

BACKGROUND

Parent-child relationships influence children's development directly and indirectly (Bronfenbrenner, 1992).

What constitutes parental warmth is extremely dependent on culture, so this construct might be perceived and enacted differently among distinct ethnic groups.

Because measures have typically been developed with predominantly Caucasian middle-class samples (Knight et al., 2009) and given that the U.S. population is becoming increasingly diverse (Rodriguez-Lainz et al, 2018), researchers need to be confident that the tools they are using to measure parental warmth work similarly across ethnic groups.

Investigations have found mean-level differences in parenting behaviors by ethnic group (e.g., Gonzalez et al., 2014), but it is not clear if this is due to true group differences or differences in how the measure is perceived by ethnic group members.

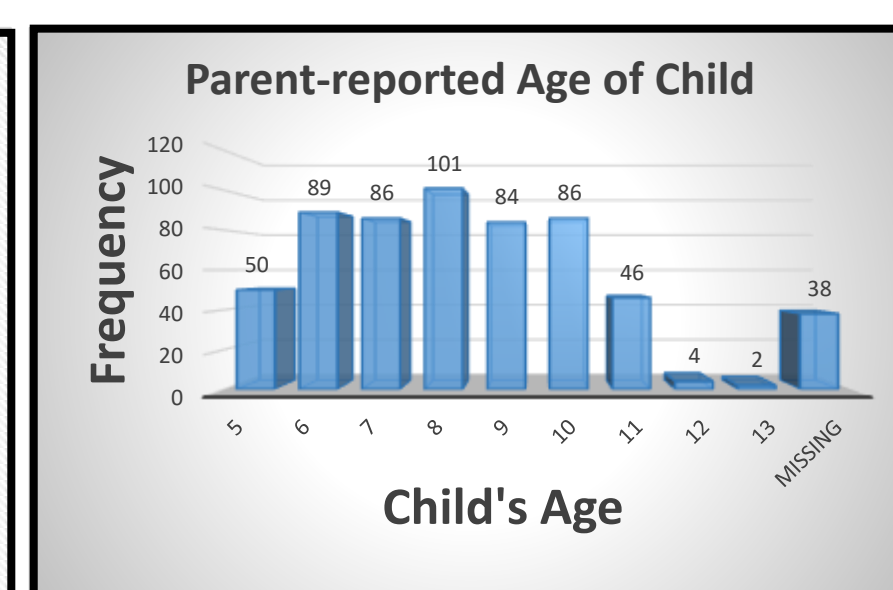
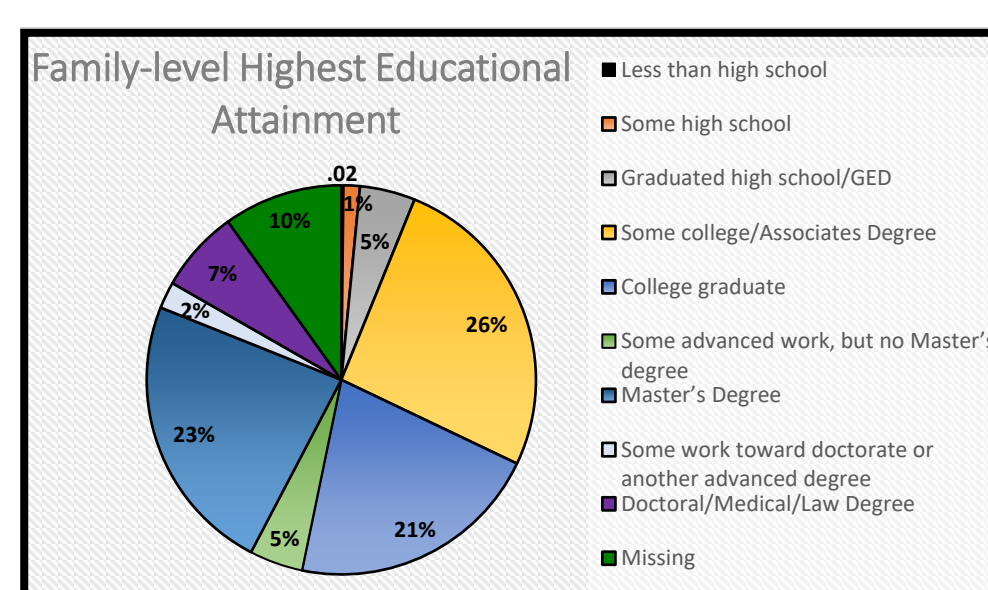
RESEARCH GOALS

To investigate whether an adapted version of the Children's Reports of Parental Behavior Inventory (Schaefer, 1965) was equivalent within a diverse sample of parents.

METHOD

Sample: N = 586 parents (82% mothers) of children attending eight Southwestern U.S. elementary schools who participated in three different studies that are part of a larger study to assess children's occupational knowledge, stereotypes, and achievement-related beliefs within the engineering domain.

Measures: Parents reported on demographics and parental warmth (Schaefer, 1965).



MAIN RESULTS



• **Measurement Invariance:** Analyses indicated the measure was invariant across groups (White vs. Non-White; Table 1; Figure 1). The amount of item variance unaccounted for by parental warmth was the same for both groups (strict).

• It was not possible to examine invariance across subgroups because of the small sample sizes (Asians $n = 19$, African Americans $n = 23$, Latino $n = 128$); thus, subgroups were combined.

• Asians reported lower on all items and the total score ($p < .05$) compared to Caucasians and Latinos, and lower than African-Americans on three items and the total score ($p < .05$). Latinos had higher scores than Caucasians on item 06 ($p = .033$) and African-Americans on item 08 ($p = .019$). African Americans reported higher than Latinos on item 04 ($p = .029$) and lower than Caucasians on item 08 ($p = .022$).

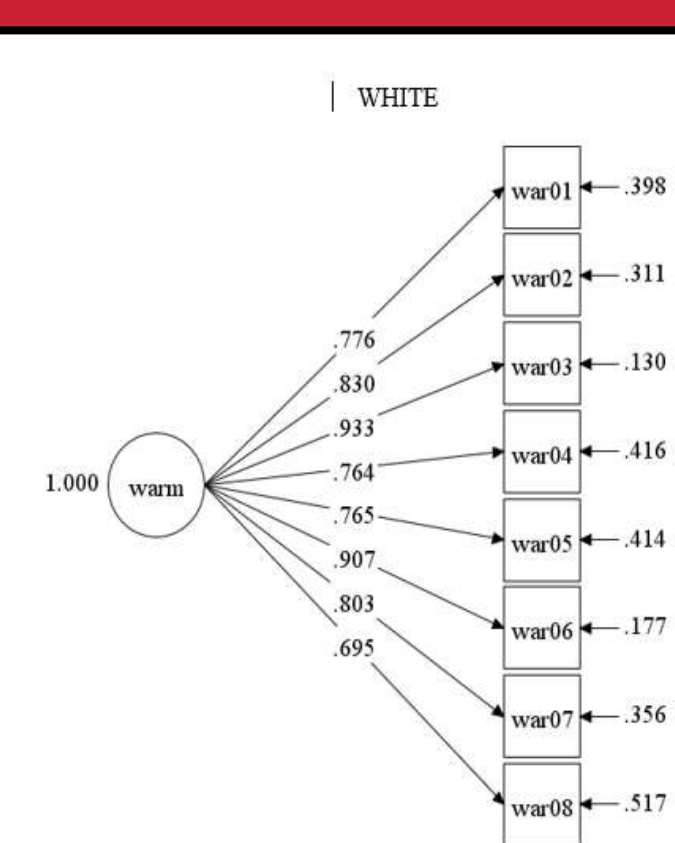
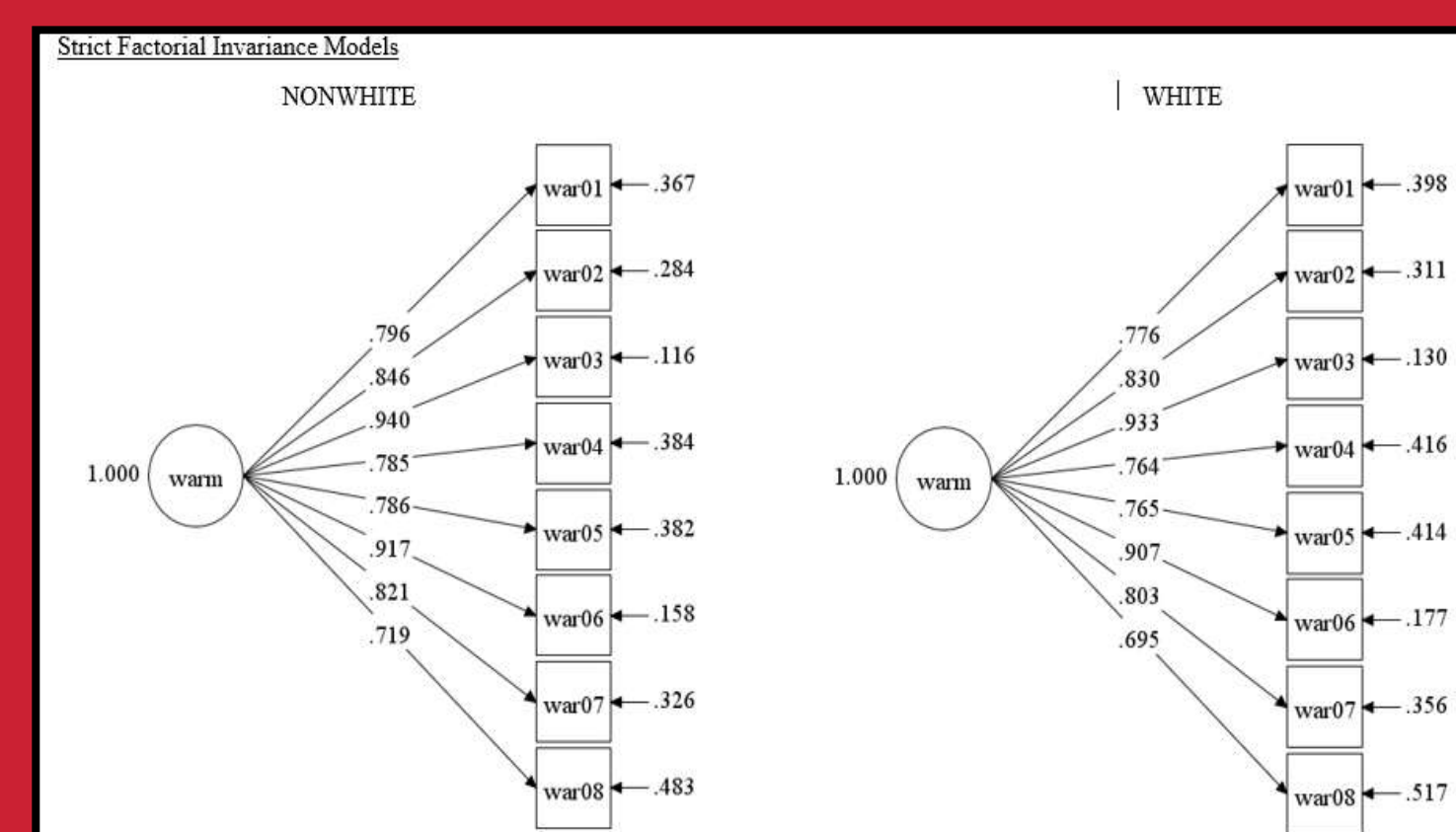


Table 1

Model fit statistics for tests of Nonwhite versus White group measurement and structural invariance

Model	Chi-Square Value	Chi-Square DF	Chi-Square p-value	CFI	RMSEA Estimate	RMSEA Lower CI	RMSEA Higher CI
Configural	126.638	40	0	0.985	0.094	0.076	0.113
Weak	122.226	47	0	0.987	0.081	0.063	0.098
Strong	136.285	62	0	0.987	0.070	0.054	0.086
Strict A	132.796	54	0	0.986	0.077	0.061	0.094
Strict B	136.285	62	0	0.987	0.070	0.054	0.086

Acknowledgements

Funding provided by the National Science Foundation, 1561424, Equity in Engineering: Understanding and Promoting All Elementary School Children's Knowledge of and Motivation to Engage in Engineering, C. Miller (P.I.), L. Wheeler (Co-P.I.), M. Reisslein (Co-P.I.). Affiliations: 1.Nebraska Center for Children, Youth, Families, and Schools, University of Nebraska-Lincoln. 2.Arizona State University.

METHOD (cont'd)

Analyses: Confirmatory factor analysis (CFA) was used to analyze the adapted measure's factor structure. It supported the hypothesis that all items are indicators of one underlying parental warmth latent factor. The fit indices suggested an adequate model fit: $\chi^2(20)=94.34$, $p < .001$; root mean square error of approximation = .083 (90% CI [.067, .100]); CFI = .987; SRMR = .042. Standardized factor loadings (.71-.93) were significant at the $p < .001$ level.

Measurement and structural invariance for the confirmatory factor model was tested between the Non-White (combined) and White (Caucasian) groups. Weighted least squares mean and variance-adjusted (WLSMV) estimation was used for all analyses.

Reliability was measured using Cronbach's alpha. The measure had moderately high reliability across ethnic groups ($\alpha = 0.87$) and moderately high to high reliability between the ethnic groups analyzed (Asian $\alpha = 0.86$; Caucasian $\alpha = 0.86$; Latino $\alpha = 0.87$; African American $\alpha = 0.92$).

Simple T -tests were used to measure item and total scores differences between each ethnic group (African American, Latino, Asian, and Caucasian).

DISCUSSION

Non-White vs. White analyses indicated the measure was invariant between those groups. It seems that minority parents are interpreting the items the same way as the White parents, thus, significant parental warmth mean differences between the former and the latter are valid.

Despite the overall measurement invariance, we were unable to confirm whether specific cultural differences were guiding parents' responses withing ethnic subgroups. It was not possible to evaluate whether culturally specific aspects of parental warmth lack representation in our items.

Replication of this study is necessary with a larger minority sample size, especially with Asian parents.