Multilevel Analysis

Table 1 compares predictors for fathers and mothers on parental stress. This is a two-level random-intercepts model in which parents are nested within families. In the unconstrained model, separate estimates are made for fathers and mothers in one model. In the constrained model, the estimates for fathers and mothers for the intercept as well as for a single predictor (or for an entire set of predictors) are set to be equal. Comparing the deviance statistic associated with the unconstrained and the constrained models assesses the statistical significance of differences in average levels of stress between fathers and mothers as well as differences in the strength of the relation between predictors and outcome for fathers and mothers. The difference between the deviance statistics for the two models is distributed as a χ^2 statistic with degrees of freedom equal to the difference in the number of parameters estimated in the two models. Authors should report χ^2 values and degrees of freedom in the text.

Table 2 is an example of a two-level random-intercepts model where individuals are nested within schools. Model 1 reflects only the individual level parameter estimates, Model 2 adds one school level parameter, and Model 3 adds a second school level parameter.

Table 1

Multilevel Model Results Predicting Fathers' and Mothers' Parenting Stress From Child Temperament and Familial Factors Using Full Maximum Likelihood Estimation (N = 300)

	Unconstrained						Constrained			
	Fathers			Mothers			Couple			
Model	Unstandardized Coefficient	*SE*	*z* ratio	Unstandardized Coefficient	*SE*	*z* ratio	Unstandardized Coefficient	*SE*	*z* ratio	χ^2
Intercept	28.12	.29	30.40**	30.18	.25	34.90**	29.50	.27	32.50**	.09
Child temperament	.39	.08	3.20**	.37	.09	3.18**	.38	.09	3.19**	.01
Marital satisfaction	−.18	.10	−2.05*	−.08	.04	−1.50	−.17	.10	−2.02*	.06
Family cohesion	−.25	.12	−2.10*	−.23	.11	−2.04*	−.24	.12	−2.08*	.01
Years married	−.12	.05	−1.80	−.11	.06	−1.74	−.12	.06	−1.77	.02

Table 1

Continued

Estimated		
parameters	13	6
Deviance	399.85	400.38

Note: Convergence criterion = .001.

p < .05. **p* <. 01.

Table 2.

Multilevel Model Results Predicting Child Behavior Problems From School and Individual Level Variables Using Full Maximum Likelihood

Estimation (N = 900 individuals from 20 schools)

	Child Behavior Problems					
	Model 1		Model 2		Model 3	
Predictors	Unstandardized Coefficient	*SE*	Unstandardized Coefficient	*SE*	Unstandardized Coefficient	*SE*
School-level						
Teacher-child ratio			−.92**	.08	-.84**	.08
M socioeconomic status					-3.12**	1.48
Individual-level						
Intercept	40.12**	.60	38.20**	.59	35.80**	.55
Temperament	.29*	.08	.28*	.08	.27*	.08
Closeness to father	−.70**	.10	−.68**	.10	−.65**	.10
Closeness to mother	−.40**	.09	−.38**	.09	−.35**	.09

Table 2

Continued

Estimated parameters	6	7	8
Deviance	374.38	369.80	365.60

Note: Convergence criterion = .001.

*p < .05. **p < .01.