

# Predictors of Resilience Among Inner City Youths

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**Abstract** Prior studies have suggested that living in high-risk neighborhoods is associated with youths' maladjustment. Youths who maintained favorable outcomes, despite being exposed to such neighborhood risks, were considered resilient. Using structural equation modeling techniques, longitudinal data of 877 youths from the Denver Youth Survey were examined to identify predictors of resilience, longitudinal interrelations among predictors, and bi-directional relationships between resilience and life context factors. Resilience was longitudinally predicted by bonding to family and teachers, involvement in extracurricular activities, lower levels of parental discord, fewer adverse life events, and being less involved with delinquent peers. A positive feedback loop was found, in which resilience predicted further resilience. Early intervention to strengthen traditional bonding, decrease involvement with delinquent peers, and reduce the effects of adverse life

events and parental discord may be essential in enhancing functioning of high-risk youths.

**Keywords** Resilience · Risk and protective factors · Drug use and delinquency · Parental discord and adverse life events · Bonding to family and teachers

## Introduction

Neighborhood risk has been a focal interest of social disorganization theorists for decades (e.g., Elliott et al. 1996; Sampson and Groves 1989). The theory posits that low economic status, family disruption, residential mobility, and ethnic heterogeneity (lack of cohesion) in a community lead to social disorganization, which in turn leads to behavior problems and maladjustment of children and adolescents in the community. This theory posits that neighborhood factors independently influence youths' development beyond individual and family factors. For example, children of a poor family residing in a socially disorganized neighborhood would experience all of the neighborhood effects, beyond the effects of living in poverty, and these effects are not necessarily mediated through family factors. Empirically, studies have shown neighborhood characteristics to be major risk factors for youths' dysfunction and conduct problems (e.g., Lambert et al. 2004). For example, Scheier et al. (1999) found that adolescent perceptions of neighborhood stress were associated with greater alcohol use, independent of individual demographic variables such as ethnicity. For a review of research on the effects of neighborhood residence on child and adolescent well-being, see Leventhal and Brooks-Gunn (2000) and Wandersman and Nation (1998).

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However, not all youths living in socially disorganized neighborhoods are maladjusted or have conduct problems; some resilient youths beat the odds and adjust well despite living in inner city, socially disorganized neighborhoods (e.g., Gorman-Smith et al. 2004). Resilience has been defined as having good outcomes despite the exposure to risk (Carlton et al. 2006; Masten 2001; Tiet and Huizinga 2002). We identified risk and protective factors that predicted resilience in children and adolescents who were at high risk of maladjustment and problem behaviors due to exposure to neighborhood risks.

The outcome measure of resilience has been indicated by a number of variables in previous research, including academic achievement (Jaffee and Gallop 2007; Shonk and Cicchetti 2001), self-esteem (Luthar et al. 2000), or by the absence or low levels of delinquency (O'Donnell et al. 2002), behavioral disturbances (Shonk and Cicchetti 2001), or psychiatric problems (e.g., Perkins et al. 2002; Tiet et al. 1998, 2001b). However, previous studies have shown that resilience is not a unidimensional construct (e.g., Masten and Obradovic 2006; Tiet and Huizinga 2002). One approach focused on a single aspect of functioning, such as social competence (e.g., Brookmeyer et al. 2005), not considering other aspects, such as emotional adjustment. However, research has found that, for example, some abused and neglected children were able to cope and adapt well behaviorally, but they had serious emotional disturbances (Farber and Egeland 1987). Consistent with previous studies (e.g., Masten et al. 2004; Tiet and Huizinga 2002), we used an alternative definition of resilience that incorporated multiple domains of youths' functioning. This approach defines resilience as a multidimensional construct and has the advantage of taking into account several aspects of functioning, which includes both internal and external components of functioning simultaneously. Tiet and Huizinga (2002) empirically examined the dimensionality and structure of the variables used to define resilience that simultaneously incorporates both internal and external components of adaptation of inner-city youths, and they identified two latent constructs of the measure of resilience: Adjustment (indicated by self-esteem, academic achievement and psychosocial functioning) and low levels of antisocial behavior (indicated by the absence or low levels of drug use, delinquent behavior, and gang involvement). We adopted Tiet and Huizinga's (2002) approach in defining the outcome measure of resilience because this multivariate approach has the advantage of examining a number of indicators of youths' internal and external components of adaptation simultaneously.

Life context variables as predictors of youths' resilience have been categorized into three broad domains (Garmezy 1985): (1) characteristics of the child, such as child IQ (not examined in this study) or bonding (attachment) to parents,

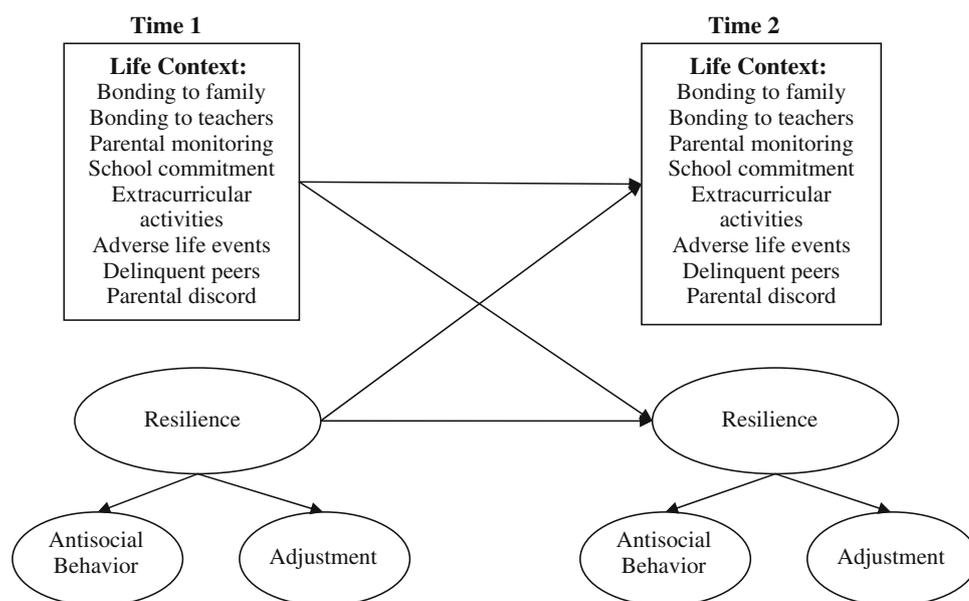
(2) characteristics of the home environment (e.g., parental monitoring or low levels of parental discord), and (3) characteristics of the outside home environment, which include the availability of external support systems that encourage and reinforce a child's coping efforts, such as community resources for children to become involved in extracurricular pro-social activities, or factors that lower the impact of an adverse life event. However, many variables do not fit precisely into a single domain. For example, bonding to parents reflects both the characteristics of the child and of the parents.

Studies have examined risk and protective factors of youths' resilience that fall into these domains. For example, Catalano and colleagues (Catalano et al. 2004) have shown that bonding (attachment and commitment) to school is associated with lower levels of substance use, delinquency, gang membership, violence, academic problems, and sexual activity. Parenting practices have been shown to predict child competence, resilience, and change in child competence over time (Masten et al. 1999). Among environmental factors, absence or low levels of adverse life events have been shown to predict better outcomes in children and adolescents (e.g., Tiet et al. 1998; Windle and Wiesner 2004).

Although studies have examined resilience in the face of neighborhood risk, most studies that have simultaneously examined risk and protective factors in all three developmental domains (characteristics of the adolescent, the home, and outside of the home environment) have focused on younger children, rather than adolescents. It is important to determine whether the risk from these domains extends into adolescence. For example, Vanderbilt-Adriance and Shaw (2006) found that child and family protective factors were related to adjustment in a sample of 11–12-year olds. However, the influence of parent–child relationship quality was only related to adjustment when low neighborhood risk existed.

Based on the findings of previous studies, we hypothesized that children and adolescents who had strong conventional bonding (with family and school) would function well and be more resilient to the environmental risks of living in socially disorganized neighborhoods that were poor, unstable, crowded, and crime-ridden. Conventional bonding, in this study, was indicated by strong bonding with parents and teachers, close monitoring by parents, commitment to school, and involvement with extracurricular activities that were supervised by adults. The hypothesis is consistent with a number of theories, including attachment theory, social learning theory, and social control theory. Succinctly, attachment theory (Ainsworth 1989; Bowlby 1969) underscores the lifelong importance of the attachment system, starting from the infant's earliest relationships, for normative development.

**Fig. 1** Conceptual model of predictors of resilience



Social learning theory (Bandura 1969) views behaviors as the outcome of the socialization process and differential social reinforcement. The decision to engage in a certain behavior is the result of the perception of the balance of rewards and punishments of that behavior, in comparison with alternative behaviors. Finally, social control theory (Hirschi 1969; Reiss 1951) posits that the strength of social controls and the internalization of parent's expectations serve to regulate behavior and restrain impulses. We also hypothesized that familial and environmental adversity, such as parental discord, adverse life events, or bonding with unconventional groups (i.e., involvement with delinquent peers) would derail normal youths' development.

Few studies have gone beyond identifying predictors of resilience, such as examining the interrelations among the predictors longitudinally, or how resilience influences these "predictors" over time. For example, Elliott et al. (1985) reported that weak conventional bonding and inadequate socialization predicted strong bonding to delinquent peers; in turn, strong bonding to delinquent peers predicted delinquent behavior. Masten et al. (1999) found that parenting quality predicted child competence, and that child competence also predicted changes in parenting quality over time. However, studies that have examined the longitudinal interrelations among predictors, or the reciprocal relationships between youths' functioning and their predictors are the exception rather than the norm.

We conceptualized resilience based on findings from Tiet and Huizinga (2002), which explored the specific aspects of resilience, using variables consistent with prior research. Factor analyses indicated evidence for the existence of two latent constructs of resilience: (1) Adjustment and (2) lower Antisocial Behavior. We included lower

levels of antisocial behaviors, in addition to better adjustment, as indicators of resilience to be consistent with definitions of resilience in prior studies, which often conceptualize resilience on a continuum with problem behaviors (Campbell-Sills et al. 2006). These two constructs are used for analyses in the current paper. The conceptual model for this study is depicted in Fig. 1. To address some of the limitations in the previous studies of resilience among high-risk, inner-city youths, we (1) empirically tested a number of factors of the child, the family, and the environment that are potential risk or protective factors of resilience among youths who live in socially disorganized and crime-plagued neighborhoods. Resilience was hypothesized to be predicted by stronger bonding with family and teachers, more commitment to school, more involvement in extracurricular activities, lower levels of parental discord, lower levels of adverse life events, and being less involved with delinquent peers. We also (2) identified the longitudinal interrelations among predictors of resilience, and (3) examined the impact of resilience on its "predictors" over time.

## Methods

### Participants

The data were drawn from the Denver Youth Survey (DYS), a longitudinal study of youths' development. To obtain a sample of high-risk youths, the DHS targeted socially disadvantaged neighborhoods with high crime rates in the Denver metropolitan area. The neighborhoods were selected on the basis of a social area analysis (cluster

analysis using census social indicators at the block group level). From seven clusters, or ecological areas, three clusters were identified as “socially disorganized.” The characteristics of these three areas included higher levels of poverty (34% of the families in the DYS neighborhoods versus 9% in non-DYS neighborhoods), higher rates of single-parent families (57 vs. 30%), higher racial mix (80% of DYS neighborhoods having two or more racial/ethnic groups), and higher mobility (38 vs. 26% changing residence in the past year). Within these three socially disorganized areas, neighborhoods with crime (arrest) rates in the top one-third were selected. Arrest rates were more than three times higher in DYS neighborhoods (140 per 1,000 households) than in non-DYS neighborhoods (40 per 1,000 households). Details of the study design and sampling procedure are described in Huizinga et al. (1988), and Esbensen and Huizinga (1991).

Selection of survey respondents was based on a probability sample of households drawn from these high-risk neighborhoods. Of the 20,236 households originally sampled, screening for the presence of eligible children was completed in 18,738 (93%). Of the remaining households, 419 (2%) refused to participate, and in 1,079 (5%), no one was found at home after four or more home-visits (many of these houses appeared uninhabited). The screened households contained 1,794 eligible children and youths, of which 1,527 (85%) completed the first year’s interview in 1987. There were five cohorts among these 1,527 youths, ages 7, 9, 11, 13, and 15 in the first year of the DYS study. These youths were followed up ten times and the last wave of data was collected in 2003. Ninety-two percent of the original sample of 1,527 pairs of youths and parents participated in the second year survey in 1988. We used data from the first and second years of data of the three older cohorts of children and youths when they were 11, 13, and 15-year old at the first wave of data collection. Children and youths were paid \$15 and parents were paid \$20 for their participation. All interviews, child, youths, and parent, were conducted by trained interviewers in private, confidential settings, usually in the respondents’ homes. In a few cases where such settings could not be found, interviews were conducted in private settings, such as private rooms in public libraries.

Because gang involvement was of interest in this study, only the 11, 13, and 15 age cohorts were included in the current study, and the two younger cohorts were excluded. Within the three older cohorts ( $N = 877$ ), there were 52.9% (464) males and 47.1% (413) females. There were 47.6% (418) Hispanics, 34.9% (306) African American, 8% (70) Whites, 2.7% (24) Native Americans, 1.3% (11) Asians, and 5.4% (48) other, as reported by the youths’ parents.

## Measurement

The Denver Youth Survey is one of the three Causes and Correlates projects initiated in 1986 by the Office of Juvenile Justice and Delinquency Prevention. The others are the Pittsburgh Youth Study and the Rochester Youth Development Study. These three projects provide a unique set of data for youth delinquency research because they not only share similar longitudinal study design but also measurement across the three projects. Additional information about the measures can be found in Huizinga et al. (1988), and Thornberry and Krohn (2003).

## Outcome Variables

The outcome measures for the construct of resilience were based on results of an earlier study (Tiet and Huizinga 2002). Based on results of LISREL analyses, that study found that the construct of resilience among the inner city youths was indicated by two latent constructs, which were statistically and negatively correlated: (1) Adjustment and (2) low levels of Antisocial Behavior (Tiet and Huizinga 2002). As described in that article, indicators of these two constructs were consistent with prior work defining the concept of resilience. Adjustment was indicated by: academic achievement, self-esteem, and psychosocial functioning, while Low Levels of Antisocial Behavior was indicated by the absence of or low levels of gang involvement, delinquency, and drug use. However, self-esteem also cross-loaded on the Antisocial Behavior factor. Outcome measures that were identical with those used in the Tiet and Huizinga (2002) study were used in this study. As reported by Tiet and Huizinga (2002), details of these six items follow.

Alpha is not appropriate for estimating some of the measures in this study, including the single-item measure of academic performance and other intentionally heterogeneous measures such as drug use, delinquency, bonding to teachers, parental monitoring, school commitment, involvement in extracurricular activities, and adverse life events. Internal consistency (e.g., Cronbach’s alpha) increases when the correlations among the items increase. However, the above measures were not intentionally constructed to have highly correlated items. Many of these measures were intended to assess multiple unrelated domains of the construct. For example, items of the measure of involvement of extracurricular activities were constructed to assess activities in multiple unrelated domains (e.g., athletic activities, student government) and therefore these items are not intended to be highly correlated.

**Academic Performance** Academic performance was measured by youths' report of their current grades that best described their performance in school on a 5-point scale, where 0 indicates "Mostly F's", and 4 indicates "Mostly A's." This sample had a mean of 2.59 (SD = .86).

**Self-Esteem** Self-esteem was measured by the self-esteem scale by Rosenberg (1965), a well-established scale that has shown good validity and reliability (e.g., Robins et al. 2001). Youths responded to ten items, such as "I feel good about myself", with responses ranging from "Almost Always = 1" to "Almost Never = 5" on a 5-point scale (mean = 3.0; SD = .54). Items were reverse coded for analyses, so that higher scores reflected better self-esteem. (Cronbach's alpha = .75 for this study).

**Psychosocial Functioning** Psychosocial functioning was measured by the parent/guardian's response to six subscales of the Child Behavior Checklist (CBCL; Achenbach and Edelbrock 1983). The CBCL is a widely used parent-report questionnaire and over 1,000 published studies have used the CBCL (Brown and Achenbach 1993), which has demonstrated good validity, reliability, and clinical utility (Aschenbrand et al. 2005). Possible responses ranged from "Disagree = 1" to "Strongly Agree = 3" on a 3-point scale, with higher scores indicating more severe problems. The six subscales were combined and a Cronbach's alpha = .95 was found for this study. The current sample had a mean = 1.18 (SD = .43). Items were log-transformed due to data skewness.

**Gang Involvement** Gang involvement was measured by two self-reported items on involvement in a delinquent gang during the school year and in the summer. A score of 2 indicated involvement during the school year and summer, a score of 1 indicated involvement in either the school year or summer, and a score of 0 indicated no gang involvement. The measure has been shown to have good validity and reliability (Huizinga et al. 2003) and Cronbach's alpha = .91 in this study. This sample had a mean = .06 (mode = 0, SD = .34).

**Delinquency** Delinquency was assessed by the Self-Report Delinquency (SRD) measure. Youths reported on the frequency of their involvement in 39 specific delinquent behaviors in the past year. A composite score was created by summing the items (Cronbach's alpha = .67). The SRD has shown good reliability and validity (Elliott et al. 1985; Farrington et al. 1996; Huizinga and Elliott 1986; Thornberry and Krohn 2003). A Cronbach's alpha = .67 was found for this study, and the mean = 28.47 (mode = 0, SD = 1.56).

**Drug Use** Drug use was measured by the 19-item Self-Report Drug Use Inventory that has shown good validity (Esbensen and Huizinga 1993; Huizinga et al. 2003). Youths reported on their drug use in the previous year, including use of tobacco, alcohol, marijuana and other drugs. An overall drug use score was created by summing the number of times each drug was used in the past year. This sample had a Cronbach's alpha of .44, mean = 42.54 (mode = 0, SD = 1.79).

#### *Predictor Variables*

Eight life context variables were examined as predictors of resilience.

**Bonding to the Family** Bonding to family was measured by an 11-item measure derived from an instrument by Lagrange and White (1985). This measure has shown good construct validity (Elliott et al. 1985; Thornberry and Krohn 2003). Youths indicated how much they would like to be the kind of people their parents were, how much their parents made them feel trusted, and how much they depended on their parents for advice and guidance. Responses ranged from "Strongly Disagree" to "Strongly Agree" on a 5-point scale. Cronbach's alpha was .74 for this sample.

**Bonding to Teachers** Bonding to teachers was composed of two items: (1) how many of their teachers the youths liked, and (2) how much the youths would want to be like the teacher they liked most. For item (1), youths responded on a 5-point scale, from "None of them" to "All of them," and for item (2), responses ranged from "Don't have any teachers you like" to "Yes, in every way" on a 5-point scale. The measure has shown good construct validity (Elliott et al. 1985; Thornberry and Krohn 2003), and a Cronbach's alpha of .50 for this sample.

**Parental Monitoring** A widely used measure developed by Patterson and colleagues (Patterson et al. 1982), with well-established psychometric properties (Capaldi and Patterson 1989), was used to assess parental monitoring. This measure included 10 youth-reported items on different aspects of parental supervision and monitoring. Six items asked about issues such as time spent talking with the youths about school, activities of the day, and knowing who the youths were with. Possible responses for these items ranged from "Almost Never" to "Often" on a 3-point scale. The remaining four items asked about curfews and whether the parents would know if the youths broke home curfew rules. Overall monitoring was assessed by summing the items. A Cronbach's alpha = .60 was found for this sample.

**School Commitment** Based on a measure by Johnson (1979), this measure has been shown to have good validity (Huizinga et al. 1994; Thornberry and Krohn 2003). Youths reported on 8 items regarding different aspects of school commitment. Seven of the items asked questions such as how much they liked school, how much they thought education was important, and how much they thought homework was a waste of time (inversed), with response options ranging from “Strongly Disagree” to “Strongly Agree” on a 5-point scale. The remaining item asked what youths would do if they had to choose between studying for a test or going out with friends, with possible responses ranging from “definitely go with friends” to “definitely study” on a 5-point scale. Items were summed to assess overall school commitment. This measure had a Cronbach’s alpha = .50 for this sample.

**Involvement in Extracurricular Activities** Youths reported on 8 items concerning their involvement in different types of extramural activities in schools and community activities during the school year and in the past summer, including athletic activities, service clubs, hobby clubs, or student government. Youths could respond from “Less than once a month” to “Every day” on a 5-point scale. A sum was used to indicate overall involvement. This measure has shown good construct validity (Elliott et al. 1985; Huizinga et al. 2003). This measure had a Cronbach’s alpha of .52 for this sample.

**Adverse Life Events** Adverse life events were assessed by a five-item measure that has been shown to have good validity (Thornberry and Krohn 2003). Youths reported whether they had a bad grade on a test, a fight or argument with close friends, a change of school, failed a grade, and had broken up with boy/girlfriend during the past year. These events were selected because they were relatively mild and common for youths in order to capture the events that many of these youth experienced, as compared to severe events that are too rare. These items had a Cronbach’s alpha of .31 in this sample.

**Involvement with Delinquent Peers** Adapted from the National Youth Survey, Involvement with Delinquent Peers (IDP, Elliott et al. 1985; Thornberry and Krohn 2003) has shown good construct validity and reliability. The IDP consisted of 20 youth-reported items on delinquent activities in which their friends were involved. This measure covered delinquent activities and alcohol and drug use of their peers, and had a Cronbach’s alpha of .91 for this study.

**Parental Discord** Developed by Straus and Gelles (1986), there is extensive evidence of construct validity and

reliability of the Conflict Tactics Scale (CTS; Archer 1999). The CTS solicits information about arguments and physical violence between parents over the past year. Fourteen items were asked regarding instances when the respondent was the victim, and then the same 14 were asked for when the respondent was the perpetrator. Parents could respond between “Never” and “More than 20 times” on a 7-point scale (Cronbach’s alpha = .90 for this study). In two-parent/guardian families, this measure was reported by one of the parents or guardians of each youth. This measure was not administered in single-parent/guardian households. Based on parent-report, two-parent/guardian families were defined by couples who were married or living together in the past year.

#### Analytic Plan

Bivariate correlation analyses were conducted to examine the relationships among the main variables. Structural equation modeling techniques using LISREL (Joreskog and Sorbom 1989) were then conducted. Analyses were conducted based on standardized measures (mean = 0; SD = 1) to facilitate succinct presentation and ease of interpretation. To identify predictors of resilience, three analyses were conducted to address the three research questions of the study. (1) To answer the first research question, “What predicts resilience?” life context factors at Time 1 predicted resilience at Time 2. (2) To address the second research question, “What predicts changes in resilience?” in addition to the predictors at Time 1, resilience at Time 1 was also included in the model to predict resilience at Time 2. In this way, the level of resilience at Time 1 was controlled to permit examination of the change in resilience by Time 2. (3) The third research question aimed (1) to identify longitudinal interrelations among predictors of resilience, in which life context factors at Time 1 predicted life context factors at Time 2, and (2) to examine how resilience predicts life context factors longitudinally, in which the relationships between resilience at Time 1 and life context factors at Time 2 were examined. In this analysis, all variables that were used as predictors of resilience were included as both predictors (at Time 1) and dependent variables (at Time 2) in order to examine the interrelations among the predictors longitudinally. Resilience at Time 1 was also included in this analysis to examine how baseline resilience predicts life context factors longitudinally. A cross-lagged model was attempted to examine this reciprocal relationship; however, the minimization of the log-likelihood function did not uniformly converge and the full cross-lagged model could not be estimated, given the large number of parameters in this model. As a result, the analyses outlined above were conducted to permit examination of reciprocal effects. All

models allowed all predictors to covary, while disturbance terms were only covaried as suggested by the modification indices.

Two sets of analyses were conducted (a total of six analyses) because the measure of Parental Discord was not applicable to youths who lived in single-parent families. One set of analyses was conducted on the full sample in which the measure of parental discord was excluded (because this full sample included single-parent households). Additionally, a second set of analyses was conducted using only two-parent/guardian families ( $n = 410$ ) so that the variable of parental discord could be included.

## Results

Bivariate correlations among key constructs were examined first, as presented in Table 1.

### Full Sample Path Analyses Excluding Parental Discord Prediction of Resilience

Seven life context variables were examined as predictors of resilience longitudinally. In this model (Model 1, shown in Fig. 2), resilience (as indicated by adjustment and lower levels of antisocial behavior) was the dependent variable predicted by seven variables. LISREL analyses were conducted to test how well a specified model, in which each independent variable directly predicted resilience, fit the data. This model fit the data well ( $\chi^2 = 56.01$ ;  $p = .003$ ;  $n = 735$ ;  $df = 30$ ) with a Goodness of Fit (GOF) of .989, and an Adjusted Goodness of Fit (AGOF) of .966 (GOF and AGOF range from 0 to 1 with a value of 1 signifying a perfect fit; Hayduk 1987). Six of the seven independent variables significantly predicted at least one of the two latent constructs of resilience longitudinally; the exception was youths' involvement in extracurricular activities. Bonding to family, school commitment, fewer adverse life events and being less involved with delinquent peers predicted better youths' adjustment. Lower levels of parental monitoring, fewer adverse life events, being less involved with delinquent peers, and being more attached to teachers at baseline predicted lower levels of antisocial behavior at Time 2.

### Prediction of Change in Resilience

In addition to the seven predictors in model 1, resilience at Time 1 was included in a second model to examine change in resilience. Model 2 (Fig. 3) fit the data very well ( $\chi^2 = 107.15$ ,  $p = .081$ ,  $n = 717$ ,  $df = 89$ ) with a GOF = .985 and AGOF = .967. (A  $p$  value of greater than

.05 suggests a non-significant difference between the model predictions and the data, and therefore is desirable).

Four of the seven independent variables were significantly related to change in at least one of the two latent constructs of resilience. Fewer adverse life events and being less involved with delinquent peers at baseline predicted better adjustment at time 2. Lower levels of parental monitoring, fewer adverse life events, and higher levels of attachment to teachers at baseline predicted lower levels of antisocial behavior at time 2.

### Longitudinal Relationships Among Predictors of Resilience, and Relationship Between Baseline Resilience and Life Context Variables at Time 2

Model 3 (Fig. 4) fit the data very well ( $\chi^2 = 91.72$ ,  $p = .459$ ,  $n = 741$ ,  $df = 91$ ), with a GOF = .988 and AGOF = .972. All variables were significantly related to themselves from Time 1 to Time 2. In addition, bonding to family at Time 1 predicted parental monitoring at Time 2 and lower levels of school commitment at Time 2. Parental monitoring at Time 1 predicted bonding to family at Time 2 and adverse life events at Time 2. Adverse life events at Time 1 predicted lower levels of involvement with extracurricular activities at Time 2. Involvement with delinquent peers at Time 1 predicted lower levels of bonding to teachers and lower levels of parental monitoring at Time 2. Finally, for the resilience measure, adjustment at Time 1 predicted school commitment at Time 2; lower levels of antisocial behaviors at Time 1 predicted lower levels of involvement with delinquent peers at Time 2 and higher levels of bonding to family and higher levels of school commitment at Time 2.

### Path Analyses Based on the Subsample of Youths Living in Two-Parent/Guardian Households Prediction of Resilience

Eight life context variables (including parental discord) were examined as predictors of resilience longitudinally (Fig. 5). The model fit the data adequately ( $\chi^2 = 68.42$ ,  $p = .011$ ,  $n = 373$ ,  $df = 44$ ), with a GOF = .975 and AGOF = .941. Higher levels of parental monitoring, more bonding to family, more involvement in extracurricular activities, fewer adverse life events, less involvement with delinquent peers, and lower levels of parental discord predicted better adjustment. Fewer adverse life events, being less involved with delinquent peers, and lower levels of parental discord predicted lower levels of antisocial behavior. In addition, having a higher levels of bonding to teachers and higher levels of parental monitoring at Time 1 were also related, but not significantly ( $p < .10$ ), to lower levels of antisocial behavior at Time 2.

**Table 1** Bivariate correlations among key constructs

	1	2	3	4	5	6	7	8	9	10
Time 1										
1. Acad. Perf.										
2. Self-esteem	0.28 <sup>‡</sup>									
3. Psychosocial functioning	-0.23 <sup>‡</sup>	-0.23 <sup>‡</sup>								
4. Gang involvement	-0.11 <sup>†</sup>	-0.01	0.14 <sup>‡</sup>							
5. Delinquency	-0.15 <sup>‡</sup>	0.00	0.09*	0.29 <sup>‡</sup>						
6. Drug use	-0.16 <sup>‡</sup>	-0.01	0.11 <sup>†</sup>	0.31 <sup>‡</sup>	0.40 <sup>‡</sup>					
7. Bonding to family	0.26 <sup>‡</sup>	0.38 <sup>‡</sup>	-0.22 <sup>‡</sup>	-0.03	-0.11 <sup>†</sup>	-0.12 <sup>†</sup>				
8. Bonding to teachers	0.25 <sup>‡</sup>	0.09*	-0.15 <sup>‡</sup>	-0.03	-0.08*	-0.12 <sup>†</sup>	0.20 <sup>‡</sup>			
9. Monitoring	0.18 <sup>‡</sup>	0.32 <sup>‡</sup>	-0.16 <sup>‡</sup>	-0.02	-0.05	-0.06	0.43 <sup>‡</sup>	0.10 <sup>†</sup>		
10. School commitment	0.37 <sup>‡</sup>	0.32 <sup>‡</sup>	-0.15 <sup>‡</sup>	-0.05	-0.08*	-0.14 <sup>‡</sup>	0.38 <sup>‡</sup>	0.27 <sup>‡</sup>	0.24 <sup>‡</sup>	
11. Extracurric.	0.17 <sup>‡</sup>	0.15 <sup>‡</sup>	-0.06	-0.02	-0.07*	-0.10 <sup>†</sup>	0.12 <sup>‡</sup>	0.13 <sup>‡</sup>	0.17 <sup>‡</sup>	0.19 <sup>‡</sup>
12. Adverse life events	-0.20 <sup>‡</sup>	-0.05	0.14 <sup>‡</sup>	0.12 <sup>†</sup>	0.18 <sup>‡</sup>	0.13 <sup>‡</sup>	-0.07*	-0.11 <sup>†</sup>	0.04	-0.14 <sup>‡</sup>
13. Delinq. peers	-0.21 <sup>‡</sup>	-0.06	0.21 <sup>‡</sup>	0.38 <sup>‡</sup>	0.33 <sup>‡</sup>	0.32 <sup>‡</sup>	-0.19 <sup>‡</sup>	-0.11 <sup>†</sup>	-0.11 <sup>†</sup>	-0.14 <sup>‡</sup>
14. Parental discord	0.06	0.07	0.14 <sup>‡</sup>	-0.02	-0.02	0.07	-0.03	0.00	0.00	0.06
	1	2	3	4	5	6	7	8	9	10
Time 2										
15. Acad. Perf.	0.45 <sup>‡</sup>	0.19 <sup>‡</sup>	-0.18 <sup>‡</sup>	-0.09 <sup>†</sup>	-0.11 <sup>†</sup>	-0.08*	0.13 <sup>‡</sup>	0.17 <sup>‡</sup>	0.07	0.19 <sup>‡</sup>
16. Self-esteem	0.16 <sup>‡</sup>	0.50 <sup>‡</sup>	-0.09*	-0.01	0.03	0.00	0.22 <sup>‡</sup>	0.00	0.21 <sup>‡</sup>	0.22 <sup>‡</sup>
17. Psychosocial functioning	-0.12 <sup>†</sup>	-0.15 <sup>‡</sup>	0.65 <sup>‡</sup>	0.13 <sup>‡</sup>	0.08*	0.12 <sup>†</sup>	-0.16 <sup>‡</sup>	-0.09*	-0.11 <sup>†</sup>	-0.11 <sup>†</sup>
18. Adjustment	0.34 <sup>‡</sup>	0.34 <sup>‡</sup>	-0.37 <sup>‡</sup>	-0.14 <sup>‡</sup>	-0.19 <sup>‡</sup>	-0.22 <sup>‡</sup>	0.29 <sup>‡</sup>	0.21 <sup>‡</sup>	0.17 <sup>‡</sup>	0.27 <sup>‡</sup>
19. Gang involvement	-0.04	0.06	0.12 <sup>‡</sup>	0.31 <sup>‡</sup>	0.28 <sup>‡</sup>	0.29 <sup>‡</sup>	0.00	-0.04	0.00	0.03
20. Delinquency	-0.03	0.04	0.08*	0.16 <sup>‡</sup>	0.27 <sup>‡</sup>	0.11 <sup>†</sup>	-0.04	-0.03	0.02	-0.05
21. Drug use	-0.10 <sup>†</sup>	0.02	0.15 <sup>‡</sup>	0.12 <sup>†</sup>	0.20 <sup>‡</sup>	0.37 <sup>‡</sup>	-0.12 <sup>†</sup>	-0.09 <sup>†</sup>	-0.03	-0.11 <sup>†</sup>
22. Antisocial	-0.19 <sup>‡</sup>	0.01	0.22 <sup>‡</sup>	0.20 <sup>‡</sup>	0.28 <sup>‡</sup>	0.34 <sup>‡</sup>	-0.16 <sup>‡</sup>	-0.22 <sup>‡</sup>	0.00	-0.18 <sup>‡</sup>
23. Bonding to family	0.15 <sup>‡</sup>	0.24 <sup>‡</sup>	-0.13 <sup>‡</sup>	-0.02	-0.08*	-0.06	0.51 <sup>‡</sup>	0.12 <sup>‡</sup>	0.31 <sup>‡</sup>	0.26 <sup>‡</sup>
24. Bonding to teachers	0.16 <sup>‡</sup>	0.01	-0.10 <sup>†</sup>	-0.12 <sup>‡</sup>	-0.07	-0.08*	0.15 <sup>‡</sup>	0.32 <sup>‡</sup>	0.09 <sup>†</sup>	0.10 <sup>†</sup>
25. Monitoring	0.17 <sup>‡</sup>	0.22 <sup>‡</sup>	-0.11 <sup>†</sup>	-0.08*	-0.08*	-0.11 <sup>†</sup>	0.33 <sup>‡</sup>	0.09*	0.44 <sup>‡</sup>	0.17 <sup>‡</sup>
26. School commitment	0.24 <sup>‡</sup>	0.13 <sup>‡</sup>	-0.07	-0.14 <sup>‡</sup>	-0.15 <sup>‡</sup>	-0.13 <sup>‡</sup>	0.15 <sup>‡</sup>	0.14 <sup>‡</sup>	0.11 <sup>†</sup>	0.34 <sup>‡</sup>
27. Extracurric.	0.12 <sup>†</sup>	0.12 <sup>†</sup>	-0.03	-0.04	0.01	-0.05	0.11 <sup>†</sup>	0.09 <sup>†</sup>	0.16 <sup>‡</sup>	0.16 <sup>‡</sup>
28. Adverse life events	-0.07*	0.00	0.11 <sup>‡</sup>	-0.01	-0.01	0.03	-0.05	-0.04	0.09*	-0.06
29. Delinq. peers	-0.17 <sup>‡</sup>	-0.01	0.15 <sup>‡</sup>	0.17 <sup>‡</sup>	0.18 <sup>‡</sup>	0.20 <sup>‡</sup>	-0.11 <sup>†</sup>	-0.13 <sup>‡</sup>	-0.03	-0.16 <sup>‡</sup>
30. Parental discord	-0.06	0.05	0.11 <sup>†</sup>	0.01	-0.01	0.01	-0.05	0.02	-0.07	0.02
	11	12	13	14	15	16	17	18	19	20
Time 1										
11. Extracurric.										
12. Adverse life events	0.05									
13. Delinq. peers	-0.07	0.31 <sup>‡</sup>								
14. Parental discord	0.09	0.18 <sup>†</sup>	0.04							
Time 2										
15. Acad. Perf.	0.14 <sup>‡</sup>	-0.26 <sup>‡</sup>	-0.24 <sup>‡</sup>	-0.02						
16. Self-esteem	0.06	-0.09*	-0.08*	-0.01	0.23 <sup>‡</sup>					
17. Psychosocial functioning	-0.07*	0.18 <sup>‡</sup>	0.24 <sup>‡</sup>	0.23 <sup>‡</sup>	-0.24 <sup>‡</sup>	-0.18 <sup>‡</sup>				
18. Adjustment	0.09*	-0.35 <sup>‡</sup>	-0.43 <sup>‡</sup>	-0.16 <sup>†</sup>	0.62 <sup>‡</sup>	0.61 <sup>‡</sup>	-0.56 <sup>‡</sup>			
19. Gang involvement	0.01	0.13 <sup>‡</sup>	0.26 <sup>‡</sup>	0.06	-0.07	-0.03	0.18 <sup>‡</sup>	-0.30 <sup>‡</sup>		
20. Delinquency	0.00	0.08*	0.21 <sup>‡</sup>	0.07	-0.09 <sup>†</sup>	-0.02	0.12 <sup>‡</sup>	-0.30 <sup>‡</sup>	0.36 <sup>‡</sup>	
21. Drug use	-0.08*	0.17 <sup>‡</sup>	0.26 <sup>‡</sup>	0.12 <sup>†</sup>	-0.11 <sup>†</sup>	0.02	0.22 <sup>‡</sup>	-0.38 <sup>‡</sup>	0.25 <sup>‡</sup>	0.31 <sup>‡</sup>

**Table 1** continued

	11	12	13	14	15	16	17	18	19	20
22. Antisocial	-0.02	0.34 <sup>‡</sup>	0.48 <sup>‡</sup>	0.16 <sup>†</sup>	-0.29 <sup>‡</sup>	0.02	0.32 <sup>‡</sup>	-0.69 <sup>‡</sup>	0.45 <sup>‡</sup>	0.45 <sup>‡</sup>
23. Bonding to family	0.07*	-0.12 <sup>†</sup>	-0.23 <sup>‡</sup>	-0.14 <sup>†</sup>	0.18 <sup>‡</sup>	0.35 <sup>‡</sup>	-0.21 <sup>‡</sup>	0.43 <sup>‡</sup>	-0.08*	-0.08*
24. Bonding to teachers	0.07*	-0.07*	-0.17 <sup>‡</sup>	-0.03	0.19 <sup>‡</sup>	0.06	-0.13 <sup>‡</sup>	0.24 <sup>‡</sup>	-0.06	-0.09*
25. Monitoring	0.11 <sup>†</sup>	-0.03	-0.26 <sup>‡</sup>	0.00	0.18 <sup>‡</sup>	0.29 <sup>‡</sup>	-0.12 <sup>†</sup>	0.29 <sup>‡</sup>	-0.04	-0.04
	11	12	13	14	15	16	17	18	19	20
Time 2										
26. School commitment	0.09 <sup>†</sup>	-0.16 <sup>‡</sup>	-0.24 <sup>‡</sup>	-0.03	0.32 <sup>‡</sup>	0.28 <sup>‡</sup>	-0.14 <sup>‡</sup>	0.40 <sup>‡</sup>	-0.07*	-0.11 <sup>†</sup>
27. Extracurric.	0.46 <sup>‡</sup>	-0.03	-0.03	-0.04	0.09 <sup>†</sup>	0.09*	-0.09 <sup>†</sup>	0.10 <sup>†</sup>	0.02	0.00
28. Adverse life events	0.07*	0.36 <sup>‡</sup>	0.09 <sup>†</sup>	0.11*	-0.10 <sup>†</sup>	0.01	0.12 <sup>‡</sup>	-0.16 <sup>‡</sup>	0.07*	0.03
29. Delinq. peers	-0.02	0.28 <sup>‡</sup>	0.56 <sup>‡</sup>	0.13 <sup>†</sup>	-0.23 <sup>‡</sup>	-0.05	0.21 <sup>‡</sup>	-0.51 <sup>‡</sup>	0.34 <sup>‡</sup>	0.32 <sup>‡</sup>
30. Parental discord	0.11*	0.09	0.00	0.67 <sup>‡</sup>	-0.02	0.09	0.20 <sup>‡</sup>	-0.08	0.10*	0.03
	21	22	23	24	25	26	27	28	29	
Time 2										
21. Drug use										
22. Antisocial	0.61 <sup>‡</sup>									
23. Bonding to family	-0.15 <sup>‡</sup>	-0.24 <sup>‡</sup>								
24. Bonding to teachers	-0.07*	-0.18 <sup>‡</sup>	0.22 <sup>‡</sup>							
25. Monitoring	-0.09*	-0.09*	0.43 <sup>‡</sup>	0.12 <sup>†</sup>						
26. School commitment	-0.12 <sup>†</sup>	-0.27 <sup>‡</sup>	0.31 <sup>‡</sup>	0.19 <sup>‡</sup>	0.21 <sup>‡</sup>					
27. Extracurric.	-0.09 <sup>†</sup>	-0.01	0.07	0.07*	0.07	0.10 <sup>†</sup>				
28. Adverse life events	0.07*	0.23 <sup>‡</sup>	-0.03	-0.02	0.08*	-0.07	0.05			
29. Delinq. peers	0.41 <sup>‡</sup>	0.68 <sup>‡</sup>	-0.23 <sup>‡</sup>	-0.15 <sup>‡</sup>	-0.13 <sup>‡</sup>	-0.16 <sup>‡</sup>	-0.05	0.25 <sup>‡</sup>		
30. Parental discord	0.03	0.13*	-0.09	-0.01	0.04	-0.04	-0.01	0.11*	0.03	

\*  $p < .05$ , <sup>†</sup>  $p < .01$ , <sup>‡</sup>  $p < .001$ 

### Prediction of Change in Resilience

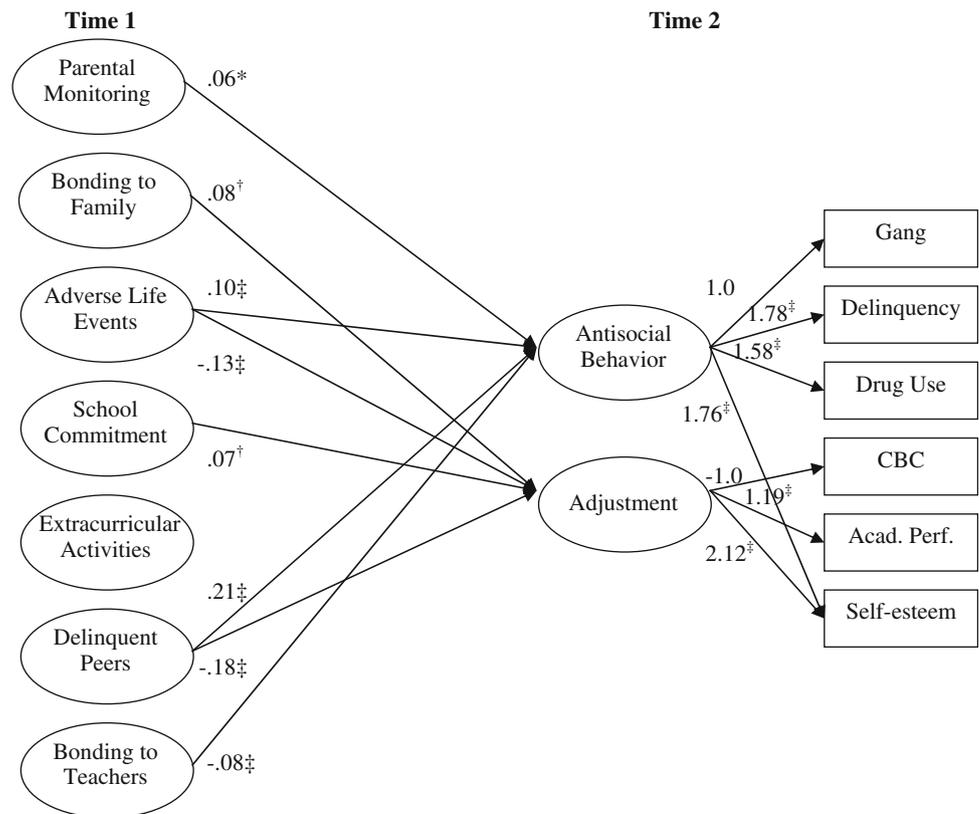
Resilience at Time 1 was included, in addition to the eight predictors in Model 2 (Fig. 6), to examine change in resilience from Time 1 to Time 2. This model fit the data very well ( $\chi^2 = 131.81$ ,  $p = .097$ ,  $n = 362$ ,  $df = 112$ ), with  $GOF = .966$  and  $AGOF = .935$ . More parental monitoring, more involvement in extracurricular activities, fewer adverse life events, less involvement with delinquent peers, and lower levels of parental discord predicted an improvement in youths' adjustment.

### Longitudinal Relationships Among Predictors of Resilience, and the Relationship Between Baseline Resilience and Life Context Variables at Time 2

As depicted in Fig. 7, the model fit the data very well ( $\chi^2 = 104.55$ ,  $p = .871$ ,  $n = 271$ ,  $df = 122$ ), with  $GOF = .968$  and  $AGOF = .934$ . All variables were significantly related to themselves from Time 1 to Time 2. In

addition, bonding to family at Time 1 predicted lower levels of adverse life events and less commitment to school at Time 2. Parental monitoring at Time 1 predicted stronger bonding to family, more commitment to school, and more involvement in extracurricular activities at Time 2. School commitment at Time 1 predicted less involvement with delinquent peers, and lower levels of parental monitoring at Time 2. Involvement with extracurricular activities at Time 1 predicted stronger bonding with teachers at Time 2. Involvement with delinquent peers at Time 1 predicted lower levels of parental monitoring and less bonding to teachers at Time 2. Parental discord at Time 1 predicted less bonding with teachers at Time 2. Finally, lower levels of antisocial behavior at Time 1 predicted more bonding with family and more commitment to school at Time 2. There was a non-significant relationship ( $p < .10$ ) between antisocial behavior at Time 1 and being less involved with delinquent peers at Time 2. Also, the association between lower levels of antisocial behavior at Time 1 and being less involved with delinquent peers at Time 2 was not significant ( $p < .10$ ).

**Fig. 2** Model 1, Predictors of resilience using the full sample. Unstandardized coefficients are shown. Not shown are covariances among predictors on the left side of the figure.  $\chi^2 = 56.01$ ;  $p = .003$ ;  $n = 735$ ;  $df = 30$ ; Goodness of fit = .989; Adjusted Goodness of fit = .966. \*  $p < .05$ , †  $p < .01$ , ‡  $p < .001$ . Note: CBC—Child Behavior Checklist, a measure of psychosocial functioning. Acad. Perf.—Academic Performance



**Discussion**

In this study, youths were deemed high-risk by virtue of living in neighborhoods that had the highest crime rate among socially disorganized neighborhoods. Youths who had higher levels of functioning despite the detrimental effects of high-risk neighborhoods were considered resilient, as indicated by higher levels of adjustment (higher levels of academic achievement, self esteem, and psychosocial functioning) and lower levels of antisocial behavior (lower levels of gang involvement, delinquent behavior, and substance use). Furthermore, resilient youths in this study also did well in an absolute sense and not only in comparison to maladjusted or antisocial youths. As evidenced in the outcome measures (pp. 10–11), the majority of youths in the study sample did not use drug, participate in delinquent behaviors, or involved in gang (modes = 0 for these measures). In addition, many youths in the sample performed well in school, with 18.5% as A students and 43.3% as B students. Our data showed that resilience in high-risk youths was longitudinally predicted by several life context factors.

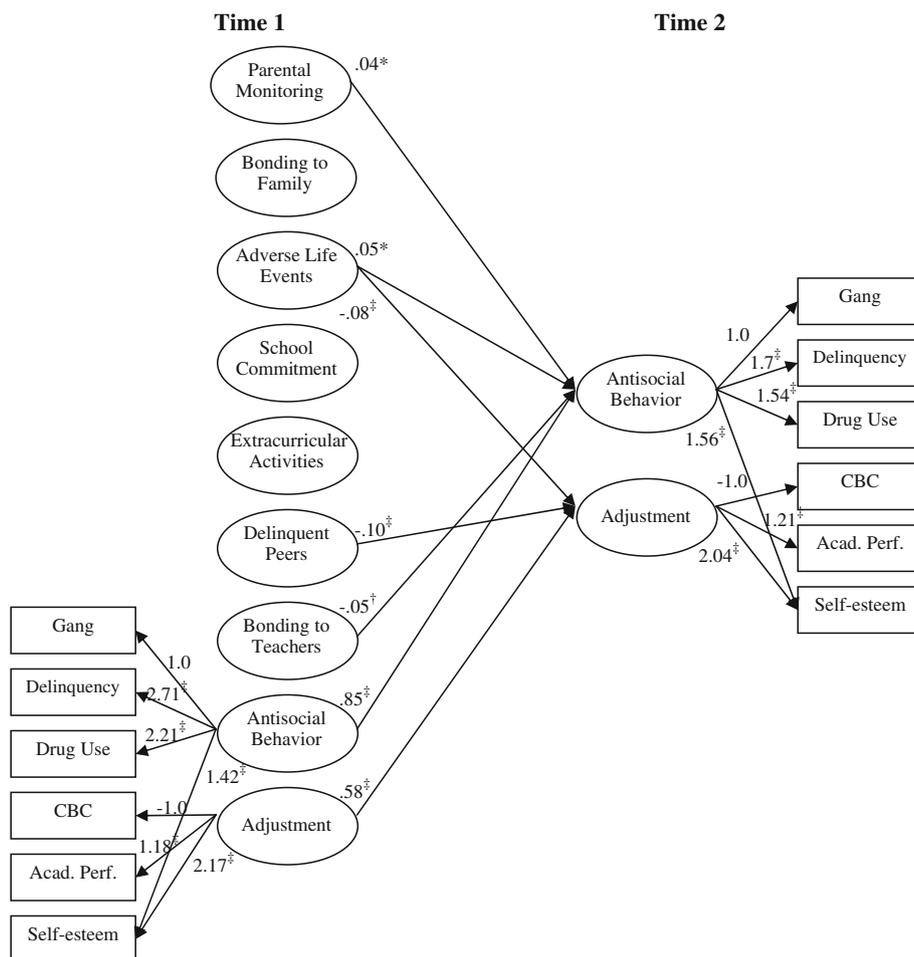
For *adjustment*, adverse life events and involvement with delinquent peers were risk factors of decreased adjustment even when prior adjustment was controlled. Strong bonding to family predicted better adjustment, but the effect was no longer significant when prior adjustment

was controlled. Among youths in two-parent families, greater parental monitoring, more involvement in extracurricular activities, and lower levels of parental discord predicted better adjustment. In the full sample analysis, greater school commitment predicted better adjustment but its effect dropped off when prior adjustment was controlled.

For *antisocial behavior*, involvement with delinquent peers was a risk factor for higher levels of antisocial behavior; however, when prior antisocial behavior was controlled, involvement with delinquent peers no longer significantly predicted antisocial behavior. Adverse life events predicted an increased of antisocial behavior. When prior antisocial behavior was controlled, adverse life events continued to predict higher levels of antisocial behavior in the full-sample analysis, but not among youths in two-parent households. In the full-sample analyses, even when prior antisocial behavior was controlled, greater bonding with teachers was a protective factor and greater parental monitoring was a risk factor that predicted higher levels of antisocial behavior. Among youths living in two-parent households, parental discord predicted higher levels of antisocial behavior, but it was no longer predictive when prior antisocial behavior was controlled.

The most consistent factors across the analyses that affected both adjustment and antisocial behavior were life events and involvement with delinquent peers. The

**Fig. 3** Model 2, Prediction of change of resilience using the full sample. Unstandardized coefficients are shown. Not shown are covariances among predictors on the left side of the figure.  $\chi^2 = 107.15$ ;  $p = .081$ ;  $n = 717$ ;  $df = 89$ ; Goodness of fit = .985; Adjusted Goodness of fit = .967. \*  $p < .05$ , †  $p < .01$ , ‡  $p < .001$



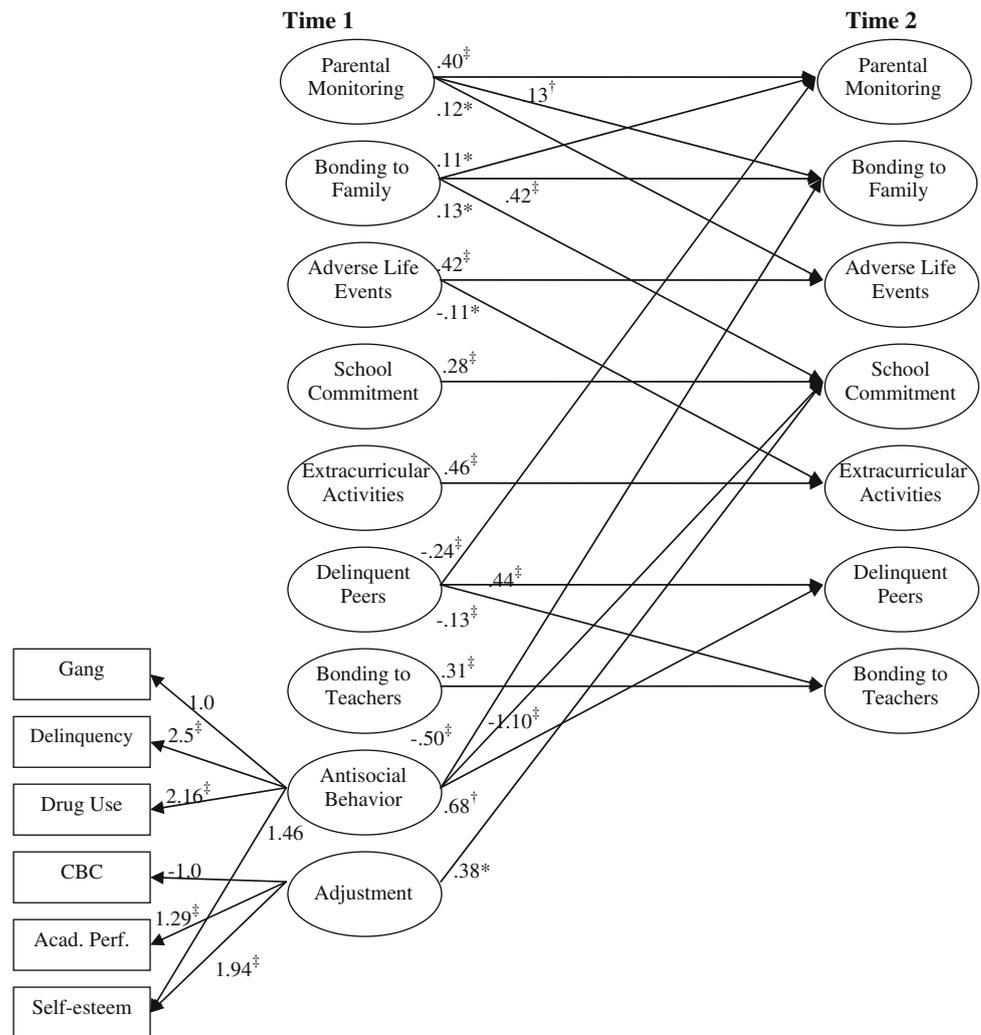
relationship between adverse life events and psychopathology, or maladjustment, has been well established in both adults (e.g., Dohrenwend 1998) and youths (e.g., Tiet et al. 2001a). Exposure to a combination of stressors (i.e., neighborhood risk and adverse life events) may make youths particularly more vulnerable. For example, Evans and English (2002) found that exposure to multiple stressors that accompanied poverty appeared to contribute to increased emotional distress in youths. Likewise, Schilling et al. (2007) reported that exposure to adverse life events in childhood was related to increased antisocial behavior in young adulthood. It is uncommon for psychological research to be certain about the etiological effects of any factor, but some researchers have thought that we are close to having “undeniable evidence of the etiological effects” of adverse life events on various types of psychopathology, ranging from diagnosable disorders to symptoms of psychological distress (Eaton and Dohrenwend 1998).

Our findings suggest that involvement with delinquent peers seems to put high-risk youths at further risk. The current findings indicated that lower levels of school

commitment predicted increased involvement with delinquent peers, and involvement with delinquent peers, in turn, predicted maladjustment and participation in antisocial behaviors, as well as further deterioration of conventional bonding. As the cycle continued, those who were involved with delinquent peers were subsequently more involved with delinquent peers. These findings are consistent with prior research that has shown involvement with delinquent peers results, in part, from lack of conventional bonding, including bonding with parents, teachers, and conventional peers (e.g., Wolfe and Shoemaker 1999). On the other hand, prior studies suggest that bonding to conventional peers seems to reduce delinquency (Huizinga et al. 2003) and increase adjustment (e.g., Lynskey and Fergusson 1997), possibly by inhibiting the initial formation of delinquent friendships.

Our data showed that once children and adolescents were involved with delinquent peers, those peers seemed to assert a substantial effect on them. Some researchers noted the tendency for offenders to commit delinquent acts along with their peers (e.g., Haynie 2001). Based on a survey of 127 juveniles being confined in two detention centers for

**Fig. 4** Model 3, Reciprocal relationship between resilience and its predictors, and relationships among predictors of resilience, in the full sample. Unstandardized coefficients are shown. Not shown are covariances among predictors on the left side of the figure.  $\chi^2 = 91.72$ ;  $p = .459$ ;  $n = 741$ ;  $df = 91$ ; Goodness of fit = .988; Adjusted Goodness of fit = .972. \*  $p < .05$ , †  $p < .01$ , ‡  $p < .001$



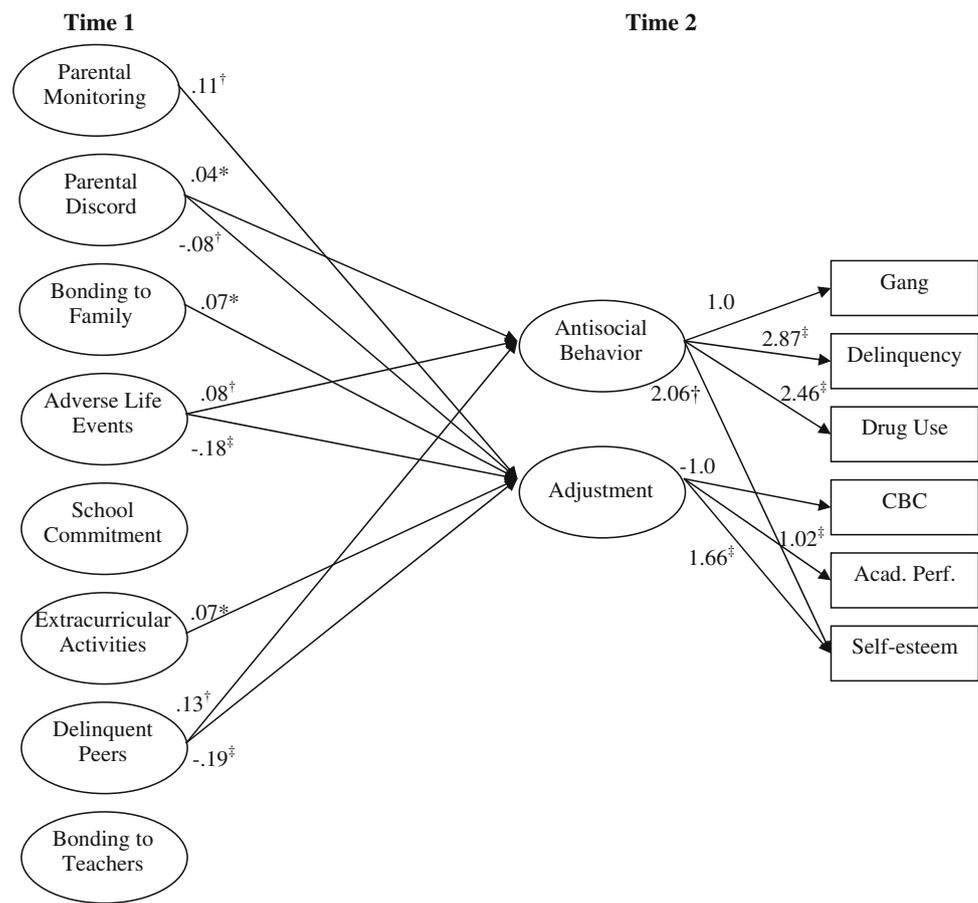
serious and violent delinquency, Wolfe and Shoemaker (1999) found that involvement with delinquent peers predicted serious delinquent behaviors. Not only did youths tend to commit delinquent acts along with their peers, evidence also showed that youths modeled their peers' antisocial behavior (e.g. Lahey et al. 1999; Wolfe and Shoemaker 1999). It should be noted, however, that although youths often commit delinquent offenses together, more serious offenders often commit a good proportion of their offenses alone, while solo offenses among less serious offenders is less common (Huizinga et al. 2003). Furthermore, youths with certain characteristics (e.g., hyperactive) are more likely to be involved with delinquent peers (La-course et al. 2006).

Beyond its direct effects on youths' maladjustment, involvement with delinquent peers also predicted lower levels of parental monitoring and lower levels of bonding to teachers. Involvement with delinquent peers seemed to pull youths further away from their families and schools. Their parents were less able to keep track of what they did,

whom they were with, and what time they got home. Bonding to teachers also decreased as involvement with delinquent peers increased. These youths liked their teachers less and no longer looked up to them. In turn, these factors might lead to further maladjustment and antisocial behavior.

Family factors, including parental monitoring, bonding to family, and parental discord were found to affect resilience. Findings about parental monitoring were mixed. In the two-parent subsample, parental monitoring was found to predict better adjustment, which is consistent with a large body of literature (e.g., Sampson and Laub 1994). On the other hand, parental monitoring was found to predict higher levels of antisocial behavior in both the full sample and in the subsample of single-parent households (not shown). This finding seemed consistent with Kerr and Stattin's (2000) study that examined the components of the construct of parental monitoring. They found that children's spontaneous disclosure and parents' knowledge about the youths' whereabouts, who they are with and

**Fig. 5** Model 1, Predictors of resilience based on the subsample of youths living in two-parent/guardian households. Unstandardized coefficients are shown. Not shown are covariances among predictors on the left side of the figure.  $\chi^2 = 68.42$ ;  $p = .011$ ;  $n = 373$ ;  $df = 44$ ; Goodness of fit = .975; Adjusted Goodness of fit = .941. \*  $p < .05$ , †  $p < .01$ , ‡  $p < .001$

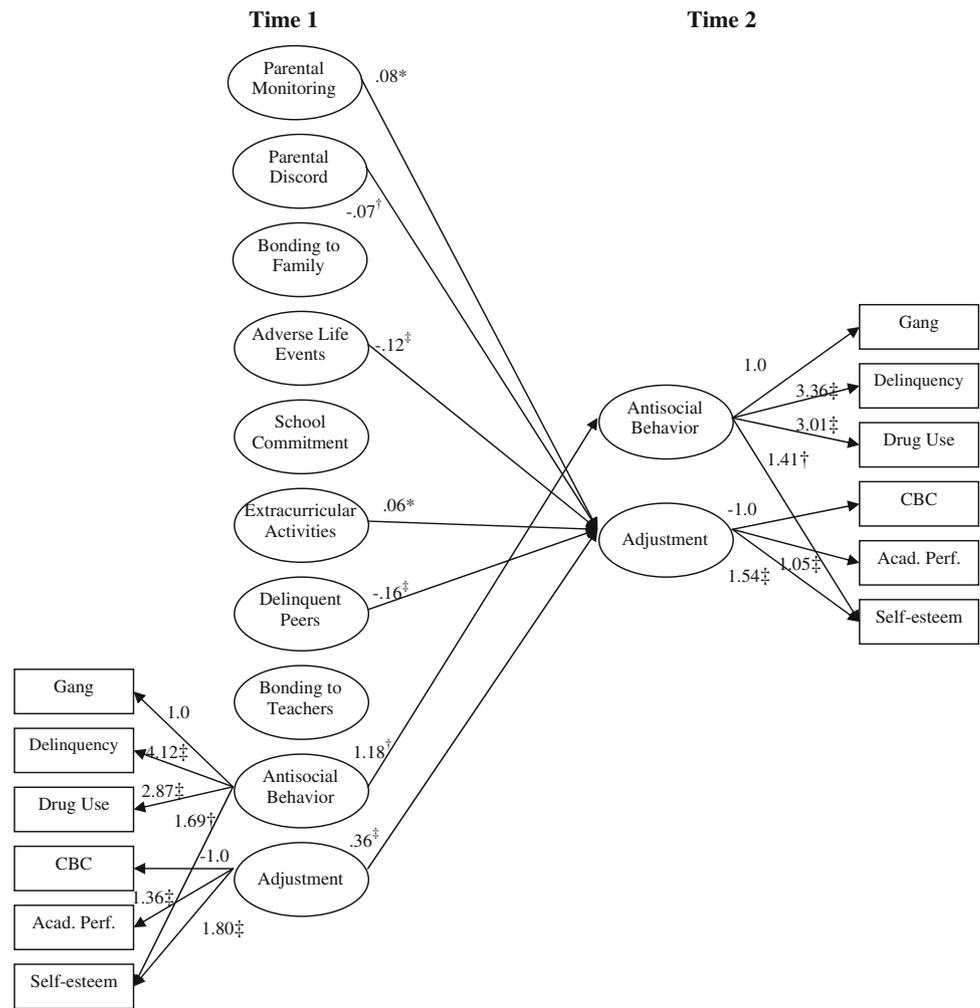


activities that they are engaged in were indeed associated with better adjustment. However, parents' attempt to control the child's behavior was related to increased delinquent behaviors. Youths may perceive the parents' attempt to control and monitor their behaviors as intrusive (Kerr and Stattin 2000) or as mistrust, and may feel that they are being controlled by getting even more involved with peers, including delinquent peers. Kerr and Stattin also suggested that parental solicitation may be a consequence of youth delinquent behaviors because the parents were noticing the youths' behavior problems. However, their study did not examine the direction of this relationship due to the cross-sectional nature of their data. Our findings seemed to support the hypothesis that parental monitoring, as measured in this study, did predict higher levels of antisocial behavior in some youths (analyses with the full sample and with the subsample of youths in single-parent household); on the other hand, our data did not support the hypothesis that an increase in parental attempts to monitor youths' behaviors was a consequence of the youths' delinquent behaviors. This finding highlights the importance of parental monitoring and that monitoring may need to be carried out in such a way that youths do not feel that they are being controlled. Perhaps parents in two-parent

households in this sample were more able to gain knowledge concerning their children's whereabouts through spending more time with them or through the youths' spontaneous disclosure. Therefore, an increase of this type of parental monitoring not only did not predict an increase of antisocial behavior, but it also predicted a better adjustment of these youths.

Among youths living in two-parent families, parental discord predicted higher levels of antisocial behavior and lower levels of adjustment in inner-city youths. This appears consistent with previous findings on general populations, as documented by Emery's classic review (1982). Hypotheses have been proposed to explain how parental discord leads to deficits in interpersonal or coping skills, and the ability to regulate emotion in youths. These hypotheses have also been supported by research. Learning theory posits that children imitate and learn interpersonal relationships by modeling their parents' behavior (Belsky 1981), and thus children living in families with discord may learn inappropriate and aggressive conflict-solving strategies (Johnson and O'Leary 1987). Other theorists have proposed that parental discord affects children through deterioration in the parent-child relationship (Shamir et al. 2001). For example, parental distress from

**Fig. 6** Model 2, Prediction of change of resilience based on the subsample of youths living in two-parent/guardian households. Unstandardized coefficients are shown. Not shown are covariances among predictors on the left side of the figure.  $\chi^2 = 131.81$ ;  $p = .097$ ;  $n = 364$ ;  $df = 112$ ; Goodness of fit = .966; Adjusted Goodness of fit = .935. \*  $p < .05$ , †  $p < .01$ , ‡  $p < .001$



marital discord has been shown to carry over into parenting behavior, which then affects child outcomes (Kitzmann 2000).

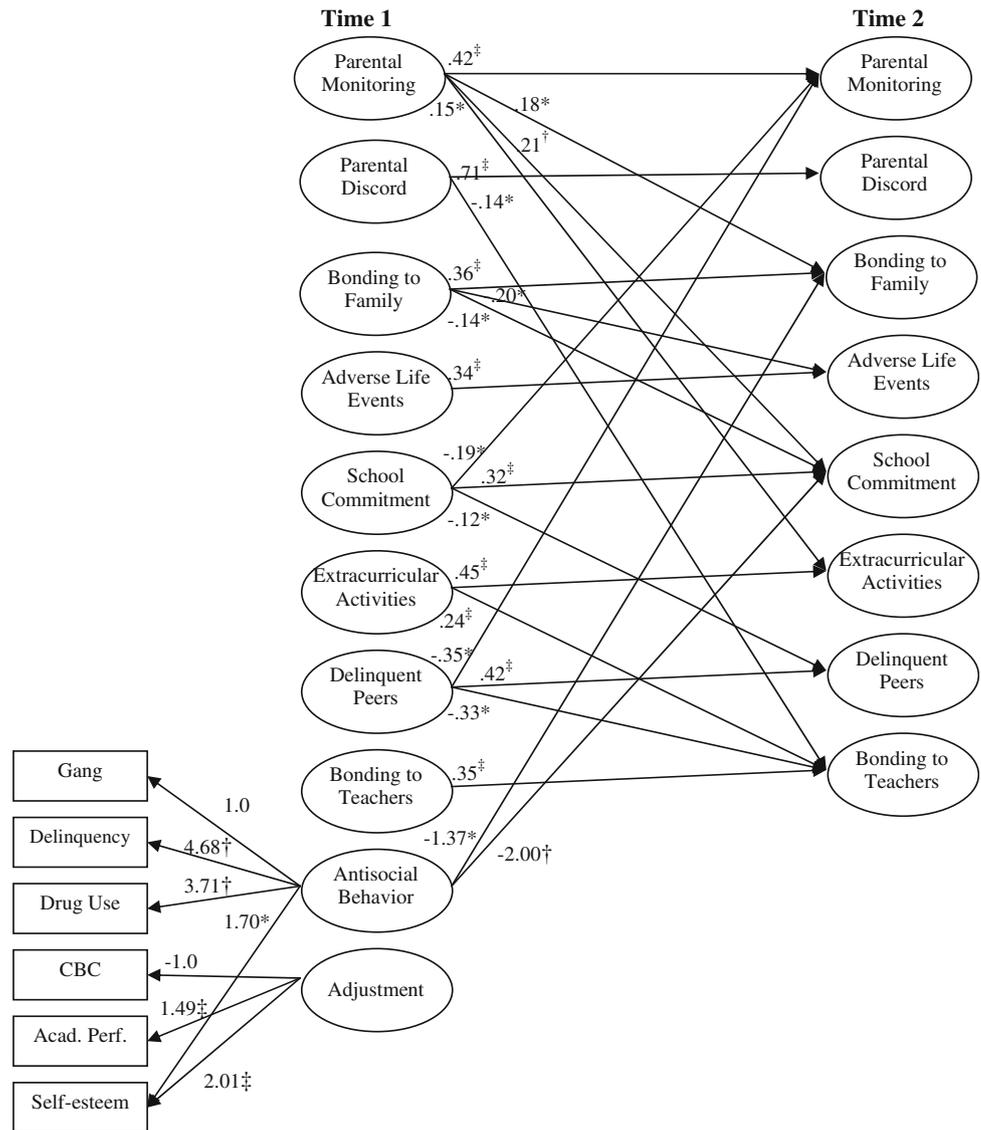
Previous studies have shown that strong parental bonding is crucial to children and adolescents, and is related to their social skills (Paterson et al. 1995), positive self-image (Perry et al. 2008) and fewer emotional (Carter et al. 2001) and behavioral problems such as substance use (Kuendig and Kuntsche 2006). Thus, it is not surprising that our data found bonding to family as a factor positively predicting adjustment in both the full and two-parent subsamples, although an influence on antisocial behavior was not found for either sample.

There is also some evidence in our findings that the school factors of bonding to teachers and involvement in extra-curricular activities promote resilience. Bonding to teachers was a significant predictor of lower levels of antisocial behavior for children and adolescents in the full sample, although bonding to teachers was not a significant predictor of either antisocial behavior or adjustment among children and adolescents living with two parents/guardians.

Post-hoc analyses focusing only on the single-parent families (not presented) also showed that bonding to teachers was a significant predictor of lower levels of antisocial behavior. Positive relationships with teachers also have been found to predict better academic and behavioral outcomes (Hamre and Pianta 2001). An additional competent and loving adult may be more essential for children and adolescents living in a single-parent family.

This finding of the relationship between bonding with teachers and youths' adaptation is particularly important because intervention studies have shown success in changing youths' bonding to teachers and school (e.g., Hawkins et al. 2001). Our findings suggest bonding to teachers has direct effects on reduction of antisocial behavior, and an indirect effect on better youth adjustment. As the study found, bonding to teachers predicted lower levels of antisocial behaviors. Over time, as shown in Figs. 4 and 7, a reduction of antisocial behavior subsequently predicted an increase in school commitment and bonding to family, which in turn predicted adjustment. Parents and teachers provide support and guidance

**Fig. 7** Model 3, Reciprocal relationship between resilience and its predictors, and relationships among predictors of resilience, with subsample of youths living in two-parent/guardian households. Unstandardized coefficients are shown. Not shown are covariances among predictors on the left side of the figure.  $\chi^2 = 104.55$ ;  $u = .871$ ;  $n = 271$ ;  $df = 122$ ; Goodness of fit = .968; Adjusted Goodness of fit = .934. \*  $p < .05$ , †  $p < .01$ , ‡  $p < .001$



(Kenny 1994), and may serve as role models to children and adolescents. Youths who have strong bonds with parents or teachers may be more likely to talk to them at times of difficulties, and thus, these youths may be more likely to learn coping and interpersonal skills, and internalize values from their parents and teachers. An additional competent and loving adult may prevent youth from engaging in antisocial behaviors, which in turns may lead to engaging in more prosocial behaviors. Ultimately, such behaviors may alter the youths’ contextual environment and then lead to better academic performance and other adjustment domains.

There was also evidence that involvement in extracurricular activities predicted resilience in some youths who lived in high-risk neighborhoods, as seen by the positive relationship with the adjustment dimension of resilience in youths living in two-parent households. Several studies

have shown that involvement in extracurricular activities is related to academic achievement (Cooper et al. 1999; Fredricks and Eccles 2006) better psychological adjustment and lower rates of substance use (Barber et al. 2001; Fredricks and Eccles 2006). A number of rationales have been proposed to explain how involvement in structured extracurricular activities benefit children and adolescents, by providing opportunities to develop and practice social and cognitive skills, to develop a sense of belonging as part of a group, to contribute to one’s community, to develop a social network of peers and adults, and to learn to handle challenges (Eccles et al. 2003). Extracurricular activities may also provide children and adolescents the opportunities to learn prosocial behaviors under the supervision and guidance of competent and responsible adults, and provide them with positive experiences that increase their sense of self-efficacy. Engaging in activities that involve competent

adults may also provide youths with good role models and learning opportunities to increase their social and coping skills. However, we did not find a relationship between involvement in extracurricular activities and the antisocial behavior dimension of resilience. Some studies show that involvement in extracurricular activities is associated with lower delinquency rates (Mahoney 2000), and less likelihood of using cigarettes, alcohol, and marijuana (Elder et al. 2000). Our findings may differ due to our consideration of multiple domains for predictors and outcomes simultaneously.

Our findings also indicated a positive feedback loop between resilience and its “predictors.” Over time, resilient youths became closer to the family, more committed to school, and less likely to be involved with delinquent peers. On the other hand, non-resilient youths tended to become less involved with their family, less committed to school, and more involved with delinquent peers. In turn, these familial, school, and peer factors further exacerbate the youths’ functioning, and youths’ functioning seemed to spiral downward. Earlier prevention, therefore, seems crucial in facilitating resilience.

### Limitations

Our findings should be considered in light of their limitations. For example, the measure of adverse life events of our study relied on only five events that are relatively common among these youths. Future studies should explore the impact of adverse life events with measures that cover a wider range of both adolescent and family events. In addition, the specific adverse life events assessed in our study are events that the youths could influence, rather than events that just happen to the child. Therefore, these events could be considered indicators of antisocial behavior or adjustment. However, the adverse life events included in our study continued to significantly predict youths’ outcomes (adjustment and antisocial behavior) when the analyses controlled for adjustment, antisocial behavior and adverse life events at an earlier time point (models 2 and 3). Thus, it is unlikely that the measure of adverse life events merely indicates antisocial behavior problems.

The historical validity of the findings may be of concern. We used data collected in 1987 and 1988 of the DYS Study. It is possible that youths in the late 1980s are different than youths today, which could affect the validity of findings. However, our results are consistent with current studies with more recent data, in the constructs that predicted both adjustment (e.g., Cooper et al. 1999) and antisocial behavior (e.g., Schilling et al. 2007), as well as studies suggesting the multidimensionality of the construct

of resilience (Masten et al. 2004; Masten and Obradovic 2006). Thus, the validity of our findings appears to hold over time.

We relied mostly on self-report measures from the youths (e.g., drug use, gang involvement, academic performance) and this may result in reporter or recall biases. For example, the youths may report a better grade than they actually got. On the other hand, the youths may be the best informants for many of these constructs. It is unlikely that the parents would know the extent of their children’s drug use or gang involvement. Self-report measures also have been shown to be the best way that researchers can meet the needs of both descriptive and etiological research efforts (Thornberry and Krohn 2000). Nonetheless, the findings need to be replicated by future studies that do not rely mostly on youths’ self-report measures.

In addition, this sample was mostly Hispanic and African American. Although this is a representative sample of youths and families in the inner city of a major metropolitan area, and, as in many other inner city areas, minority youths are highly represented in these areas, the results may only be applicable only to these ethnic groups and the generalizability to other ethnic groups may be limited.

Finally, we did not examine how cultural factors interact with other life context factors in predicting resilience in this study. Given that large populations of youths living in the inner city are from diverse ethnic backgrounds, it is imperative that future studies should examine the impact of cultural factors on predictors of resilience.

Despite its limitations, several important points can be made from this study: (1) Strong bonding with family and with teachers, and being involved in extracurricular activities moderately predict resilience. (2) Parental discord, adverse life events, and involvement with delinquent peers are strong predictors of maladjustment and antisocial behavior among high-risk inner-city youths. (3) There is a positive feedback loop between resilience and its predictors. Finally (4), previous findings regarding the relationships between life context factors and youths’ functioning in other populations may be generalizable to inner-city high-risk youths, and the relationships continue to be statistically significant and clinically important even when other factors are simultaneously examined.

Future studies should examine whether the current findings are replicable in other samples. In addition, studies with experimental designs are needed to examine causality among the factors examined. For example, randomized controlled trials can be conducted to examine the effectiveness of increased involvement of extracurricular activities, and improvement of family or teacher bonding on youth functioning.

Our findings not only support the importance of focusing on the strengths rather than the weaknesses or

pathology of high-risk youths but also provide suggestions for specific domains that should be attended to by clinicians. For example, clinicians can assist youths to develop better relationships and stronger bonding with their family and teachers, or facilitate their involvement with after-school activities.

From a preventive intervention and public policy standpoint, the positive feedback loop found in this study suggests that early intervention to enhance resilience of high-risk youths is crucial. It is important to strengthen traditional bonding with parents and teachers and enhance commitment to school and involvement in extracurricular, prosocial activities (for youths in two-parent households) early to reduce involvement with delinquent peers. Enhancing protective factors may also reduce the effects of adverse life events and parental discord to promote better functioning of high-risk youths.

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## References

- Achenbach, T. M., & Edelbrock, C. S. (1983). *Manual for the Child Behavior Checklist and revised child behavior profile*. Burlington: University of Vermont, Department of Psychiatry.
- Ainsworth, M. D. S. (1989). Attachments beyond infancy. *American Psychologist*, *44*, 709–716.
- Archer, J. (1999). Assessment of the reliability of the Conflict Tactics Scales: A meta-analytic review. *Journal of Interpersonal Violence*, *14*, 1263–1289.
- Aschenbrand, S. G., Angelosante, A. G., & Kendall, P. C. (2005). Discriminant validity and clinical utility of the cbcl with anxiety-disordered youth. *Journal of Clinical Child and Adolescent Psychology*, *34*, 735–746.
- Bandura, A. (1969). *Principles of behavior modification*. New York: Holt, Rinehart & Winston.
- Barber, B. L., Eccles, J. S., & Stone, M. R. (2001). Whatever happened to the jock, the brain, and the princess? Young adult pathways linked to adolescent activity involvement and social identity. *Journal of Adolescent Research*, *16*, 429–455.
- Belsky, J. (1981). Early human experience: A family perspective. *Developmental Psychology*, *17*, 3–23.
- Bowlby, J. (1969). *Attachment: Attachment and loss*. New York: Basic Books.
- Brookmeyer, K. A., Henrich, C. C., & Schwab-Stone, M. (2005). Adolescents who witness community violence: Can parent support and prosocial cognitions protect them from committing violence? *Child Development*, *76*, 917–929.
- Brown, A., & Achenbach, T. M. (1993). *Bibliography of published studies using the Child Behavior Checklist and related materials: 1993 edition*. Burlington: University of Vermont.
- Campbell-Sills, L., Cohan, S. L., & Stein, M. B. (2006). Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behaviour Research and Therapy*, *44*, 585–599.
- Capaldi, D. M., & Patterson, G. R. (1989). *Psychometric properties of fourteen latent constructs from the Oregon Youth Study*. New York: Springer.
- Carlton, B. S., Goebert, D. A., Miyamoto, R. H., Andrade, N. N., Hishinuma, E. S., Makini, G. K., Jr, et al. (2006). Resilience, family adversity and well-being among Hawaiian and non-Hawaiian adolescents. *International Journal of Social Psychiatry*, *52*, 291–308.
- Carter, M. M., Sbrocco, T., Lewis, E. L., & Friedman, E. K. (2001). Parental bonding and anxiety: Differences between African American and European American college students. *Journal of Anxiety Disorders*, *15*, 555–569.
- Catalano, R. F., Haggerty, K. P., Oesterle, S., Fleming, C. B., & Hawkins, J. D. (2004). The importance of bonding to school for healthy development: Findings from the social development research group. *Journal of School Health*, *74*, 252–261.
- Cooper, H., Valentine, J. C., Nye, B., & Lindsay, J. J. (1999). Relationships between five after-school activities and academic achievement. *Journal of Educational Psychology*, *91*, 369–378.
- Dohrenwend, B. P. (1998). *Adversity, stress, and psychopathology*. New York: Oxford University Press.
- Eaton, W. W., & Dohrenwend, B. P. (1998). Individual events. In Bruce Dohrenwend (Ed.), *Adversity, stress, and psychopathology*. New York: Oxford University Press.
- Eccles, J. S., Barber, B. L., Stone, M., & Hunt, J. (2003). Extracurricular activities and adolescent development. *Journal of Social Issues*, *59*, 865–889.
- Elder, C., Leaver-Dunn, D., Wang, M. Q., Nagy, S., & Green, L. (2000). Organized group activity as a protective factor against adolescent substance use. *American Journal of Health Behavior*, *24*, 108–113.
- Elliott, D. S., Huizinga, D., & Ageton, S. S. (1985). *Explaining delinquency and drug use*. Beverly Hills: Sage.
- Elliott, D. S., Wilson, W. J., Huizinga, D., Sampson, R. J., Elliott, A., & Rankin, B. (1996). The effects of neighborhood disadvantage on adolescent development. *Journal of Research in Crime and Delinquency*, *33*, 389–427.
- Emery, R. E. (1982). Interparental conflict and the children of discord and divorce. *Psychological Bulletin*, *92*, 310–330.
- Esbensen, F. A., & Huizinga, D. (1991). Community structure and drug use from a social disorganization perspective. *Justice Quarterly*, *7*, 691–709.
- Esbensen, F., & Huizinga, D. (1993). Gangs, drugs, and delinquency in a survey of urban youth. *Criminology*, *31*, 565–589.
- Evans, G. W., & English, K. (2002). The environment of poverty: Multiple stressor exposure, psychophysiological stress, and socioemotional adjustment. *Child Development*, *73*, 1238–1248.
- Farber, E. A., & Egeland, B. (1987). Invulnerability among abused and neglected children. In E. J. Anthony & B. J. Cohler (Eds.), *The invulnerable child* (pp. 253–288). New York: Guilford.
- Farrington, D. P., Loeber, R., Stouthamer-Loeber, M., VonKammen, W. B., & Schmidt, L. (1996). Self-reported delinquency and a combined delinquency seriousness scale based on boys, mothers, and teachers: Concurrent and predictive validity for African Americans and Caucasians. *Criminology*, *34*, 493–517.
- Fredricks, J. A., & Eccles, J. S. (2006). Is extracurricular participation associated with beneficial outcomes? Concurrent and longitudinal relations. *Developmental Psychology*, *42*, 698–713.
- Garmezy, N. (1985). Stress-resistant children: The search for protective factors. In J. E. Stevenson (Ed.), *Recent research in developmental psychopathology* (pp. 213–233). Pergamon: Oxford.

- Gorman-Smith, D., Henry, D. B., & Tolan, P. H. (2004). Exposure to community violence and violence perpetration: The protective effects of family functioning. *Journal of Clinical Child and Adolescent Psychology, 33*, 439–449.
- Hamre, B. K., & Pianta, R. C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72*, 625–638.
- Hawkins, J. D., Guo, J., Hill, K. G., Battin-Pearson, S., & Abbott, R. D. (2001). Long-term effects of the Seattle Social Development Intervention on school bonding trajectories. *Applied Developmental Science, 5*, 225–236.
- Hayduk, L. A. (1987). *Structural equation modeling with LISREL*. Baltimore: The John Hopkins University Press.
- Haynie, D. L. (2001). Delinquent peers revisited: Does network structure matter? *American Journal of Sociology, 106*, 1013–1057.
- Hirschi, T. (1969). *Causes of delinquency*. Berkeley: University of California Press.
- Huizinga, D., & Elliott, D. S. (1986). Reassessing the reliability and validity of self-report delinquent measures. *Journal of Quantitative Criminology, 2*, 293–327.
- Huizinga, D., Esbensen, F. A., & Elliott, D. (1988). *The Denver Youth Survey: Project overview*. Denver Youth Survey Project report 1, Institute of Behavioral Science, University of Colorado. Available from the National Criminal Justice Reference Service, Rockville, MD.
- Huizinga, D., Loeber, R., & Thornberry, T. (1994). *Urban delinquency and drug use*. Office of Juvenile Justice and Delinquency Prevention, United States Department of Justice.
- Huizinga, D., Weiher, A. W., Espiritu, R. C., & Esbensen, F. A. (2003). Delinquency and crime: Some highlights from the Denver Youth Survey. In T. P. Thornberry & M. Krohn (Eds.), *Taking stock: An overview of findings from contemporary longitudinal studies*. New York: Plenum.
- Jaffee, S. R., & Gallop, R. (2007). Social, emotional, and academic competence among children who have had contact with child protective services: Prevalence and stability estimates. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 757–765.
- Johnson, R. E. (1979). *Juvenile delinquency and its origins*. Cambridge, MA: Cambridge University Press.
- Johnson, P. L., & O'Leary, K. D. (1987). Parental behavior patterns and conduct disorders in girls. *Journal of Abnormal Child Psychology, 15*, 573–581.
- Joreskog, K. G., & Sorbom, D. (1989). *LISREL 7 user's reference guide*. Mooresville, IN: Scientific Software.
- Kenny, M. (1994). Quality and correlates of parental attachment among late adolescents. *Journal of Counseling and Development, 72*, 399–402.
- Kerr, M., & Stattin, H. (2000). What parents know, how they know it, and several forms of adolescent adjustment: Further support for a reinterpretation of monitoring. *Developmental Psychology, 36*, 366–380.
- Kitzmann, K. M. (2000). Effects of marital conflict on subsequent triadic family interactions and parenting. *Developmental Psychology, 36*, 3–13.
- Kuendig, H., & Kuntsche, E. (2006). Family bonding and adolescent alcohol use: Moderating effect of living with excessive drinking parents. *Alcohol and Alcoholism, 41*, 464–471.
- Lacourse, E., Nagin, D. S., Vitaro, F., Cote, S., Arseneault, L., & Tremblay, R. E. (2006). Prediction of early-onset deviant peer group affiliation. *Archives of General Psychiatry, 63*, 562–568.
- Lagrange, R. L., & White, H. R. (1985). Age differences in delinquency: A test of theory. *Criminology, 23*, 19–45.
- Lahey, B. B., Waldman, I. D., & McBurnett, K. (1999). Annotation: The development of antisocial behavior: An integrative causal model. *Journal of Child Psychology and Psychiatry, 40*, 669–682.
- Lambert, S. F., Brown, T. L., Phillips, C. M., & Jalongo, N. S. (2004). The relationship between perceptions of neighborhood characteristics and substance use among urban African American adolescents. *American Journal of Community Psychology, 34*, 205–218.
- Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin, 126*, 309–337.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*, 543–562.
- Lynskey, M. T., & Fergusson, D. M. (1997). Factors protecting against the development of adjustment difficulties in young adults exposed to childhood sexual abuse. *Child Abuse and Neglect, 21*, 1177–1190.
- Mahoney, J. L. (2000). School extracurricular activity participation as a moderator in the development of antisocial patterns. *Child Development, 71*, 502–516.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*, 227–238.
- Masten, A. S., Burt, K. B., Roisman, G. I., Obradovic, J., Long, J. D., & Tellegen, A. (2004). Resources and resilience in the transition to adulthood: Continuity and change. *Development and Psychopathology, 16*, 1071–1094.
- Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. (1999). Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology, 11*, 143–169.
- Masten, A. S., & Obradovic, J. (2006). Competence and resilience in development. *Annals of the New York Academy of Sciences, 1094*, 13–27.
- O'Donnell, D. A., Schwab-Stone, M. E., & Muyeed, A. Z. (2002). Multidimensional resilience in urban children exposed to community violence. *Child Development, 73*, 1265–1282.
- Paterson, J., Pryor, J., & Field, J. (1995). Adolescent attachment to parents and friends in relation to aspects of self-esteem. *Journal of Youth and Adolescence, 24*, 365–376.
- Patterson, G. R., Chamberlain, P., & Reid, J. B. (1982). A comparative evaluation of a parent-training program. *Behavior Therapy, 13*, 638–650.
- Perkins, D. F., Luster, T., & Jank, W. (2002). Protective factors, physical abuse, and purging from community-wide surveys of female adolescents. *Journal of Adolescent Research, 17*, 377–400.
- Perry, J. A., Silvera, D. H., Neilands, T. B., Rosenvinge, J. H., & Hanssen, T. (2008). A study of the relationship between parental bonding, self-concept and eating disturbances in Norwegian and American college populations. *Eating Behaviors, 9*, 13–24.
- Reiss, A. J., Jr. (1951). Delinquency as the failure of personal and social controls. *American Sociology Review, 16*, 196–207.
- Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg self-esteem scale. *Personality and Social Psychology Bulletin, 27*, 151–161.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social disorganization theory. *American Journal of Sociology, 94*, 774–802.
- Sampson, R. J., & Laub, J. H. (1994). Urban poverty and the family context of delinquency: A new look at structure and process in a classic study. In Children and poverty [Special issue]. *Child Development, 65*(52), 3–540.
- Scheier, L. M., Botvin, G. J., & Miller, N. L. (1999). Life events, neighborhood stress, psychosocial functioning, and alcohol use among urban minority youth. *Journal of Child and Adolescent Substance Abuse, 9*, 19–50.

- Schilling, E. A., Aseltine, R. H., Jr., & Gore, S. (2007). Adverse childhood experiences and mental health in young adults: A longitudinal survey. *BMC Public Health*, *7*, 30.
- Shamir, H., Schudlich, T. D. R., & Cummings, E. M. (2001). Marital conflict, parenting styles, and children's representations of family relationships. *Parenting: Science and Practice*, *1*, 123–151.
- Shonk, S. M., & Cicchetti, D. (2001). Maltreatment, competency deficits, and risk for academic and behavioral maladjustment. *Developmental Psychology*, *37*, 3–17.
- Straus, M. A., & Gelles, R. J. (1986). Societal change and change in family violence from 1975 to 1985 as revealed by two national surveys. *Journal of Marriage and the Family*, *48*, 465–479.
- Thornberry, T. P., & Krohn, M. D. (2000). The self-report method for measuring delinquency and crime. In D. Duffee (Ed.), *Measurement and analysis of crime and justice: Criminal justice* (Vol. 4, pp. 33–84). Washington, DC: U.S. Department of Justice.
- Thornberry, T. P., & Krohn, M. D. (2003). *Taking stock of delinquency: An overview of findings from contemporary longitudinal studies*. New York: Kluwer Academic/Plenum.
- Tiet, Q. Q., Bird, H., Davies, M., Hoven, C., Cohen, P., Jensen, P., et al. (1998). Adverse life events and resilience. *Journal of the American Academy of Child and Adolescent Psychiatry*, *37*, 1191–1200.
- Tiet, Q. Q., Bird, H. R., Hoven, C. W., Moore, R., Wu, P., Wicks, J., et al. (2001a). Relationship between specific adverse life events and psychiatric disorders. *Journal of Abnormal Child Psychology*, *29*, 153–164.
- Tiet, Q. Q., Bird, H. R., Hoven, C., Wu, P., Moore, R., & Davies, M. (2001b). Resilience in the face of maternal psychopathology and adverse life events. *Journal of Child and Family Studies*, *10*, 347–365.
- Tiet, Q. Q., & Huizinga, D. (2002). Dimensions of the construct of resilience and adaptation among inner city youth. *Journal of Adolescent Research*, *17*, 260–276.
- Vanderbilt-Adriance, E., & Shaw, D. S. (2006). Neighborhood risk and the development of resilience. *Annals of the New York Academy of Sciences*, *1094*, 359–362.
- Wandersman, A., & Naton, M. (1998). Urban neighborhoods and mental health: Psychological contributions to understanding toxicity, resilience, and interventions. *American Psychologist*, *53*, 647–656.
- Windle, M., & Wiesner, M. (2004). Trajectories of marijuana use from adolescence to young adulthood: Predictors and outcomes. *Developmental Psychopathology*, *16*, 1007–1027.
- Wolfe, T. W., & Shoemaker, D. J. (1999). Actor, situation, and context: A framework for delinquency theory integration. *American Journal of Criminal Justice*, *24*, 117–138.