Published in final edited form as:
J Genet Psychol. 2010 ; 171(2): 116–138.

Gender Differences in Risk and Promotive Classifications Associated With Adolescent Delinquency

Dr Stephen Dennis Whitney, Ph.D.,
University of Missouri, ESCP, 16 Hill Hall, Columbia, 65211 United States

Dr Lynette M Renner, and
University of Iowa, Social Work, Iowa City, United States

Dr Todd I Herrenkohl
Univeristy of Washington, Social Work, Seattle, United States

Stephen Dennis Whitney: whitneyst@missouri.edu; Lynette M Renner: rennerl@missouri.edu; Todd I Herrenkohl: tih@u.washington.edu

Abstract

How likely are children exposed to multiple risk factors to engage in delinquent behavior, to what extent do promotive factors mitigate exposure to these risk factors, and do the predictors of delinquent behavior differ by gender? To address these questions, data from youths (229 males, 187 females) who completed the third wave of the Lehigh Longitudinal Study were analyzed using Latent Profile Analysis. A unique risk/promotive class with slightly elevated rates of exposure to parental violence, mean levels of other risk factors and low levels of promotive factors was present for females but not for males. Additionally, for both males and females, high risk/low promotive individuals were significantly more likely to engage in delinquent behavior than low risk, high promotive cases. Findings suggest the need to examine risk and promotive factors in combination to account for their shared influences on developmental outcomes for youth.

Keywords

risk factors; protective factors; child maltreatment; delinquency; sex differences

Early onset of delinquency significantly increases the risk of serious, violent, and chronic offending in later years (Loeber & Farrington, 2000). To best aid efforts in preventing more serious offending behavior, it is essential that both risk factors (variables having a positive correlation with delinquent behavior) and promotive factors (variables having a negative correlation with delinquent behavior) be studied and well-understood among male and female adolescents. Because the development of delinquency in adolescence occurs in a multi-faceted interactive environment characterized by risk and promotive influences acting simultaneously (Bronfenbrenner & Morris, 1998), it is essential that these risk and promotive factors be analyzed simultaneously. For this study, risk factors are positively related to delinquent behaviors and promotive factors are associated with the likelihood of reduced delinquent behaviors (Loeber, Slot, & Stouthamer-Loeber, 2008). Further, promotive factors operate here as main effects (similar to risk factors), although any mention of protective (variables that, on their own, do not greatly promote non-delinquent behaviors but do seem to protect individuals

Correspondence to: Stephen Dennis Whitney, whitneyst@missouri.edu.

from certain risk factors) factors reflect an interaction effect that is greater when risk is high than when risk is low (Loeber, Slot, & Stouthamer-Loeber, 2008).

Review of Literature

Risk Factors for Delinquent Behavior

Physical abuse and exposure to parental intimate partner (domestic) violence (IPV) during childhood are among the most potent risk factors for a range of behavior problems for youth (Cicchetti, 2004; Sabol, Coulton, & Korbin, 2004) and the significant co-occurrence between child maltreatment and adult IPV has been well-documented (Appel & Holden, 1998; Edleson, 1999; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008; Renner & Slack, 2006). Child abuse has been associated with delinquency during adolescence (Ireland, Smith, Thornberry, 2002; Lemmon, 1999; Smith, & Thornberry, 1995; Stouthamer-Loeber, Loeber, Homish, & Weit, 2001; Thornberry, Ireland, & Smith, 2001) but some findings suggest that exposure to IPV is a stronger predictor of youth delinquency than child abuse (Herrera & McCloskey, 2001). Other studies have documented the “double whammy” effect of child abuse and exposure to IPV on later behavior problems (Hughes, Parkinson, & Vargo, 1989; Sternberg et al., 1993; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003).

Research also suggests that child abuse and exposure to IPV often co-occur with other risks, including family characteristics, such as low SES (Farrington, & Loeber, 2000; Herrenkohl, Tajima, Whitney, & Huang, 2005; Loeber, Slot, & Stouthamer-Loeber, 2008) and child characteristics, such as low IQ (Herrenkohl, Tajima, Whitney, & Huang, 2005; Loeber, Slot, & Stouthamer-Loeber, 2008). Early behavior problems (Bor, McGee, & Fagan, 2004; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998; Simonoff, Elander, Holmshaw, Pickles, Murray, & Rutter, 2004; Stouthamer-Loeber & Loeber, 2002), hyperactivity, impulsivity, and communication problems in childhood (Loeber, 1990), and poor social skills (Loeber, Slot, & Stouthamer-Loeber, 2008) have also been identified as risk factors for delinquency at later developmental stages. In addition, youth most likely to experience later problems are those who encounter several risk factors in combination (Pungello, Kupersmidt, Burchinal, & Patterson, 1996). Exposure to simultaneously occurring, multiple risk factors are associated with problematic youth outcomes including delinquency (Herrenkohl, Maguin, Hill, Hawkins, Prelow, & Loukas, 2003; Sameroff, Gutman, & Peck, 2003).

Risk Factors for Delinquent Behavior by Gender

Some research findings indicate different risks for the development of delinquent behaviors among boys and girls (Broidy et al., 2003; Fagan, Van Horn, Hawkins, & Arthur, 2007; Gorman-Smith, & Loeber, 2005; Hart, O’Toole, Price-Sharps, & Shaffer, 2007; Kroneman, Loeber, & Hipwell, 2004; Liu & Kaplan, 2004; Piquero & Sealock, 2004) suggesting unique developmental pathways across gender.

For example, in a study including over 7,000 adolescents from six sites within three countries, Broidy et al. (2003) found a strong relationship between early aggressive behaviors and continuous delinquency among boys but found no similar relationship among girls. The authors point out this may be due to a lack of variance among young girls and early aggressive behaviors but also find a notable lack of consistency between early aggressive behaviors and later delinquency among girls. Thus, the authors conclude the there may be different etiologies for boys and girls in the development of delinquent behaviors. Similarly, in a study of 7,829 10^{th} grade adolescents, Fagan, Van Horn, Hawkins, and Arthur (2007) found boys experience higher exposure to multiple risks associated with later delinquency than females. Specifically, males’ experiences included higher levels of peer delinquency, rebelliousness and academic failure, among other risk factors, although, females experienced greater family conflict and

lower levels of attachment to fathers. Study findings indicate the developmental trajectory leading to delinquency runs through social relationships for females and through multiple forms of risks for males.

Promotive Factors for Delinquent Behavior

Although the majority of research on delinquent behavior has focused on risk factors, some research has indicated the multiple nature of promotive factors as a negative influence in the development of delinquent behavior (Fagan, Van Horn, Hawkins, & Arthur, 2007). Identified promotive factors against the development of delinquency include having a positive orientation to school and positive relations with adults (Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995), positive parenting styles (Henry, Tolan, & Gorman-Smith, 2001), parental disapproval for child problem behavior (Loeber, Slot, & Stouthamer-Loeber, 2008), involvement in extracurricular activities (Hart, O'Toole, Prince-Sharps, & Shaffer, 2007) and closeness to family (Fagan, Van Horn, Hawkins, & Arthur, 2007).

Promotive Factors for Delinquent Behavior by Gender

In addition to an increase in studies focused on promotive factors in general, in recent years, research examining possible gender differences of promotive factors in the development of delinquency has emerged. For example, Fagan, Van Horn, Hawkins, and Arthur (2007) found higher levels of promotive factors including more prosocial opportunities and better social skills among females when compared to males but a similar number of promotive factors. These findings may indicate that higher rates of delinquency in males may be due to lower levels of promotive factors in combination with higher exposure to risk factors when compared to females.

Present Study

Despite research focused individually on risk or promotive factors of delinquent behavior among adolescents, only a few studies have examined the simultaneous nature of multiple risk factors and multiple promotive or protective factors within a single study (see Fagan, Van Horn, Hawkins, & Arthur, 2007; Hart, O'Toole, Price-Sharps, & Shaffer, 2007; Stouthamer-Loeber, Wei, Homish, & Loeber, 2002). Similarly, few studies have examined the simultaneous nature of risk and promotive or protective factors in the development of delinquency over time (see Carr & Vandiver, 2001; Fagan, Van Horn, Hawkins, & Arthur, 2007; Hart, O'Toole, Prince-Sharps, & Shaffer, 2007; Titzmann, Raabe, & Silbereisen, 2008). Narrowing the scope even further, only a few of these studies examined multiple risk and promotive or protective factors differences based upon gender (see Fagan, Van Horn, Hawkins, & Arthur, 2007; Hart, O'Toole, Prince-Sharps, & Shaffer, 2007).

Using a holistic model based on ecological developmental theory, the present study examines the influence of multiple risks and multiple promotive factors on the development of delinquency for males and females. To test and integrate the theoretical tenets of ecological development theory, latent constructs are used to represent the different ecological systems, or parts of systems, as a way of modeling the individual within context. These latent constructs are manifested in the current study as clusters of risk and promotive factors through the use of latent profile analysis (LPA). Analyses were conducted separately by gender because it is hypothesized that males and females will show distinctly different risk/promotive profiles. Based on findings from previous studies, we postulate that several unique classes will emerge from our study. As shown in Figure 1, we hypothesize the following classes will emerge:

1. A 'low-risk, high-promotive' class that will exhibit the least amount of delinquent behaviors. We expect this class will emerge for both males and females.

2. A ‘violence’ class that is high on both physical child abuse and exposure to IPV with mean levels (or below) on other risk factors and low levels on promotive factors. This class is expected to engage in the highest levels of delinquent behaviors and we hypothesize this class will emerge for both males and females;
3. An ‘external, multiple risk’ class that will show elevated levels of social/attention problems and early problem behaviors. We anticipate this class will exhibit a moderate level of delinquent behaviors and we expect this class will only be present for males.
4. A ‘social promotive’ class of elevated levels promotive factors and moderate risks with low levels of delinquent behaviors. We expect this class will emerge for females who have high levels of socially-oriented promotive factors, such as parental/peer disapproval of anti-social behavior and perceived parental responsiveness and acceptance.

Method

Subjects were drawn from the Lehigh Longitudinal study and data collection for the original sample of preschool children and their families was completed in 1976–77. At the time of the first assessment the 457 children ranged in age from 18 months to six years. A second, school-age assessment was completed in 1980–1982 when the children were between 6 and 11 years old, and 82% of children from Wave 1 were retained in Wave 2 (n=374). A third and final assessment was completed in 1990–1992 when children in the sample were adolescents (average age=18 years), and 416 of the initial 457 children (91%) were retained in Wave 3. These 416 adolescents made up the sample used in this study. Written consent to participate in the first two waves of the study was given by the children’s parents and consent for Wave 3 was obtained in writing from each adolescent.

The original study participants were sampled from child protective service units in two county child welfare programs in Pennsylvania. In addition, participants were also drawn from 13 Head Start centers, 12 day care programs, two programs for children with disabilities children, three Home Start programs, and eight nursery school programs all serving the same two-county area. Families from the child welfare programs were divided into two groups: those cited for documented physical abuse (called ‘child welfare abuse’) and those receiving services due to concerns of child neglect (called ‘child welfare neglect’). The child/family participants recruited from the Head Start, day care, Home Start, and nursery school programs comprised the non-abused control group.

The overall Wave 1 sample (N= 457) contained 248 (54%) males and 209 females from 297 families. The majority of families (52%) had one child participating in the study, although 43% of families had two participating children and 5% had either three or four children in the study. The racial breakdown of the original sample was: 80.7% (n=369) White, 1.3% (n=6) American Indian/Alaska Native, 0.2% (n=1) Native Hawaiian or Other Pacific Islander, 5.3% (n=24) Black or African American, 11.2% (n=51) more than one race, and 1.3% (n=6) unknown. The ethnic composition of the original sample was: 7.1% (n=33) Hispanic or Latino, 91.5% (n=381) Not Hispanic or Latino, and 1.3% (n=6) unknown. These percentages are consistent with the makeup of the two-county area from which the sample was drawn. The majority of children (86%) lived in two-parent households at the time of initial assessment and 63% (n=425) of families had monthly incomes below $700 in 1976–1977.

Of the 416 participants assessed in Wave 3 as adolescents, 229 (55.0%) were males and 187 (45.0%) were females. Table 1 presents descriptive statistics on the final adolescent sample along with means and standard deviations for the study outcome and selected risk and promotive factors. The table shows the descriptive statistics separately for males and females,

and standardized means and standard deviations do not equal 0 and 1 because the scales were created using the whole sample and then split by gender. For variables that were standardized, means and standard deviations are 0 and 1 for the sample as a whole.

The equality of attrition across groups (in adolescence) was tested. Percentages lost to attrition from each composite group in the sample (e.g., child welfare abuse) were not significantly different. Further, no significant differences were found when those lost to attrition and those who remained in the study were compared on several key variables, including childhood SES and severity of physical discipline (see Herrenkohl, Tajima, Whitney, & Huang, 2005 for attrition analysis).

Measures

Risk Factors

Physical child abuse: Self–reported acts of physically abusive discipline were provided by primary caregivers (mostly mothers) in the first two waves of the larger study. These acts included hitting a child with a strap, biting a child, and hitting a child so as to bruise the child. Each item was weighted for severity according to ratings provided independently by social welfare professionals to question about physical abuse. To adhere to the ecological developmental theoretical framework and to represent the severity and chronicity of physical child abuse items were summed based on the weighted scores (α=.68).

Exposure to IPV: Using a retrospective report from Wave 3, each adolescent identified the number of times during their lifetime they recalled their mother being hit, pushed, or kicked by their father. The same question was asked of participants about their fathers being victimized by their mother. Responses were then averaged and combined (α=.65).

Low IQ: IQ scores were based on three measures: the Wechsler Intelligence Scale for Children-Revised (WISC-R) (Wechsler, 1974), the McCarthy Scales of Cognitive Ability (McCarthy, 1972), and a review of school records. The McCarthy Scales of Cognitive Ability was administered to children in the 1st wave of the study, and based on its similarity to the McCarthy Scales, the Wechsler Intelligence Scale for Children-Revised (WISC-R) was administered in the 2nd wave. Not all of the original study participants could be located or agreed to participate in the 2nd wave so not all of the original respondents were given the WISC-R. In addition, scheduling conflicts in Wave 2 led to only 341 of the 374 participants being given the WISC-R. For the cases where the WISC-R was not available, scores from the McCarthy Scales of Cognitive Ability and school records were used. All scores were weighted and combined using standardized scores to create a continuous variable.

Early problem behavior: Data on school-age delinquency and aggression were taken from the Child Behavior Checklist (CBCL) (Achenbach, 1978, 1999; Achenbach & Edelbrock, 1979). Data (on children) from mothers were organized as two subscales of aggression (18 items: e.g., teases, cruel or mean to others, destroys things) and early delinquency (10 items: e.g., vandalizes, steals, runs away) behaviors. Items for the two subscales (α = .84 and .71 respectively) were standardized and added to form a single measure to lessen a problem with multicollinearity and to broaden the dimension of early problem behavior used in the analysis. The combined scale, based on a total of 28 individual items, has a standardized alpha of .87 and was collected during the second wave of data or when the subjects were school age.

Social and attention problems: Data on school-aged social and attention problems were also from the modified CBCL instrument used in the school-age assessment of the original study. These were kept separate from the other early problem behavior scales because they represent distinct, theoretically meaningful constructs that may relate differently to the hypothesized

outcome (Hawkins, Herrenkohl, Farrington, Brewer, Catalano, & Harachi, 1998). Mothers' reports of their children's behavior were again combined in a composite scale, and for this study, 20 items were used (e.g., "Is easily distracted," "Has short attention span," and "Doesn't get along with other children"). The full scale has a standardized alpha of .80 and was collected during the second wave of data or when the subjects were school age.

Low SES: Socioeconomic status (SES) was created from a composite of parents' occupational status, educational level, family income, and the total number of rooms in the family's home from Wave 1 (α= .84).

Promotive Factors

Positive future orientation: A measure of positive future orientation was developed by combining 12 items on youth participants' goals and outlook for the future based on a 5-point scale (1=not at all important, 5= very important). Examples of items include, "How important is it to you to be a success in your work or career?" and "How important is it to you to graduate from college?" The standardized scale alpha for this continuous variable is .68.

Religion (Importance and Involvement): Adolescents rated the current importance and involvement in religion by answering three questions about the importance (1=not at all, 5=very), attendance (1=never, 6=several times a week) and influence (1=very little, 5=a great deal) of religion on their life (e.g. "How important has religion been in your life"). A summary score was constructed using the three item responses (α= .82).

Extracurricular activities: A measure of youths' involvement in extracurricular activities combines responses to two questions asked of adolescents: "How many sports teams, including intramurals, have you been on?" and "How many clubs, organizations or activities have you been involved in?" The final scale is a continuous variable (range 0–17) based on the total number of activities from the two questions.

Parental/Peer disapproval of anti-social behavior: The parental/peer disapproval of anti-social behavior scale consists of responses to 20 questions about the messages adolescents received regarding reactions to antisocial behaviors (e.g., alcohol or drugs, stealing, or perpetrating violence). For example, participants were asked how their parents and/or peers would react on a 5-point scale (1= strongly disapprove, 5=strongly approve) if they sold hard drugs such as heroin, cocaine, and LSD (α= .89).

Perceived parental responsiveness and acceptance: The parental responsiveness and acceptance scale consists of 10 questions gauging the parenting practices used with adolescents. Youth responded on a five point scale (1=Never or almost never true, 5=Always or almost always true) to questions like, "My parents accept me as I am," and "How much support/encouragement have you received from your parents" (1= Very little, 5=A great deal) (α= .85).

Outcome—*Delinquency* was based on a composite, lifetime measure of self-reported acts of law-violating behaviors, such as breaking and entering, and robbery. Thirty-nine acts of delinquency were included, with a range of 0–34 and a mean of 10.84 for the full sample (α= . 92). For males the range is 0–34 with a mean of 13.33 (SD = 8.10), for females the range is 0–26 with a mean of 7.76 (SD = 5.97). The items contained in the delinquency composite provide a broad overview of different types of delinquent behaviors and several match criteria from the DSM-IV-TR for anti-social behavior, including impulsivity, aggressiveness, failure to comply with social norms demonstrated by repeated behaviors that could lead to arrests, and reckless disregard for the safety of self and others.

Control variable—The age of the adolescent at Wave 3 (continuous variable) was included in the analyses as a control variable.

Analysis—Latent profile analysis (LPA) is a statistical method that allows clusters of data to be estimated from unobserved groupings within the data. Although LPA is similar to other types of cluster techniques, like K-mean, it is different in that it is model based and produces probabilities of group membership for each case. The fact that it is model based allows different cluster solutions to be compared using fit indices. The unobserved latent groups estimated with LPA fit well with an understanding of the individual interacting with a complex and changing contextual world as postulated in ecological developmental theory.

LPA was used to establish latent classifications of risk and promotive for both males and females. LPA was used to model the simultaneous experience of risk and promotive factors within individual's lives as postulated by ecological developmental theory. LPA does not assume independence among variables and is appropriate when examining multiple risk and promotive factors that are correlated. Although LPA is an exploratory method and certain class structures have been hypothesized, the authors' use of LPA was guided by the realization that the underlying structure of the unique combination of variables present in this study is not suggested by previous research.

There are several ways to test gender differences within the current analytic framework. The decision to conduct separate LPAs for males and females was guided by the assumption that males and females experience risk and protmotive factors from different developmental trajectories starting at an early age. To provide the clearest possible solution for each case in terms of class placement, LPA assumes that the classes are independent from each other or they are uncorrelated with each other. For the analysis, we used the M*plus* statistical software package (Version 5.01) (Muthén & Muthén, 2001).

Model fit in LPA can be assessed using a variety of statistics, including the Bayesian Information Criteria (BIC). Using this index, models with lower BICs are favored over models with higher BICs (Hagenaars & McCutcheon, 2002). When comparing models, differences between BIC values of less than two is considered weak evidence of model difference, values between two and six points difference is considered positive evidence, and differences of six to 10 are considered strong evidence, where differences of greater than 10 is considered very strong evidence of model difference (Fraley & Raftery, 1998). As a check of the validity of the class and to examine differences between gender, class, and delinquency, a one-way ANOVA with a Scheffé's post hoc analysis was conducted separately for males and females. All measures were standardized to aid in the interpretation of the relative risk/promotive classes by centering the measures means at zero and fixing the standard deviations to be 1 across all scales.

Results

For the sample as a whole, the frequency of select risk and promotive factors were: 31.7% were hit with a strap, rope or belt in Wave 1 (25.1% in Wave 2), 7% were hit so as to leave a bruise in Wave 1 (4.5% in Wave 2), 56% were exposed to IPV (combination of Wave 1 and 2), 15.8% had a low IQ, 85% followed a religious denomination, 62.6% reported a positive future orientation, and 86% reported participating in at least one extracurricular activity. With respect to the outcome variable, 5.7% of the male sample reported engaging in 5 or fewer acts of delinquency, lifetime compared to 8% of the females. Bivariate correlations were run to test the direction of the risk and promotive factors in relation to delinquent behavior, and results are presented in Table 2. With the exceptions of IQ for females and SES for males and females, an overall pattern emerges from the correlation matrix where risk factors are positively

associated with delinquency and promotive factors are negatively associated with the delinquency. For both males and females, parental/peer disapproval of anti-social acts and parental responsiveness and acceptance were the promotive factors with the strongest negative relationship to delinquency. Excluding IQ and SES, the strongest risk factor for delinquency for males was exposure to IPV (r=.28, p<.001) and was physical child abuse for females (r=.21, p<.01). Also, aside from IQ and SES, nearly all risk factors were positively associated with other risks and promotive factors were positively associated with other promotive factors.

Latent Profile Analysis of Risk/Promotive Indicators

To test the hypothesis that males and females differ on risk/promotive classifications, two separate Latent Profile Analyses were conducted – one for males and one for females. For males, a four-class model fit the risk data best (BIC=4966.43), compared to both a three-class model (BIC=4977.35) and a five-class model (BIC=4981.32). The four-class model's average probabilities for assignment were 91% for class one, 86% for class two, 88% for class three, and 97% for class four indicating a clean definition across the four classes. BIC differences between the three-class and four-class model (10.92) and between the four-class and the five-class model (14.89) both indicate very strong evidence for model difference.

Figure 2 and Table 3 show the standardized estimated means for the four latent profile classes for each of the risk/promotive factors for males. As shown, latent class 1 is an 'average' class category with relatively low scores on all risk items and sample mean scores on promotive items. Latent class 2 represents a 'mixed' class with elevated levels of physical abuse, early problem behaviors, and early attention and social problems, and mean level of exposure to IPV. IQ and SES are below the sample mean for this class and the only promotive factor above the sample mean is religious importance/involvement. Latent class 3 represents a 'high-risk, low-promotive' category with relatively low scores on IQ and SES and relatively high scores on physical child abuse, IPV exposure, early problem behavior, and school-aged social and attention problems with low levels on all promotive factors. Latent class 4 represents a 'low-risk, high-promotive' category, with elevated levels of IQ and SES, low scores on physical abuse, exposure to IPV, early problem behaviors, and school-aged social and attention problems with high levels present for all promotive factors.

For females, a five-class model fit the risk data best (BIC=3834.26), compared to both a four-class model (BIC=3853.86) and a six-class model (BIC=3854.12). The five-class model's average probabilities for assignment were 86% for class one, 99% for class two, 99% for class three, 92% for class four and 92% for class five, indicating a clean definition across the five classes. BIC differences between the four-class and five-class model (19.60) indicate very strong evidence for model difference between those two models. However, the BIC difference between the five-class and the six-class models was very weak (.26). Due to the weak evidence of model difference indicated by the BIC other fit indices were examined to determine the best fit between these two cluster solutions. The entropy for the five-class model was higher than for the six-class model, .887 compared to .838. The five-class model's average probabilities for assignment were also slightly better than the six-class model's average probabilities (87, 99, 99, 92, 92, compared to 99, 85, 86, 99, 76, respectively).

Figure 3 and Table 4 show the standardized estimated means for the five latent profile classes for each of the risk/promotive factors for females. As shown, latent class 1 represents a 'moderate-risk, moderate-promotive' class with low levels of SES and IQ, moderate levels of risk factors and some promotive factors. Latent class 2 represents a 'low-risk, high-promotive' category, with elevated levels of IQ and SES, low scores on physical abuse, exposure to IPV, early problem behaviors, and school-aged social and attention problems with high levels present for all promotive factors. Latent class 3 represents an 'exposure to IPV, low-promotive' class with relatively high scores on exposure to IPV and low levels on all promotive factors.

Latent class 4 represents a 'high-risk, low-promotive' category with relatively low scores on IQ and SES and relatively high scores on physical child abuse, exposure to IPV, early problem behavior, and school-aged social and attention problems with low levels on all promotive factors. Finally, latent class 5 is an 'average' class category with relatively low scores on all risk items and sample mean scores on promotive items.

Relationship between Risk/Promotive Classes and Delinquency

To validate the class solutions derived from the LPA and to predict later delinquency, a mean comparison was conducted using an ANOVA separately for males and females. Significant mean differences derived from a one-way ANOVA with Scheffé's correction are shown in Table 5 for males and Table 6 for females. Significant differences between the risk/promotive classes exist for both males and females in relation to delinquency. Cases that experienced low levels of promotive and high levels of risk reported the highest levels of delinquency when compared to other risk/promotive classes, and this finding is consistent with previous research (Herrenkohl et al., 2005;Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008). Interestingly, however, the female class with elevated levels of exposure to IPV showed the same pattern of engaging in significantly more delinquent behavior than all of the other risk/promotive classes with the exception of the high risk/low promotive group.

Discussion

Findings supported the first hypothesis that a 'low-risk, high-promotive' class would emerge for both males and females and that this class would engage in the least amount of delinquent behaviors. However, the other three hypotheses were not supported. Risk factors of physical child abuse and exposure to IPV did not form a separate 'violence' class for males or females in this study. Rather, these two risk factors were associated with other risk and promotive factors within the model and the second hypothesis was not upheld. The third hypothesis predicted an 'external multiple risk' class with elevated levels of social/attention problems and early problem behaviors for males. Although the results did reveal a connection between, the two 'external risk factors' of social/attention problems and early problem behaviors, these two risks also occurred within the framework of elevated levels of physical child abuse and exposure to IPV and lower levels of IQ and SES. Therefore, the hypothesized connection between external risk factors only and delinquency was not supported for males due to their simultaneous co-occurrence with other risk factors. Our fourth hypothesis predicted a 'social promotive' class for females with elevated levels of parental/peer disapproval of anti-social behaviors and perceived parental responsiveness and acceptance. There was an 'average' class for females that showed some slightly elevated levels of parental/peer disapproval of anti-social behaviors and perceived parental responsiveness and acceptance; however, these promotive factors were very close to the sample average and occurred within a class that exhibited normal sample levels of risk factors.

Although not all of our hypotheses were upheld, the analysis did reveal distinct risk/promotive classes for both males and females that warrant attention. Our analysis indicated four classes for males: 1) an 'average' class with low scores on all risk items and sample mean scores on promotive items, 2) a 'mixed' class with elevated levels of physical abuse, early problem behaviors, and school-aged social and attention problems and mean level of exposure to IPV, 3) a 'high-risk, low-promotive' class, and 4) a 'low-risk, high-promotive' class. For females, five classes were revealed, including 1) a 'moderate-risk, moderate-promotive' class with low levels of SES and IQ, moderate levels of other risk factors and some promotive factors, 2) a 'low-risk, high-promotive' category, 3) an 'IPV, low-promotive' class with relatively high scores on exposure to IPV and low levels on all promotive factors, 4) a 'high-risk, low-

promotive' category, and 5) an 'average' class category with relatively low scores on all risk items and sample mean scores on promotive items.

Results also indicated some differences between the classes across gender. Data from males revealed a risk/promotive class that was high on child physical abuse, with mean levels of exposure to IPV that was not present for females (the mixed class). Similarly, the risk/promotive classes for females revealed a class (IPV, low-promotive class) with slightly elevated rates of exposure to IPV, mean levels of other risk factors, and low levels of protective factors that were not present for males. Risk/promotive classes also indicated that importance/involvement in religion, extracurricular activities and parental responsiveness/acceptance are important promotive factors for both males and females, and that parental/peer disapproval of anti-social behavior may be an important promotive factor for females only.

The finding that the female class with elevated levels of exposure to IPV showed the same pattern of engaging in significantly more delinquency than all of the other risk/promotive classes except the high risk/low promotive group was unexpected and points to the potentially important influence of exposure to IPV on the development of delinquent behaviors specifically within females. This finding shows exposure to IPV may be an important factor behind delinquent behaviors among some females and may be related to one's struggle to control her environments. An adolescent female who is exposed to violence perpetrated against her mother may feel unable to effectively intervene in the family environment. This feeling of helplessness at home may lead these females to spend less time at home and more time with peers, some of whom may be engaged in delinquent behaviors themselves.

The finding that parental/peer disapproval of anti-social behavior may be a significant promotive factor for females but not for males may be due to the different socialization and family rules that females are exposed to although growing up. Female adolescents experience greater supervision than males (Daigle, Cullen, & Wright, 2007), and parental control and parental supervision has been linked with the development of greater self-control within females (Blackwell & Piquero, 2005). Greater self-control, therefore, may also be an important promotive factor when faced with decisions about how to act in the face of multiple simultaneously experienced risk factors.

The study strengths lie in its examination of multiple risk and promotive factors as a single and indivisible unit of analysis. That is, as factors that occur simultaneously within the experience of individuals, and as such, their contributions to developmental behaviors should be modeled from a holistic standpoint. The view that risk and promotive factors are indivisible within the individual and the modeling of that holistic approach using latent constructs acts as an empirical test of the ecological development theory. As predicted by the theory, risk and promotive factors work in combination to influence the individual's developmental trajectory toward or away from the development of delinquency.

One limitation of the study is the possible validity of other alternative hypotheses for the findings, including the idea that youth with social/attention problems and behaviors could be seen as the sequelae of trauma from child physical abuse and exposure to parental IPV. This explanation assumes a casual relationship with the trauma being experienced before the development of social and attention problems and behaviors. While this may be the case, the present study assumes a co-occurrence of these factors in a reciprocal relationship where the causal direction of the two factors may not be easily disengaged.

A second limitation of the study is that secondary data was used, and consequently several risk and promotive factors that may have an influence on the development of delinquency were not able to be included in the analysis. Future studies might include other risk (e.g., child neglect, substance use, high parental stress) and promotive (e.g., mentoring by adults) factors that have

shown relationships with delinquency. The study sample also represents a high-risk sample, largely taken from cases of child abuse and neglect, which has limited diversity in terms of racial and cultural differences that may influence the development of risk and promotive factors. Future directions for research should utilize a larger, more diverse population which would allow the important contributions of race, ethnicity and culture on the development of delinquent behaviors to be examined.

Because research studies have identified several individual risk and promotive factors for delinquency, the next important step is to understand precisely how promotive factors may influence risk exposure. Future research that addresses questions such as "Do promotive factors alleviate the influence of risk factors *after* they have been experienced, or do they *act to prevent* exposure to risk factors?" could make substantial contributions to the literature. The current analysis suggests that the experience of most individuals is complex, with both risks and promotive factors occurring simultaneously. These unique combinations of risks and promotive factors or developmental profiles may lead to a more detailed understanding of the current experience of youths, which may in turn lead to more precise intervention and prevention strategies. Because early delinquency is a predictor for later more serious and violent offending behavior, more precise interventions that can better account for the uniqueness of the individual and his or her environment would make substantial contributions to the practice field. Such strategies could concentrate on the multiple forms of risk that are present and focus on strengthening multiple promotive factors within the individual and the environment.

References

Achenbach, TM. The Child Behavior Checklist and related instruments. In: Maruish, ME., editor. The use of psychological testing for treatment planning and outcomes assessment. 2nd ed.. Mahwah, NJ: Lawrence Erlbaum Associates; 1999.

Achenbach TM. The Child Behavior Profile: I. Boys aged 6–11. Journal of Consulting & Clinical Psychology 1978;46:478–488. [PubMed: 670491]

Achenbach TM, Edelbrock CS. The Child Behavior Profile: II. Boys aged 12–16 and girls aged 6–11 and 12–16. Journal of Consulting & Clinical Psychology 1979;47:223–233. [PubMed: 469068]

Appel AE, Holden GW. The co-occurrence of spouse and physical child abuse: A review and appraisal. Journal of Family Psychology 1998;12(4):578–599.

Blackwell BS, Piquero AR. On the relationships between gender, power control, self-control, and crime. Journal of Criminal Justice 2005;33(1):1–17.

Bor W, McGee TR, Fagan AA. Early risk factors for adolescent antisocial behaviour: An Australian longitudinal study. Australian & New Zealand Journal of Psychiatry 2004;38:365–372. [PubMed: 15144516]

Broidy LM, Nagin DS, Tremblay RE, Bates JE, Brame B, Dodge KA, et al. Developmental trajectories of childhood disruptive behaviors and adolescent delinquency: A six-site, cross-national study. Developmental trajectories of childhood disruptive behaviors and adolescent delinquency: A six-site, cross-national study 2003;39(2):222–245.

Bronfenbrenner, U.; Morris, PA. The ecology of developmental processes. In: Damon, W., editor. Handbook of Child Psychology. Vol. Vol. 5th. New York, N.Y: John Wiley & Sons, Inc; 1998.

Carr MB, Vandiver TA. Risk and protective factors among youth offenders. Adolescence 2001;35(143): 409–426. [PubMed: 11817624]

Cicchetti D. An odyssey of discovery: Lessons learned through three decades of research on child maltreatment. American Psychologist 2004;59:731–741. [PubMed: 15554837]

Daigle LE, Cullen FT, Wright JP. Gender differences in the predictors of juvenile delinquency: Assessing the generality-specificity debate. Youth Violence and Juvenile Justice 2007;5(3):254–286.

Edleson JL. The overlap between child maltreatment and woman battering. Violence Against Women 1999;5(2):134–154.

Fagan AA, Van Horn VL, Hawkins JD, Arthur MW. Gender similarities and differences in the association between risk and protective factors and self-reported serious delinquency. Prevention Science 2007;8:115–124. [PubMed: 17226092]

Farrington DP, Loeber R. Epidemiology of juvenile violence. Child and Adolescent Psychiatric Clinical of North America 2000;9:733–748.

Fraley C, Raftery AE. How many clusters? Which cluster method? Answers via model-based cluster analysis. The Computer Journal 1998;41(8):578–588.

Gorman-Smith D, Loeber R. Are Developmental Pathways in Disruptive Behaviors the Same for Girls and Boys? Journal of Child and Family Studies 2005;14(1):15–27.

Hagenaars, JA.; McCutcheon, AL. Applied Latent Class Analysis. Cambridge, UK: Cambridge University Press; 2002.

Hawkins, JD.; Herrenkohl, T.; Farrington, DP.; Brewer, D.; Catalano, RF.; Harachi, TW. A review of predictors of youth violence. In: Loeber, R.; Farrington, DP., editors. Serious & violent juvenile offenders: Risk factors and successful interventions. Thousand Oaks, CA: Sage Publications, Inc; 1998.

Hawkins, SR.; Graham, PW.; Williams, J.; Zahn, MA. Resilient girls: Factors that protect against delinquency. 2009. OJJDP Girls Study Group Series, NCJ 220124. Available: http://www.ncjrs.gov/pdffiles1/ojjdp/220124.pdf

Hart JL, O'Toole SK, Prince-Sharps JL, Shaffer TW. The risk and protective factors of violent juvenile offending: An examination of gender differences. Youth Violence and Juvenile Justice 2007;5:367–384.

Henry DB, Tolan PH, Gorman-Smith D. Longitudinal family and peer group effects on violence and nonviolent delinquency. Journal of Clinical Child Psychology 2001;30(2):172–186. [PubMed: 11393918]

Herrera VM, McCloskey LA. Gender differences in the risk for delinquency among youth exposed to family violence. Child Abuse & Neglect 2001;25(8):1037–1051. [PubMed: 11601596]

Herrenkohl EC, Herrenkohl RC, Egolf BP. Resilient early school-age children from maltreating homes: Outcomes in late adolescence. American Journal of Orthopsychiatry 1994;64:301–309. [PubMed: 8037238]

Herrenkohl TI, Maguin E, Hill KG, Hawkins JD, Abbott RD, Catalano RF. Developmental risk factors for youth violence. Journal of Adolescent Health 2000;26(3):176–186. [PubMed: 10706165]

Herrenkohl TI, Sousa C, Tajima EA, Herrenkohl RC, Moylan CA. Intersection of child abuse and children's exposure to domestic violence. Trauma, Violence, & Abuse 2008;9(2):84–99.

Herrenkohl TI, Tajima EA, Whitney SD, Huang B. Protection against antisocial behavior in children exposed to physically abusive discipline. Journal of Adolescent Health 2005;36(6):457–465. [PubMed: 15901510]

Hughes HM, Parkinson D, Vargo M. Witnessing spouse abuse and experiencing physical abuse: A “double whammy”? Journal of Family Violence 1989;4(2):197–209.

Ireland TO, Smith CA, Thornberry TP. Developmental issues in the impact of child maltreatment on later delinquency and drug use. Criminology 2002;40:359–399.

Jessor R, Van Den Bos J, Vanderryn J, Costa FM, Turbin MS. Protective factors in adolescent problem behavior: Moderator effects and developmental change. Developmental Psychology 1995;31(6): 923–933.

Kroneman L, Loeber R, Hipwell AE. Is Neighborhood Context Differently Related to Externalizing Problems and Delinquency for Girls Compared With Boys? Clinical Child and Family Psychology Review 2004;7(2):109–122. [PubMed: 15255175]

Lemmon JH. How child maltreatment affects dimensions of juvenile delinquency in a cohort of low-income urban youths. Justice Quarterly 1999;16:357–376.

Liu RX, Kaplan HB. Role stress and aggression among young adults: The moderating influences of gender and adolescent aggression. Social Psychology Quarterly 2004;67(1):88–102.

Loeber R. Development and risk factors of juvenile antisocial behavior and delinquency. Clinical Psychology Review 1990;10:1–41.

Loeber R, Farrington DP. Young children who commit crime: Epidemiology, developmental origins, risk factors, early interventions, and policy implications. Development and Psychopathology 2000;12:737–762. [PubMed: 11202042]

Loeber, R.; Farrington, DP.; Stouthamer-Loeber, M.; Van Kammen, WB. Antisocial behavior and mental health problems: Explanatory factors in childhood and adolescence. Mahwah, NJ: Lawrence Erlbaum; 1998.

Loeber, R.; Slot, W.; Stouthamer-Loeber, M. A cumulative developmental model of risk and promotive factors. In: Loeber, R.; Slot, NW.; Van, PH.; Lann Der Hoeve, M., editors. Tomorrow's criminals: The development of child delinquency and effective interventions. Surrey, England: Ashgate; 2008. p. 133-161.

McCarthy, D. McCarthy Scale of Children's Abilities. San Antonio, TX: The Psychological Corporation; 1972.

Muthén, LK.; Muthén, BO. Mplus statistical analysis with latent variables user's guide. Los Angeles, CA: Author; 2001.

Piquero NL, Sealock MD. Gender and General Strain Theory: A Preliminary Test of Broidy and Agnew's Gender/GST Hypotheses. Justice Quarterly 2004;21(1):125–158.

Prelow HM, Loukas A. The role of resource, protective, and risk factors on academic achievement-related outcomes of economically disadvantaged Latino youth. Journal of Community Psychology 2003;31 (5):513–529.

Pungello EP, Kupersmidt JB, Burchinal MR, Patterson CJ. Environmental risk factors and children's achievement from middle childhood to early adolescence. Developmental Psychology 1996;32(4): 755–767.

Renner LM, Slack KS. Intimate partner violence and child maltreatment: Understanding intra- and intergenerational connections. Child Abuse & Neglect 2006;30(6):599–617. [PubMed: 16782195]

Sabol WJ, Coulton CJ, Korbin JE. Building community capacity for violence prevention. Journal of Interpersonal Violence 2004;19(3):322–340. [PubMed: 15005995]

Sameroff, AJ.; Gutman, LM.; Peck, SC. Adaptation among youth facing multiple risks: Prospective research findings. In: Luthar, SS., editor. Resilience and vulnerability: Adaptation in the context of childhood adversities. New York, NY: Cambridge University Press; 2003. p. 364-391.

Simonoff E, Elander J, Holmshaw J, Pickles A, Murray R, Rutter M. Predictors of antisocial personality. Continuities from childhood to adult life. British Journal of Psychiatry 2004;184:118–127. [PubMed: 14754823]

Smith CA, Thornberry TP. The relationship between childhood maltreatment and adolescent involvement in delinquency. Criminology 1995;33:451–477.

Sternberg KJ, Lamb ME, Greenbaum C, Cicchetti D, Dawud S, Cortes RM, et al. Effects of domestic violence on children's behavior problems and depression. Developmental Psychology 1993;29(1): 44–52.

Stouthamer-Loeber M, Loeber R. Lost opportunities for intervention: Undetected markers for the development of serious juvenile delinquency. Criminal Behaviour and Mental Health 2002;12:69–82. [PubMed: 12357258]

Stouthamer-Loeber M, Loeber R, Homish DL, Wei E. Maltreatment of boys and the development of disruptive and delinquent behavior. Development and Psychopathology 2001;13(4):941–955. [PubMed: 11771915]

Stouthamer-Loeber M, Wei EH, Homish DL, Loeber R. Which family and demographic factors are related to both maltreatment and persistent serious juvenile delinquency? Children's Services: Social Policy, Research, & Practice 2002;5(4):261–272.

Titzmann PF, Raabe TS, Silbereisen RK. Risk and protective factors for delinquency among male adolescent immigrants at different stages of the acculturation process. International Journal of Psychology 2008;43(1):19–31.

Thornberry TP, Ireland TO, Smith CA. The importance of timing: The varying impact of childhood and adolescent maltreatment on multiple problem outcomes. Development and Psychopathology 2001;13 (4):957–979. [PubMed: 11771916]

Wechsler, D. Wechsler Intelligence Scale for Children, Revised. New York, N.Y.: The Psychological Corporation; 1974.

Wolfe DA, Crooks CV, Lee V, McIntyre-Smith A, Jaffe PG. The effects of children's exposure to domestic violence: A meta-analysis and critique. Clinical Child and Family Psychology Review 2003;6(3):171–187. [PubMed: 14620578]

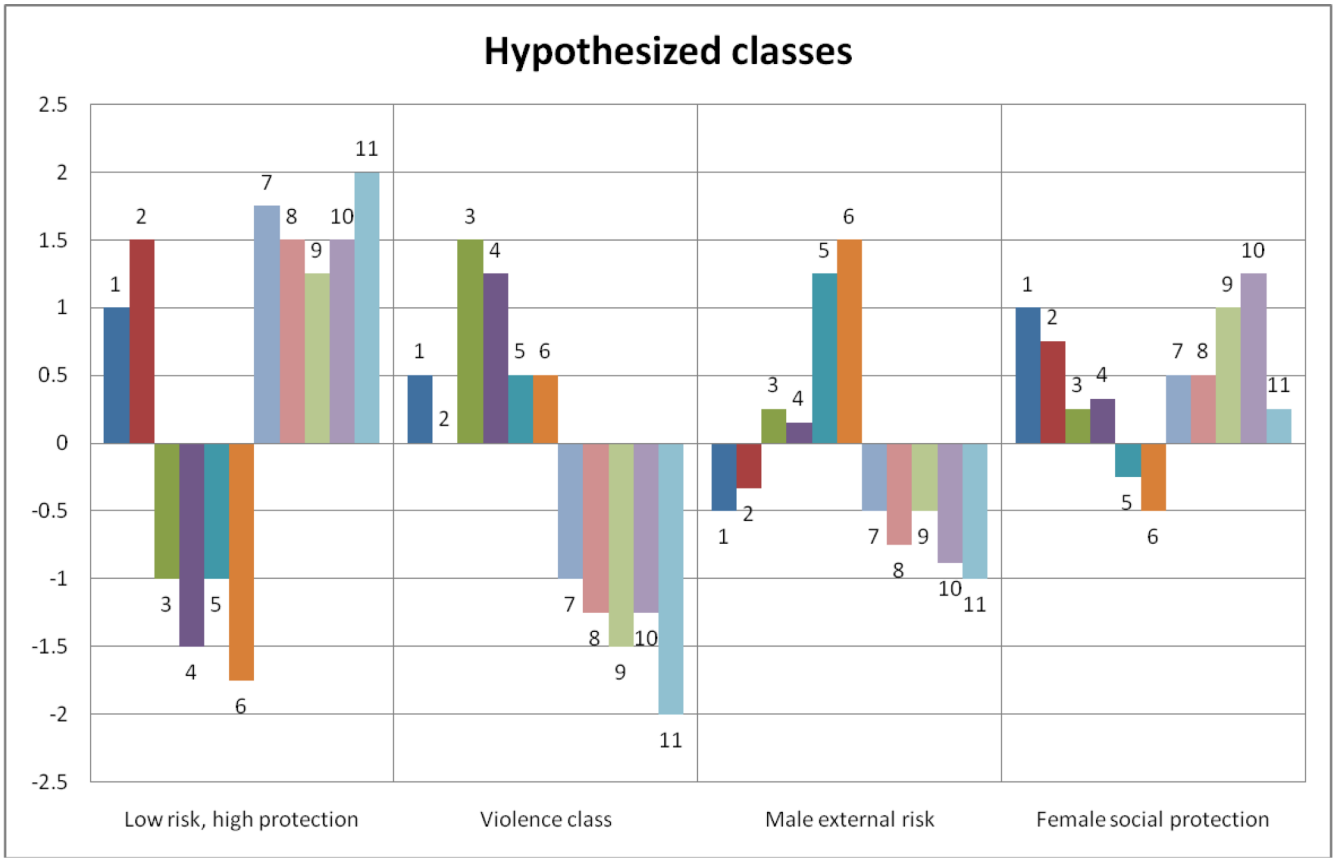

Figure 1. Hypothesized latent profile risk/promotive classes

Note: 1=Intelligence Quotient, 2=Socio-economic status, 3= Physical child abuse, 4=Intimate partner violence, 5=Early problem behaviors, 6=Social and attention problems, 7=Positive future orientation, 8=Religion, 9= Parental/peer disapproval of anti-social acts, 10= Parental responsiveness and acceptance, and 11=Extracurricular activities.

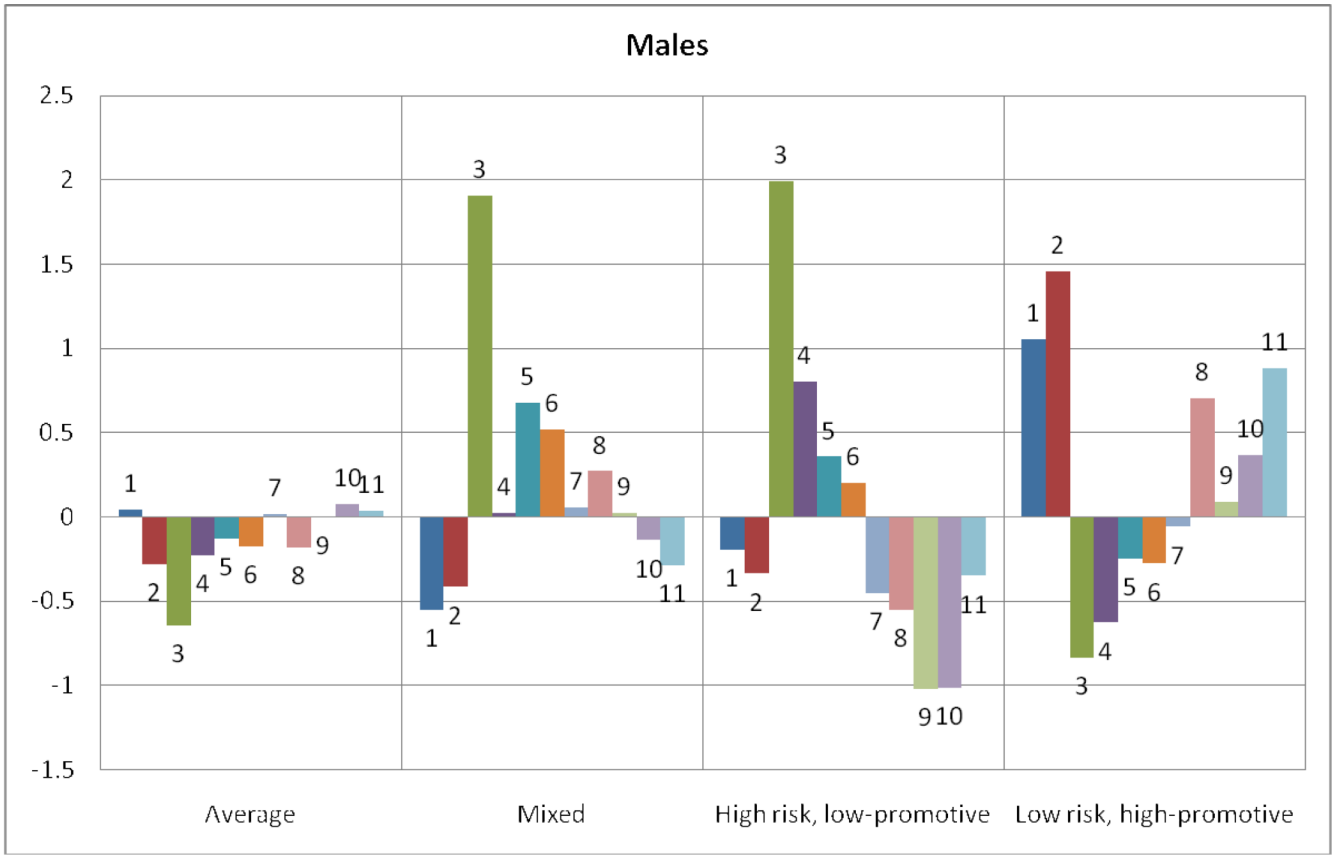

Figure 2. Latent profile analysis risk/promotive classes, males

Note: 1=Intelligence Quotient, 2=Socio-economic status, 3= Physical child abuse, 4=Intimate partner violence, 5=Early problem behaviors, 6=Social and attention problems, 7=Positive future orientation, 8=Religion, 9= Parental/peer disapproval of anti-social acts, 10= Parental responsiveness and acceptance, and 11=Extracurricular activities.

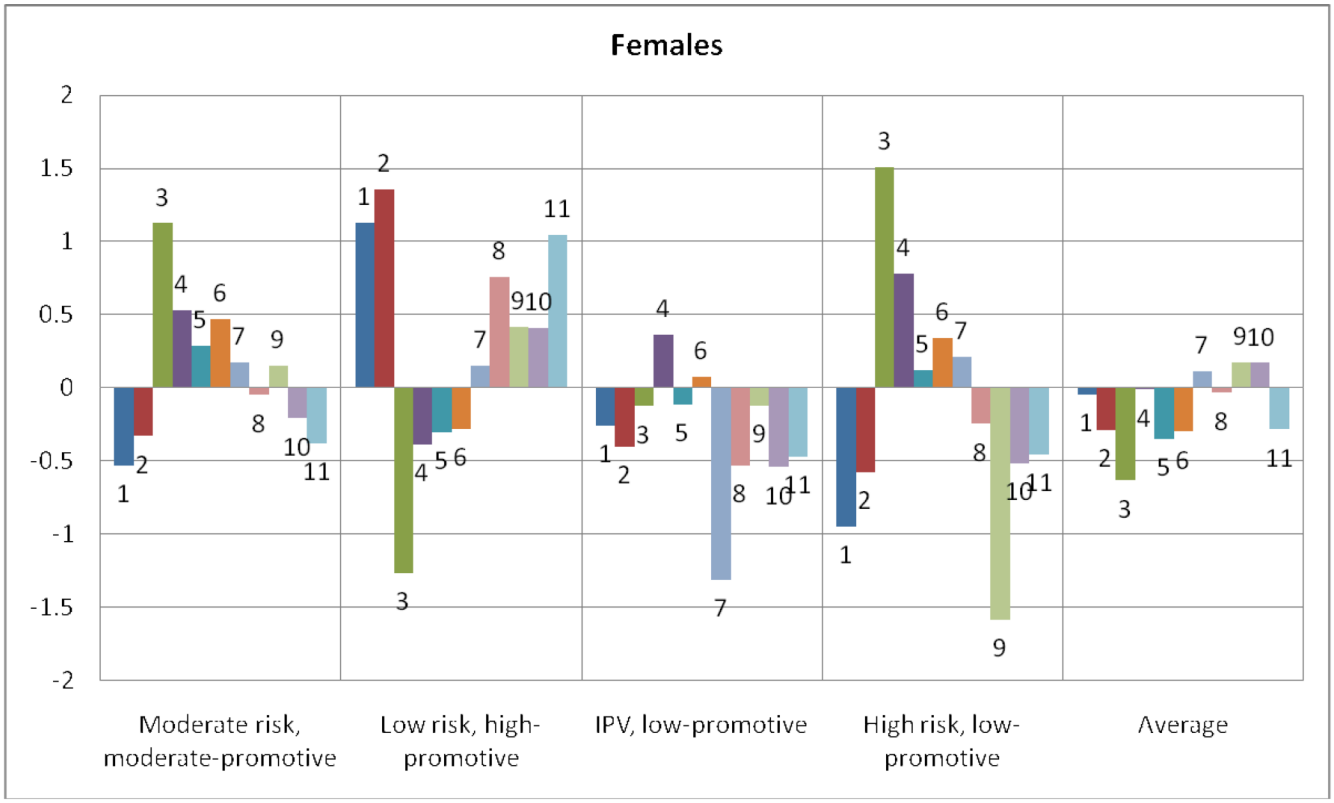

Figure 3. Latent profile analysis risk/promotive classes, females

Note: 1=Intelligence Quotient, 2=Socio-economic status, 3= Physical child abuse, 4=Intimate partner violence, 5=Early problem behaviors, 6=Social and attention problems, 7=Positive future orientation, 8=Religion, 9= Parental/peer disapproval of anti-social acts, 10= Parental responsiveness and acceptance, and 11=Extracurricular activities.

Table 1

Wave 3 means and standard deviations by gender

	Males		Females	
N	**229**		**187**	
Ethnic group				
White	175		139	
Hispanic	17		10	
Black	19		24	
Other	18		14	
	M	SD	M	SD
Age	18.23	1.80	18.24	1.82
Physical child abuse	.44	.46	−.02	.42
Exposure to intimate partner violence	−.11	.83	.12	.88
IQ	.67	.97	−.03	1.00
Early problem behavior	.10	.52	−.13	.39
Social and attention problems	.18	.50	−.03	.50
SES	.28	.84	.01	.81
Positive future orientation	−.03	.55	.04	.48
Religion	−.07	.89	.07	.85
Extracurricular activities	.93	.74	.88	.84
Parent/peer disapproval of antisocial behavior	−.07	.89	.09	.59
Parental responsiveness and acceptance	−.02	.62	.03	.68
Delinquency	13.34	8.07	7.76	5.97

* All items are standardized except for age and delinquency.

J Genet Psychol. Author manuscript; available in PMC 2011 April 1.

Table 2

Pearson correlations among risk factors, promotive factors, and outcome

	1	2	3	4	5	6	7	8	9	10	11	12
1. IQ	--	.60**	−.12	−.10	−.35**	−.38**	.08	.13	.14	.13	.51**	−.09
2. SES	.48**	--	−.23*	−.33**	−.25**	−.27**	.10	.36**	.30**	.27**	.63**	−.29**
3. Physical child abuse	−.20**	−.15*	--	.35**	.39**	.35**	.09	−.15	−.22*	−.26**	−.22*	.21*
4. Exposure to IPV	−.23**	−.37**	.14	--	.22**	.20*	.02	−.01	−.27**	−.30**	−.24**	.18*
5. Early problem behavior	−.22**	−.32**	.44**	.24**	--	.70**	−.01	−.09	−.19*	−.21**	−.19*	.20*
6. Social and attention problems	−.44**	−.30**	.42*	.19**	.60**	--	−.04	−.19*	−.13	−.30**	−.27**	.16*
7. Positive future orientation	.10	−.01	−.04	−.08	.06	−.08	--	.10	.04	.22**	.14	−.29**
8. Religion	.25**	.33**	−.15*	−.19**	−.17*	−.19**	.09	--	.31**	.30**	.31**	−.30**
9. Parental/peer disapproval of anti-social acts	.11	.11	−.24**	−.16*	−.11	−.08	.09	.25**	--	.25**	.24**	−.36**
10. Parental responsiveness and acceptance	.16**	.26**	−.23**	−.40**	−.29**	−.20**	.24**	.18**	.28**	--	.29**	-31**
11. Involvement in extracurricular activities	.55**	.52**	−.21**	−.24**	−.19**	−.31**	.04	.28**	.13	.27**	--	−.19**
12. Delinquency	.04	−.17**	.16*	.28**	.26**	.08	−.11	−.24**	−.48**	−.37**	−.05	--

Note: correlations for males are below the diagonal, females are above,

* $p<.01$,

** $p<.001$

Table 3

Means and standard deviation for risk classes, males.

	Average N=101		Mixed N=60		High-risk, low-promotive N=22		Low-risk, high-promotive N=46	
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
IQ	.04	.10	−.55	.19	−.19	.28	1.06	.12
SES	−.28	.06	−.41	.06	−.34	.11	1.46	.08
Physical child abuse	−.64	.27	1.91	.38	1.99	1.04	−.84	.33
Exposure to intimate partner violence	−.23	.11	.22	.20	.80	.40	−.63	.05
Early problem behavior	−.13	.05	.67	.09	.36	.19	−.25	.05
Social and attention problems	−.17	.05	.52	.09	.20	.06	−.28	.07
Positive future orientation	.01	.06	.06	.07	−.45	.16	−.06	.13
Religion	−.18	.09	−.27	.12	−.55	.21	.70	.13
Parental/peer disapproval of anti-social acts	−.01	.05	.02	.09	−1.02	.35	.09	.05
Parental responsiveness and acceptance	.08	.07	−.14	.12	−1.01	.15	.37	.07
Involvement in Extracurricular activities	−.03	.09	−.29	.07	−.35	.13	.88	.12

Table 4

Means and standard deviations for risk classes, females.

	Moderate-risk, moderate-promotive		Low-risk, high-promotive		IPV, low-promotive		High-risk, low-promotive		Average	
	N=48		N=38		N=14		N=12		N=75	
	M	SD	M	SD	M	SD	M	SD	M	SD
IQ	−.53	.23	1.13	.11	−.25	.25	−.95	.38	−.04	.11
SES	−.33	.08	1.35	.09	−.40	.15	−.58	.08	−.29	.05
Physical child abuse	1.12	.41	−1.27	.23	−.12	.51	1.50	.87	−.63	.39
Exposure to intimate partner violence	.53	.14	−.38	.11	.36	.28	.78	.57	−.01	.11
Early problem behavior	.28	.08	−.30	.06	−.11	.07	.12	.18	−.35	.04
Social and attention problems	.47	.09	−.28	.09	.07	.11	.34	.17	−.30	.05
Positive future orientation	.17	.05	.15	.05	−1.31	.12	.21	.20	.12	.03
Religion	−.05	.16	.76	.14	−.53	.18	−.25	.20	−.03	.10
Parental/peer disapproval of anti-social acts	.15	.14	.42	.04	−.12	.12	−1.58	.54	.17	.47
Parental responsiveness and acceptance	−.21	.11	.41	.09	−.54	.20	−.52	.26	.17	.07
Involvement in Extracurricular activities	−.38	.15	1.05	.11	−.47	.16	−.45	.18	−.28	.08

Table 5

One-way ANOVA with Scheffé post-hoc test, males

	Classes			
Delinquency	**Average**	**Mixed**	**High-risk, low-Promotive**	**Low-risk, high-promotive**
M	12.30[a]	14.68[b]	22.18[abc]	9.63[bc]
SD	7.22	8.81	7.47	5.39
Range	0–32	0–34	8–32	1–20

Note: Means sharing a common superscript are significantly different ($p<.05$)

Table 6

One-way ANOVA with Scheffé post-hoc test, females

Delinquency	Classes				
	Moderate-risk, moderate-promotive	**Low-risk, high-promotive**	**IPV, low-promotive**	**High-risk, low-promotive**	**Average**
M	8.35[a]	4.01[ab]	14.86[abc]	11.58[b]	7.32[c]
SD	6.31	3.04	6.15	7.74	5.00
Range	0–26	0–13	6–26	2–25	0–22

Note: Means sharing a common superscript are significantly different ($p<.05$)