

The lasting effects of childhood maltreatment: Validation of a biopsychosocial model



Kim A. Gorgens, Ph.D., Marybeth Lehto, Ph.D. and Laura Meyer, Ph.D., University of Denver, and Daniel Bruns, Psy.D., Independent Practice, Greeley, CO

BACKGROUND

Data collected through the National Child Abuse and Neglect Data System show that an estimated 695,000 children were victims of child abuse and neglect in 2010 (U.S. Department of Health and Human Services, 2011). The scope of this problem has led to a dramatic increase in research aimed at identifying the short and long-term sequelae of maltreatment among children. While many children are resilient in the face of trauma, there is growing indication that the negative consequences are more widespread and lasting than previously imagined.

This study applied a comprehensive Biopsychosocial model of dysfunction to a sample of medical and general community members. In keeping with research using Confirmatory Factor Analysis (CFA), the present study had three objectives. First, translate a body of empirical work into a biopsychosocial model of human function; second, examine the strength of the relationships between childhood maltreatment and the three areas of function; and third, evaluate the compatibility between this model and the data.

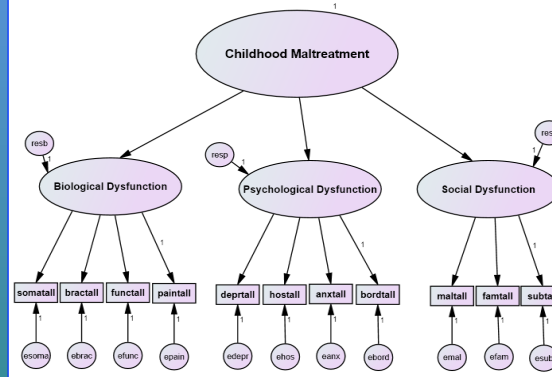
Data from the validation study of the Battery for Health Improvement (BHI; Bruns & DiSorbio, 1996) were used and included responses from 725 community members. A CFA was conducted on the variable covariance matrix using SPSS AMOS and evaluation of model fit used Chi-Square and Root Mean Square Error of Approximation (RMSEA; Chen et al., 2008).

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kgorgens@du.edu

HYPOTHESIZED MODEL

Hypothesized Biopsychosocial CFA Model



MODEL VARIABLES

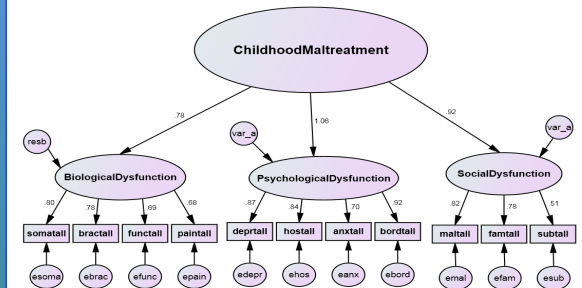
somatal1 t-scores BHI2 Somatic Complaints	resb Residual error variance Biological Dysfunction
bractall1 t-scores BHI2 Muscular Bracing	resp Residual error variance Psychological Dysfunction
funcall1 t-scores BHI2 High or Very High Functional Complaints	ress Residual error variance Social Dysfunction
paintall1 t-scores BHI2 High or Very High Pain Complaints	esoma Error variance Somatic Complaints
deprtall1 t-scores BHI2 High or Very High Depression	ebrac Error variance Muscular Bracing
hostall1 t-scores BHI2 High or Very High Hostility	efunc Error variance Functional Complaints
anxtall1 t-scores BHI2 High or Very High Anxiety	epain Error variance Pain Complaints
bordtall1 t-scores BHI2 High or Very High Borderline Personality Disorder	edepr Error variance Depression
maltall1 t-scores BHI2 High or Very High Chronic Maladjustment	ehos Error variance Hostility
famtall1 t-scores BHI2 High or Very High Family Dysfunction	eanx Error variance Anxiety
subtall1 t-scores BHI2 High or Very High Substance Abuse	ebord Error variance Borderline Personality Disorder
	emal Error variance Chronic Maladjustment
	efam Error variance Family Dysfunction
	esub Error variance Substance Abuse

RESULTS

- Model fit was estimated using empirically supported parameters (below). Results showed that the model was recursive and minimum was achieved but the overall model fit was poor:
 - Chi-square=1619.28
 - p=.000
 - CFI=.88
 - RMSEA=.149
- Post-hoc exploratory factor analyses failed to yield a stronger model fit
- A correlation matrix confirmed the poor model fit suggested by covariance data

MODEL SOLUTION

Hypothesized Biopsychosocial CFA Model



Note: Standardized estimates

DISCUSSION

- A tripartite model of biopsychosocial dysfunction is supported by the literature and was applied to a medical and community dataset
- Results suggest that the latent variable, childhood maltreatment, cannot be assumed to account for variance in bio, psycho, and social dysfunction.
- It could be that particular types of victimization, here all accounted for in Childhood Maltreatment, differentially impact biopsychosocial functioning
- Finally, these analyses suggest that the distinction between bio, psycho and social symptomology is arbitrary
- Consider validating tripartite model in medical patient sample

REFERENCES

- Bruns, D. & DiSorbio, J.M., (1996). *Battery for Health Improvement*. National Computer Systems: Minneapolis, MN.
- Chen, F., Curran, P.J., Bollen, K.A., Kirby, J., Paxton, P. (2008). An empirical evaluation of the use of fixed cutoff points in RMSEA Test Statistic in Structural Equation Models. *Sociological Methods and Research*, 36 (4), 462-494.
- U.S. Departmental of Health and Human Services, Administration on Children, Youth and Families, National Clearinghouse on Child Abuse and Neglect Information, (2011). *Child Maltreatment 2010*. Retrieved July 15, 2012 from <http://www.acf.hhs.gov/programs/cb/pubs/cm10/index.htm>.