

A Bifactor Model of Negative Affectivity: Fear and Distress Components Among Younger and Older Youth

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Abstract: The Positive and Negative Affect Schedule for Children (PANAS-C) is a 27-item youth-report measure of positive affectivity and negative affectivity. Using 2 large school-age youth samples (clinic-referred sample: N = 662; school-based sample: N = 911), in the present study, we thoroughly examined the structure of the PANAS-C NA and PA scales and fit a bifactor model to the PANAS-C NA items. Our exploratory factor analytic results demonstrated that negative affectivity is comprised of 2 main components-NA: Fear and NA: Distress-specifically among older youth. A bifactor model also evidenced the best model fit relative to a unidimensional and second-order factor structure of the PANAS-C NA items. The NA: Fear group factor evidenced significant correspondence with external criterion measures of anxiety. However, the original PANAS-C NA scale evidenced equal (and in some cases greater) correspondence with criterion measures of anxiety. We thus recommend continued usage and interpretation of the full PANAS-C NA scale despite the identification of the fear and distress group factors underlying general negative affectivity. The identification of these fear and distress group factors nonetheless suggest that negative affectivity may be comprised largely of a fear and distress component among older youth. The implications of these findings are discussed in relation to better understanding the structure of psychopathology across childhood development and informing the development of future treatments of negative emotions. © 2011 American Psychological Association.

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References:

1. Allison, P.D., Missing data techniques for structural equation modeling (2003) *Journal of Abnormal Psychology*, 112, pp. 545-557
2. (1994) *Diagnostic and statistical manual of mental disorders*, , Author, Washington, DC, American Psychiatric Association
3. Analyse-It for Microsoft Excel (Version 2.12), , <http://www.analyse-it.com/>, Analyse-It Software
4. Anthony, J.L., Lonigan, C.J., Hooe, E.S., Phillips, B.M., An affect-based, hierarchical model of temperament and its relations with internalizing symptomatology (2002) *Journal of Clinical Child and Adolescent Psychology*, 31, pp. 480-490
5. Asparouhov, T., Muthén, B., Robust chi square difference testing with mean and variance adjusted test statistics (Mplus web notes No. 10), , <http://www.statmodel.com/download/webnotes/webnote10.pdf>
6. Austin, A.A., Chorpita, B., Temperament, anxiety, and depression: Comparisons across five ethnic groups of children (2004) *Journal of Clinical Child and Adolescent Psychology*, 33, pp. 216-226
7. Bagozzi, R., An examination of the psychometric properties of measures of negative affect in the PANAS-X scales (1993) *Journal of Personality and Social Psychology*, 65, pp. 836-851
8. Barlow, D., Allen, L., Choate, M., Towards a unified treatment for emotional disorders (2004) *Behavior Therapy*, 35, pp. 205-230
9. Bentler, P.M., Comparative fit indices in structural models (1990) *Psychological Bulletin*, 107, pp. 238-246
10. Brown, T.A., (2006) *Confirmatory factor analysis for applied research*, , Guilford Press, New York, NY
11. Browne, M., Cudeck, R., Alternative ways of assessing model fit (1993) *Testing structural equation models*, pp. 136-159. , Sage, Newbury Park, CA, K.A. Bollen, J.S. Long (Eds.)
12. Chorpita, B.F., Daleiden, E.L., Tripartite dimensions of emotion in a child clinical sample: Measurement strategies and implications for clinical utility (2002) *Journal of Consulting and Clinical Psychology*, 70, pp. 1150-1160
13. Chorpita, B., Moffitt, C., Gray, J., Psychometric properties of the Revised Child Anxiety and Depression Scale in a clinical sample (2005) *Behaviour Research and Therapy*, 43, pp. 309-322
14. Chorpita, B., Plummer, M., Moffitt, C., Relations of tripartite dimensions of emotion to childhood anxiety and mood disorders (2000) *Journal of Abnormal Child Psychology*, 28, pp. 299-310
15. Chorpita, B., Yim, L., Moffitt, C., Umemoto, L., Francis, S., Assessment of symptoms of DSM-IV anxiety and depression in children: A revised child anxiety and depression scale (2000) *Behaviour Research and Therapy*, 38, pp. 835-855
16. Cole, D.A., Truglio, R., Peeke, L., Relation between symptoms of anxiety and depression in children: A multitrait-multimethod-multigroup assessment (1997) *Journal of Consulting and Clinical Psychology*, 65, pp. 110-119
17. Costello, A.B., Osborne, J.W., Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis (2005) *Practical Assessment, Research and Evaluation*, 10, pp. 1-9
18. Crook, K., Beaver, B., Bell, M., Anxiety and depression in children: A preliminary examination of the PANAS-C (1998) *Journal of Psychopathology and Behavioral Assessment*, 20, pp. 333-350
19. DeLong, E., DeLong, D., Clarke-Pearson, D., Comparing the areas under two or more correlated receiver operating characteristic curves: A nonparametric approach (1988) *Biometrics*, 44, pp. 837-845
20. Ebesutani, C., Bernstein, A., Nakamura, B.J., Chorpita, B.F., Weisz, J.R., A psychometric analysis of the Revised Child Anxiety and Depression Scale-Parent Version in a clinical sample (2010) *Journal of Abnormal Child Psychology*, 38, pp. 249-260

21. Emons, W.H.M., Sijtsma, K., Meijer, R.R., On the consistency of individual classification using short scales (2007) *Psychological Methods*, 12, pp. 105-120
22. Ferdinand, R., Validity of the CBCL/YSR DSM-IV scales Anxiety Problems and Affective Problems (2008) *Journal of Anxiety Disorders*, 22, pp. 126-134
23. Flora, D., Curran, P., An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data (2004) *Psychological Methods*, 9, pp. 466-491
24. Goodman, S.H., Lahey, B.B., Fielding, B., Dulcan, M., Narrow, W., Regier, D., Representativeness of clinical samples of youths with mental disorders: A preliminary population-based study (1997) *Journal of Abnormal Psychology*, 106, pp. 3-14
25. Gustafsson, J.E., Balke, G., General and specific abilities as predictors of school achievement (1993) *Multivariate Behavioral Research*, 28, pp. 407-434
26. Holgado-Tello, F., Chacón-Moscoso, S., Barbero-García, I., Vila-Abad, E., Polychoric versus Pearson correlations in exploratory and confirmatory factor analysis of ordinal variables (2010) *Quality and Quantity*, 44, pp. 153-166
27. Holmbeck, G.N., Devine, K.A., Bruno, E.F., Developmental issues and considerations in research and practice (2010) *Evidence-based psychotherapies for children and adolescents*, pp. 28-39. , Guilford Press, New York, NY, J.R. Weisz, A.E. Kazdin (Eds.)
28. Holzinger, K.J., Swineford, F., The bi-factor method (1937) *Psychometrika*, 2, pp. 41-54
29. Hu, L.T., Bentler, P.M., Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives (1999) *Structural Equation Modeling*, 6, pp. 1-55
30. Hughes, A.A., Kendall, P.C., Psychometric properties of the Positive and Negative Affect Scale for Children (PANAS-C) in children with anxiety disorders (2009) *Child Psychiatry and Human Development*, 40, pp. 343-352
31. Jacques, H., Mash, E., A test of the tripartite model of anxiety and depression in elementary and high school boys and girls (2004) *Journal of Abnormal Child Psychology*, 32, pp. 13-25
32. Laurent, J., Catanzaro, S., Joiner, T., Development and preliminary validation of the Physiological Hyperarousal Scale for Children (2004) *Psychological Assessment*, 16, pp. 373-380
33. Laurent, J., Catanzaro, S.J., Joiner, T.E., Rudolph, K.D., Potter, K.I., Lambert, S., Gathright, T., A measure of positive and negative affect for children: Scale development and preliminary validation (1999) *Psychological Assessment*, 11, pp. 326-338
34. Laurent, J., Potter, K., Catanzaro, S.J., Assessing positive and negative affect in children: The development of the PANAS-C (1994), (March), Paper presented at the 26th annual convention of the National Association of School Psychologists, Seattle, WA
Lonigan, C., Hooe, E., David, C., Kistner, J., Positive and negative affectivity in children: Confirmatory factor analysis of a two-factor model and its relation to symptoms of anxiety and depression (1999) *Journal of Consulting and Clinical Psychology*, 67, pp. 374-386
35. Muthén, B., du Toit, S.H.C., Spisic, D., Robust inference using weighted least squares and quadratic estimating equations in latent variable modeling with categorical and continuous outcomes (1997), Unpublished manuscript
Muthén, B., Kaplan, D., Hollis, M., On structural equation modeling with data that are not missing completely at random (1987) *Psychometrika*, 42, pp. 431-462
36. Muthén, B., Muthén, L., (2007) *Mplus*, , Muthén & Muthén, Los Angeles, CA, (Version 4.21)
37. Muthén, L.K., Muthén, B.O., (2006) *Mplus user's guide*, , Muthén & Muthén, Los Angeles, CA
38. Phillips, B., Richey, A., Lonigan, C., The factor structure of the PANAS in children, adolescents, and young adults: Comparisons across age and sex (2002), Presented at the Annual Meeting of the Association for the Advancement of Behavior Therapy
Reno, NV
Reise, S., Moore, T., Haviland, M., Bifactor models and rotations: Exploring the extent to which

- multidimensional data yield univocal scale scores (2010) *Journal of Personality Assessment*, 92, pp. 544-559
39. Reise, S.P., Morizot, J., Hays, R.D., The role of bifactor model in resolving dimensionality issues in health outcome measures (2007) *Quality of Life Research*, 16, pp. 19-31
 40. Ronan, K., Kendall, P., Rowe, M., Negative affectivity in children: Development and validation of a self-statement questionnaire (1994) *Cognitive Therapy and Research*, 18, pp. 509-528
 41. Silverman, W.K., Albano, A.M., (1996) *Anxiety disorders interview schedule for DSM-IV, child and parent versions*, , Psychological Corporation, San Antonio, TX
 42. Tabachnick, B.G., Fidell, L.S., (2007) *Using multivariate statistics*, , Pearson, Allyn, & Bacon, Upper Saddle River, NJ
 43. Watson, D., Clark, L., The PANAS-X: Preliminary manual for the Positive and Negative Affective Schedule-Expanded form (1991), Unpublished manuscript, Southern Methodist University, Dallas, TX
Watson, D., Clark, L., Affects separable and inseparable: On the hierarchical arrangement of the negative affect (1992) *Journal of Personality and Social Psychology*, 62, pp. 489-505
 44. Watson, D., Clark, L.A., The PANAS-X: Manual for the Positive and Negative Affect Schedule-Expanded Form (1994), Unpublished manuscript, Department of Psychology, University of Iowa, Iowa City, IA
Watson, D., Clark, L.A., Carey, G., Positive and negative affectivity and their relation to anxiety and depressive disorders (1988) *Journal of Abnormal Psychology*, 97, pp. 346-353
 45. Watson, D., Clark, L.A., Tellegen, A., Development and validation of brief measures of Positive and Negative Affect: The PANAS Scales (1988) *Journal of Personality and Social Psychology*, 54, pp. 1063-1070
 46. Weems, C.F., Developmental trajectories of childhood anxiety: Identifying continuity and change in anxious emotion (2008) *Developmental Review*, 28, pp. 488-502
 47. Wolfe, V., Finch, A., Saylor, C., Blount, R., Pallmeyer, T., Carek, D., Negative affectivity in children: A multitrait-multimethod investigation (1987) *Journal of Consulting and Clinical Psychology*, 55, pp. 245-250