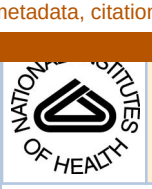

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A Brief Measure of Peer Affiliation and Social Acceptance (PASA): Validity in an Ethnically Diverse Sample of Early Adolescents

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Abstract

Objective—Conduct a multiagent–multimethod analysis of the validity of a brief measure of deviant peer affiliations and social acceptance (PASA) in young adolescents. Peer relationships are critical to child and adolescent social and emotional development, but currently available measures are tedious and time consuming. The PASA consists of a youth, parent, and teacher report that can be collected longitudinally to study development and intervention effectiveness.

Method—This longitudinal study included 998 middle school students and their families. We collected the PASA and peer sociometrics data in Grade 7 and a multiagent–multimethod construct of deviant peer clustering in Grade 8.

Results—Confirmatory factor analyses of the multiagent–multimethod data revealed that the constructs of deviant peer affiliations and social acceptance and rejection were distinguishable as unique but correlated constructs within the PASA. Convergent, discriminant, concurrent, and predictive validity of the PASA was satisfactory, although the acceptance and rejection constructs were highly correlated and showed similar patterns of concurrent validity. Factor invariance was established for mother and for father reports.

Conclusions—Results suggest that the PASA is a valid and reliable measure of peer affiliation and of social acceptance among peers during the middle school years and provides a comprehensive yet brief assessment of peer affiliations and social acceptance.

Keywords

peer relationships; deviant peer clustering; sociometric status; early adolescence

Developmental and clinical research with children and adolescents during the past 30 years suggests that peer relationships are instrumental to normative and to problematic development (Rubin, Bukoswki, & Laursen, 2009). At least two critical dimensions of peer relationships are salient in the lives of children. The first critical dimension describes the kinds of friends a youth affiliates with. There is extensive evidence that peers' behavior can amplify various forms of problem behavior (Dishion & Tipsord, 2011) and promote prosocial pathways, such as academic achievement (Véronneau, Vitaro, Brendgen, Dishion, & Tremblay, 2010). The second critical feature of peer relationships is referred to generally as *social acceptance*. Two unique but correlated dimensions of social acceptance include rejection and acceptance (Coie, Dodge, & Copottelli, 1982a, 1982b; Peery, 1979). Each provides a unique interpersonal experience and each uniquely affects subsequent social development (Bierman, 2004).

Because peer relationships are critical to problem behavior and to normative social and emotional development, there is considerable interest among developmental and intervention researchers to assess this construct. Several strategies used to measure each of these dimensions range from sociometric assessments (i.e., peer nominations or ratings) to direct observations or global reports by parents, teachers, and youths themselves. However, current measurement strategies are quite varied, making it difficult to compare studies and perceptions of key informants. The purpose of this study was to examine the validity and reliability of a brief measure of children's peer affiliation and social acceptance (PASA), which includes a child-, parent-, and teacher-report version. We examined the internal consistency scale, convergent validity, and criterion validity of more intensive measurements of peer acceptance and peer associates during adolescence.

Adolescent involvement with deviant peers was first established as a proximate cause of adolescent problem behavior by researchers in the field of criminology (e.g., Short, 1957; Short & Strodtbeck, 1965). The construct was measured in several longitudinal studies and found to be predictive of escalations in problem behavior, particularly during adolescence (e.g., Elliott, Huizinga, & Ageton, 1985; West & Farrington, 1977). In the psychological study of the development of antisocial behavior, the self-report measure developed and used by Elliott and colleagues was often used (e.g., Dishion, Patterson, Stoolmiller, & Skinner, 1991). Although the measure was developed and used with a nationally representative sample, it was based primarily on self-report. Using a self-report measure to indicate deviant peer involvement and one's own problem behavior presents monomethod bias in the estimation of peer effects (Cook & Campbell, 1979). For this reason, direct observation of friendship interactions gained favor (Dishion, Patterson, & Griesler, 1994). Studies using direct observation of deviant peer influence produced substantial estimates of predictive validity (see Dishion & Tipsord, 2011). However, capturing the social interaction of youths and their friends is not only labor intensive, but it is unrealistic in studies in which deviant peer affiliations are not the primary measure of interest.

A more satisfactory approach is to measure the youth's social network (see Rodkin & Hanish, 2007). Studies of youth social networks have revealed strong and significant affiliations between changes in network status and changes in adolescent problem behavior (Dijskstra et al., 2010). Nevertheless, it is challenging to measure peer affiliations by

completing a network analysis. In particular, longitudinal research that uses this method requires assessing social ecologies over time. The PASA offers a child-, parent-, and teacher-report version; each has the same item pool for assessing the influence of friends' behaviors and generally whether the youth is liked (acceptance) or disliked (rejected) by peers in school and in the neighborhood.

Concern about peer acceptance was established in longitudinal research that looked purely at low social acceptance and revealed that a history of such was prognostic of adjustment problems in late adolescence and young adulthood (Roff, 1961; Roff & Sells, 1970). Research by Peery (1979) was the first to use sociometric assessments to examine both "rejection" (liked least) and "acceptance" (liked most). The difference between the *z* scores for liked most and liked least nominations were used to create a social preference score, with a positive and negative dimension. Later, peer relationships researchers built on Peery's work (1979) to create sociometric groups based on social preference and social impact scores (e.g., Coie et al., 1982a). For example, Coie and Kupersmidt (1983) created clinically significant sociometric groups defined as *rejected, popular, average, controversial,* and *neglected* youths. It was immediately clear that children defined as "rejected" were the most at risk and were problematic with respect to aggression, hyperactivity, and academic skill deficits (Coie & Krehbiel, 1984; Coie & Kupersmidt, 1983; Dodge, 1983; French, 1988). Longitudinal work on social acceptance (rejection and liking) supported the need to consider and measure this dimension of peer relationships from childhood through adolescence (Asher & Coie, 1990; Bierman, 2004).

Despite the empirical and conceptual promise of sociometric measurement, logistical challenges arise when assessing changes in children's peer relationships over time. Like social network assessments, sociometric methods require extensive recruitment and consent activities because of the need for participation from a representative group within the social ecology. Thus it is challenging to assess the peer relationships of youths over time, when they disperse over a broad area and diverse schools. Moreover, sociometric assessments are unrealistic for clinical applications, when one is interested in the peer relationships of one child and how these relationships might change over time.

The PASA uses child, parent, and teacher report to assess youths' peer associates and acceptance (i.e., liking) and rejection (i.e., disliking) by peers. The measure can be used longitudinally to track youths in a variety of research and clinical contexts. Two levels of validity are particularly relevant when one considers the utility of a new measure of a relevant construct. The first is convergent validity, that is, the expectation that indicators of the same construct from different sources correlate substantially. Early personality research revealed the conceptual and measurement strengths of measuring unique traits by using different raters (Campbell & Fiske, 1959). Multimethod and multirater assessment strategies became increasingly used as statistical modeling approaches became available to enable the estimation of method and of trait effects (Dwyer, 1983). Because we were interested in examining the measurement of peer affiliations and social acceptance, we sought to test the hypothesis that measures of the same trait would be more highly correlated than those of a different trait. Figure 1 provides an overview of the hypothesis that peer affiliations and

social acceptance would be moderately correlated, and the individual child, parent, and teacher reports would converge within the construct each was intended to measure.

Also important for analysis of the validity of a new measure is the extent to which the measure predicts a criterion that has strong evidence for validity. There are two types of criterion validity: concurrent and predictive. We examined the concurrent validity of the social acceptance scales by assessing youths on the PASA and peer nominations at age 12–13, in Grade 7 (see Figure 1). The acceptance and rejection scales of the PASA were correlated with peer nominations of the same.

To examine the predictive validity of the PASA deviant peer affiliation scale, we used a multiagent–multimethod construct called *deviant peer clustering*, which was assessed at age 13–14 during Grade 8. The deviant peer clustering construct has been studied extensively and found to predict escalations to violence by late adolescence (Dishion, Véronneau, & Myers, 2010) and predict sexual promiscuity (Dishion, Ha, & Véronneau, 2012). The construct is measured by aggregating peer nominations, teacher ratings, self-report, and school staff nominations. As revealed in Figure 1, we expected that the peer affiliation construct on the PASA would be more predictive of deviant peer clustering and PASA acceptance and rejection scales would be most correlated with acceptance and rejection, respectively, as measured on peer nominations.

A critical issue in clinical assessment with children and adolescents is whether reports by mothers and fathers can be considered equivalent. In clinical practice, it is not uncommon that only a mother or a father can provide ratings on a youth's adjustment. Achenbach, McConaughy, and Howell (1987) reported that relationships between raters who play similar roles with respect to a focal youth had substantially larger correlations than did the relationships between raters with different roles. If the measure is valid, then in two-parent families, mother and father reports on these dimensions of peer affiliation and social acceptance should be approximately equivalent. Therefore, we hypothesized that the ratings for mothers and fathers would be factorially equivalent.

Method

Participants

Study participants were part of a longitudinal prevention project intended to prevent adolescent problem behaviors and substance use (Dishion & Kavanagh, 2000; Dishion, Nelson, & Kavanagh, 2003). Data from youths age 12–13 and 13–14 were used in our study.

Among the 998 participants, 526 (52.7%) were identified as male and 472 (47.3%) were identified as female. As for ethnicity, 423 (42.4%) were identified as European American, 291 (29.2%) as African American, 21 (2.1 %) as Native American, 68 (6.8%) as Hispanic or Latino, 52 (5.2%) as Asian American, 9 (.9%) as Pacific Islander, 35 (3.5%) as European–African American, 77 (7.7%) as other ethnic combination rather than European–African American, and 22 (2.2%) as ethnicity other than those already mentioned.

Procedure

Two cohorts were recruited and assessed. Cohort 1 (n = 675) was recruited in Grade 6 in the 1996–1997 academic year and Cohort 2 (n = 323) was recruited in Grade 7 in the 1998–1999 academic year. Data from both cohorts were used in this study. Youth self-report and teacher surveys were administered to the entire sample in the school setting, and parent questionnaires were sent home and mailed back to the researchers. By design, only youths and families were assessed on parent report measures if the youth was deemed "at risk." Teacher ratings were administered in Grade 6 (Wave 1 of the study) and were used to define at-risk status. Youths whom teachers perceived as at no risk were set aside, and those with one or more teacher-identified risks were recruited into the family assessment (Dishion & Kavanagh, 2003). The sample size for the family assessment included 235 for Cohort 1 and 152 for Cohort 2.

In this study, peer affiliation and social acceptance (PASA) data and peer nominations were assessed at age 12–13 (Grade 7) to investigate concurrent validity. Deviant peer clustering (DPC) measures were collected at age 13–14, when the youths were in Grade 8.

Measures

Peer affiliation and social acceptance (PASA)—PASA was evaluated by four sources: mother, father, child, and teacher. Respondents are asked to estimate the percentage of peers who fit a description, on a scale ranging from 1 (*very few–less than 25%*) to 5 (*almost all–more than 75%*). PASA measures were collected at age 12–13 (Grade 7). Three scales were assessed on the PASA. We were interested in three constructs that were observed in the school environment: peer affiliations, acceptance, and rejection. The peer affiliations score was computed by averaging four items: (a) percent of friends who are well behaved in school (reversed), (b) percent of friends who misbehave or break rules, (c) percent of friends who experiment with smoking and drugs, and (d) percent of friends who dress or act like a gang member. The internal consistency (standardized α coefficients) for the four items were adequate considering the small number of items, α_{child} = .67, α_{mother} = .73, α_{father} = .53, and $\alpha_{teacher}$ = .80. Peer acceptance and peer rejection were each measured by one question that asked about the percentage of peers at school who were friendly or unfriendly to the child. In summary, 12 (3 constructs × 4 informants) PASA manifest variables were used in this study's models.

Peer nominations—Peer nominations were collected at age 12–13 (Grade 7) as part of the school-based assessment measures. All participates who originally provided consent (N = 998) were involved in the peer nomination assessments. Participating students chose from a list of classmates whom they liked most and whom they liked least. In this study, we used the received proportion (the received votes out of the number of classmates) of each of the nominations: who was liked most and who was liked least.

Deviant Peer Clustering

The deviant peer clustering (DPC) construct was developed to clarify the contribution of peers to the development of problem behavior. In two longitudinal models, the DPC construct was found to be highly predictive of violence and sexual promiscuity in

adolescence (Dishion et al., 2012; Dishion et al., 2010). DPC was measured at age 13–14 (Grade 8) by using four measurements: teacher report, self-report, school counselor report, and peers' nomination. Teachers evaluated each student on one item that asks how much the student hangs around with troublemakers, rated on a scale ranging from 1 (*never, almost never*) to 5 (*always, almost always*). The self-report survey consists of one item asking how often the student has spent time with gang members as friends during the past month, rated on a scale ranging from 1 (*never*) to 20 (*more than 20 times*). School counselors rated the likelihood of gang membership for each student by using a scale ranging from 1 (*not at all*) to 5 (*completely*). Last, a proportion score was calculated based on peer nominations of a student involved in gang activity and the number of the student's classmates (0 = *no nominations* to .50 = *nominated by half of one's classmates*).

Analysis Strategy

Construct validity tests hypotheses regarding the nomological network underlying the latent constructs generating variation among the manifest variables (Cronbach & Meehl, 1955). In structural equation modeling (SEM), one can explicitly specify and test the measurement model using a confirmatory factor analytic approach. In our study, we hypothesized that the PASA ratings were measuring three factors: peer affiliation, acceptance, and rejection. Acceptance and rejection can be thought of as opposite poles of the same dimension (i.e., social preference). Therefore, we also fit a two-factor model into the data to evaluate the selection of the three-factor model over the two-factor model.

To capture the variance explained by multiple raters over and above the traits (factors) of interest, we fit confirmatory factor analysis (CFA) models for multitrait–multimethod (MTMM) data. Marsh (1989) has proposed taxonomy for alternative CFA models fitted into MTMM data. For example, correlated traits correlated methods (CTCM), correlated traits uncorrelated methods (CTUM), and correlated traits correlated uniqueness (CTCU) models were proposed. In the CTCU model, there are no method factors, thus the interpretation of the model is weaker than that of other, alternative models. Correlating the residuals of each manifest variable captures the shared common method. However, Marsh and Bailey (1991) argue that CTCM and even CTUM models often present identification or estimation challenges. Fewer estimation problems were observed while fitting the CTCU model into data than while fitting the CTCM or CTUM models. Usually, the CTCM, CTUM, and CTCU models are fitted into data subsequently to test method correlations and/or if there are any estimation issues (Hoyle, 1995). In this study, the alternative models (i.e., CTCM, CTUM, and CTCU) for MTMM were subsequently fit to the data.

Concurrent (criterion) validity is measured by the correlation between the target measure (i.e., PASA) and a previously validated measure (i.e., peer nominations). Correlations between exogenous variables in SEM represent concurrent validity. In this study, we hypothesized the acceptance and rejection factor to be significantly related to the like and dislike peer nominations.

Predictive (criterion) validity is measured by the relationship between the target measure (i.e., PASA) and a later outcome (i.e., DPC). In SEM, specifying the path from the

exogenous variable to the endogenous variable represents this covariation. In our study, the path from peer affiliation to DPC was expected to be significantly positive.

In summary, the empirically fitted model was similar to the proposed theoretical model depicted in Figure 1 but had some difference, the most important being how the model captured the rater effect. The rater factors were explicitly added in the model for the CTCM or CTUM model, whereas the relevant residual (unique) factors sharing common raters were correlated in the CTCU model. Another omitted relationship in the theoretical model was the correlation between the PASA factors. In this study we allowed the PASA factors to correlate with each other.

Mplus 6.11 (Muthén & Muthén, 1998–2010) was used to analyze the data. The Mplus program is capable of running a variety of SEM models and is also useful for handling missing data. The default in Mplus uses full information maximum likelihood (FIML) to estimate the model parameters.[1]

A total of 998 youths have participated in this project, but 76 cases were missing all the variables in our study. The 76 missing observations are cases in which neither PASA ratings nor peer nominations were collected. Although the PASA measure was collected for only 401 participants in the study, statistical methods (i.e., FIML) enable one to use all and any of the data possible.[1] Therefore, except for the 76 completely missing cases, 922 participants' data were used in our study analyses. Assuming that data are missing at random, the FIML procedure uses all data points in a dataset to construct the best possible mean and covariance. The mean and covariance estimated by FIML are superior in terms of recovering the parameter values to the conventional computed mean and covariance from listwise or pairwise deletion (Enders, 2010; Wothke, 1998). By default, Mplus provides the sample statistics based on FIML estimation (Muthén & Muthén, 1998–2010).

In SEM, if the exact fit (chi-square test) indicates the model does not fit the data, then researchers refer to approximate fit indices. Approximate fit indices provide a continuous score of fit, accepting that the model does not fit the data perfectly (Millsap, 2007). In the literature, cut-points for approximate fit indices have been suggested to evaluate a model of interest. Browne and Cudeck (1993) have suggested a root mean square error of approximation (RMSEA) value of < .05 as a close fit, < .08 as a fair fit, and > .10 as a poor fit. For the standardized root mean square residual (SRMR), Hu and Bentler (1998) have suggested values less than .08 are preferred. Also, a typical cut-point for the comparative fit index (CFI) is .95 (e.g., Hu & Bentler, 1998). However, Kenny (2012) has argued that the CFI can be a small value when the average correlation between the variables is small and when the RMSEA value of the null model is less than .158.

Factorial Invariance of Mother and Father Ratings

The PASA measure includes two sources of parent ratings: mothers and fathers. We were interested in testing if the manifest variables based on mother and father ratings provided unique information for each construct. In SEM, we tested this question by sequentially

[1]Results of analyzing 401 observations were essentially the same as the results with 998 observations.

constraining some of the parameters of the model to be equivalent (Millsap, 2011). First, configural invariance was tested to see if mother and father ratings are related to the same factors. For example, we can specify the peer affiliation PASA factor to be measured by the mother and the father ratings and not any other factor. Then, metric invariance or "weak invariance" was tested by constraining the factor loadings of the mother and the father ratings to be equal. Furthermore, scalar invariance or "strong invariance" was tested by constraining the intercepts to be equal.

Results

Descriptive Statistics

Table 1 provides the mean and standard deviation for each variable, and Table 2 shows correlations between the variables. Note that the peer rejection indicators are reverse scored.

Construct Validity

The CTCM and the CTUM model had convergence problems and failed to fit the data. The CTCU model was the only working MTMM model. The fit of the two-factor model CTCU model was fair, $\chi^2(41) = 101.994$, RMSEA = .056, CFI = .953, SRMR = 053, and $\chi^2(39) = 91.959$, RMSEA = .054, CFI = .959, SRMR = 052. The fit of the three-factor CTCU model was also fair, $\chi^2(39) = 91.959$, RMSEA = .054, CFI = .959, SRMR = 052. There are two degrees of freedom difference between the two models, indicating more constraints on the two- versus the three-factor model. Because the three-factor and two-factor models are nested (hierarchical) models (Bentler & Bonett, 1980; Kline, 2010), we can perform a statistical test (i.e., the chi-square difference test). The chi-square difference test indicated that the three-factor model was statistically a better fit than the two-factor model, $\Delta\chi^2$ (2) = 10.04, p = .006. In addition to statistical reasons, we favor the three-factor model over the two-factor model on the basis of theoretical and clinical reasons as discussed later in more detail.

The standardized factor loadings for each factor ranged between .345 and .786, which indicated that the measures were convergent for measuring the same factors instead of other factors, after controlling for the method variance. The factor correlation between the acceptance factor and rejection factor was high and negative ($\varphi_{ACC,REJ} = -.882$). Because of the high correlation between the acceptance and rejection factor, researchers may question the discriminant validity of the PASA measure. However, on the basis of the chi-square difference test, which indicated the superior fit of the three-factor model over the two-factor model, and moreover, on the basis of substantial reasons (see the Discussion section), we argue that the two factors should remain as distinct constructs. Therefore, the three-factor PASA model was used for the following analyses of factorial invariance and validity.

Factorial Invariance and Criterion Validity

Note that the three-factor PASA model explicitly specifies that the mother and the father ratings are essentially the same method construct, which is referred to as the *configural invariance model*. The fit for the configural invariance model indicated that the model fit the data relatively well, $\chi^2(114) = 269.496$, RMSEA = .038, CFI = .901, SRMR = .066. The CFI

was below the cut-point (.95), but because the correlations between variables were small (refer to Table 2) and the RMSEA value of the null model was .106, we ignored the small CFI value and concluded the configural invariance model was an appropriate fit to the data.

Based on the configural invariance model, the next step was to evaluate the invariance in the factor loadings of mother and of father ratings (the metric invariance model). The chi-square ratio (difference) test indicated a nonsignificant difference in the factor loadings, $\Delta\chi^2(3) = 0.373$. Thus, we could not reject the null hypothesis that the mother and the father factor loadings were equivalent. The last step was to evaluate the invariance in the intercepts of the mother and the father ratings (the scalar invariance model). Note that to identify the model, we fixed the intercept of the reference indicator (i.e., teacher rating for the peer affiliation factor, child ratings for the social acceptance factor, and peer nominations for the DPC factor) to estimate the factor means. We found the constraint of the mother and father intercepts to be equivalent over the metric invariance model, $\Delta\chi^2(3) = 1.285$, which indicated that we could not reject the invariance in the intercepts. See Table 3 for details of model fit; also see Figure 2 for estimates of the final model (scalar invariance model). Because the factor loadings and intercepts were invariant for the mother and the father ratings, we can interpret that mother and the father reports are equivalent on the PASA[2].

Finally, criterion validity of the PASA measure was evaluated. Concurrent validity was shown by the significant and medium to large correlations between PASA social acceptance factors and peer nomination indicators. We referred to Cohen's (1988) standard while evaluating the effect size of the correlations (i.e., .1 for small, .3 for medium, and .5 for large correlations). The correlation between the PASA acceptance factor and “like most” peer nominations received was positive, significant, and had a large effect size, $r = .565$, $p < .001$. The correlation between the PASA acceptance factor and “like least” peer nominations received was negative, significant, and had a small effect size, $r = -.240$, $p < .001$.

The correlation between the PASA rejection factor and peer nominations of “like least” was positive, significant, and had a medium effect size, $r = .401$, $p < .001$. Also, the correlation between the PASA rejection factor and “like most” peer nominations received was negative, significant, and had a medium effect size, $r = -.358$, $p < .001$. These analyses suggest that the PASA rejection score discriminated between acceptance and rejection, with correlations in the opposite direction for each, respectively.

Predictive validity was evaluated by the path loading to DPC from the PASA peer affiliation factor. The path coefficient was positive, significant, and there was a large effect size, standardized $B = .703$, $p < .001$, $R^2 = .494$. See Figure 2 for details. There was some concern about the inflation of the path estimate because of the shared informant variance between the PASA peer affiliation factor and the DPC factor. To eliminate the shared informant variance, a model using only the peer nominations for DPC was fitted to the data. Results

[2]A reviewer has questioned whether informants who share different environments can show invariance in measuring the factors. We conducted additional analyses to test whether the teacher and parent, child and parent, and child and teacher reports were invariant. As a result, the metric invariance test (invariance among the factor loadings) indicated child and parent, and teacher and parent were not invariant. The factor loadings for child and teacher ratings were invariant, but the scalar invariance test (invariance between the intercepts) showed the intercept for child and teacher ratings was noninvariant. In conclusion, only the mother and father reports were invariant in measuring the factors.

indicated that the path coefficient to DPC from the PASA peer affiliation factor was still significant, standardized $B = .298$, $p < .001$, $R^2 = .089$. Note that the path coefficient estimate became smaller than the estimate using all four measurements for the DPC factor. Surely, eliminating the shared informant variance shrank the estimate, but the effect may have also resulted from losing meaningful information for the DPC factor.

Discussion

The purpose of this study was to examine the reliability and validity of the PASA measure. Overall, the results of this study suggest evidence in support of the convergent, concurrent, and predictive validity of the PASA measure of deviant peer affiliations and of social acceptance among peers. The reliability findings indicated that two sources (mother and teacher) of the PASA peer affiliations ratings were greater than the $\alpha = .70$ accepted standard (Nunnally & Bernstein, 1994). The exceptions that were included in the measure were peer affiliations rated by the youths ($\alpha = .67$) and the peer affiliations rated by fathers ($\alpha = .52$). Considering that peer affiliation was measured by using only four items, it is not surprising that the reliability coefficients are less than $\alpha = .70$. The inclusion of relatively few items for peer affiliation was purposeful; the measure was created to be brief and easy to administer. An improvement on this measure would be the systematic addition of items to these subscales, and it should be considered in future versions of the measure while keeping in mind the goal of measure brevity.

To examine the viability of the hypothesized measurement model generating the PASA subscales, we examined a multitrait–multimethod structural model of the data on a ethnically diverse sample of young adolescents. The factor structure of the PASA inventory was examined using confirmatory factor analysis in a multitrait and multimethod framework. The factor structure was specified to have three distinguishable traits (i.e., deviant peer affiliation, peer acceptance, and peer rejection). The measurement methods (i.e., child, parent, and teacher report) were modeled by specifying correlated residuals in the model. This was a good-fitting model that supported the proposed factor structure and was a better fit than the two-factor model in which acceptance and rejection were merged as one factor. Despite the high negative correlation between the acceptance and rejection factors ($r = -.88$), we favor the three-factor model over the two-factor model empirically (i.e., better fit) and theoretically. Theoretically, the peer relationships area of research on social and emotional development of children and adolescents has clearly shown that rejection is evoked by problem behaviors, whereas low acceptance can be associated with problem behaviors, but also simple shyness, poor social skills, or lack of interaction with peers. Other constructs of children's adjustment yield similarly high correlations, yet it is common practice to consider the factors separately. For example, proactive and reactive aggression (Poulin & Boivin, 2000) and overt and covert forms of antisocial behavior (Dishion & Patterson, 2006) are highly correlated but often assessed by using unique scales. Highly correlated factors are kept separate because they provide clinically useful distinctions, unique etiologies, and change patterns with development. In terms of rejection and acceptance, improvement in social skills related to initiation and participation might show improvements in acceptance, whereas reductions in problem behavior might have an impact on peer rejection. Therefore, we have retained the distinction between the rejection

and acceptance factors and leave it to future research to clarify under what measurement conditions we can reliably distinguish between these two peer experiences.

We used SEM to examine the linkages between the PASA factors (acceptance and rejection) and peer nomination data collected during the same time period. This structural model provided evidence for the concurrent validity of these subscales of the PASA in that it demonstrated a statistical covariation between the two measures in the expected direction. The findings suggest that ratings of acceptance may be somewhat more discriminating because there was a relatively large correlation between acceptance and peer nominations of liking and a small negative correlation between acceptance and disliking. Ratings of rejection, however, were equally predictive of peer nominations of liking and rejection, in the expected direction. Without doubt, the sociometric status of young adolescents is complex, with some “salient” youths being both liked and disliked depending on the ecology of their neighborhood and school (Rodkin, Farmer, Pearl, & Van Acker, 2000). Because peer nomination data are expensive and complicated to collect, this evidence of the linkages between this type of data and the PASA peer acceptance subscale score provides researchers and clinicians with a more affordable and easily implemented alternative to peer nomination data. One of the advantages of the PASA is the ability to disentangle parent, teacher and youth perceptions of the child's peer relationships, which may be as clinically meaningful as the actual peer relationships.

The results of the multitrait–multimethod structural model indicate that there are both trait-level (subscale) and method-level (rater) effects, which suggests that researchers and clincians using this measure should consider variation by rater and by subscale. Inclusion of child and teacher report seems particularly important for the measurement of deviant peer affiliations. Inspection of Table 1 reveals higher levels of child- and teacher-reported affiliations with deviant peers, compared with mother and with father report. For intervention activity, it is prudent to conduct an ecological assessment to provide perspective to parents, who are most often involved in remediating problem behavior and peer adjustment problems (Dishion & Stormshak, 2007). In the Family Check-Up model (Dishion & Stormshak, 2007), diverse perspectives of youths' adjustment across home and school is a critical tool for adapting and tailoring interventions designed to improve youth adjustment. In this intervention approach, an ecological assessment, including an observational task, is the second session when working with caregivers. The third session consists of feedback based on the observed data. Acquiring data from youths and teachers about deviant peer affiliations may afford an opportunity to intervene in ways that address emerging risk that occurs outside of the home.

Even though the perceptions of mothers and fathers revealed uniqueness at each vantage point, there was also evidence of measurement equivalence. The factorial invariance of the parent ratings was investigated by constraining SEM parameters (factor loadings and intercepts) successively. Results indicated that parent ratings can be used interchangeably, thus the PASA inventory can be administrated to either parent. Given the low internal consistency of fathers' ratings, it would be advisable to consider both parents' perceptions. However, as revealed in the correlations in Table 2, despite the lower reliability of father

report, convergent validities to the youth and teacher reports was approximately equivalent between the two raters.

The efficient measurement of peer affiliations may be the most important contribution to research and clinical practice. In the context of an ethnically diverse sample of young adolescent males and females, the deviant peer affiliation and the peer acceptance and rejection scales were correlated with peer nominations of acceptance and rejection, often considered to be the “gold standard.” With regard to the ecology of young adolescents' lives, however, their emerging pattern of peer affiliations is probably the most prognostic indicator of future problem behavior. From an intervention standpoint, there is ample evidence that such affiliations can be reduced, as can the correlated increases in problem behavior (Connell, Dishion, Yasui, & Kavanagh, 2007; Van Ryzin, Stormshak, & Dishion, 2012).

Developing realistic conventions for the measurement of key constructs that are significant to child and adolescent social and emotional development is central to building a solid empirical foundation for both developmental and intervention science. A particularly promising trend during the past 20 years in child and adolescent research is the inculcation of a multiagent–multimethod approach to measurement. Personality (e.g., Campbell & Fiske, 1955) and developmental theorists (Dwyer, 1983; Patterson, Reid, & Dishion, 1992) recognize the promise of this more comprehensive perspective. Other key measurement tools have also introduced the multiagent–multimethod approach to child and adolescent clinical research (e.g., Achenbach, 2001). As the constructs of interest burgeon, so must the efficiency of measurement. Large, unwieldy measurement of each construct undermines the potential for assessing the ecology of youth adjustment. Future research in child and adolescent psychopathology would benefit from using comprehensive approaches to assess child and family adjustment within a reasonable assessment time frame. The development and validation of more comprehensive approaches will increase the likelihood that clinicians will use assessments in making clinical judgments and improve the ecological validity of developmental research on children and adolescents.

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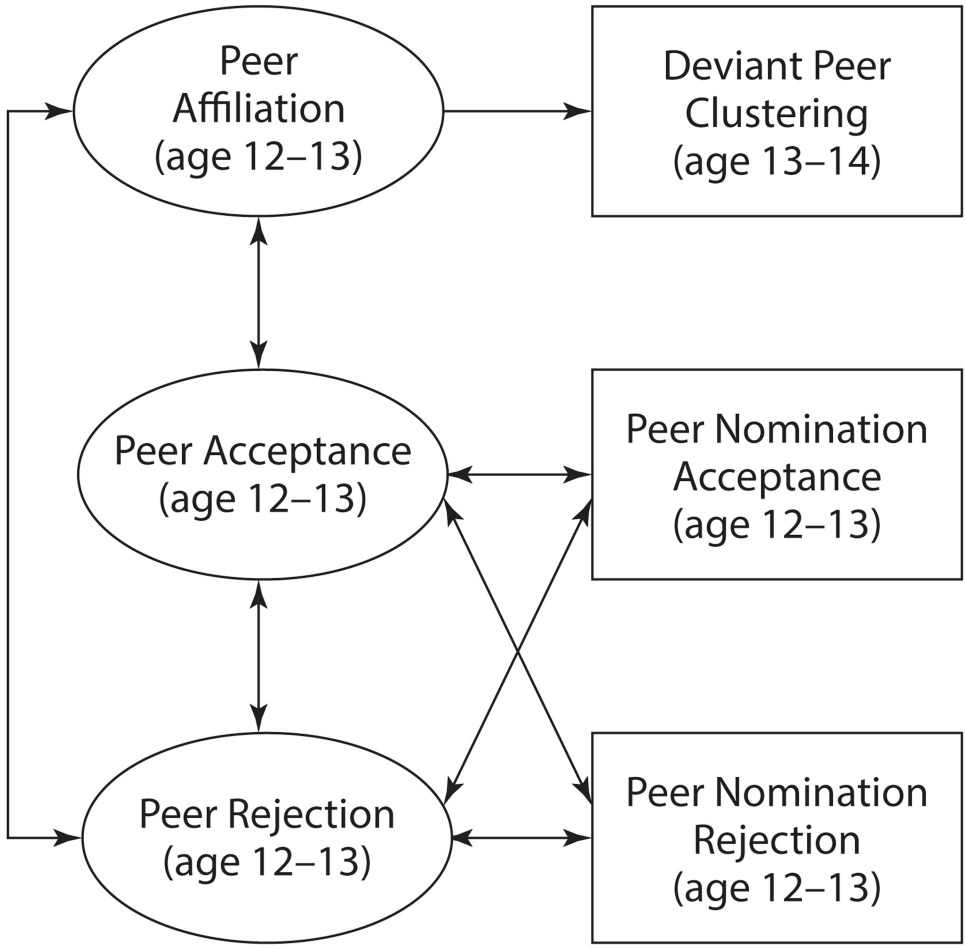
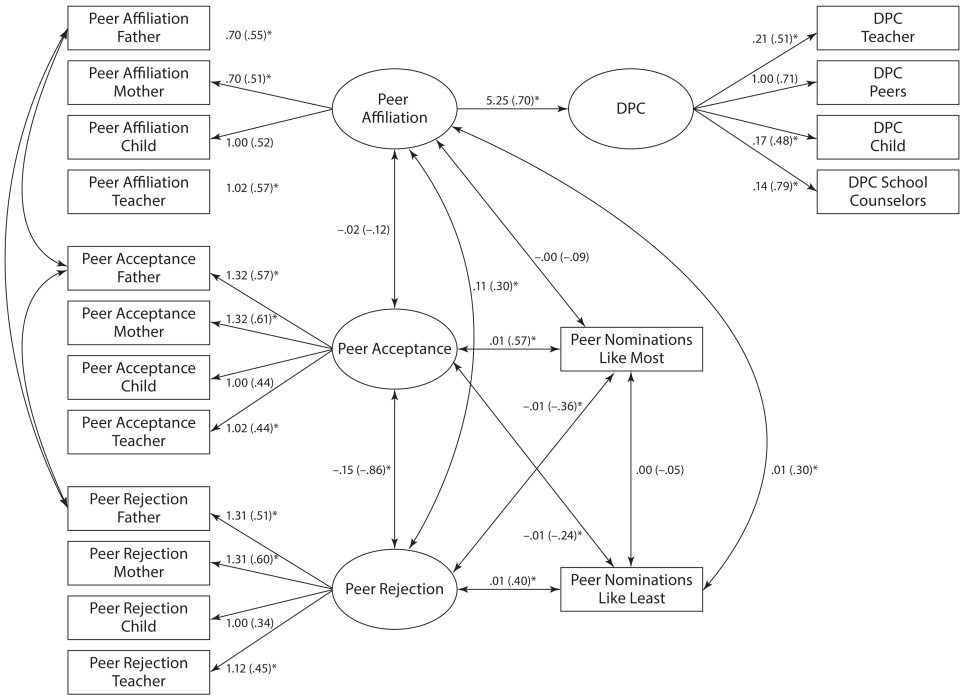


Figure 1.
Conceptual framework for validity study of the PASA measure of peer relationships.



* Indicates significant results ($p < .05$). Values in parenthesis indicate the standardized estimates.

Figure 2.

The PASA validation model.

Only the correlation between the father ratings of PASA was depicted in this figure. Other residual correlations were omitted in the figure to avoid complicity. $r_{P\_F\&A\_F}$ = -.10 (-.26)*, $r_{A\_F\&R\_F}$ = -.13 (-.18)*, $r_{R\_F\&P\_F}$ = .02 (.07), $r_{P\_M\&A\_M}$ = -.13 (-.34)*, $r_{A\_M\&R\_M}$ = -.13 (-.26)*, $r_{R\_M\&P\_M}$ = .08 (.26)*, $r_{P\_C\&A\_C}$ = -.05 (-.09), $r_{A\_C\&R\_C}$ = -.38 (-.40)*, $r_{R\_C\&P\_C}$ = .07 (.10), $r_{P\_T\&A\_T}$ = -.21 (-.35)*, $r_{A\_T\&R\_T}$ = -.46 (-.57)*, $r_{R\_T\&P\_T}$ = .15 (.31)*, where the underscripts P = Peer Affiliations, A = Acceptance, R = Rejection, F = Father, M = Mother, C = Child and T = Teacher.

Table 1
Estimated Mean and Standard Deviations for Each Measured Variable

Subscale	*M*	*SD*
Mother: Peer Affiliation	1.549	.568
Father: Peer Affiliation	1.533	.452
Child: Peer Affiliation	1.883	.719
Teacher: Peer Affiliation	1.890	.691
Mother: Peer Acceptance	3.939	.989
Father: Peer Acceptance	4.011	1.023
Child: Peer Acceptance	3.988	.921
Teacher: Peer Acceptance	3.493	1.038
Mother: Peer Rejection (R)	4.574	.724
Father: Peer Rejection (R)	4.549	.737
Child: Peer Rejection (R)	4.300	.851
Teacher: Peer Rejection (R)	4.446	.799
Peer nominations: Like Most	0.055	.045
Peer nominations: Like Least	0.050	.045
Teacher Rating	1.886	1.226
Peers Rating	1.953	4.237
Self-report	1.403	1.028
School Counselors' Rating	1.270	.515

Note. (R) = reverse-scored indicators.

Table 2

C	Self DPC	Counselor DPC	Father PA	Mother PA	Child PA	Teacher PA	Father ACC	Mother ACC	Child ACC	Teacher ACC	Father REJ (R)	Mother REJ (R)	Child REJ (R)	Teacher REJ (R)
	1													
	0.35	1												
	0.28	0.25	1											
	0.26	0.30	0.49	1										
	0.33	0.32	0.27	0.43	1									
	0.22	0.52	0.31	0.37	0.35	1								
	-0.22	-0.04	-0.30	-0.09	0.05	-0.03	1							
	-0.11	0.14	-0.24	-0.34	-0.08	-0.13	0.42	1						
	0.04	0.05	0.03	-0.09	-0.05	-0.01	0.25	0.36	1					
	-0.06	0.13	-0.15	-0.18	-0.05	-0.30	0.18	0.25	0.19	1				
	-0.03	0.06	-0.19	-0.30	0.07	-0.02	0.40	0.32	0.18	0.16	1			
	-0.11	0.06	-0.16	-0.32	-0.08	-0.13	0.25	0.57	0.31	0.29	0.35	1		
	-0.03	0.09	0.04	-0.07	-0.12	-0.07	0.19	0.27	0.63	0.22	0.18	0.31	1	
	-0.09	0.10	-0.23	-0.17	-0.03	-0.36	0.12	0.22	0.13	0.61	0.21	0.27	0.11	1

EJ = rejection; (R) = reverse-scored indicators.

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Table 3

Model Fit for Tested Models

Model	$\chi^2(df)$	CFI	RMSEA (90% CI)	SRMR
3-factor PASA model (configural invariance)	269.496 (114)	.901	.038 (.033 .044)	.066
3-factor PASA model (metric invariance)	269.869 (117)	.903	.038 (.032 .044)	.067
3-factor PASA model (scalar invariance)	271.154 (120)	.904	.037 (.031 .043)	.067

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.