**Table S1**

*Model Fit Indices for Confirmatory Factor Analyses Examining Longitudinal Measurement Invariance*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Fit Indices |   |   | Model Comparisons |
| Model | *χ2* | *df* | *p* | RMSEA | CFI | SRMR |   |  Scaled *Δχ2* | *Δdf* | *p* | ΔRMSEA | ΔCFI | ΔSRMR |
| Peer victimization (TR) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 299.22 | 74 | <.001 | 0.015 | 0.985 | 0.021 |  |  |  |  |  |  |  |
| Model 2 (metric) | 339.80 | 83 | <.001 | 0.015 | 0.982 | 0.029 |  | 39.34 | 9 | <.001 | 0.000 | -0.003 | 0.008 |
| Model 3 (scalar) | 465.80 | 95 | <.001 | 0.017 | 0.975 | 0.028 |  | 147.53 | 12 | <.001 | 0.002 | -0.007 | -0.001 |
| Peer victimization (SR) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 48.03 | 39 | 0.152 | 0.004 | 0.999 | 0.011 |  |  |  |  |  |  |  |
| Model 2 (metric) | 86.78 | 45 | <.001 | 0.008 | 0.996 | 0.021 |  | 40.14 | 6 | <.001 | 0.004 | -0.003 | 0.010 |
| Model 3 (scalar) | 417.19 | 53 | <.001 | 0.023 | 0.966 | 0.040 |  | 411.09 | 8 | <.001 | 0.015 | -0.030 | 0.019 |
| Model 4 (partial scalar) | 120.83 | 50 | <.001 | 0.010 | 0.993 | 0.023 |  | 41.09 | 5 | <.001 | 0.002 | -0.003 | 0.002 |
| Social anxiety |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 33.28 | 15 | 0.004 | 0.010 | 0.998 | 0.011 |  |  |  |  |  |  |  |
| Model 2 (metric) | 35.89 | 19 | 0.011 | 0.008 | 0.998 | 0.013 |  | 1.92 | 4 | 0.750 | -0.002 | 0.000 | 0.002 |
| Model 3 (scalar) | 187.52 | 25 | <.001 | 0.022 | 0.983 | 0.040 |  | 184.27 | 6 | <.001 | 0.014 | -0.015 | 0.027 |
| Model 4 (partial scalar) | 64.64 | 23 | <.001 | 0.012 | 0.996 | 0.021 |   | 33.86 | 4 | <.001 | 0.004 | -0.002 | 0.008 |

Note: RMSEA = Root Mean Square Error of Approximation, CFI = Comparative Fit Index, SRMR = Standardized Root Mean Residual, TR = teacher report, SR = self-report. In Model 1, the factor loadings and intercepts were unconstrained. In Model 2, the factor loadings for the same item were constrained to be equal across waves. In Model 3, the factor loadings and intercepts of the same item were constrained to be equal across waves. For each construct, in addition to examining the overall model fit, which was adequate for all of the specified models, measurement invariance was evaluated by performing a series of model comparisons. Model comparisons were performed to compare fit indices for Model 2 compared to Model 1, Model 3 compared to Model 2, and Model 4 compared to Model 2. We first estimated the Satorra-Bentler scaled chi-square difference test (to account for MLR estimation; see Satorra, 2000); however, because this test is sensitive to sample size, we also examined changes in the model fit indices, and in particular the CFI. According to methodologists (Chen, 2007; Cheung & Rensvold, 2002), models exhibit measurement invariance when the change in CFI is not more than -.01. Using this cutoff, the results indicated that peer victimization (teacher report) exhibited longitudinal scalar invariance. Social anxiety and peer victimization (self-report) exhibited metric invariance, but the change in CFI for the scalar models exceeded the cutoff threshold. The intercepts for these models were examined more closely, and it appeared that both models exhibited partial longitudinal scalar invariance.

**Table S2**

*Model Fit Indices for Confirmatory Factor Analyses Examining Multiple-Group Measurement Invariance*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Fit Indices |   |   | Model Comparisons |
| Model | *χ2* | *df* | *p* | RMSEA | CFI | SRMR |   |  Scaled *Δχ2* | *Δdf* | *p* | ΔRMSEA | ΔCFI | ΔSRMR |
| Peer victimization (SR) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Child Sex |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 200.75 | 104 | <.001 | 0.012 | 0.991 | 0.030 |  |  |  |  |  |  |  |
| Model 2 (metric) | 233.24 | 108 | <.001 | 0.013 | 0.988 | 0.035 |  | 30.42 | 4 | 0.000 | 0.001 | -0.003 | 0.005 |
| Model 3 (scalar) | 330.08 | 112 | <.001 | 0.017 | 0.980 | 0.036 |  | 118.10 | 4 | 0.000 | 0.004 | -0.008 | 0.001 |
| African Americans |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 185.92 | 104 | <.001 | 0.011 | 0.992 | 0.029 |  |  |  |  |  |  |  |
| Model 2 (metric) | 187.88 | 108 | <.001 | 0.011 | 0.992 | 0.031 |  | 2.70 | 4 | 0.609 | 0.000 | 0.000 | 0.002 |
| Model 3 (scalar) | 259.11 | 112 | <.001 | 0.014 | 0.986 | 0.037 |  | 43.67 | 4 | 0.000 | 0.003 | -0.006 | 0.006 |
| Hispanics |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 175.69 | 104 | <.001 | 0.010 | 0.993 | 0.027 |  |  |  |  |  |  |  |
| Model 2 (metric) | 180.00 | 108 | <.001 | 0.010 | 0.993 | 0.029 |  | 4.56 | 4 | 0.335 | 0.000 | 0.000 | 0.002 |
| Model 3 (scalar) | 193.83 | 112 | <.001 | 0.011 | 0.992 | 0.030 |  | 15.07 | 4 | 0.005 | 0.001 | -0.001 | 0.001 |
| Asians |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 219.45 | 104 | <.001 | 0.013 | 0.989 | 0.030 |  |  |  |  |  |  |  |
| Model 2 (metric) | 237.60 | 108 | <.001 | 0.014 | 0.987 | 0.051 |  | 14.39 | 4 | 0.006 | 0.001 | -0.002 | 0.021 |
| Model 3 (scalar) | 261.31 | 112 | <.001 | 0.014 | 0.985 | 0.048 |  | 24.57 | 4 | 0.000 | 0.000 | -0.002 | -0.003 |
| Peer victimization (TR) |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Child Sex |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 634.75 | 196 | <.001 | 0.018 | 0.969 | 0.039 |  |  |  |  |  |  |  |
| Model 2 (metric) | 841.69 | 200 | <.001 | 0.022 | 0.955 | 0.074 |  | 99.15 | 4 | 0.000 | 0.004 | -0.014 | 0.035 |
| Model 3 (scalar) | 1128.71 | 204 | <.001 | 0.026 | 0.935 | 0.072 |  | 340.62 | 4 | 0.000 | 0.004 | -0.020 | -0.002 |
| Model 4 (partial scalar) | 856.82 | 202 | <.001 | 0.022 | 0.954 | 0.071 |  | 18.69 | 2 | 0.000 | 0.000 | -0.001 | -0.003 |
| African Americans |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 612.56 | 196 | <.001 | 0.018 | 0.972 | 0.036 |  |  |  |  |  |  |  |
| Model 2 (metric) | 640.56 | 200 | <.001 | 0.018 | 0.971 | 0.046 |  | 22.08 | 4 | 0.000 | 0.000 | -0.001 | 0.010 |
| Model 3 (scalar) | 749.13 | 204 | <.001 | 0.020 | 0.964 | 0.046 |  | 130.12 | 4 | 0.000 | 0.002 | -0.007 | 0.000 |
| Hispanics |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 588.24 | 196 | <.001 | 0.017 | 0.974 | 0.035 |  |  |  |  |  |  |  |
| Model 2 (metric) | 605.59 | 200 | <.001 | 0.017 | 0.973 | 0.039 |  | 15.66 | 4 | 0.004 | 0.000 | -0.001 | 0.004 |
| Model 3 (scalar) | 620.83 | 204 | <.001 | 0.017 | 0.972 | 0.038 |  | 16.28 | 4 | 0.003 | 0.000 | -0.001 | -0.001 |
| Asians |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1 (configural) | 687.10 | 196 | <.001 | 0.019 | 0.966 | 0.044 |  |  |  |  |  |  |  |
| Model 2 (metric) | 717.30 | 200 | <.001 | 0.020 | 0.964 | 0.073 |  | 20.22 | 4 | 0.000 | 0.001 | -0.002 | 0.029 |
| Model 3 (scalar) | 757.23 | 204 | <.001 | 0.020 | 0.962 | 0.071 |   | 50.54 | 4 | 0.000 | 0.000 | -0.002 | -0.002 |

Note: RMSEA = Root Mean Square Error of Approximation, CFI = Comparative Fit Index, SRMR = Standardized Root Mean Residual, TR = teacher report, SR = self-report. All multiple-group models were specified as longitudinal CFAs. Models for self-reports of peer victimization assumed partial longitudinal scalar invariance and models for teacher-reports of peer victimization assumed longitudinal scalar invariance, consistent with the longitudinal measurement analyses reported in Table S1. In addition to the constraints imposed across the repeated measures over time, in Model 1 (configural), the factor loadings and intercepts were unconstrained between groups. In Model 2 (metric), the factor loadings for the same item were constrained to be equal between groups. In Model 3 (scalar), the factor loadings and intercepts of the same item were constrained to be equal between groups. For each construct, in addition to examining the overall model fit, which was adequate for all of the specified models, measurement invariance was evaluated by performing a series of model comparisons, similar to the approach used to examine longitudinal invariance (i.e., difference scores were computed for each of the model fit indices for Model 2 compared to Model 1, Model 3 compared to Model 2, and Model 4 compared to Model 2). Using this approach, all models demonstrated metric and scalar invariance between groups, with the exception of child sex based on teacher-reported peer victimization, which demonstrated partial scalar invariance.

**Table S3**

*Parameter Estimates for Latent Growth Factors in 5-Class Model Examining Children’s Peer Victimization Trajectories*

|  |  |  |  |
| --- | --- | --- | --- |
|   | Intercept | Linear slope | Quadratic slope |
| Class | *Est.* | *SE* | *p* | *Est.* | *SE* | *p* | *Est.* | *SE* | *p* |
| High-chronic victims | 1.10 | 0.18 | 0.000 | 0.18 | 0.14 | 0.198 | -0.02 | 0.04 | 0.675 |
| High-decreasing victims | 1.69 | 0.10 | 0.000 | -0.96 | 0.12 | 0.000 | 0.20 | 0.03 | 0.000 |
| Moderate-increasing victims | 0.41 | 0.02 | 0.000 | 0.18 | 0.03 | 0.000 | -0.05 | 0.01 | 0.000 |
| Moderate-decreasing victims | 0.35 | 0.01 | 0.000 | -0.10 | 0.02 | 0.000 | 0.01 | 0.01 | 0.087 |
| Low victims | 0.00 | 0.00 | - | 0.00 | 0.01 | 0.926 | 0.00 | 0.00 | 0.659 |

Note. These estimates are plotted in Figure 2. In order to estimate this model, the intercept estimate for low victims was fixed to zero.

**Table S4**

*Model Fit Indices for Unconditional Latent Growth Models*

|  |  |  |  |
| --- | --- | --- | --- |
|   | Fit Indices |   | Model Comparisons |
| Model | *χ2* | *df* | *p* | RMSEA | SRMR |   |  Scaled Δχ2 | Δdf | *p* | ΔRMSEA | ΔSRMR |
| Externalizing problems (4 waves) |  |  |  |  |  |  |  |  |  |  |  |
| Linear growth model | 9.49 | 5 | 0.091 | 0.008 | 0.018 |  |  |  |  |  |  |
| Quadratic growth model | 0.02 | 1 | 0.893 | 0.000 | 0.000 |  | 9.20 | 4 | 0.056 | -0.008 | -0.018 |
| Internalizing problems (4 waves) |  |  |  |  |  |  |  |  |  |  |  |
| Linear growth model | 17.86 | 5 | 0.003 | 0.014 | 0.015 |  |  |  |  |  |  |
| Quadratic growth model | 0.38 | 1 | 0.535 | 0.000 | 0.002 |  | 17.16 | 4 | 0.002 | -0.014 | -0.013 |
| Social anxiety |  |  |  |  |  |  |  |  |  |  |  |
| Linear growth model (3 waves) | 25.91 | 1 | <.001 | 0.044 | 0.023 |  |  |  |  |  |  |

Note: RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Residual.

**Table S5**

*Parameter Estimates for Unconditional Latent Growth Models*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Intercept | Linear slope | Quadratic slope |
| Class | *Est.* | *SE* | *p* | *Est.* | *SE* | *p* | *Est.* | *SE* | *p* |
| Externalizing problems (4 waves) | 1.69 | 0.01 | 0.000 | -0.02 | 0.00 | 0.000 |   |   |   |
| Internalizing problems (4 waves) | 1.57 | 0.01 | 0.000 | 0.03 | 0.01 | 0.040 | -0.01 | 0.00 | 0.020 |
| Social anxiety (3 waves) | 2.35 | 0.02 | 0.000 | -0.12 | 0.01 | 0.000 |   |   |   |

**Figure S1**

*Illustrative Example of Second Order Growth Mixture Model*

1

1

1

1

9

4

1

0

3

2

1

0

1

1

1

1

PV (TR) (G2)

PV (TR) (G3)

PV (TR) (G4)

PV (TR) (G5)

PV (SR) (G3)

PV (SR) (G4)

PV (SR) (G5)

Note: PV = peer victimization, G = grade, TR = teacher report, SR = self-report

**Figure S2**

*Illustrative Example of Conditional Latent Growth Model*

9

4

1

0

3

2

1

0

1

1

1

1

 **(Covariates)**

Gender

Black

Hispanic

Asian

SES

Child adjustment (Grade 2)

Child adjustment (Grade 3)

Child adjustment (Grade 4)

Child adjustment (Grade 5)

Note: The example above reflects the manual ML 3-step model that was estimated to examine the associations between the peer victimization trajectory classes and internalizing problems. In the model for externalizing problems and social anxiety, linear growth models were specified by removing the quadratic slope and its corresponding estimates. Covariate effects are shown in gray. In the example above, the intercept estimate reflects children’s baseline (Grade 2) adjustment.

References

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*(3), 464-504.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 9*(2), 233-255.

Satorra, A. (2000). Scaled and adjusted restricted tests in multi-sample analysis of moment

structures. In Heijmans, R.D.H., Pollock, D.S.G. & Satorra, A. (eds.), Innovations in multivariate statistical analysis. A Festschrift for Heinz Neudecker (pp.233-247). London: Kluwer Academic Publishers.