

Psychometric Properties of the Positive and Negative Affect Scale for Children (PANAS-C) in Children with Anxiety Disorders

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Abstract This study investigated the psychometric properties of the Positive and Negative Affect Scale for Children (PANAS-C) (Laurent et al. *Psychol Asses* 1: 326–338, 1999) in a sample of 139 children (ages 7–14 years) diagnosed with a principal anxiety disorder. Results from this study provided support for the convergent validity of the PANAS-C with established measures of childhood anxiety and depression. As predicted, negative affect was significantly associated with measures of anxiety and depression whereas positive affect was associated with depression. However, weaknesses in discriminant validity were found, most notably with regard to social anxiety. Consistent with previous research, social anxiety was significantly associated with low levels of positive affect (PA). Furthermore, results from regression analyses indicated that PA made a significant unique contribution to the prediction of social anxiety as well as depression scores. Findings are discussed with regard to the usefulness of the PANAS-C to differentiate anxiety and depression in children with anxiety disorders.

Keywords Positive affect · Negative affect · Tripartite model · Anxiety · Children

Introduction

Anxiety and depression are commonly comorbid conditions in children and adults [1, 2]. Moreover, established measures of anxiety and depression tend to be highly correlated leading to a debate in the field regarding whether are indeed unique disorders or whether they are variations of the same syndrome [3]. Given this controversy, structural models of emotion have emerged over the past couple of decades to explicate the shared and unique features of anxiety and depression [4].

The tripartite model of anxiety and depression [5] has received the greatest amount of empirical attention of these models. The tripartite model posits that high levels of negative

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affect (NA) are shared by anxiety and depression whereas low levels of positive affect (PA) are presumed to be unique to depression and physiological hyperarousal (PH) unique to anxiety. Evidence suggests that NA and PA represent temperamental factors that act as risk factors for anxiety and mood disorders whereas the temperamental status of PH is less clear [6, 7].

Several studies provide support for the tripartite model in adult samples [8–12].

For example, results from a factor analysis of adult responses on established measures of anxiety and depression indicated that a NA factor accounted for the majority of the explained variance common to measures of anxiety and depression whereas a specific anxiety factor was defined primarily by physiological items and items from the measure of depression were markers of a low PA factor [10]. Furthermore, evidence suggests that the tripartite model may be valid in child and adolescent samples [13–15]. For example, results from a sample of school children and adolescents indicated that NA and PA measures performed in a manner consistent with findings from adult samples [15]. However, deviations from predictions of the tripartite model have also emerged in samples of children and adults diagnosed with anxiety and mood disorders [16–18]. For example, recent research suggests that PA may be associated with social anxiety disorder as well as depression [16–18].

Evidence that the tripartite model may be valid in child as well as adult samples prompted the development of child measures to reflect the components of the tripartite model. Development of a reliable and valid measure of the tripartite factors was necessitated by the fact that established child measures of anxiety and depression have good convergent validity, but tend to have poor discriminant validity [1]. Thus, given high correlations between existing child measures of anxiety and depression, it is important to develop measures with improved ability to differentiate between anxiety and depression.

Laurent et al. [3] developed the PANAS-C using 30 items from the adult 60 item Positive and Negative Affect Scale (PANAS-X) [19]. These items were chosen based on an initial evaluation with a group of elementary and middle school children with regard to children's ability to read and understand the items. Furthermore, results indicated low (<0.30) item-total correlations for three of the items on the PA scale in a large sample of school-aged children. Thus, the final 27 PANAS-C consisted of 15 NA and 12 PA items, which were found to best represent their respective factors based on results from principal-axis factoring analyses across two samples of school-aged children. Furthermore, preliminary evidence from a separate sample of school-aged children as well as a small inpatient sample indicated that the PANAS-C has good convergent and discriminant validity with existing child measures of anxiety and depression [3]. However, Laurent et al. [3] recommended that future research be conducted to replicate their findings with clinical populations. This recommendation is also consistent with the notion that measures need to be re-evaluated with samples different than the ones in which they were originally developed [20].

The purpose of the present study was to examine the convergent and discriminant validity of the PANAS-C in relation to established measures of anxiety and depression in a large sample of children with anxiety disorders. That is, the relations of NA and PA to measures of trait anxiety, worry, social anxiety, and separation anxiety as well as depression. Consistent with predictions of the tripartite model, NA was expected to significantly correlate with all measures of anxiety and depression. However, consistent with recent research, positive affect was expected to significantly correlate with measures of social anxiety as well as depression. Examination of this scale in a sample of children with anxiety disorders is particularly important given recent evidence that the tripartite factors (e.g., PA) may function differently across the anxiety syndromes [21].

Method

The sample consisted of 139 children aged 7–14 years ($M = 10.40$, $SD = 1.75$) diagnosed with a principal anxiety disorder. All children met DSM-IV [22] diagnostic criteria for a principal anxiety disorder diagnosis, 46% met criteria for generalized anxiety disorder (GAD), 32% met criteria for social phobia (SP), and 22% met criteria for separation anxiety disorder (SAD) based on a structured diagnostic interview. In addition to principal diagnoses, 76% of children met diagnostic criteria for an additional anxiety disorder diagnosis, 18% of children met diagnostic criteria for a mood disorder, 33% of children met criteria for attention deficit hyperactivity disorder, 9% met criteria for oppositional defiant disorder, 4% of children met criteria for selective mutism, and 4% of children met criteria for functional enuresis. Children were excluded if they demonstrated psychotic symptoms, were taking anti-anxiety or antidepressant medications, or were non English-speaking/writing (i.e., could not complete research forms without a dedicated translator).

Males comprised 58% of the sample; 84% of the sample was Caucasian, 9% identified as African-American, 4% Hispanic, and 3% as “other.” Family income was below \$20,000 for 4%, between \$20,000 and 40,000 for 12%, between \$40,000 and 60,000 for 20%, between \$60,000 and 80,000 for 28%, and above \$80,000 for 36% of the sample. The majority of the parents reported their marital status as married (80%).

Measures

Demographic Questionnaire

The children’s caregivers completed a questionnaire to obtain demographic information such as age, gender, ethnicity, and family income level.

The Anxiety Disorders Interview Schedule for Children (ADIS-C/P) [23]

The ADIS-Parent Version (ADIS-P) and ADIS-Child Version (ADIS-C) are semi-structured diagnostic interviews administered to parents and children independently to assess the presence of DSM-IV anxiety disorders in children and adolescents. The ADIS-C/P was designed to assess symptomatology and severity of anxiety, mood, and externalizing disorders in youth. The ADIS-C/P has demonstrated acceptable reliability for DSM-IV disorders in youth [24]. Diagnosticians met inter-rater reliability agreements ($\kappa > 0.80$).

Positive and Negative Affect Scale for Children (PANAS-C) [3]

The PANAS-C is a 27 item self-report scale that PA and NA in children and adolescents. Items are scored on a 5 point Likert scale ranging from 1 (very slightly or not at all) to 5 (extremely). Participants are instructed to indicate how often they have felt this way over the past two weeks. The PANAS-C subscales have demonstrated adequate internal consistency, moderate convergent and discriminant validity [3].

Multidimensional Anxiety Scale for Children (MASC) [25]

The MASC is a 39 item self-report measure of anxiety symptoms characteristic of children and adolescents. Items are self-rated on a 4 point scale from 0 (never true) to 3 (often true). The MASC yields several subscales and has been shown robust psychometric properties in

clinical, epidemiological, and treatment studies [25]. We used the total anxiety scale (MASC-TS), social anxiety scale (MASC-SOC), and separation anxiety scale (MASC-SEP) to measure the respective anxiety symptoms.

Revised Children's Manifest Anxiety Scale [26]

The RCMAS is a 37 item true-false self report measure of trait anxiety. Psychometric data for the instrument suggest adequate reliability and validity [25]. The RCMAS yields a total anxiety scale (RCMAS-TS) and several subscales. We used the worry subscale (RCMAS-WOR) and total anxiety scale. Psychometric data for the instrument suggest adequate reliability and validity [27].

The Children's Depression Inventory (CDI) [28]

The CDI is a self-report measure that includes 27 items assessing the cognitive, affective and behavioral symptoms of depression. The scale has demonstrated high internal consistency and acceptable item-total correlations [26]. Numerous studies have reported modest retest reliability [29] and adequate ability to distinguish between clinical and non-clinical groups of children [30].

Procedure

Participants were referred for anxiety disorders from multiple community resources including local schools and health professionals. Parent(s) participated in a brief phone screen to assess for current anxiety symptoms in their child to determine whether the child appeared appropriate for the study. If the parents agreed to participate and their child appeared appropriate, children and their parents were scheduled for a diagnostic evaluation. Parents provided written consent and their children gave written assent for the study, which had Institutional Review Board approval. Participants were informed that they would need to complete a diagnostic interview and study measures and that if their child met diagnostic criteria for an anxiety disorder, then they would be provided with treatment at our clinic.

Consent and assent forms were signed by the parent and child, followed by separate administrations of the ADIS-C and ADIS-P by interviewers blind to reason for the evaluation. The child's diagnostic status was determined from the composite of interviews, as recommended in the ADIS-C/P. Children completed self report measures following the interview.

Statistical Analyses

Data analysis consisted of calculating zero-order correlations between the PANAS-C subscales and measures of trait anxiety, social anxiety, separation anxiety, worry and depression. Tests of dependent correlations [31] were used to systematically examine the convergent and discriminant validity of the PANAS-C subscales. We conducted a series of hierarchical regressions used by other researchers in this area [e.g., 1, 12, 21] in order to be consistent and make comparisons with previous research published in this area. Hierarchical regressions were used to evaluate the relative proportion of convergent criterion and discriminant criterion variance in each scale. A series of equations predicting anxiety and depression, in which both the NA and the discriminant criterion or nontarget construct

were entered in the first block and PA was entered in the second block. The nontarget measure was the CDI total scale (i.e., CDI) when predicting anxiety measures and the RCMAS-TS when predicting scores on the CDI. Based on predictions of the tripartite model and previous research, it was hypothesized that for analyses using depression and social anxiety scores as the criterion, standardized regression coefficient for the NA scale would be significant, as would the standardized regression coefficient for the PA scale in the second step. For anxiety measures (with the exception of social anxiety) as the criterion, it was predicted that the standardized regression coefficient for the NA scale would be significant, but that the standardized regression coefficient for the PA scale would not be significant in the second step.

Results

Descriptive Statistics

As can be seen in Table 1, the PANAS-C subscales demonstrated good internal consistency. The total scales and subscales from the MASC and RCMAS exhibited internal consistency in the good or adequate ranges. The CDI demonstrated adequate internal consistency. Means and standard deviations for all study variables are also presented in Table 1.

Zero-Order Correlations between PANAS-C Subscales with Measures of Anxiety and Depression

Table 1 shows the correlations between the PANAS-C subscales with measures of anxiety and depression. With regard to NA, examination of the correlations revealed a pattern consistent with previous research as well predictions of the tripartite model. That is, there were significant positive associations between NA and measures of trait anxiety (i.e., RCMAS-TS & MASC-TS; $r = 0.43$ & $r = 0.40$, respectively), social anxiety (i.e., MASC-SOC; $r = 0.29$), worry (RCMAS-WOR; $r = 0.38$), separation anxiety (i.e., MASC-SEP;

Table 1 Alpha coefficients, means, standard deviations, and zero-order correlations among PANAS-C subscales with study measures

Measure	Alpha	<i>M</i>	<i>SD</i>	PANAS-C:NA	PANAS-C:PA
PANAS-C:NA	.87	33.81	11.08	–	
PANAS-C:PA	.92	40.47	11.39	–0.06	–
RCMAS-TS	.88	50.56	11.48	–0.43**	–0.32**
MASC-TS	.92	48.17	20.51	–0.40**	–0.28**
CDI	.84	10.45	7.12	–0.40**	–0.55**
MASC-SOC	.88	11.67	7.25	–0.29**	–0.38**
RCMAS-WOR	.82	10.27	3.47	–0.38**	–0.24**
MASC-SEP	.76	10.54	5.93	–0.29**	–0.08

Note: PANAS-C Positive and Negative Affect Scale for Children; NA Negative Affect; PA Positive Affect; RCMAS Revised Children's Manifest Anxiety Scale; MASC Multidimensional Anxiety Scale for Children; CDI Children's Depression Inventory; TS Total Scale; SOC Social Anxiety; WOR Worry; SEP Separation Anxiety

* $p < .05$; ** $p < .01$

$r = 0.29$), and depression (i.e., CDI; $r = 0.40$). With regard to PA, a significant negative association was found between PA and depression (i.e., CDI; $r = -0.55$). However, with the exception of the measure of separation anxiety, significant negative associations were also found between PA and measures of trait anxiety (i.e., RCMAS-TS & MASC-TS; $r = -0.32$ & $r = -0.28$, respectively), social anxiety (i.e., MASC-SOC; $r = -0.38$), and worry (RCMAS-WOR; $r = -0.24$). PA and NA were not significantly related ($r = -0.06$, $p = 0.47$).

Differences in the Magnitudes of Correlations between PA and NA with Measures of Anxiety and Depression

In order to examine the relations between NA and PA with measures of anxiety and depression, tests of dependent correlations [31] were used to compare the magnitudes of the correlations. The RCMAS-TS and MASC-TS, measures of trait anxiety, were more strongly related to NA than PA ($z = 6.07$, $p < .0001$; $z = 5.54$, $p < .0001$, respectively). This pattern was also found for the RCMAS-WOR, a measure of worry ($z = 5.03$, $p < .0001$), and the MASC-SEP, a measure of separation anxiety ($z = 3.01$, $p < .003$). However, the MASC-SOC, a social anxiety measure, was more strongly correlated with PA than with NA ($z = 5.47$, $p < .0001$). The CDI also demonstrated a higher correlation with PA than with NA ($z = 7.91$, $p < .0001$).

Hierarchical Multiple Regression Analyses for Measures of Anxiety and Depression

A series of equations were used to predict trait anxiety, worry, social anxiety, separation anxiety, and depression scores when NA and the discriminant criterion (“nontarget” construct) were entered in the first block followed by PA in the second block. These analyses allowed us to examine the relative proportion of convergent and discriminant criterion variance in the measures of anxiety and depression.

Results from these analyses are presented in Table 2. With regard to trait anxiety, results from these analyses revealed that NA, but not PA significantly predicted anxiety scores on both the RCMAS-TS and the MASC-TS. This pattern of results was found for worry as measured by the RCMAS-WOR subscale and separation anxiety symptoms as measured by the MASC-SEP subscale. However, PA, but not NA predicted social anxiety scores as measured by the MASC-SOC subscale. With regard to symptoms of depression, results were consistent with predictions of the tripartite model. That is, NA and PA predicted depression symptoms as measured by the CDI.

Discussion

Findings from this study provide some evidence for the convergent and discriminant validity of the NA and PA scales of the PANAS-C and the tripartite model in sample of children diagnosed with anxiety disorders. Results were as expected with regard to the relations between the NA subscale and measures of anxiety and depression. Furthermore, as predicted by the tripartite model, PA was moderately correlated with an established measure of depression. However, inconsistent with predictions of the tripartite model, findings from this study provide further evidence that positive affect is associated with social anxiety as well as depression.

With regard to convergent validity of the PANAS-C, moderate correlations were found between the NA subscale and measures of trait anxiety and depression. High levels of NA were also significantly associated and in the moderate range with measures of worry, social, and separation anxiety. However, inconsistent with predictions of the tripartite model, moderate correlations between the PA subscale and all of the anxiety measures except separation anxiety were also found. Thus, these results suggest some problems with

component of the tripartite model. These findings suggest that relations between the tripartite factors and specific anxiety syndromes are more complex than originally hypothesized. Thus, further research is needed to delineate the unique components of the tripartite model with different anxiety syndromes [4].

Potential limitations merit consideration. Participants in this study had a principal anxiety diagnosis of separation, social or generalized anxiety disorder. Further research is needed to examine the convergent and discriminant validity of the PANAS-C with a wider range of anxiety disorders. In addition, given the high degree of comorbid anxiety disorders in this sample, we were unable to examine the relations of the NA and PA factors and specific anxiety disorder diagnosis (i.e., GAD, SAD, or SP). That is, the *ns* of our “pure” anxiety disorder groups (i.e., not comorbid with another anxiety disorder) were too small to conduct these analyses. Furthermore, the demographic characteristics of this sample are representative of children with anxiety disorders who typically seek treatment. Thus, it may not be representative of all children with anxiety disorders. Lastly, given that the sample was predominately Caucasian, it is unclear whether these findings will generalize to other ethnicities. Thus, these findings need to be replicated with different and more ethnically diverse samples.

Summary

Anxiety and depression are commonly comorbid conditions in children and established measures of anxiety and depression tend to be highly correlated [1, 2]. The tripartite model of anxiety and depression [5] emerged to explicate the shared and unique features of anxiety and depression. Development of a reliable and valid measure of the tripartite factors was necessitated by the fact that established child measures of anxiety and depression have good convergent validity, but poor discriminant validity. The Positive and Negative Affect Measure for Children (PANAS-C) was developed to examine positive and negative affect in school-age children and has demonstrated adequate internal consistency, moderate convergent and discriminant validity [3]. However, Laurent et al. [3] recommended that future research be conducted to replicate their findings with clinical populations.

The present study examined the convergent and discriminate validity of the PANAS-C in relation to established measures of anxiety and depression in a large sample of children with anxiety disorders. Results from this study provided support for the convergent validity of the PANAS-C with established measures of childhood anxiety and depression. However, weaknesses in discriminant validity were found, most notably with regard to social anxiety. Consistent with previous research, social anxiety was significantly associated with the low levels of PA. Findings from this study provide further evidence that PA may characterize social anxiety as well as depression [16–19, 32].

References

1. Brady EU, Kendall PC (1992) Comorbidity of anxiety and depression in children and adolescents. *Psychol Bull* 111:244–255. doi:10.1037/0033-2909.111.2.244
2. Kendall PC, Watson D (1989) Anxiety and depression: distinctive and overlapping features. Academic Press, San Diego, CA
3. Laurent J, Catanzaro S, Joiner T, Rudolf K, Potter K, Lambert S (1999) A measure of positive and negative affect for children: scale development and preliminary validation. *Psychol Assess* 1:326–338. doi:10.1037/1040-3590.11.3.326

4. Mineka S, Watson D, Clark LA (1998) Comorbidity of anxiety and unipolar mood disorders. *Annu Rev Psychol* 49:377–412. doi:[10.1146/annurev.psych.49.1.377](https://doi.org/10.1146/annurev.psych.49.1.377)
5. Clark LA, Watson D (1991) Tripartite model of anxiety and depression: psychometric evidence and taxonomic implications. *J Abnorm Psychol* 100:316–336. doi:[10.1037/0021-843X.100.3.316](https://doi.org/10.1037/0021-843X.100.3.316)
6. Clark LA, Watson D, Mineka S (1994) Temperament, personality, and the mood and anxiety disorders. *J Abnorm Psychol* 103:103–116. doi:[10.1037/0021-843X.103.1.103](https://doi.org/10.1037/0021-843X.103.1.103)
7. Lonigan CJ, Phillips BM, Hooe ES (2003) Relations of positive and negative affectivity to anxiety and depression in children: evidence from a latent variable longitudinal study. *J Consult Clin Psychol* 71:465–481. doi:[10.1037/0022-006X.71.3.465](https://doi.org/10.1037/0022-006X.71.3.465)
8. Clark DA, Steer RA, Beck AT (1994) Common and specific dimensions of self reported anxiety and depression: implications for the cognitive and tripartite models. *J Abnorm Psychol* 103:645–654. doi:[10.1037/0021-843X.103.4.645](https://doi.org/10.1037/0021-843X.103.4.645)
9. Joiner TE (1996) A confirmatory factor-analytic investigation of the tripartite model of depression and anxiety in college students. *Cognit Ther Res* 20:521–539. doi:[10.1007/BF02227911](https://doi.org/10.1007/BF02227911)
10. Steer RA, Clark DA, Beck AT, Ranieri WF (1995) Common and specific dimensions of self-reported anxiety and depression: a replication. *J Abnorm Psychol* 104:542–545. doi:[10.1037/0021-843X.104.3.542](https://doi.org/10.1037/0021-843X.104.3.542)
11. Watson D, Clark LA, Weber K, Assenheimer JS, Strauss ME, McCormick RA (1995) Testing a tripartite model: II. Exploring the symptom structure of anxiety and depression in student, adult, and patient samples. *J Abnorm Psychol* 104:15–25. doi:[10.1037/0021-843X.104.1.15](https://doi.org/10.1037/0021-843X.104.1.15)
12. Watson D, Weber K, Assenheimer JM, Clark L, Strauss ME, McCormick RA (1995) Testing a tripartite model: I. Evaluating the convergent and discriminant validity of anxiety and depression symptom scales. *J Abnorm Psychol* 104:3–14. doi:[10.1037/0021-843X.104.1.3](https://doi.org/10.1037/0021-843X.104.1.3)
13. Chorpita BF, Albano AM, Barlow DA (1998) The structure of negative emotions in a clinical sample of children and adolescents. *J Abnorm Psychol* 107:74–85. doi:[10.1037/0021-843X.107.1.74](https://doi.org/10.1037/0021-843X.107.1.74)
14. Joiner TE, Cantanzaro SJ, Laurent J (1996) Tripartite structure of positive and negative affect, depression, and anxiety in child and adolescent psychiatric inpatients. *J Abnorm Psychol* 105:401–409. doi:[10.1037/0021-843X.105.3.401](https://doi.org/10.1037/0021-843X.105.3.401)
15. Lonigan CJ, Hooe ES, David CF, Kistner JA (1999) Positive and negative affectivity in children: confirmatory factor analysis of a two-factor model and its relation to symptoms of anxiety and depression. *J Consult Clin Psychol* 67:374–386. doi:[10.1037/0022-006X.67.3.374](https://doi.org/10.1037/0022-006X.67.3.374)
16. Brown TA, Chorpita BF, Barlow DH (1998) Structural relationships among dimensions of the DSM-IV anxiety and mood disorders and dimensions of negative affect, positive affect, and autonomic arousal. *J Abnorm Psychol* 107:179–192. doi:[10.1037/0021-843X.107.2.179](https://doi.org/10.1037/0021-843X.107.2.179)
17. Chorpita BF, Plummer CM, Moffitt CE (2000) Relations of tripartite dimensions of emotion to childhood anxiety and mood disorders. *J Abnorm Psychol Child Psychol* 28:299–310. doi:[10.1023/A:1005152505888](https://doi.org/10.1023/A:1005152505888)
18. Hughes AA, Heimberg RG, Coles ME, Gibb BE, Liebowitz MR, Schneier FR (2006) Relations of the factors of the tripartite model of anxiety and depression to two types of social anxiety. *Behav Res Ther* 44:1629–1641. doi:[10.1016/j.brat.2005.10.015](https://doi.org/10.1016/j.brat.2005.10.015)
19. Watson D, Clark LA (1991) The PANAS-X: preliminary manual for the positive and negative affect schedule-expanded form. Unpublished manuscript
20. Kazdin AE (1998) Research design in clinical psychology, 3rd edn. Allyn and Bacon, Boston
21. Chorpita BF, Daleiden EL (2002) Tripartite dimensions of emotion in a child clinical sample: measurement strategies and implications for clinical utility. *J Consult Clin Psychol* 70:1150–1160. doi:[10.1037/0022-006X.70.5.1150](https://doi.org/10.1037/0022-006X.70.5.1150)
22. American Psychiatric Association (1994) Diagnostic and statistical manual of mental disorders, 4th ed. American Psychiatric Association, Washington, DC
23. Silverman WK, Albano AM (1996) The anxiety disorders interview schedule for DSM-IV-child and parent versions. Graywind Publications, San Antonio, TX A Division of the Psychological Corporation
24. Silverman WK, Saavedra LM, Pina AA (2001) Test-retest reliability of anxiety symptoms and disorders with the anxiety disorders interview schedule for DSM-IV: child and parent versions. *J Am Acad Child Adolesc Psychiatry* 40:937–943. doi:[10.1097/00004583-200108000-00016](https://doi.org/10.1097/00004583-200108000-00016)
25. March JS, Parker J, Sullivan K, Stallings P, Conners C (1997) The Multidimensional Anxiety Scale for Children (MASC): factor structure, reliability and validity. *J Am Acad Child Adolesc Psychiatry* 36:554–565
26. Reynolds CR, Richmond BO (1978) What I think and feel: a revised measure of children's manifest anxiety. *J Abnorm Psychol* 67:271–280
27. Reynolds CR, Richmond BO (1985) Revised children's manifest anxiety scale. Western Psychological Services, Los Angeles

28. Kovacs M (1992) Children's depression inventory. Multihealth Systems, North Tonawanda, NY
29. Finch AJ, Saylor CF, Edwards GL (1985) Children's depression inventory: sex and grade norms for normal children. *J Consult Clin Psychol* 53:424–425. doi:[10.1037/0022-006X.53.3.424](https://doi.org/10.1037/0022-006X.53.3.424)
30. Saylor C, Finch AJ, Spirito A, Bennett B (1984) The children's depression inventory: a systematic evaluation of psychometric properties. *J Consult Clin Psychol* 52:955–967. doi:[10.1037/0022-006X.52.6.955](https://doi.org/10.1037/0022-006X.52.6.955)
31. Meng X, Rosenthal R, Rubin DB (1992) Comparing correlated coefficients. *Psychol Bull* 111:172–175. doi:[10.1037/0033-2909.111.1.172](https://doi.org/10.1037/0033-2909.111.1.172)
32. Watson D, Clark LA, Carey G (1988) Positive and negative affectivity and their relation to anxiety and depressive disorders. *J Abnorm Psychol* 97:346–353. doi:[10.1037/0021-843X.97.3.346](https://doi.org/10.1037/0021-843X.97.3.346)