 2: Effectiveness of the CDR in screening for MCI and AD patients

Discriminant validity	Mild Cognitive Impairment/Normal Cognition		Alzheimer's Disease /Normal Cognition	
	CDR-SB	CDR-GS	CDR-SB	CDR-GS
AUC	98.5	99.80	99.90	99.90
Accuracy	99.39	99.74	99.11	99.93
Sensitivity	92.59	100	98.21	99.77
Specificity	100	99.67	99.56	100
Positive predictive	100	98.80	99.09	100
Negative predictive	99.34	100	99.12	99.89
Youden's index	92.59	99.70	97.80	99.77

Note. Values of reliability assessment components when comparing the MCI group and the control group, and between the AD group and the control group (% values). AUC values shown to be significant for each comparison. AUC, area under the curve;

CONCLUSIONS

The Peruvian version of the CDR demonstrated good psychometric properties (internal consistency, discriminant and concurrent validity) comparable to those obtained in CDR evaluation in Latin America.

Read the full paper in Alzheimer's & Dementia:

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