

Measurement Invariance of Paranoia Scales in US Hispanic and African American Participants

Thomas Bart, Charlie Su, Megan Hricovec, Alexandra Ayala, Jamie Pogue, Shealen Taylor, Wesley Amlong, & David Cicero
Department of Psychology, University of North Texas



Background

- Research suggests ethnic minorities endorse higher levels of paranoia than non-Hispanic whites, resulting in increased diagnosis of psychotic disorders (Freeman et al., 2011; Wolny et al. 2023)
- Some studies have shown the importance of expanding norms to include this difference (Combs et al., 2002)
- Few studies have focused on measurement invariance of paranoia scales across multiple ethnicities
- It is unclear if differences of paranoia ratings among minority groups represent actual differences in prevalence or biases in the assessment instruments

Current study

- Examines the measurement invariance of two commonly used paranoia scales, the R-GPTS and the PS
- Revised-Green Paranoid Thoughts Scale (R-GPTS)
 - 18-item questionnaire that assesses ideas of reference (8 items) and persecution (10 items) across the paranoia spectrum
- Paranoia Scale (PS)
 - 20-item questionnaire initially designed to assess paranoia in the general population

Method

- Participants (n=903) were recruited via Prolific and were paid for participation. Participants were divided into the following categories:
 - White Non-Hispanic (n=312)
 - Hispanic (n=285)
 - African American (n=306)
- Participants were asked to endorse demographic info and filled out various questionnaires about social determinants of health (SDoH) and various paranoia scales

Results

Table 1
Measurement Invariance of Paranoia Scales

	X ² (df)	RMSEA (90% CI)	CFI	X ² (df) diff	ΔCFI
R-GPTS Reference					
Configural	126.893 (60)	0.031 (0.024-0.039)	1.000		
Metric	61.09 (74)	0.035 (0.024-0.048)	1.000	20.082 (14)	0.006
Scalar	80.405 (88)	0.039 (0.026-0.051)	1.000	45.817 (28)	0.000
R-GPTS Persecution					
Configural	206.441 (105)	0.057 (0.045-0.068)	0.996		
Metric	75.917 (123)	0.029 (0.015-0.040)	0.994	22.630 (18)	0.002
Scalar	92.905 (141)	0.031 (0.019-0.042)	0.992	48.460 (36)	0.003
Paranoia Scale					
Configural	1220.043 (510)	0.058 (0.053-0.062)	0.975		
Metric	1019.65 (548)	0.065 (0.058-0.071)	0.967	72.003 (38)	0.009
Scalar	1091.57 (586)	0.065 (0.058-0.071)	0.964	134.260 (76)	0.011

Table 2
Mean (SD) Comparisons of Paranoia

	White Non-Hispanic	Hispanic	African American	F (2,902)
R-GPTS Reference	6.29 (6.34)	7.72 (7.52) ^a	8.09 (7.56) ^a	5.43**
R-GPTS Persecution	4.44 (6.44)	6.28 (8.85) ^a	7.49 (9.33) ^a	10.65***
Paranoia Scale Total	38.64 (13.55)	41.91 (16.43) ^a	44.23 (15.94) ^a	10.35***

* p < .05, ** p < .01, *** p < .001. Groups that share a superscript letter do not differ significantly from each other.

Discussion

Measurement Invariance

- R-GPTS can be confidently used in these groups, and the same cutpoints can be used to assess paranoia across these groups as the scores likely represent actual differences in paranoia
- Paranoia Scale has configural and metric invariance but lacks scalar invariance. This means it is assessing the construct of paranoia similarly, but scores should be interpreted with caution
 - Next step is item-level analysis to determine problematic item(s)

Mean Paranoia Across Groups

- African Americans exhibited the highest level of paranoia across the three groups, consistent with previous research
- Post-hoc analyses revealed significant differences in paranoia between the non-Hispanic White group and the Hispanic and African American groups; no other significant differences between groups

Limitations

- Non-clinical sample
- Data collected via Prolific
- Self-report

Future Research

- Assess in clinical samples
- Include additional paranoia scales
- Explore other variables that may be related to increased paranoia in ethnic minorities, such as SDoH

Citations

Combs, D. R., Penn, D. L., & Fenigstein, A. (2002). Ethnic differences in subclinical paranoia: an expansion of norms of the paranoia scale. *Cultural Diversity and Ethnic Minority Psychology, 8*(3), 248.

Freeman, D., McManus, S., Brugha, T., Meltzer, H., Jenkins, R., & Bebbington, P. (2011). Concomitants of paranoia in the general population. *Psychological medicine, 41*(5), 923-936.

Wolny, J., Moussa-Tooks, A. B., Bailey, A. J., O'Donnell, B. F., & Hetrick, W. P. (2023). Race and self-reported paranoia: Increased item endorsement on subscales of the SPQ. *Schizophrenia Research, 253*, 30-39.