Published in final edited form as:

J Child Adolesc Subst Abuse. 2015 September 1; 24(5): 282–294. doi:10.1080/1067828X.2013.829011.

Parenting Practices Among Biological Mothers of Drug Involved Truant Youth: A Latent Profile Analysis

Richard Dembo, Ph.D.,

Criminology Department, University of South Florida, 4202 E. Fowler Avenue, Tampa, FL 33620,
Phone:(813)931-3345, Fax: (813)_354-0740, rdembo@usf.edu

Rhissa Briones-Robinson, M.A.,

Criminology Department, University of South Florida, 4202 E. Fowler Avenue, Tampa, FL 33620

Kimberly Barrett, M.A.,

Criminology Department, University of South Florida, 4202 E. Fowler Avenue, Tampa, FL 33620

Ken C. Winters, Ph.D.,

Department of Psychiatry, University of Minnesota, F282/2A, 2450 Riverside Avenue,
Minneapolis, MN 55454

Rocio Ungaro, M.A.,

Criminology Department, University of South Florida, 4202 E. Fowler Avenue, Tampa, FL 33620

Lora M. Karas, B.S., and

Mediation Program, 13th Judicial Circuit, 800 E Twiggs St., Tampa, FL 33602

Steven Belenko, Ph.D.

Department of Criminal Justice, Temple University, 558-9 Gladfelter Hall, 1115 West Berks
Street, Philadelphia, PA 19122

Introduction

Research has confirmed the continuing influence of parents/primary caregivers in the lives of children through adulthood (Borkowsky, Ramey, & Bristol-Power, 2002; Hair et al., 2005). Although the influence of peers on youth attitudes, values, and behavior increases as they enter adolescence (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006), parent influence in their development remains a significant aspect of their lives (Borkowsky et al., 2002).

Considerable research attention has been directed to understanding the influence of parenting practices and parenting styles on youth development. Parenting practices refer to parent responses to child/youth behavior in specific situations (Darling & Steinberg, 1993), while parenting styles reflect an attitude or orientation, as well as behavior, towards a child/youth across a wide range of situations/circumstances (Williams et al., 2009). Parenting styles are particularly potent and enduring experiences in child development in that they

Ethical Approval

Ethical approval for this project was given by University of South Florida's Institutional Review Board [ref number 104555].

provide an emotional environment for parent-child relationships, and youth development (Baumrind, 1967; Darling & Steinberg, 1993). As discussed in the following section, several distinct parenting styles have been identified.

Parenting Styles

A rather extensive literature has established the existence of various parenting styles, and documented their relationship to child and youth emotional/psychological and social development. For example, Connell, Dishion, Yasui, and Kavanagh (2007) found that processes within the family are essential in the development of child and youth problem behavior (see: Dishion & Patterson, 2006).

Baumrind (1971) first conceptualized parenting style to include values, and attitudes about parenting, parent beliefs about development, and parenting practices used with their children. Stable parenting styles result from the maintenance of these values, beliefs, attitudes, and behaviors over time (also see: Darling & Steinberg, 1993; Williams et al., 2009). Several parenting styles have been identified in the research literature, including authoritative, authoritarian, and permissive parenting styles.

Authoritative parents are high on both firm control and warmth. Authoritarian parents are also high on firm control, but low on warmth. Permissive parents are characterized as being low on firm control, but high on warmth (Baumrind, 1991). In regard to adverse child outcomes, authoritative parents' greater warmth and involvement, clear communication, reasoning, and general pleasantness could be expected to lead to less child/youth functioning problems. On the other hand, authoritarian parents' reliance on control, verbal hostility, and punitive discipline practices, and permissive parents' lax or inconsistent discipline, and lack of confidence in parenting, could be expected to result in increased child-youth psychological functioning difficulties. There is considerable evidence for these relationships in the literature (Querido, Warner, & Eyberg, 2002; Robinson, Mandelco, Olsen, & Hart 1995; Steinberg, Blatt-Eisengart, & Cauffman, 2006; Thompson, Hollis, & Richards, 2003; also see: Williams et al., 2009).

In their study of adolescent depression, Betts, Gullone, and Allen (2009) found the presence of high depression symptoms was associated with a parenting style characterized by low nurturance and high overprotection. Mezulis, Hyde, and Abramson (2006) determined that maternal anger expression and negative maternal feedback to their child's failure interacted with the child's negative events to increase cognitive vulnerability. Paulussen-Hoogbeem, Stams, Hermanns, Peetsma, and van den Wittenboer (2008) found relationships between child negative emotionality and their externalizing and internalizing behaviors were mediated by their mother's authoritative parenting style. Williams et al. (2009) completed a longitudinal study of the impact of behavioral inhibition and parenting style on child to adolescent internalizing and externalizing problems. Among their key findings: (1) internalizing behaviors at age 4 were more pronounced among behaviorally inhibited children who were exposed to permissive parenting, and (2) authoritative parenting related to a lower rate of increase in internalizing problems and a greater reduction in externalizing problems over time. Kiff, Lengua, and Bush (2011) contend that these relationships need to

be viewed with a nuanced understanding of child temperament, parent behavior, and their interaction.

In regard to social and educational development, Blondal and Adalbjarnardottir (2009) found adolescents in their Icelandic longitudinal study who perceived their parents as authoritative (displaying acceptance and supervision) were more likely to complete upper secondary school, than youth from non-authoritative families, after controlling for covariates. Barnes et al. (2006) found parental monitoring/ supervision was a strong deterrent to the development of problem behavior in their six-wave, longitudinal study of New York State youth. Dishion and his associates have uncovered similar findings in their work (Connell et al., 2007; Dishion, Nelson, & Bullock, 2004; Dishion, Nelson, & Kavanagh, 2003).

Parenting Practices

Parenting practices are critical elements in the development of parenting styles. Early literature provided less focus on specific parenting practices, often subsuming parenting practices within the concept of parenting styles. A significant amount of literature has been devoted to patterns of parenting and child-parent/caregiver attachment across cultures (e.g., Rogoff, 2003). As well, considerable interest has been shown in the childrearing activities of young mothers in developed countries, often from a psychological-clinical perspective (e.g., Taylor & Biglan, 1998; Williams, 1974). However, a significant weakness in this area has been the lack of validated measures of parenting practices developed and applied in a variety of real-life settings.

In recent years, serious efforts have been undertaken to elucidate domains of parenting practices. A number of parenting practices measures have been developed for children (Clarke & Hornick, 1984; Strayhorn & Weidman, 1988) and older aged youth (Jacob, Moser, Windle, Loeber, & Stouthamer-Loeber, 2000). The development of the Alabama Parenting Questionnaire (Frick, 1991; Shelton, Frick, & Wootton, 1996) represents one of the most successful of these efforts. Initially developed from data collected on clinic referred children and their parents, and the families of community volunteer children (Shelton et al., 1996), the instrument has been found useful, particularly the parent version, for identifying parent practices involving preadolescent and adolescent youth (Dadds, Maujean, & Fraser, 2003; Kamon, Budney, & Stanger, 2005; also see: Essau, Sasagawa, & Frick, 2006).

Analyses of APQ data have involved correlation, psychometric, and factor analysis. In their important analyses of the psychometric properties of the APQ, Shelton et al. (1996) identified five family practice domains: (1) parent involvement (e.g., help child/youth with his/her home work), (2) positive parenting (e.g., praise child/youth when he/she behaves well), (3) poor monitoring/supervision (e.g., child/youth is at home without adult supervision), (4) inconsistent discipline (e.g., punishment given child/youth depends on the mood of the parent), and (5) corporal punishment (e.g., slap child/youth when he/she has done something wrong). Essau et al. (2006) obtained similar results with the Child Global Report version of the APQ administered to German youth aged 10–14.

The APQ has established itself as a significant measurement instrument in identifying parenting practices (also see: Barry, Frick, & Grafeman 2008). At the same time, the psychometric structure of the instrument might benefit from further studies involving different samples of parents of at-risk youth, in an effort to determine if the factor structure of the APQ could be simplified further. In particular, there is a need to identify clusters or profiles of parents, reflecting different constellations of APQ factors, which relate to parent and child characteristics.

Parenting Practices and Truant Youth

Although parenting variables are included in studies involving delinquent youth, with truancy constituting an outcome variable (e.g., Okorodudu, 2010), and studies have been conducted on school dropout (e.g., Blondal & Adalbjarnardottir, 2009), we have not been able to identify any studies specifically examining parenting practices among parents of truant youth. This is quite unfortunate, as truant youth often experience a number of serious problems. Truant youth are a very important group of at-risk youth to study. Among other things, they experience a troubled family life, have problems in school, and experience psychological and substance use issues (Dembo & Turner, 1994; Baker, Sigmon, & Nugent, 2001; Kearney & Silverman, 1995; Diebolt & Herlache, 1991; Pritchard, Cotton, & Cox, 1992; Egger, Costello, & Angold, 2003; Garry, 1996; Ingersoll & LeBoeuf, 1997). Research indicates truant youth are at risk of continuing their troubled behavior and entering the juvenile justice system (Loeber & Farrington, 2000; Puzzanchera, Stahl, Finnegan, Tierney, & Snyder, 2003; Henry, Thornberry, & Huizinga 2009).

Insight into the role parenting practices play in the lives of truant youth is critical to informing the creation of truancy intervention programs. However, attention to this important topic has been neglected, due, in significant measure, to the sanction and procedure oriented approach used by many truancy programs in the U.S. Such programs often use such ineffective approaches as formal adjudication, police involvement, and suspension or remedial programs (Byer & Kuhn, 2003). Many communities also lack evidence based screening and assessment procedures.

For the reasons noted above, studies of parenting practices among truant youth are seriously needed. The current study is a beginning effort to address this need.

Focus on the Mothers of Drug Involved Truant Youth

Drawing on the earlier discussion of the APQ, we sought to assess the psychometric structure of the APQ among parents of truant youth. We wished to determine whether the factor structure of the APQ could be simplified further. In this effort, we sought to determine if APQ identified parent practice domains were themselves reflective of latent constructs that may more parsimoniously describe profiles of parent behavior toward their children. In addition, we sought to identify distinct types of parents, who engage in these practices, which may be related differently to parent psychosocial factors, and to their children's psychosocial functioning. Identifying such parent practice clusters could inform a more nuanced use of intervention services to address the needs of parents enacting them.

These were the main purposes of this study, which involved an exploratory latent class analysis of the responses of the biological mothers of drug involved truant youth to the APQ. We report preliminary findings from an analysis of baseline data collected on 190 biological mothers of 238 drug involved truant youth involved in an ongoing, NIDA supported Brief Intervention (BI) project for truant youth.

Our study addressed four research questions: (1) Do the previously identified five APQ parent factors also exist among the biological mothers of truant youth? (2) Are there distinct clusters/profiles of these five factors? (3) Do the clusters/profiles relate to other mother characteristics and their reported problems among their project involved child? (4) Do the clusters/profiles relate to their child's reported psychosocial issues? Confirmatory factor analyses were used to assess if the five parent practice domains were consistent with the APQ parent data we collected.

Latent class analysis was employed to identify distinct parent practice clusters or profiles among these mothers. Collateral data on the mothers and their children were used to evaluate the utility of the classification. After we present and discuss our results, we discuss their implications for intervention services.

Method

Subjects

Recruitment of subjects occurred as part of participation in a brief intervention (BI) project that occurred at the Hillsborough County Juvenile Assessment Center, Truancy Intake Center (TIC). Project eligibility criteria were: (1) aged 11 to 15, (2) no arrest record or up to two misdemeanor arrests, (3) residence within a 25 miles of the TIC, and (4) indication of alcohol or other drug use based on a screening form (PESQ [Winters, 1992]) or determined by a school social worker assigned to the TIC. Regarding the PESQ, we used the 18-item drug use problem severity scale on this questionnaire. Items refer to general drug use and reflect abuse and dependence-like signs and symptoms. Its psychometric properties have been are favorable (e.g., coefficient alpha, .91; Winters, 1992). As well, other school social workers or guidance counselors could make referrals to the project. A community diversion program served as a second place of recruitment into the BI project. Case managers could refer youth with a current truancy record, who also met project criteria, for BI services.

Enrollment involved: (1) A project staff member meeting with the youth and his/her parent/guardian and providing an overview of the project. (2) They are informed that BI services are free, provided in-home, and participation is voluntary. (3) For interested parents and youths, an in-home meeting was scheduled to further discuss the BI project, answer any questions, complete the consent and assent processes, and conduct separate youth and parent/guardian baseline interviews. After the baseline interviews, youth and parent/guardian were randomly assigned to one of three service conditions: (1) usual truancy program services, plus a referral service overlay, (2) two BI sessions with the youth, or (3) two BI sessions with the youth, one BI session with the parent (based on a program developed by Winters and Leitten, 2007). All study procedures were approved and monitored by a local IRB.

Among the 238 enrolled families, 190 biological mothers and 19 biological fathers completed APQ; no other adult guardian (e.g., grandparent) accounted for than 5% of the 238 families. We focused in the mothers' APQ scores in the analysis, given that mothers most often have more contact with their children and represent a primary socialization agent. Mothers averaged 40 years of age, 60% were non-Caucasian, 45% of the households involved mother alone, and 43% reported incomes of \$25,000 or less (see Table 1)..

Key Measures

Parenting Practices—The 42 item parent version of the Alabama Parenting Questionnaire (APQ) (Shelton et al., 1996) was used to obtain information on the mothers' parenting practices in five areas: (1) poor monitoring/supervision, (2) inconsistent discipline, (3) involvement, (4) positive parenting, and (5) corporal punishment. This measure is discussed in detail in the results section.

Parent and Youth Behavior—The adolescent and parents versions of the Adolescent Diagnostic Interview (ADI-Y and ADI-P, Winters & Henly, 1993) were used to assess if the youth or their family ever experienced various traumatic events. Both versions are highly structured (e.g., most questions are yes/no) and measure, among other things, DSM-IV criteria for substance use disorders and related areas of functioning. A wide range of reliability and validity data on all sections of the ADI are reported elsewhere (Winters & Henly, 1993; Winters & Stinchfield, 2003).

Analysis Strategy—Latent profile analysis (LCA) was used to analyze the data (Muthén & Muthén, 2010; Dayton, 1998). The procedure is particularly useful when studying heterogeneous populations, or populations "consisting of several unidentified groups that behave differently regarding the problems at hand" (Hagenaars & McCutcheon, 2002, p. xii). LCA can identify mutually exclusive latent classes, which account for the distributions of the observable measures within the sample (Clogg, 1981, 1995; Hagenaars & McCutcheon, 2002). Our use of latent class analysis was exploratory in nature.

The issue of class enumeration (i.e., determining the appropriate number of latent classes for a study population) in mixture modeling remains unresolved, multiple criteria were used to aid in class enumeration (Nylund, Asparouhov, & Muthén, 2007). Hence, a number of statistical criteria were used to assess the number of classes: (1) the classification table based on class probabilities for the most likely latent class membership by latent class, (2) the entropy score, (3) the Akaike Information Criterion (AIC), (4) the Bayesian Information Criterion (BIC), (5) the sample size adjusted BIC (saBIC), (6) the Vuong-Lo-Mendell-Rubin likelihood ratio test (LRT), (7) Lo-Mendell-Rubin adjusted likelihood ratio test (aLRT), (8) the bootstrap likelihood ratio test statistics (bLRT) (Lo, Mendell, & Rubin, 2001; Nylund et al., 2007), and (9) the model fit to the univariate and bivariate frequency tables (Akaike, 1987; Bozdogan, 1987; Lubke & Neale 2006; Ramaswamy, DeSarbo, Reibstein, & Robinson, 1993). For the classification table, high diagonal values and low off-diagonal values indicate good classification quality (Muthén & Muthén, 2001: 372). Entropy values range from 0 to 1, with values closer to 1 indicating clearer classifications (Muthén & Muthén, 2001: 372). For AIC, BIC, and saBIC, lower scores, those closest to zero, indicate a

better fit of the model. For aLRT, a significant p-value indicates that the specified model (with k classes) fits significantly better than a model enumerating one less class (k-1). The bLRT is similar to the aLRT except the distribution is estimated based on bootstrap samples. For the fit of the model to the univariate and bivariate frequency tables, smaller standardized residuals between the observed and estimated (expected) probabilities indicate a better fit. The substantive meaningfulness of the selected latent class model was also important in deciding on the number of classes. Each of the parenting practice variables was a continuous variable, summary factor scores.

Results

Experience of Stressful/Traumatic Events

The parent/guardian ADI asked youths' parents/guardians to indicate if the youth or their family ever experienced various traumatic events. As Table 2 shows, large percentages of the youths/families had these experiences, with unemployment of parent (51%), divorce of parents (45%), death of a loved one (58%), serious illness (30%), and legal problem resulting in jail or detention (25%) being noteworthy. In addition, 51% of the caretakers reported other traumatic experiences (e.g., youth being placed in foster care, not having a relationship with their father, fighting with brothers and sisters, losing the opportunity to obtain a driver's license, separation from their mother). Overall, an average of 3.04 (SD = 1.76) traumatic events were reported.

Parenting Practices

We used the 42 item parent version of the APQ (Shelton et al., 1996) to obtain information on the mothers' parenting practices in the five areas noted earlier. Table 3 lists the constituent items for these five scales, together with each item's mean (x) and standard deviation (S.D.). Since the psychometric properties of the APQ have been established (Essau et al., 2006; Shelton et al., 1996), confirmatory factor analyses were conducted on items measuring each of the five parenting practice domains. Each item was scored as follows: 1= Never, 2= Almost Never, 3= Sometimes, 4= Often, and 5= Always.

Confirmatory Factor Analysis (CFA) Using Maximum Likelihood and Bayesian Estimation

Below we present the results of the CFA of mothers' responses to the APQ questions probing their parenting practices in the five domains. These factors formed the basis of our creation of summary measures for use in further analyses. The confirmatory factor analyses were conducted using maximum likelihood (ML) and Bayesian estimation procedures. Currently, ML estimation procedures are extensively used in statistical analyses (details of the CFA can be obtained from the senior author).

(1) Poor monitoring/supervision—As Table 3 notes, previous research has indicated that 10 items comprise this domain. However, preliminary factor analysis using maximum likelihood (ML) and Bayesian estimation indicated a poor fit of this ten item model to the data. Informed by ML modification index results, elimination of items 28, 29, and 30 significantly improved the model fit (results are shown in Table 4). Cronbach's alpha for the

seven item scale was 0.75. Based on these results, a measure of poor monitoring/supervision was created by saving the factor scores for use in further analyses.

(2) Inconsistent discipline—Previous research has confirmed that 6 APQ items tap this domain (see Table 3). Factor analysis using ML and Bayesian estimation indicated a good fit of this one factor model to our data (see Table 4). Cronbach's alpha for the scale was 0.69. Based on these results, a measure of inconsistent discipline was created by saving the factor scores for use in further analyses.

(3) Parent Involvement—Previous research has indicated that 10 APQ items reflected this parenting style (Table 3). Preliminary factor analysis using maximum likelihood (ML) and Bayesian estimation indicated a poor fit of this ten item model to the data. ML modification index results indicated model fit could be improved by elimination of items 4, 20, and 23. With the elimination of these three items, Bayesian estimation indicated an acceptable fit of the model to the data (see Table 4). Cronbach's alpha for the seven item scale was 0.68. Based on these results, a measure of parent involvement was created by saving the factor scores for use in further analyses.

(4) Positive parenting—Six APQ items have been found to reflect this parenting practice (Table 3). Factor analysis using ML and Bayesian estimation found a good fit of this model to the data using Bayesian estimation (see Table 4). Cronbach's alpha for the scale was 0.80. Based on these results, a measure of positive parenting was created by saving the factor scores for use in further analyses.

(5) Corporal punishment—Previous research has found that three APQ items tap this parenting style domain (Table 3). Both ML and Bayesian estimation of this model found a good fit of the model to our data (Table 4). Cronbach's alpha for this three item scale was 0.70. Based on these results, a measure of corporal punishment was created by saving the factor scores for use in further analyses.

With minor item adjustments, each of the five APQ factors was found to be consistent with our data. These results provide an affirmative response to Research Question #1.

Relationships among the variables in the Latent Class Analysis

The correlations (Pearson r) among the parenting practice variables in the latent class analysis are shown in Table 5. Using Fisher's r to z transformation and following conversion of the correlations to z -scores, these results highlight significant relationships exist between 5 pairs of variables. Parent involvement and positive parenting were significantly related to one another. Parent involvement was significantly, negatively related to poor monitoring/supervision and to inconsistent discipline; and positive parenting was also significantly, negatively related to poor monitoring/supervision. Further, poor monitoring/supervision was significantly and positively related to inconsistent discipline.

Latent Class Analysis Fit Indices

LCA models were estimated for a series of models including one-class, two- class, and three-class models. The LCA fit indices are shown in Table 6. Given the limited number, and distribution of, cases across the various variables, up to a three- class LCA solution could be estimated. As the LRT, aLRT and bLRT results reported in Table 5 indicate, a three-class solution appeared to best fit the data. It had the lowest AIC, BIC and Sample Size Adjusted BIC values; and, a bLRT p-value <0.0000.

Additional analysis was conducted to address the issue of local independence, a critical assumption of the model when trying to enumerate the correct class model. Local dependencies will artificially increase the optimum number of classes extracted (Reboussin, Ip, & Wolfson, 2007). Since the parenting style variables were continuous, the local independence assumption was tested by introducing the observed variables as a latent factor in the LCA analysis, and comparing to its BIC obtained from the selected three class model. A smaller BIC for the selected 3-class model was obtained supporting the local independence of the indicators.

Latent Class Analysis Results

The LCA results are shown in Table 7. The three classes identified in the data, which differ in important ways across the five variables included in the analyses, were termed: (1) *Low level parenting* mothers (n = 40; 21%), (2) *High level parenting* mothers (n = 116; 61%), and (3) *a parenting style involving the use of physical punishment* (n=34; 18%). Low level parenting mothers report limited involvement with positive parenting of project youth. High level parenting mothers report significant involvement in positive parenting of project youths, and an unwillingness to use physical punishment. Use of physical punishment mothers report high levels of use of this manner of disciplining the project youth. The three latent classes reflect clear differences among them. The classification table based on an individual's model-estimated (posterior) probabilities for most likely latent class membership indicates high main diagonal and relatively low off-diagonal values. These results suggest the model produces relatively unambiguous classifications. As well, a high entropy (a quantification of the classification uncertainty) value of .845 was obtained; which reflects very high classification clarity.

The latent class analysis results provide a clear answer to Research Question #2. Distinct clusters/profiles of biological mother parent practices were found in our data.

Comparison of Covariates across the Three Parenting Style Groups

The Mplus Auxiliary option (Muthén & Muthén, 1998–2007: 454) of specifying variables for which the equality of means across latent classes is tested using posterior probability-based multiple imputation was used to compare the equality of means for the low level parenting, high level parenting, and use of physical punishment parenting style groups in regard to three sets of variables: (1) mothers' sociodemographic characteristics (age, being African American, Hispanic, mother headed household, mother married, and annual household income), (2) mother ADI interview information regarding reported youth/family

experience of stressful events/trauma, reported frequency of alcohol use in the 12 months prior to their baseline interviews, reported project youth ever receiving mental health care, and reported project youth ever receiving alcohol/other drug treatment, and (3) at baseline ADI interview, project youth reported whether they ever had a drug or alcohol abuse problem, received services for emotional or behavioral problems, and engaged in delinquent behavior during the preceding 12 months.

In regard to mother sociodemographic comparisons, no significant differences were found across the three latent profile groups, or in pairwise comparisons, for each of these characteristics. These findings support the similarity of the latent profile results across different sociodemographic subgroups of mothers in the study. Unfortunately, there were an insufficient number of cases to complete multi-group latent profile analyses. This is planned for future studies.

In regard to the mother ADI interview comparisons noted earlier, results indicated: (a) mothers reporting more use of physical punishment were marginally, significantly more likely to report a higher frequency of alcohol use in the past year, than low level parenting mothers; (b) mothers reporting more use of physical punishment were significantly more likely to report the project youth received mental health care, than high level parenting mothers; (c) mothers reporting more use of physical punishment were marginally, significantly more likely to report the project youth received mental health care, than low level parenting mothers. While the lower of these comparisons are lowered by the small proportions of mothers in the low level parenting (21%) and use of physical punishment parenting style groups (18%), when compared to the high level parenting group (61%), the mean values for the use of physical punishment group are always higher than the other two groups. Given the literature reviewed earlier, it could be expected that mothers who more often use physical punishment would be more alcohol involved, and that their offspring would reflect more emotional/psychological issues. Table 8 presents these results. These findings provide promising support to Research Question 3: The clusters/profiles among the mothers of truant youth relate to other non-sociodemographic characteristics of them, and their reported problems among their project involved child; and to Research Question 4: The clusters/profiles relate to their child's reported psychosocial issues.

The project youth of the 190 mothers averaged 14.8 years of age (S.D. = 1.32); 65% were male. As Table 9 shows, in regard to the youth ADI interview comparisons noted earlier, results indicated that youth whose mothers report greater use of physical punishment were marginally, significantly more likely to report having a drug or alcohol problem, than youth having low level parenting mothers. Again, although the power of these comparisons is limited due to small sample sizes in the low level parenting and use of physical punishment parenting groups, the mean levels are in the expected direction—with project youth with mothers who more often use physical punishment reporting higher levels of problems, than the youth of the two other parenting style groups.

Conclusions

The results provide affirmative responses to each of the research questions informing our study. In regard to research question #1, with minor item adjustments, the five APQ factors identified by Frick and his associates (Shelton et al., 1996) were confirmed in the biological mother APQ data we collected. These results provide an interesting extension of the parent APQ factors to the mothers of adolescent, truant youth.

We also identified distinct profiles of the APQ factors (research question #2): (1) mothers whose parenting practices reflected low involvement and low positive parenting, (2) mothers who engaged in practices reflecting high involvement and positive parenting, and a low use of corporal punishment, and (3) mothers whose parenting practices reflected the use of corporal punishment. Although it is comforting that profile (2) mothers represent 61% of the mothers in the study. However, it is disturbing that nearly 40% of the mothers in the study report parenting practices that increase the risk of poor youth developmental outcomes. This is especially the case for mothers who report the use of corporal punishment, reflecting an authoritarian parenting style (Baumrind, 1971; 1999). It would be interesting to learn how our findings apply to the biological mothers of other at-risk youth, such as youth who are involved with the juvenile justice system. Confirmation of our findings could lead to incorporating specific parent practice components in interventions involving at-risk youth.

The biological mother practice profiles related in patterned ways to other self-report information in the parent ADI interviews, in regard to their past year alcohol use, and reports of their truant child's ever receiving mental health services (research question #3). Of important note, for each measure reported in Table 8, the corporal punishment profile group had the highest mean value of the three latent profile groups, indicating more issues/problems.

Finally, in regard to research question #4, truant youth of mothers distinguished by their use of physical punishment reported a higher rate of drug or alcohol abuse problems than truant youth in the two other profile groups of mothers. Again, youth in the corporal punishment mother practice group reported the highest rates of problems in each of the three measures shown in Table 9.

This study represents the first study we are aware of that focuses on the parent practices of the mothers of drug involved truant youth. The results provide strong suggestion that a sizable number of truant youth in our project are living in parent environments that are conducive to the development and maintenance of psychosocial issues. They highlight that treating truancy as a management problem with sanction-oriented approaches used to address it is a misplaced strategy. For drug involved truant youth living in households where poor parent involvement, low positive parenting, or the frequent use corporal punishment exist, such an approach is likely to compound, rather than reduce, the issues they face. More nuanced assessment approaches and intervention services are seriously needed to identify and address these youths' needs.

Some truancy programs have begun moving away from sanction-oriented, disciplinary, and procedural approaches, to involve more collaborative and holistic approaches, and are

showing promising results (Dembo et al., in press b; Dembo & Gulledge, 2009; Fantuzzo et al., 2005; Sinclair, Christiansen, Evelo, & Hurley, 1998; Colorado Foundation for Families and Children, 2007). Critical to the success of these efforts is a comprehensive assessment of the truant youth psychosocial functioning and the family environment in which they are living, including the parenting practices they are experiencing. Such information is needed to develop, or refer truant youth to, intervention services that can effectively address their needs.

Our analysis involved a novel use of latent profile analysis. The use of latent class analysis to identify subgroups of mothers reflecting different constellations of parenting practices can be useful to program administrative and clinical staff in at least two ways: (1) provide evidence that service agencies or programs are serving their intended target population, and (2) subgroups of mothers, reflecting different parenting practice profiles, can lead to more informed referrals or treatment placement. (It is appreciated that the subgroups identified by latent class analysis are statistical constructs, rather than actual persons. Hence, the results of latent class analysis should be interpreted with this understanding.)

Truancy constitutes a continuing epidemic in schools across the United States (Fantuzzo, Grim, & Hazan, 2005). Efforts are needed to address truant behavior by remediating the psychosocial issues, including youth—parent relationships exist among many truant youth. We need to strengthen service delivery to truant youth and their families. Interventions that do not target the root causes of their problem behavior will fail to address the issues that can lead many seriously troubled truant youth to move into the juvenile justice system. Directing treatment resources to truant youth is far less costly, and has greater potential for redirecting troubled lives in more prosocial directions, rather than having these youths develop more serious, troubled behavior problems with their resulting, adverse consequences for them, their families, and their communities.

Several limitations in our study should be noted. The study involved a relatively small number of cases. This small sample size might have reduced the likelihood of identifying additional parenting practice latent profile groups. This situation, together with the distribution of cases across the latent profile groups, limited the various covariate comparisons across them. We plan to conduct an expanded analysis with a larger number of cases in this ongoing study to address these issues. Second, it would be important to replicate our findings among the mothers of truant youths in other jurisdictions, who differ in their sociodemographic characteristics. Such an effort is important to assess whether our results were sample specific. Third, our findings are based on cross-sectional information collected from baseline interviews, which prevent discussion of the longitudinal relationships between the parent practice profiles and truant youth functioning over time. We are planning to conduct and report the results of such analyses in future manuscripts. Finally, the study sample may not be representative of mothers of truant youth because study participation required agreement to participate in an intervention study.

Acknowledgments

Funding

The research reported in this article was funded by the National Institute on Drug Abuse (NIDA) Grant No. DA021561. We are grateful for NIDA's support.

References

- Akaike H. Factor analysis and AIC. *Psychometrika*. 1987; 52:317–332.
- Asparouhov, T.; Muthén, BO. Bayesian analysis using Mplus: Technical implementation. Technical appendix. Los Angeles: Muthén & Muthén; 2010a. www.statmodel.com
- Baker, ML.; Sigmon, JN.; Nugent, ME. Juvenile Justice Bulletin. Washington DC: U.S. Department of Justice, Office of Juvenile Justice Delinquency Prevention; 2001. Truancy reduction: Keeping students in school.
- Barnes GM, Hoffman JH, Welte JW, Farrell MP, Dintcheff BA. Effects of parental monitoring and peer deviance on substance use and delinquency. *Journal of Marriage and Family*. 2006; 68:1084–1104.
- Barry CT, Frick PJ, Grafeman SJ. Child versus parent reports of parenting practices: Implications for the conceptualization of child behavioral and emotional problems. *Assessment*. 2008; 15:294–303. [PubMed: 18182477]
- Baumrind D. Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*. 1967; 75:43–88. [PubMed: 6032134]
- Baumrind D. Current patterns of parental authority. *Developmental Psychology*. 1971; 4:1–103.
- Baumrind D. The influence of parenting styles on adolescent competence and substance use. *The Journal of Early Adolescence*. 1991; 11:56–95.
- Betts J, Gullone E, Allen JS. An examination of emotion regulation, Temperament and parenting style as potential predictors of adolescent depression risk status: A correlational study. *British Journal of Developmental Psychology*. 2009; 27:473–485. [PubMed: 19998542]
- Blondal KS, Adalbjarnardottir S. Parenting practices and school dropout: A longitudinal study. *Adolescence*. 2009; 44:729–749. [PubMed: 20432598]
- Borkowski, J.; Ramey, S.; Bristol-Power, M., editors. Parenting and the child's world: Influences on academic, intellectual, and social-emotional development. Mahwah, NJ: Erlbaum; 2002.
- Bozdogan H. Model-selection and Akaike's information criterion (AIC): The general theory and its analytical extensions. *Psychometrika*. 1987; 52:345–370.
- Brown, MW.; Cudeck, R. Alternative ways of assessing model fit. In: Bollen, KA.; Long, JS., editors. *Testing Structural Equation Models*. Newbury Park, CA: Sage; 1993.
- Byer JL, Kuhn J. A model response to truancy prevention: The Louisville Truancy Court Diversion Project. *Juvenile and Family Court Journal*. 2003 Winter;54:59–67.
- Clarke M, Hornick J. The development of The Nurturance Inventory: An instrument from assessing parenting practices. *Child Psychiatry & Human Development*. 1984; 15:49–63. [PubMed: 6534637]
- Clogg, C. New developments in latent structure analysis. In: Jackson, DJ.; Borgatta, EF., editors. *Factor analysis and measurement in sociological research*. Beverly Hills, CA: Sage; 1981. p. 215–246.
- Clogg, C. Latent Class Models. In: Arminger, G.; Clogg, C.; Sobel, M., editors. *Handbook of Statistical Modeling for the Social and Behavioral Sciences*. New York: Plenum; 1995.
- Colorado Foundation for Families and Children. Model truancy prevention programs. 2007 Jan. Retrieved January 18, 2008, from <http://www.schoolengagement.org>
- Connell AM, Dishion TJ, Yasui M, Kavanagh K. An adaptive approach to family intervention: Linking engagement in family-centered intervention to reductions in adolescent problem behavior. *Journal of Consulting and Clinical Psychology*. 2007; 75:568–579. [PubMed: 17663611]
- Dadds MR, Maujean A, Fraser JA. Parenting and conduct problems in children: Australian data and psychometric properties of the Alabama Parenting Questionnaire. *Australian Psychologist*. 2003; 38:238–241.
- Darling N, Steinberg L. Parenting style as context: An integrative model. *Psychological Bulletin*. 1993; 113:487–496.

- Dayton, CM. Latent class scaling analysis. Thousand Oaks, CA: Sage Publications; 1998.
- Dembo R, Briones-Robinson R, Ungaro RA, Gullledge LM, Karas LM, Winters KC, Belenko S, Greenbaum PE. Emotional/psychological and related problems among truant youths: An exploratory latent class analysis. *Journal of Emotional and Behavioral Disorders*. (in press a).
- Dembo R, Briones-Robinson R, Barrett K, Winters KC, Schmeidler J, Ungaro R, Karas L, Belenko S, Gullledge L. Mental health, substance use, and delinquency among truant youths in a brief intervention project: A longitudinal study. *Journal of Emotional and Behavioral Disorders*. (in press b).
- Dembo R, Gullledge L. Truancy intervention programs: Challenges and Innovations to implementation. *Criminal Justice Policy Review*. 2009; 20:437–456. [PubMed: 20161546]
- Dembo R, Turner G. A pilot study of truants processed at the Hillsborough County Juvenile Assessment Center. *The Journal of At-Risk Issues*. 1994; 1:38–42.
- Diebolt, A.; Herlache, L. The school psychologist as a consultant in truancy prevention. Paper presented at the annual meeting of the National Association of School Psychologists, Dallas, Texas; 1991.
- Dishion TJ, Nelson SE, Kavanagh K. The family check-up for high-risk adolescents: Preventing early-onset substance use by parent monitoring. *Behavior Therapy*. 2003; 34:553–571.
- Dishion TJ, Nelson SE, Bullock B. Premature adolescent autonomy: Parent disengagement and deviant peer process in the amplification of problem behavior. *Journal of Adolescence*. 2004; 27:515–530. [PubMed: 15475044]
- Dishion, TJ.; Patterson, GR. The development and ecology of antisocial behavior. In: Cicchetti, D.; Cohen, DJ., editors. *Developmental psychopathology, Vol. 3: Risk, disorder, and adaptation*. New York: Wiley; 2006.
- Egger HL, Costello EJ, Angold A. School refusal and psychiatric disorders: A community study. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2003; 7:797–807.
- Essau CA, Sasagawa S, Frick PJ. Psychometric properties of the Alabama Parenting Questionnaire. *Journal of Child and Family Studies*. 2006; 15:597–616.
- Fantuzzo J, Grim S, Hazan H. Project START: An evaluation of a community-wide school based intervention to reduce truancy. *Psychology in the Schools*. 2005; 42(6):657–667.
- Frick, PJ. The Alabama Parenting Questionnaire. Unpublished rating scale: University of Alabama; 1991.
- Garry, EM. Juvenile Justice Bulletin. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention; 1996. Truancy: First step to a lifetime of problems.
- Gelman, A.; Carlin, JB.; Stern, HS.; Rubin, DB. Bayesian data analysis. Second Edition. Boca Raton, FL: Chapman & Hall; 2004.
- Gelman A, Meng XL, Stern HS, Rubin DB. Posterior predictive assessment of model fitness via realized discrepancies (with discussion). *Statistical Sinica*. 1996; 6:733–807.
- Gelman A, Rubin DB. Inference from iterative simulation using multiple sequences. *Statistical Science*. 1992; 7:457–511.
- Hagenaars, JA.; McCutcheon, AL., editors. *Applied latent class analysis*. Cambridge: Cambridge University Press; 2002.
- Hair, E.; Moore, KA.; Garrett, SB.; Kinukawa, A.; Lippman, LH.; Michelson, E. The parent-adolescent relationship scale. In: Moore, KA.; Lippman, LH., editors. *What do children need to flourish? Conceptualizing and measuring indicators of positive development*. New York: Springer Science; 2005. p. 183-202.
- Henry KL, Thornberry TP, Huizinga DH. A discrete-time survival analysis of the relationship between truancy and the onset of marijuana use. *Journal of Studies on Alcohol and Drugs*. 2009; 70:5–15. [PubMed: 19118386]
- Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional versus new alternatives. *Structural Equation Modeling*. 1999; 6:1–55.
- Ingersoll, S.; LeBoeuf, D. Reaching out to youth out of the education mainstream. Washington, DC: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention; 1997.

- Jacob T, Moser RP, Windle M, Loeber R, Stouthamer-Loeber M. A new measure of parenting practices involving preadolescent- and adolescent-aged children. *Behavior Modification*. 2000; 24:611–634. [PubMed: 11036731]
- Kamon J, Budney A, Stanger C. A contingency management intervention for adolescent marijuana abuse and conduct problems. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2005; 44:513–521. [PubMed: 15908833]
- Kearney CA, Silverman WK. Family environment of youngsters with school refusal behavior: A synopsis with implications for assessment and treatment. *American Journal of Family Therapy*. 1995; 23:59–72.
- Kiff, CJ.; Lengua, LJ.; Bush, NR. Temperament variation in sensitivity to parenting: Predicting changes in depression and anxiety. *Journal of Abnormal Child Psychology*. 2011. published online: July 30, 2011. Retrieved from: <http://www.ncbi.nlm.nih.gov/pubmed/21800017>
- Lo Y, Mendell NR, Rubin DB. Testing the number of components in a Normal mixture. *Biometrika*. 2001; 88:767–778.
- 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]
- Lubke GH, Neale MC. Distinguishing between latent classes and Continuous factors: Resolution by maximum likelihood? *Multivariate Behavioral Research*. 2006; 41:499–532.
- Lynch, S. Introduction to applied Bayesian statistics and estimation for social scientists. New York, NY: Springer; 2010.
- Mezulis AH, Hyde JS, Abramson LY. The developmental origins of Cognitive vulnerability to depression: Temperament, parenting, and negative life events in childhood as contributors to negative cognitive style. *Developmental Psychology*. 2006; 42:1012–1025. [PubMed: 17087538]
- Muthén, B.; Asparouhov, T. Bayesian SEM: A more flexible representation of substantive theory. 2010. Submitted for publication. Available at: www.statmodel.com
- Muthén, LK.; Muthén, BO. MPlus User's Guide, 5th Version. Los Angeles, CA: Muthén & Muthén; 2001.
- Muthén, LK.; Muthén, BO. MPlus User's Guide, 2nd Version. Los Angeles, CA: Muthén & Muthén; 1998–2007.
- Muthén, LK.; Muthén, BO. MPlus User's Guide Version 6.1. Los Angeles, CA: Muthén & Muthén; 2010.
- Nylund KL, Asparouhov T, Muthén BO. Deciding on the number of classes in latent class analysis and growth mixture modeling: A monte carlo simulation study. *Structural Equation Modeling*. 2007; 14:535–569.
- Office of Juvenile Justice and Delinquency Prevention. Truancy reduction: Keeping students in school. 2001. Retrieved from: <http://www.ojjdp.ncjrs.org>
- Okorodudu GN. Influence of parenting styles on adolescent delinquency in Delta Central Senatorial District. *Edo Journal of Counseling*. 2010; 3:58–86.
- Paulussen-Hoogeboom MC, Stams GJJM, Hermanns JMA, Peetsma TTD, van den Wittenboer GLH. Parenting style as a mediator between children's negative emotionality and problematic behavior in early childhood. *The Journal of Genetic Psychology*. 2008; 169:209–226.
- Pritchard C, Cotton A, Cox M. Truancy, drug abuse and knowledge of HIV infection in 926 normal adolescents. *Journal of Adolescence*. 1992; 15:1–17. [PubMed: 1607421]
- Puzzanchera, C.; Stahl, AL.; Finnegan, TA.; Tierney, N.; Snyder, HN. Juvenile Court Statistics 1998. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice Delinquency Prevention; 2003.
- Querido JG, Warner TD, Eyberg SM. Parenting styles and child behavior in African American families of preschool children. *Journal of Clinical Child Psychology*. 2002; 31:272–277.
- Ramaswamy V, DeSarbo W, Reibstein D, Robinson W. An empirical pooling approach for estimating marketing mix elasticities with PIMS data. *Marketing Science*. 1993; 12:103–14.
- Reboussin BA, Ip EH, Wolfson M. Locally dependent latent class models with covariates: An application to underage drinking in the USA. *Journal of the Royal Statistical Society: Series A: (Statistics in Society)*. 2008; 171:877–897.

- Robinson CC, Mandelco B, Olsen SF, Hart CH. Authoritative, authoritarian, and permissive parenting practices: Development of a new measure. *Psychological Reports*. 1995; 77:819–830.
- Rogoff, B. *The cultural nature of human development*. New York: Oxford University; 2003.
- Rupp AA, Dey DK, Zumbo BD. To Bayes or not to Bayes, from whether to when: Applications of Bayesian methodology to modeling. *Structural Equation Modeling*. 2004; 11:424–451.
- Scheines R, Hoijtink H, Boomsma A. Bayesian estimation and testing of structural equation models. *Psychometrika*. 1999; 64:37–52.
- Shelton KK, Frick PJ, Wootton J. Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology*. 1996; 25:317–329.
- Sinclair MF, Christenson SL, Evelo DL, Hurley CM. Dropout prevention for high-risk youth with disabilities: Efficacy of a sustained school engagement procedure. *Exceptional Children*. 1998; 65:7–21.
- Steinberg L, Blatt-Eisengart I, Cauffman E. Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful homes: A replication in a sample of serious juvenile offenders. *Journal of Research on Adolescence*. 2006; 16:47–58.
- Strayhorn JM, Weidman CS. A parent practices scale and its relation to parent and child mental health. *Journal of the American Academy of Child & Adolescent Psychiatry*. 1988; 27:613–618. [PubMed: 3182627]
- Taylor T, Biglan A. Behavioral family interventions for improving childrearing: A review of the literature for clinicians and policy makers. *Clinical Child and Family Psychology Review*. 1998; 1:41–60. [PubMed: 11324077]
- Thompson A, Hollis C, Richards D. Authoritarian parenting attitudes as a risk for conduct problems: Results from a British national cohort. *European Child & Adolescent Psychiatry*. 2003; 12:84–91. [PubMed: 12664272]
- Williams TM. Childrearing practices of young mothers: What we know, how it matters, why it's so little. *American Journal of Orthopsychiatry*. 1974; 44:70–75. [PubMed: 4809588]
- Williams LR, Degnan KA, Perez-Edgar KE, Henderson HA, Rubin KH, Pine DS, Steinberg L, Fox NA. Impact of behavioral inhibition and parenting style on internalizing and externalizing problems from early childhood through adolescence. *Journal of Abnormal Child Psychology*. 2009; 37:1063–1075. [PubMed: 19521761]
- Winters KC. Development of an adolescent alcohol and other drug abuse screening scale: Personal Experience Screening Questionnaire. *Addictive Behaviors*. 1992; 17:479–490. [PubMed: 1332434]
- Winters, KC.; Henly, GA. *Adolescent Diagnostic Interview Schedule and Manual*. Los Angeles: Western Psychological Services; 1993.
- Winters KC, Leitten W. Brief intervention for drug-abusing adolescents in a school setting. *Psychology of Addictive Behaviors*. 2007; 21:249–254.
- Winters, KC.; Stinchfield, RD. *Adolescent Diagnostic Interview-Parent*. Minneapolis: University of Minnesota; 2003.
- Yu, CY.; Muthén, BO. Evaluation of model fit indices for latent variable models with categorical and continuous outcomes (Technical report). Los Angeles: University of California, Los Angeles, Graduate School of Education and Information Studies; 2001.

Table 1Demographic and Living Situation Description of the Biological Mothers in the Study ($n=190$)

	Percentage
<i>Race/Ethnicity</i>	
African American	24.2
Hispanic	30.0
Caucasian	40.5
American Indian	1.1
Other	4.2
<i>Age</i>	
Mean = 40.25; SD = 6.10; range 29–57 years	
<i>Annual Income</i>	
Less than \$5K	5.3
\$5K to \$10K	9.5
\$10K to \$25K	28.4
\$25 to \$40K	27.4
\$40K to \$75K	22.1
More than \$75K	6.3
No Data	1.1
<i>How Much of the Time the Youth Lived with Mother in the Past Year</i>	
Full time	94.2
About half time	4.2
Less than half time	1.6

Table 2Biological Mother Reports of Youth or Their Family Experiencing Traumatic Events in Lifetime ($n=190$)

Traumatic Event	Percentage
Unemployment of parent	51%
Divorce of parent	45%
Death of loved one	58%
Serious illness	30%
Victim of a violent crime	18%
Eviction from house or apartment	14%
Legal problem resulting in jail time or detention	25%
Accidental injury requiring hospitalization	12%
Other traumatic event not listed	51%

Average number of reported traumatic events: Mean = 3.04; SD = 1.76

Table 3

Alabama Parenting Questionnaire Scales (n=187 to 190)

Involvement	Mean (X)	S.D.
1. You have a friendly talk with your child.	4.06	0.86
4. You volunteer to help with special activities that your child is involved in (e.g., sports, Boy/Girl Scouts, church youth groups).	3.51	1.28
7. You play games or do other fun things with your child.	3.33	0.94
9. You ask your child about his/her day in school.	4.33	0.81
11. You help your child with his/her homework.	2.68	1.18
14. You ask your child what his/her plans are for the coming day.	3.63	0.98
15. You drive your child to special activity.	3.38	1.31
20. You talk to your child about his/her friends.	4.17	0.86
23. Your child helps plan family activities.	2.95	1.06
26. You attend PTA meetings, parent/teacher conferences, or other meetings at your child's school.	3.39	1.32
Positive Parenting		
2. You let your child know when he/she is doing a good job with something.	4.21	0.82
5. You reward or give something extra to your child for obeying you or behaving well.	3.83	0.90
13. You compliment your child when he/she does something well.	4.15	0.75
16. You praise your child if he/she behaves well.	3.95	0.99
18. You hug or kiss your child when he/she has done something well.	3.82	1.02
27. You tell your child that you like it when he/she helps around the house.	4.22	0.83
Poor Monitoring/Supervision		
6. Your child fails to leave a note or to let you know where he/she is going.	2.92	1.31
10. Your child stays out in the evening past the time he/she is supposed to be home.	2.80	1.30
17. Your child is out with friends you do not know.	2.81	1.29
19. Your child goes out without a set time to be home.	1.99	1.33
21. Your child is out after dark without an adult with him/her.	3.01	1.25
24. You get so busy that you forget where your child is and what he/she is doing.	1.51	0.73
28. You don't check that your child comes home from school when he/she is supposed to.	2.12	1.49
29. You don't tell your child where you are going.	2.15	1.42
30. Your child comes home from school more than an hour past the time you expect him/her.	2.30	1.24
32. Your child is at home without adult supervision	2.68	1.04
Inconsistent Discipline		
3. You threatened to punish your child and then do not actually punish him/her.	3.08	1.02
8. Your child talks you out of being punished after he/she has done something wrong.	2.98	1.14
12. You feel that getting your child to obey you is more trouble than it's worth.	2.46	1.31
22. You let your child out of punishment early (e.g., lift restrictions earlier than you originally said).	2.88	0.95
25. Your child is not punished when he/she has done something wrong.	2.48	1.13
31. The punishment you give your child depends on your mood.	2.14	1.04

Involvement	Mean ($\bar{X}$)	S.D.
Corporal Punishment		
33. You spank your child with your hand when he/she has done something wrong.	1.67	0.92
35. You slap your child when he/she has done something wrong.	1.48	0.74
38. You hit your child with a belt, switch, or other object when he/she has done something wrong.	1.52	0.86

Note: Response choices were: 1=Never, 2=Almost never, 3=Sometimes, 4=Often, 5=Always

Table 4

Alabama Parenting Questionnaire Scale Analysis Results

	Chi-Square	df	CFI	TLI	RMSEA	Potential Scale Reduction (PSR)	Bayesian Estimation	Posterior Predictive p-value
APQ Scale								
Poor Monitoring/ Supervision All items (n=10 items)	152.81***	35	0.774	0.709	0.133	1.020	1.020	0.000
Items 28, 29, 30 removed	21.17	14	0.977	0.965	0.052	1.054	1.054	0.219
Corporal Punishment (n=3 items)	1.30	1	0.997	0.992	0.040	1.064	1.064	0.682
Inconsistent Discipline (n=6 items)	16.46	9	0.955	0.926	0.066	1.076	1.076	0.318
Involvement All items (n=10 items)	74.05***	35	0.882	0.848	0.077	1.027	1.027	0.000
Items 4, 20, 23 removed	28.80*	14	0.924	0.886	0.075	1.012	1.012	0.063
Positive Parenting (n=6 items)	23.46**	9	0.961	0.934	0.092	1.012	1.012	0.125

Two-tailed test significance levels

* p<.05;

** p<.01;

*** p<.001

Table 5Correlations Among the Variables in the Latent Class Analysis ($n=190$)

	1	2	3	4	5
1. Poor Monitoring/Supervision	-				
2. Corporal Punishment	.085	-			
3. Inconsistent Discipline	.219**	.027	-		
4. Involvement	-.289***	-.112	-.168*	-	
5. Positive Parenting	-.166*	-.060	-.105	.677***	-

Two-tailed significance levels

* p.05;

**

p<.01;

*** p<.001

Table 6Latent Class Analysis Fit Statistics ($n=190$)

	Akaike (AIC)	Bayesian (BIC)	Sample Size Adjusted BIC	Vuong-Lo-Mendell-Rubin Likelihood Ratio Test (LRT)	Lo-Mendell-Rubin Adjusted LRT (aLRT)	Parametric Bootstrapped LRT (bLRT)
1 Class	1774.67	1807.14	1775.46	N/A	N/A	N/A
2 Classes	1694.65	1746.60	1695.92	p=0.0376	p=0.0409	p=0.0000
3 Classes	1661.04	1732.48	1662.79	p=0.1631	p=0.1714	p=0.0000

Note: AIC=Akaike Information Criterion; BIC=Bayesian Information Criterion

Table 7**Latent Class Analysis Results**

Low Level Parenting Class (n=40)			
<i>Means</i>	Estimate	S.E.	Critical Ratio
Poor Monitoring/Supervision	0.183	0.127	1.438
Corporal Punishment	0.065	0.181	0.359
Inconsistent Discipline	0.071	0.106	0.668
Involvement	-0.465	0.099	-4.699***
Positive Parenting	-0.722	0.121	-5.988***
<i>Variances</i>			
Poor Monitoring/Supervision	0.506	0.042	12.151***
Corporal Punishment	0.208	0.041	5.122***
Inconsistent Discipline	0.393	0.042	9.435***
Involvement	0.093	0.011	8.145***
Positive Parenting	0.190	0.025	7.648***
High Level Parenting Class 2 (n=116)			
<i>Means</i>			
Poor Monitoring/Supervision	-0.094	0.078	-1.205
Corporal Punishment	-0.445	0.039	-11.393***
Inconsistent Discipline	-0.041	0.062	-0.651
Involvement	0.144	0.040	3.597***
Positive Parenting	0.190	0.065	2.934**
Use of Physical Punishment Class 3 (n=34)			
<i>Means</i>			
Poor Monitoring/Supervision	0.104	0.126	0.822
Corporal Punishment	1.407	0.104	13.571***
Inconsistent Discipline	0.055	0.123	0.444
Involvement	0.052	0.073	0.707
Positive Parenting	0.191	0.112	1.706
Categorical Latent Variable Means			
C#1	0.128	0.347	0.369
C#2	1.201	0.225	5.328***
Average Latent Class Probabilities for Most Likely Latent Class Membership			
	1	2	3
1	0.860	0.126	0.014
2	0.038	0.952	0.010

Low Level Parenting Class (n=40)			
3	0.020	0.007	0.973

Note: Two-tailed p-values

*
p<.05;

**
p<.01;

p<.001

Entropy: 0.845

Table 8

Equality Tests of Estimated Means and Proportions between Classes

	Latent Class 1 Low Involvement and Low Positive Parenting (n=40)		Latent Class 2 High Involvement and Positive Parenting and Low Corporal Punishment (n=116)		Latent Class 3 Corporal Punishment (n=34)	
	Mean	S.E.	Mean	S.E.	Mean	S.E.
<i>Comparison Variables</i>						
Reported youth or family experience of trauma (lifetime)	3.090	0.300	2.932	0.170	3.326	0.314
Frequency of parent alcohol use in past 12 months ⁺	2.179 ^b	0.255	2.461	0.140	2.905 ^b	0.257
Youth ever received mental health care (yes)	0.533 ^a	0.087	0.540	0.048 ^b	0.758 ^{ab}	0.075
Youth ever received alcohol/other drug treatment (yes)	0.079	0.050	0.091	0.028	0.097	0.052

⁺ Coded as: 1=Never, 2=1–5 times; 3=6–20 times; 4=21–49 times; 5=50–99 times; 6=100+times

Note: Classes within a row with a common superscripted letter are significantly different at:

^a p<.10;^b p<.05

Table 9

Equality Tests of Estimated Means and Proportions between Classes

	Latent Class 1 Low Involvement and Low Positive Parenting (n=40)		Latent Class 2 High Involvement and Positive Parenting and Low Corporal Punishment (n=116)		Latent Class 3 Corporal Punishment (n=34)	
	Mean	S.E.	Mean	S.E.	Mean	S.E.
<i>Comparison Variables</i>						
Youth reported drug or alcohol abuse problem (yes)	0.093 ^a	0.054	0.174	0.037	0.273 ^a	0.078
Youth reported receiving services for emotional or behavioral problems (yes)	0.462	0.088	0.446	0.048	0.578	0.086
Youth self-reported delinquency in past year ^b	1.072	0.158	1.042	0.088	1.156	0.173

Note: Classes within a row with a common superscripted letter are significantly different at:

^a $p < .10$.^b Log transformed, self-reported involvement in 23 delinquent behaviors in the year prior to baseline interview (Dembo & Schmeidler, 2002).