



The latent structure of the Center for Epidemiological Studies Depression Scale (CES-D) among older adults in China (HE702)

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• Introduction and Purpose

When Radloff designed the CES-D, he measured depressive symptoms in a community-based population rather than in an older population. It remains unclear whether the scale captures the same phenomenon in China as the construct validity of the four-factor structure supported by many Western gerontology studies.

As such, the study aims to examine the factorial structure of the CES-D among the elderly in China.

• Research Method

Confirmatory factor analysis (CFA) was employed to analyze the factorial structure of the full scale and short form of the CES-D.

• Results

- 1) The mean score of the full scale of the CES-D was 14.27 in the older Chinese sample. Approximately 33.7% of the participants suffered from depressive symptoms, which is similar to the prevalence of depressive symptoms in Chinese adults in 2012;
- 2) Table 1 shows that the one-factor CFA model had the worst fit to the data for the full scale, with the largest values of χ^2 , AIC and RMSEA, and the lowest value of GFI. In the full scale, the model fit of the two-factor model improved substantially, but it was not superior to the other two models. Although the three-factor model had the same GFI and RMSEA values as the four-factor model, the four-factor model fitted the data best because of its lower AIC value (2526.67);
- 3) In the short-form scale, the two-factor and three-factor models fitted the data better than the one-factor model. The three-factor model, the best fitting model, was identified by its lower AIC value and significant difference in χ^2 .

• Conclusions

The four-factor structure for the full CES-D and the three-factor structure for the short-form CES-D have better model fit among older adults in China. The results suggest that acceptable measurement properties of the full- and short-form of the CES-D in Chinese older adults.

Table 1 Fit Indices of the CES-D.

Model	χ^2	df	GFI	AIC	RMSEA
The 20-item scale in 2012					
One factor	5078.88	170	0.86	5158.88	0.09
Two factor (depressive symptoms and interpersonal problems)	4691.01	169	0.87	4773.01	0.08
Two factor (depressed and positive affect)	2832.34	169	0.92	2914.34	0.07
Three factor (depressed symptoms, positive affect, and interpersonal problems)	2448.47	167	0.93	2534.47	0.06
Four factor	2434.67	164	0.93	2526.67	0.06
The 8-item scale in 2016					
One factor	1655.79	20	0.90	1687.79	0.15
Two factor (depressed and positive affect)	436.30	19	0.97	470.30	0.08
Three factor	411.13	17	0.97	449.13	0.08

Note: CES-D signifies the Center for Epidemiological Studies Depression Scale. The positive items in the CES-D are reverse coded.