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The influence of youth and parent reports of parental knowledge and monitoring and reporting discrepancy on high risk youth offending

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Abstract

Introduction Positive parenting practices are known to be related to lower levels of youth offending. Questions remain as to the overlap between youth and parent perceptions of parenting practices, and the relationship of perception discrepancies with youth offending. This study examines the concordance of parenting behaviors reports, the relationship between parent and youth perceptions of parenting measures with youth offending, and whether discordant youth and parent reports are related to heterogeneity in youth offending.

Methods Survey data from 818 high risk U.S. youth averaging 16 years old who participated in the Pathways to Desistance study and his or her parent form the basis of this analysis.

Results and conclusions Results demonstrate youth and parent reports of parental knowledge and parental monitoring are correlated, yet independent predictors of youth offending variety scores. Youth and parent reports about parenting measures demonstrate youth offending is highest when youth perceive parents as uninvolved, and lowest when youth estimates of parental knowledge and monitoring are higher than parent estimates. Parenting matters for high-risk youth, especially in reducing the likelihood of property offending. Using multiple perspectives to assess parenting practices is important in studying these dyadic relationships.

Research examining the influence of parenting on youth offending builds upon the assumption that positive parenting practices facilitate a child's healthy psychosocial development and reduce their negative externalizing behaviors including offending (Johnson, Giordano, Manning, & Longmore, [2011](#); Perez-Gramaje, Garcia, Reyes, Serra, & Garcia, [2020](#)). Historically research in this area focused on the parent-youth relationship, family dynamics, and varying strategies used to control youth behavior as central components to positive development and prevention of delinquent behavior (see

for example Gottfredson & Hirschi, 1990; Hirschi, 1968, 1969). More recent research has sought to define parenting practices and strategies that are related to delinquency prevention. These studies have examined the relative influence of parental monitoring that structures or limits opportunities and provides discipline for rule breaking (Augenstein et al., 2016), and the importance of creating affective bonds in which youth value the normative expectations of their parents and adjust their behavior accordingly (Hoeve et al., 2009). Studies consistently find that parenting matters for the reduction and prevention of delinquent behavior but often fails to consider aspects of the dyadic nature of a parenting relationship.

In refining our knowledge and understanding of different parenting styles, oftentimes researchers only consider the singular perspective of the parent. Through this lens, parenting style is understood to be the practices or strategies that parents, or parental figures employ in child rearing, which may include expression of attitudes toward a child's responsibilities and specific parenting practices (Bornstein & Zlotnik, 2008). For example, studies have addressed the validity of indicators that ask youth how much their parents know about their behavior or how closely the youth perceives that they are monitored by their parents, which are common approaches used in the literature on parenting (e.g., Augenstein et al., 2016). Questions arise as to the relationship of these dimensions with delinquency outcomes, as well as whether youth perceptions of parenting are valid as a stand-alone measure of parenting practices (e.g., Walters, 2019).

The current study advances the existing literature by examining the extent to which parent and youth reports of parenting behaviors are congruent, whether parent or youth reported measures of parenting have more influence on youth offending, and how discrepancies between youth and parent reports are related to offending. Importantly, this study strengthens the knowledge in this area of the literature because of two key features. First, we examine a high-risk population of incarcerated youth to ensure a sufficiently high likelihood of delinquent behavior exists in comparison to non-system involved youth (Bechtold, Cavanagh, Shulman, & Cauffman, 2014; Snyder & Sickmund, 2006). Second, self-reported offending by youth is utilized as the outcome measure, which researchers suggest is a more valid measure of offending than official records (Brame, Turner, Paternoster, & Bushway, 2012; Farrington et al., 2003; Maxfield, Weiler, & Widom, 2000). Researchers suggest much youth misconduct goes undetected by law enforcement officials. Moreover, the complexities of the parent-youth relationship are recognized as dyadic and behaviors are not viewed through a singular lens of parent to youth influence, but with recognition that reciprocal effects should be recognized in longer term research efforts.

1. Parenting and youth offending

A parenting style characterized by a warm, firm relationship between the adult and child is more likely to lead to positive and prosocial developmental outcomes. Researchers find youth exposed to an “authoritative” style of parenting, which includes high levels of behavioral regulation and high levels of parental support, are “more psychologically competent, more successful in school and less prone to internalizing or

externalizing problems” (Steinberg, Blatt-Eisengart, & Cauffman, **2006**, pp. 48; see also; Steinberg, **2001**; Steinberg, Lamborn, Dornbusch, & Darling, **1992**). Studies examining community samples of youth find that authoritative parenting significantly reduces the likelihood of negative youth outcomes. Based on results from a longitudinal study of 1049 youth, Luyckx et al. (**2011**) characterize authoritative parenting as optimal for long-term youth development, with a decreased likelihood of cigarette and alcohol use and less engagement in anti-social behavior.

Extending this linkage between parenting style and youth behavior beyond a community sample, Steinberg et al. (**2006**) studied a sample of 1355 delinquent youth, finding that offenders from authoritative households on average have higher empathy and temperance, achieve higher grades in school, report a stronger bond to school and their teachers, and report less anxiety and externalizing problem behaviors as compared to youth exposed to harsh, lax, or inconsistent parenting styles. The positive impact of authoritative parenting on youth outcomes is very robust among some youth, so much so that its effects mediate or transcend individual level risk factors such as family ethnicity, peer relationships, and genetic predisposition (Bountress, Chassin, & Lemery-Chalfant, **2017**; Chung & Steinberg, **2006**; Simons, Simons, Burt, Brody, & Cutrona, **2005**; White, Liu, Gonzales, Knight, & Tein, **2016**).

1.1. Dimensions of parenting related to youth behavior

Studies have moved beyond typological assessment of parenting styles (i.e., authoritative, authoritarian, indulgent, or uninvolved) to examine the relative influence of varying parenting dimensions of behavioral regulation and support (Maccoby & Martin, **1983**) on delinquency. As noted earlier, oftentimes researchers have viewed these dimensions in a unidirectional relationship with parenting influencing the youth without other considerations. For example, behavioral regulation is typically comprised of parental monitoring and parental knowledge of youth behavior. Parental monitoring is considered as the extent of a parent's level of control or active supervision including boundary or rule setting (Dishion & McMahon, **1998**). Parental knowledge is considered as the extent of a parent's awareness of the youth's location and the activities in which they are engaged (Vieno, Nation, Pastore, & Santinello, **2009**). Studies often combine these elements of parental behavioral regulation of youth, however, Augenstein and colleagues (2016) argue these are distinct constructs but interrelated. For example, Vieno et al. (**2009**) examined 840 mother-youth dyads finding in dyads reporting higher levels of maternal monitoring, higher levels of maternal knowledge of youth activities also existed. Augenstein et al. (2016) comment that when parents know more about their child's whereabouts and activities, they may be less inclined to initiate stricter rule-setting (i.e., monitoring). For this reason, understanding parental knowledge and monitoring behaviors distinctly is important in understanding the parental role in delinquency prevention.

In focusing on dimensions of parenting style such as behavioral regulation, the assumption is higher levels of parental knowledge and monitoring reduces the likelihood of negative youth outcomes. Findings from Vieno et al. (**2009**) support this assumption. They find greater maternal knowledge of youth behavior is correlated with fewer self-

reported incidents of antisocial behavior. Others argue parental knowledge and, in turn parental monitoring may be a protective factor against the development of child maladjustment including delinquent behavior (Ohannessian, Laird, & De Los Reyes, **2016**).

Often overlooked is the reciprocal influence of the parent-youth dyad, which becomes clearer when researchers consider indirect aspects of behavioral regulation. For example, behavioral regulation may occur indirectly through parental solicitation of information from the youth to enhance their parental knowledge. Successful transmission of knowledge from youth to parent assumes a youth is willing to disclose information to the parent (De Los Reyes, Goodman, Kliwer, & Reid-Quiñones, **2010**). Disclosure requires an interactive or transactional process of positive communication in the parent-youth dyad (Lippold, Greenberg, & Feinberg, **2011**) whose success will vary by the level of trust and quality of the dyadic relationship, or the affective bond between parent and child. When successful, this transactional communication process supports both parental knowledge and impact subsequent parental monitoring (Lippold et al., **2011**). When unsuccessful, the lack of youth to parent communication may contribute to a parent's inability to engaged in effective behavioral regulation or interrupt delinquent pathways.

In addition to behavioral regulation, parental support is another robust dimension connected to both parental knowledge/monitoring and delinquency. Common indicators of parental support are expressions of warmth, empathy, and perspective-taking, combined with avoidance of negative parenting behaviors such as the expression of hostility toward the youth (Davidov & Grusec, **2006**; Luyckx et al., **2011**). Williams and Steinberg (2011) emphasize the importance of accounting for multiple dimensions of parenting including behavioral regulation and parental support. They hypothesize these different dimensions may be related to distinct youth outcomes including socioemotional development and misbehavior. Applying parallel growth curve models to data from the Pathways to Desistance study to test their theory, Williams and Steinberg (2011) examine the relative influence of the parental support and behavioral regulation dimensions on offending, finding that both contribute to delinquency patterns over the three-year period examined. As anticipated, higher levels of parental warmth led to less delinquency, and higher levels of parental hostility led to more delinquency. Similarly, higher levels of parental monitoring led to declines in delinquency over time. Interestingly, although the influence of parental warmth remained consistent, the relative influence of parental hostility and monitoring declines over time. Williams and Steinberg (**2011**) are careful to note that “although positive parenting clearly did not prevent the adolescents in this sample from becoming delinquent, it was nonetheless associated with desistance from antisocial activity” (p. 643).

1.2. Differences in parenting by reporter

While initial studies demonstrate the importance of measuring parenting dimensions, it remains unclear whether the underlying mechanism influencing offending is the youth's subjective perception or concrete parenting behaviors. Lippold et al. (**2011**) suggest youth and parents may have different perceptions during the

transactional process of information sharing. Youth perceptions of how much parents know about and attempt to control their activities may subsequently impact their delinquent involvement. Moreover, researchers suggest children are more strongly influenced by their own perceptions of parental behavior rather than what parents may be doing or think they are doing (Demo, Small, & Savin-Williams, **1987**). Clarification on the relative importance of youth perceptions as compared to parental perceptions of parenting as an influence on youth offending is needed.

Early studies examining the influence of parenting styles on youth outcomes relied heavily on the perspective of parents and/or other observers such as teachers (Gaylord, Kitzmann, & Coleman, **2003**). Criticism followed suggesting researcher reliance on single reporter perceptions, especially parents, presents difficulty in determining the validity. A better approach is to examine the perceptions of the parent youth dyad. Congruent reporting between parent and youth may be reflective of strong attachment that facilitates communication and information sharing resulting in higher levels of parental knowledge perceived by both (Lippold et al., **2011**). It is equally possible that the parent can either over or under report a behavior, with each difference having unique implications. Discordant reporting between parent and child may be a normative developmental process that occurs with aging as youth become increasingly independent of parents (Augenstein et al., 2016). Alternatively, large disparities in parent and child perceptions may reflect underlying conflict in that relationship (Ksinan & Vaszonyi, 2016). De Los Reyes et al. (**2010**) suggest if a parent over-reports youth behavior, it may indicate a lack of information about the child's activities (i.e., low parental knowledge). Low parental knowledge can also result in a positive illusion bias – a commonality among many parents (Wenger & Fowler, **2008**), leading a parent to also underestimate the potential for the child's involvement in delinquency. In contrast, it is not known whether parental overevaluation of knowledge in comparison to youth self-reports consistently extends to perceptions of youth offending (Brummelman, Thomaes, Nelemans, Orobio de Castro, & Bushman, **2015**).

Often studies examining the influence of parenting dimensions on youth offending singularly rely upon youth self-reports (Lippold, Greenberg, & Collins, **2014**; Williams & Steinberg, **2011**). This single-reporter approach may result in bias when measuring various parenting dimensions. Evidence-based assessment practices suggest that using either a dyadic or multiple reporter approach has greater validity (Lippold et al., **2011**). More recent research examining the influence of parenting dimensions on offending incorporates both parent and youth reports. Questions regarding the exact knowledge contribution garnered from each reporter and the relationship between the reporter perspectives remain. In assessing whether parent reports uniquely contribute to the prediction of delinquency, Bechtold et al. (**2014**) examine the predictive ability of mother reports and youth self-reports of impulsivity on arrest. Findings demonstrate mothers' ratings of their son's impulsivity predict arrest up to six years, whereas youth self-reports of impulsivity only reliably predict arrest for up to two and a half years. Bechtold et al. (**2014**, pp. 1909) describe the increased explanatory power as “incremental predictive validity” confirming the importance of parental (maternal) and youth reports.

Though most studies using multi-method reports of parenting behavior find overlap between youth and parent perceptions, significant and consistent discrepancies between the two groups exist (De Los Reyes et al., **2010**; Tein, Roosa, & Michaels, **1994**). Studies commonly find low to moderate agreement between youth and parent perceptions with mother-child reports of parental behavior demonstrating correlations of between .11 and .41 (Fogas & Wolchick, 1986 as cited in Tein et al., **1994**; Schwarz, Barton-Henry, & Pruzinsky, **1985**; Tein et al., **1994**; Vieno et al., **2009**). Augenstein and colleagues (2016) conclude that while youth and parent reports are correlated, they are not redundant. When incongruence between youth and parent reports exists, particularly where the parent perceives they have more knowledge than the child reports, or overestimates their knowledge, the likelihood of risky youth behavior is higher (Cottrell et al., **2003**; De Los Reyes et al., **2010**). Also, when congruency among youth-parent dyads with low parental knowledge exists, or underestimates their knowledge, youth are more likely to be delinquent as compared to youth-parent dyads with congruent high parental knowledge (Crouter & Head, **2002**).

The limited studies that have explored both parent and youth perceptions of parental knowledge are not without their limitations for delinquency prevention efforts. For example, Cottrell et al. (**2003**) use cross sectional data from parents and youth in a rural community to understand congruency in perceptions of parenting. Their sample was comprised primarily of low income, Caucasian families with very few youths who engaged in any form of risky behavior. Here, risky behaviors considered included smoking cigarettes, consuming alcohol, or having sexual intercourse. For each category, less than 25% reported engaging in such behavior. Important for future efforts is an increased focus on risk with demonstrably high risk of delinquency to determine parent youth discordance and the relationship with delinquency using panel data at minimum. Additionally, while de los Reyes and colleagues (**2010**) improve upon Cottrell et al., they limit their assessment of congruency to overestimation of knowledge and the Problem Behavior Frequency Scale as a measure of delinquency. While useful, this scale targets low level delinquency such as truancy, shoplifting, and vandalism rather than substantive offending behavior.

2. The current study

This study builds upon Bechtold et al.'s (**2014**) recommendation that researchers should examine the role of parent-child relationships and parenting style, as well as the degree to which parent and youth self-reports are predictive of future delinquency. We also improve upon the limitations of recent research in this area. We utilize parent and youth reports to assess multiple dimensions of parenting styles, congruency between the reporters, and the relative relationship of reporter discrepancies with the youth's self-reported offending behavior. For this study, we rely upon data from the Pathways to Desistance Study because it is uniquely suited to address these recommendations by its composition of high-risk offenders. We test the following directional and non-directional hypothesis based on the literature discussed.

H1 Youth and parent reports of parenting measures will be positively correlated to a statistically significant degree representing a degree of congruency.

H2 Parent reports of parenting measures will increase the explanatory power of the variance in offending variety scores above variance explained by youth reports alone.

H3 Discordance between youth and parent perceptions of parenting measures will be significant related to youth offending variety scores.

3. Method

3.1. Participants

The current study draws upon youth who were participants in the Pathways to Desistance study during the baseline and collateral interviews portion of the study. The Pathways to Desistance research study is a multi-site, longitudinal study that followed serious juvenile offenders from adolescence to young adulthood between 2000 and 2010 (Mulvey & Schubert, **2012**). The Pathways to Desistance study began in 2000 with 645 adjudicated youth from juvenile and adult court systems in Maricopa County, Arizona and 700 adjudicated youth from Philadelphia County, Pennsylvania (Mulvey, 2000).¹ Interviewers conducted baseline interviews with youth between November 2000 and January 2003. After researchers conducted initial baseline interviews, they conducted follow-up interviews every six months for the first three years, then annually for four years.

In addition to interviews with the delinquent youth, researchers conducted collateral interviews at baseline and at a one-year follow-up. The collateral interview respondent could be anyone known to the youth, but most collateral respondents at Time 1 (82%) were parents who were primary caregivers (mostly women, 85%). The non-parent (i.e., sibling, significant other, other relative, or other) collateral interviews were excluded. To be included in these analyses, youth and collateral interviewees must have both responded to all sections including the parenting measures section of the interview. Because of this criterion, our sample was restricted to 818 youth and parents. These youth were primarily males identifying as persons of color with an average age of 15.9 years old (SD = 1.1).

3.2. Measures

Table **1** presents descriptive statistics for all measures including the youth and parent reports of parental knowledge and monitoring, youth reports of maternal warmth and maternal hostility, property and aggressive offending, and control variables.

Table 1. Descriptive statistics for parenting, offending, and control variables.

Variables	Percent	<i>M</i> (SD)	Skewness	Kurtosis	Range
Parental Knowledge (Youth)		2.78 (0.78)	-0.183	-0.768	1-4
Parental Knowledge (Parent)		2.75 (0.75)	-0.293	-0.459	1-4
Parental Monitoring (Youth)		2.84 (0.85)	-0.284	-0.976	1-4
Parental Monitoring (Parent)		3.17 (0.76)	-0.589	-0.593	1-4
Maternal Warmth (Youth)		3.19 (0.69)	-0.705	-0.361	1-4
Maternal Hostility (Youth)		1.62 (0.45)	1.381	2.259	1-3.75
Property Offending Variety Score (Past Year)		2.12 (2.26)	1.146	0.632	0-10
Aggressive Offense (Past Year)	54.4%	1.30 (1.71)	1.610	2.396	0-8
Male	85.8%				
Person of Color	74.4%				
Age at Baseline		15.89 (1.12)	-0.183	-0.862	14-18
Impulse Control		2.97 (0.95)	0.101	-0.671	1-5

3.3. Parenting measures

Four parenting constructs are captured in this study: parental knowledge, parental monitoring, maternal warmth, and maternal hostility. All scales were pre-constructed in the Pathways to Desistance dataset, which were adapted from the Quality of Parental Relationships Inventory (Conger, Ge, Elder, Lorenz, & Simons, 1994; see Appendix for full lists of items). Parental Knowledge and Parental Monitoring questions were asked about “the person who is primarily responsible for you.” The Warmth and Hostility questions were asked separately for “mother/female caregiver” and “father/male caregiver.” While most participants provide information about warmth and hostility relative to their “mother/female caregiver,” there was a significant amount of missing data related to “father/male caregiver.” For this reason and because women tend to be primary caregivers, analyses focus on warmth and hostility of the participants’ female caregiver.

Parental Knowledge. Parental Knowledge is a five-item scale assessing how much parents know about the youth's whereabouts, friends, and activities (e.g., how much does your parent know about how you spend your free time). These items are asked in both the youth and parent (i.e., collateral) interviews. Each item is measured on a four-point scale ranging from 1 = “doesn't know at all” to 4 = “knows everything.”

The pre-constructed scale represents the average of the items, and higher values on the scale indicate a greater degree of parental knowledge about the youth's activities.

Parental Monitoring. Parental Monitoring is a four-item scale assessing how much control parents exert over the youth's activities and behavior (e.g., how often do you have a set time to be home on weekend nights?). Each item is measured on a four-point scale from 1 = never to 4 = always. The pre-constructed scale represents the average of the items with higher scale values indicating a higher level of parental monitoring.

Maternal Warmth. Maternal Warmth is a nine-item scale assessing the affective quality of the mother-youth relationship (e.g., how often does your mother tell you she loves you, let you know she really cares about you, etc.). The Quality of Parental Inventory (Conger et al., 1994) was adapted for this construct (see Appendix A for individual items). Each item is measured on a four-point scale from 1 = never to 4 = always. The pre-constructed scale provides the average of the items with higher scale values indicate a more affectionate, warmer relationship.

Maternal Hostility. Maternal Hostility is a twelve-item scale adapted from Conger et al. (1994)'s Quality of Parental Inventory capturing level of hostility in the youth-mother relationship (e.g., how often does your mother get angry at you, throw things at you, etc.). Each item is measured on a four-point scale from 1 = never to 4 = always. The pre-constructed scale provides the average of the items with higher values indicate a more hostile mother-youth relationship.

3.4. Offending measures

Two self-reported measures of offending are used in this study: a variety score of property offending and a variety score of aggressive offending.² Respondents are asked in this study to indicate whether they had engaged in a series of 22 offending behaviors within the previous year. Eleven items reflect non-drug property or public order offenses (i.e., damaged or destroyed property, set a fire, broke into a building to steal something, shoplifted, bought/received/sold stolen property, used checks or credit cards illegally, stole a motor vehicle, drove drunk or high, paid for sex, broke into a car to steal something, joyriding). Eight items represent aggressive offenses (i.e., carjacked, shot and hit someone, shot at someone, robbery with a weapon, robbery with no weapon, participated in a gang fight, assaulted someone causing serious injury, carried a gun). Remaining items were masked for confidentiality and were not considered in this analysis. Questions for these measures were developed by the Pathways Study research team (Mulvey, 2013).

Dichotomous indicators for property offending and aggressive offending are respectively summed to create variety scores. The property offending variety score ranges from 0 to 10 types of property offending behaviors committed, with a mean of 2.12 (SD = 2.26). The aggressive offending variety score ranges from 0 to 8, with a mean of 1.30 (SD = 1.71).

A subsequent, supplemental analysis extends the focus on analysis of parenting to explore causal effects of perceptions of parenting on youth offending. For this second stage analysis, both the property and aggressive offending variety scores are computed based on the one-year follow-up data. The same behavioral indicator as described above are used, but with a focus on offending behaviors that occurred between the baseline interview and the follow up interview. For these analyses, 776 youth respondents are included since they have complete baseline youth and collateral interview data and one-year follow-up data. The Time 2 property offending variety score ranges from 0 to 15 with a mean of 1.00 (SD = 2.12). The Time 2 aggressive offending variety score ranges from 0 to 7 with a mean of 0.35 (SD = 0.90).

3.5. Control variables

Several control variables are included in the multivariate models. Gender is coded as 0 = female (14.2%; n = 116) and 1 = male (85.8%; n = 702). A dichotomous measure captures race (1 = Person of Color; 74.4%; n = 609). Age at baseline is a continuous variable ranging from 14 to 18, with an average of 15.89 (SD = 1.12). Finally, multivariate analyses incorporate a scale measuring impulse control. The Impulse Control scale is an average of eight items from the Weinberger Adjustment Inventory (Weinberger, 1997) that reflect the youth's level of impulse control (e.g., I say the first thing that pops into head without thinking about it). Respondents are asked to consider the previous six months and report how true each statement is of them (coded as 1 = false to 5 = true). The items are recoded and averaged so that higher values reflect more impulse control. Scale scores range from 1 to 5 with a mean of 2.97 (SD = 0.95).

4. Analytical approach

This study uses a variety of analytical approaches to inform the stated hypothesis. First, descriptive and bivariate analyses examine both youth and parental perspectives to test the first hypothesis. Next, a set of sequential negative binomial regression models examining offense variety scores are conducted. First, youth reports of parental knowledge and monitoring are included, and then parent reports are added to determine whether the addition of these indicators significantly correlates with offending variety scores and improves explanatory power, net of control variables (Hypothesis 2). Finally to test Hypothesis 3, difference scores representing the degree to which youth have higher or lower values of the parenting measures in comparison to their parent's reports are calculated. Multivariate negative binomial regression models for the property and aggressive offending variety scores that include the same control variables are conducted. The final set of analyses to test hypothesis 3 combines these elements by using a person-centered approach, Latent Class Analysis (LCA), to uncover patterns of youth and parent reporting of knowledge and monitoring along with discrepancies. Recognizing these latent classes of parenting, multivariate models are estimated to predict the property and aggressive offending variety scores incorporating

the same controls as used previously along with the categorical indicators of predicted class membership.

5. Results

5.1. Youth versus parent reports

The first of inquiry informs hypothesis 1 and 2 with the questions: To what extent are youth and parent reports of parenting measures congruent? Are youth and parent reports independently related to youth offending? Table 2 presents correlations among the six parenting measures. While youth and parent reports are significantly correlated ($r = .318$, $p < .01$ for knowledge; $r = .306$, $p < .01$ for monitoring), the overlap between the reporters is not overwhelming, with only 10.1% shared variance for parental knowledge and 9.4% for parental monitoring.

Table 2. Correlations between youth and parent perceptions and behavior.

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) Youth – Knowledge	–					
(2) Youth – Monitoring	.328**	–				
(3) Parent – Knowledge	.318**	.156**	–			
(4) Parent – Monitoring	.205**	.306**	.451**	–		
(5) Youth – Maternal Warmth	.254**	.142**	.029	.045	–	
(6) Youth – Maternal Hostility	-.214**	-.104**	-.122**	-.073*	-.417**	–

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

As shown in Table 3, in almost all cases parenting measures are significantly correlated with youth offending variety scores at the bivariate level. Parental knowledge, parental monitoring, and maternal warmth are negatively correlated to a statistically significant degree with property offending variety score for both youth and parent reporters. Maternal hostility is significantly and positively correlated with both property and aggressive offending variety scores. Maternal warmth is only significantly correlated with the aggressive offending variety score. While these results confirm congruency anticipated in hypothesis 1, the extent of explained variance should result in a cautionary interpretation of this relationship.

Table 3. Correlations between youth and parent perceptions and youth offending behavior.

Variables	Property Offending Variety Score	Aggressive Offending Variety Score
Youth – Knowledge	-.284**	-.254**
Youth – Monitoring	-.181**	-.213**
Parent – Knowledge	-.176**	-.169**
Parent – Monitoring	-.109**	-.094**
Youth – Maternal Warmth	-.096**	-.001
Youth – Maternal Hostility	.179**	.185**

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

Next to test hypothesis 2, we examine whether parent reports add to the explanatory power in understanding offending variety scores, beyond youth reports. As count variables with overdispersion, multivariate negative binomial models were estimated to predict both property and aggressive offending variety scores, a negative binomial regression model was used. Eq. (1) presents the negative binomial regression model (see Britt et al., 2018), which includes an individual-level error term that allows for unobserved heterogeneity. In this approach, the overdispersion of property and aggressive offending variety scores is modeled as a linear function of the mean such that “ k represents the count, λ represents the mean, and θ represents the dispersion parameter” (Britt et al., 2018, p. 594).

$$P(y = k) = \frac{\Gamma(\lambda/\theta + k)}{\Gamma(\lambda/\theta)\Gamma(k + 1)} \left(\frac{1}{1 + \theta}\right)^{\lambda/\theta} \left(\frac{\theta}{1 + \theta}\right)^k$$

The variance of the model expressed in Eq. (1) is $\lambda(1 + \theta)$, and with this form of the negative binomial regression model notes the expected value of the dependent variable (i.e., offending) as $E(y) = \lambda = \exp(XB)$, which Britt et al. indicate is interpreted with the exponentiated coefficient measuring “the incident risk ratio (IRR) for a one unit change in the covariate.”

Table 4 provides results from multivariate analyses of property and aggressive offending variety scores at baseline. For each dependent variable, the first model includes youth reports of parental knowledge and parental monitoring, along with maternal warmth and maternal hostility while controlling for gender, race, age, and level of impulse control. The second model adds the parent reports of parental knowledge

and monitoring. In a negative binomial regression model for the property offending variety score, youth reports of higher levels of parental knowledge and parental monitoring are related to lower offending variety scores net of control variables. When parent reports are included in the model, coefficients for both youth report of parenting measures remain statistically significant, and the higher parent reports of parental knowledge results in a lower offending variety score to a statistically significant degree. A likelihood-ratio test indicates that the model including both youth and parent reports is a significantly better fit than the model with only youth reports ($\chi^2 = 7.09$, $p < .05$). Thus, youth and parent reports of parental knowledge appear to have independent, additive effects for understanding youth property offending confirming hypothesis 2.

Table 4. Sequential negative binomial regression models predicting offending with youth and parent reports of parenting.

Variables	Property Offending Variety Score				Aggressive Offending Variety Score			
	b (s.e.)	IRR	b (s.e.)	IRR	b (s.e.)	IRR	b (s.e.)	IRR
Constant	2.780 (0.663)	16.122**	3.207 (0.679)	24.715**	0.368 (0.785)	1.445	0.776 (0.806)	2.173
Male	0.275 (0.112)	1.317**	0.280 (0.111)	1.323**	0.782 (0.158)	2.185**	0.776 (0.157)	2.172**
Non-White	-0.131 (0.083)	0.877	-0.138 (0.083)	0.871*	0.322 (0.108)	1.380**	0.318 (0.107)	1.374**
Age at Baseline	-0.038 (0.034)	0.963	-0.041 (0.034)	0.960	-0.023 (0.041)	0.977	-0.028 (0.041)	0.972
Impulse Control	-0.334 (0.041)	0.716**	-0.336 (0.041)	0.715**	-0.321 (0.049)	0.725**	-0.319 (0.049)	0.727**
Maternal Warmth	0.053 (0.059)	1.054	0.039 (0.058)	1.039	0.238 (0.072)	1.269**	0.225 (0.072)	1.252**
Maternal Hostility	0.173 (0.089)	1.189*	0.152 (0.089)	1.165*	0.439 (0.107)	0.551**	0.420 (0.107)	1.523**
Youth Reports								
Parental Knowledge	-0.285 (0.050)	0.752**	-0.249 (0.051)	0.779**	-0.295 (0.060)	0.744**	-0.256 (0.062)	0.774**
Parental Monitoring	-0.121 (0.046)	0.886**	-0.111 (0.048)	0.895**	-0.184 (0.056)	0.832**	-0.187 (0.058)	0.830**
Parent Reports								
Parental Knowledge	-	-	-0.108 (0.054)	0.896*	-	-	-0.143 (0.066)	0.867*
Parental Monitoring	-	-	-0.043 (0.053)	0.958	-	-	0.011 (0.065)	1.011
Pseudo-r ²	.186		.193		.196		.202	
χ^2 Likelihood ratio test for full vs. reduced model			7.09*				5.34*	

* $p < .05$; ** $p < .01$, one-tailed.
ap = .069.

Results are similar in the negative binomial regression models predicting the self-reported aggressive offending variety score. In the youth report only model, higher levels of both parental knowledge and parental monitoring are significantly related to lower aggressive offending variety scores net of control variables. Interestingly, higher levels of maternal warmth and maternal hostility are significantly related to higher rates of aggressive offending variety scores. In the second model when parent reports are added, the relationship of youth reports with offending remains significant. The higher levels of parent reported parental knowledge is significantly related to lower levels of aggressive offending variety scores net of controls even further. The likelihood ratio test comparing the full and reduced models is marginally significant ($\chi^2 = 5.34$, $p = .069$). Although the fit is only marginally improved, this finding does confirm hypothesis 2.

5.2. Differences in youth-parent reports

While the absolute levels of parenting measures appear to play a role in offending, it is possible that the key feature of parenting is the discrepancy or discordance between youth and parent perceptions of parenting behaviors. Following De Los Reyes et al. (2010) and Lippold et al. (2011) along with recommendations for current practice, standardized difference scores are calculated to reflect discrepancies in reporting. Youth and parent reports of parental knowledge and parental monitoring were first standardized, and then the parent score was subtracted from the youth score. The resulting difference score represent the degree to which youth have higher or lower values of the parenting measures in comparison to their parent's reports. Positive score indicates that youth report a higher degree of parental knowledge or parental monitoring as compared to their parent (i.e., youth overestimation of parenting). Negative scores indicate youth report lower levels compared to their parent (i.e., youth underestimation of parenting). It is important to note that this analytical approach is not intended to indicate the parent perception is the most objective perspective; instead, one of the two reports must serve as the comparison category. Here, we select the parent report as the base and compare youth reports as overestimated or underestimated in relation to the parent perception.

Table 5 presents descriptive statistics for both the average youth/parent scores and the difference scores and correlations with offending. Average levels of parental knowledge and parental monitoring are both significantly and negatively correlated with property and aggressive offending variety scores. Additionally, a greater overestimation of parenting of youth to parent reports (i.e., youth > parent) for parental knowledge and parental monitoring measures is significantly correlated with a lower property offending variety score ($r = -0.093$, $p < .01$ for knowledge; $r = -0.061$, $p < .05$ for monitoring) and aggressive offending variety score ($r = -0.073$, $p < .01$ for knowledge; $r = -0.101$, $p < .01$ for monitoring).

Table 6 presents multivariate negative binomial regression models for the property and aggressive offending variety scores that include the same control variables as described previously along with maternal warmth and maternal hostility. To reflect discrepancies in youth and parent reporting, two sets of variables are added. The difference scores are included to reflect the discrepancy between youth and parent reports. Additionally, the average of the youth and parent reports for both parental knowledge and parental monitoring are included to control for overall levels of parental knowledge and parental monitoring (see De Los Reyes et al., 2010). In both models, the average levels of parental knowledge and parental monitoring are significantly related to lower property and aggressive offending variety scores. Additionally, the difference score for parental knowledge (but not parental monitoring) significantly impacts the property offending variety score. Youth reporting higher levels of parental knowledge relative to parental reports is significantly associated with a lower property offending variety score. Conversely, the parental monitoring difference score (but not parental knowledge) is significant in the aggressive offending model. Youth reporting higher than parent reports (i.e., overestimating) of parental monitoring is significantly associated

with lower aggressive offending variety scores. These findings confirm the non-directional statement of hypothesis 3 that discordance between youth and parent perceptions of parenting measures will be significant related to youth offending variety scores.

Table 5. Correlations between knowledge and monitoring average and differences scores and youth offending behavior.

Variables	<i>M (SD)</i>	Range	Property Offending Variety Score	Aggressive Offending Variety Score
Average Scores (Youth/Parent)				
Parental Knowledge	2.77 (0.62)	1.10–4.00	-.285**	-.261**
Parental Monitoring	3.01 (0.65)	1.13–4.00	-.182**	-.194**
Difference Scores (Youth – Parent)				
Parental Knowledge	0.00 (1.17)	-3.94– 3.89	-.093**	-.073**
Parental Monitoring	0.00 (1.18)	-3.26– 4.21	-.061*	-.101**

p* < .05; *p* < .01, one-tailed.

Table 6. Negative binomial regression models predicting offending with differences between youth and parent reports.

Variables	Property Offending Variety Score		Aggressive Offending Variety Score	
	<i>b (s.e.)</i>	IRR	<i>B (s.e.)</i>	IRR
Constant	3.236 (0.682)	25.436**	0.846 (0.810)	2.332
Male	0.280 (0.111)	1.323**	0.776 (0.157)	2.172**
Non-White	-0.138 (0.083)	0.871*	0.318 (0.107)	1.374**
Age at Baseline	-0.041 (0.034)	0.960	-0.028 (0.041)	0.972
Impulse Control	-0.336 (0.041)	0.715**	-0.319 (0.049)	0.727**
Maternal Warmth	0.039 (0.058)	1.039	0.225 (0.072)	1.252**
Maternal Hostility	0.152 (0.089)	1.165*	0.420 (0.107)	1.523**
Average of Youth/Parent				
Parental Knowledge	-0.360 (0.065)	0.697**	-0.402 (0.079)	0.669**
Parental Monitoring	-0.157 (0.062)	0.855**	-0.187 (0.075)	0.829**
Differences Scores (Youth – Parent)				
Parental Knowledge	-0.054 (0.032)	0.947*	-0.043 (0.039)	0.958
Parental Monitoring	-0.027 (0.032)	0.973	-0.079 (0.039)	0.924*
Pseudo-r ²	.193		.202	

p* < .05; *p* < .01, one-tailed.

5.3. Latent Class Analysis of reporting behaviors

The final set of analyses attempts to combine all these elements by using a person-centered approach, Latent Class Analysis (LCA), to uncover patterns of youth and parent reporting of knowledge and monitoring along with discrepancies. Following

Lippold et al. (2014), each of the six parenting measures is dichotomized at the median. Like factor analysis which groups variables, LCA groups individuals by different response patterns to each of the six parenting measures. With six variables (j) and two response categories for each (r_j), there are 64 possible response patterns (i.e., $2^6 = 64$), and y represents a specific response pattern. LCA assumes that the patterns of responses reflect an underlying latent variable with a certain number of mutually exclusive categories (c ; see Porcu & Giambona, 2017; Sullivan, McGloin, Ray, & Caudy, 2009). In Eq. (2), the LCA model predicts the probability of a particular response pattern as a function of two parameters, the probability of membership in each category of latent class c (γ_c) and the probability of response i to item j conditional on class membership ($\rho_{j,r_j|c}$).

$$P(\mathbf{Y} = y) = \sum_{c=1}^C \gamma_c \prod_{j=1}^J \prod_{r_j=1}^{R_j} \rho_{j,r_j|c}^{I(y_j=r_j)}$$

We test models with between two and six latent classes. Analyses are conducted in MPlus7 (Muthen & Muthen, 2012; see Table 7). Selection of the appropriate number of classes relies on several fit statistics. Ultimately, a four-class model is selected based on the highest entropy value produced (see Wang, Deng, Bi, Ye, & Yang, 2017 for discussion on class selection based on entropy values) (Table 8)

Table 7. Latent class analysis fit statistics for 6 dichotomous indicators above median (n = 818).

Class	BIC	LMR	BLR	Entropy
2	6569.394	255.157**	260.591**	.554
3	6550.511	64.458**	65.831**	.640
4	6575.070	21.922	22.389**	.681
5	6604.023	17.620	17.996*	.578
6	6643.690	7.148	7.281	.619

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

Table 8. Negative binomial regression models predicting offending with predicted parenting latent classes.

Variables	Property Offending Variety Score		Aggressive Offending Variety Score	
	b (s.e.)	IRR	b (s.e.)	IRR
Constant	1.401 (0.550)	4.058**	-0.535 (0.671)	0.586
Male	0.311 (0.111)	1.364**	0.813 (0.157)	2.254**
Non-White	-0.084 (0.083)	0.919	0.417 (0.109)	1.518**
Age at Baseline	-0.007 (0.033)	0.994	0.026 (0.040)	1.027
Impulse Control	-0.384 (0.040)	0.681**	-0.392 (0.050)	0.676**
Predicted Parenting Latent Class ^a				
Youth < Parent	0.047 (0.138)	1.048	0.211 (0.175)	1.235
Low Parental Involvement	0.487 (0.120)	1.627** ^b	0.578 (0.152)	1.782** ^b
Knowledge Focused	0.161 (0.155)	1.175	0.298 (0.192)	1.347
Pseudo-r2	.159		.158	

*p < .05; **p < .01, one-tailed.

a Reference category is "Youth > Parent."

b A post-hoc test found that the coefficient for "Low Parental Involvement" is significantly different from "Youth Under-Estimators" and "Knowledge Focused" groups.

The results from the four-class model (Fig. 1) illustrate the differences between the four identified groups on the probability of having a score above the median. The first group is identified as "Youth > Parent" comprises about 13.3% of the sample. The group demonstrates high probabilities that youth reports are above the median, with somewhat lower probabilities for parent reports. They are characterized by high maternal warmth and low maternal hostility. The next group, "Youth < Parent," comprises 20.7% of the sample. In this group, parent reports of parental knowledge and parental monitoring are higher than youth reports, and the group has relatively low levels of maternal warmth and high levels of maternal hostility. The "Low Parental Involvement" group comprises more than half of the sample (53.5%). This group demonstrates low scores on all the parenting measures, regardless of reporter, low

levels of maternal warmth, but the highest levels of maternal hostility. Finally, the smallest group (12.5% of the sample) can be characterized as “Knowledge-Focused.” This group demonstrates higher levels of both youth and parent reports of parental knowledge and maternal warmth, with relatively lower levels of monitoring and the lowest level of maternal hostility.

Predicted Latent Class Groups

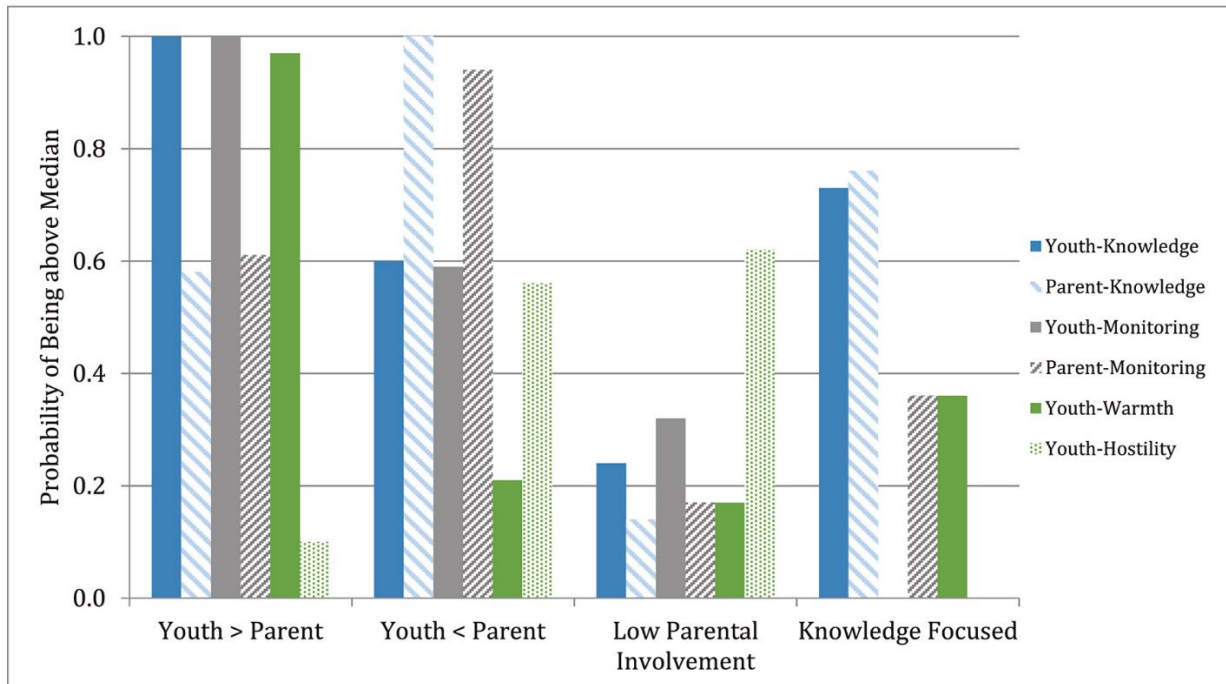


Fig 1 Predicted latent class groups.

Recognizing these latent classes of parenting, multivariate models are estimated to predict the property and aggressive offending variety scores incorporating the same controls as used previously along with the categorical indicators of predicted class membership (See Table 9). The “Youth > Parent” group is the excluded reference category. In both the property and aggressive offending models, the “Low Parental Involvement” group has significantly greater variety scores as compared to the “Youth > Parent” (i.e., the reference category). Additional post-hoc tests indicate that the “Low Parental Involvement” coefficients are also significantly greater than those for both the “Youth < Parent” and the “Knowledge Focused” groups. Thus, youth in the “Low Parental Involvement” group have the greatest level of self-reported offending. The “Youth > Parent” group has the lowest level of self-reported offending.

Table 9. Negative binomial regression models predicting time 2 offending with predicted parenting latent classes.

Variables	Property Offending Variety Score (n = 776)		Aggressive Offending Variety Score (n = 776)	
	b (s.e.)	IRR	b (s.e.)	IRR
Constant	0.113 (1.257)	1.119	-1.821 (1.529)	0.162
Male	1.071 (0.256)	2.919**	1.272 (0.367)	3.567**
Non-White	-0.134 (0.182)	0.875	0.221 (0.229)	1.247
Age at Baseline	-0.029 (0.075)	0.972	-0.004 (0.090)	0.996
Impulse Control	-0.378 (0.086)	0.685**	-0.515 (0.108)	0.597**
Predicted Parenting Latent Class ^a				
Youth < Parent	0.541 (0.286)	1.718*	1.061 (1.043)	2.890**
Low Parental Involvement	0.677 (0.254)	1.968** ^b	1.043 (0.358)	2.838**
Knowledge Focused	0.126 (0.326)	1.134	0.479 (0.452)	1.615
Pseudo-r2	.066		.085	

*p < .05; **p < .01, one-tailed.

^a Reference category is “Youth > Parent.”

^b A post-hoc test found that the coefficient for “Low Parental Involvement” is significantly different from the “Knowledge Focused” group.

5.4. Parenting and time 2 offending

A final set of analyses considers parenting further and explores the potential relationship of youth versus parent reports of parenting on youth offending. With the previous cross-sectional analyses of parenting and offending, results indicated correlations between these various parenting measures; however, it is important to consider the possible relationships between parenting measures and subsequent youth offending. To begin an assessment of the potential causal role of the parenting measures identified above, multivariate models are estimated predicting Time 2 property and aggressive offending variety scores incorporating the same controls as used previously along with the categorical indicators of predicted class membership (See Table 9).³ Again, the “Youth > Parent” group is the excluded reference category. It is important to recognize that involvement in offending has reciprocal effects on parenting behaviors, possibly altering actual parental knowledge and parental monitoring. For example, with system-involved youth, parents may feel hopeless and abdicate their parental role, or may try to help their children by becoming more involved. For this exploratory analysis, we will initially consider a unilateral approach.

In both the property and aggressive offending models, the “Low Parental Involvement” group has significantly greater Time 2 variety scores as compared to the “Youth > Parent” group (i.e., the reference category). Thus, youth in the “Low Parental Involvement” group have higher levels of self-reported offending. Additionally, coefficients for the “Youth < Parent” group are positive and significant in both models. In other words, youth who reported lower levels of parental knowledge and parental monitoring relative to parent reports are significantly more likely to engage in a variety of property and aggressive offending than those who reported higher levels of those parental measures.

6. Discussion

Nearly 40 years ago, researchers began to grapple with questions related to the influence of parenting on healthy psychosocial development of youth. Studies have refined assessment of this topic over the years with questions remaining as to the most effective modality of ascertaining reports of youth behavior and parenting dimensions. Researchers have determined the need for multiple reporters (i.e., parents and youth) to assess parenting style dimensions, with an added emphasis on assessing the congruency between these reports and the relative perceptions of the reporters. Prior studies have suggested that in addition to the parenting dimensions, the relative influence of reporter discrepancies may also affect the extent of the youth's self-reported delinquency. Data from the Pathways to Desistance study, a sample of high-risk incarcerated youth, enabled the exploration of these relationships in the current study. This high-risk sample ensured a sufficiently high likelihood of delinquent behavior was possible as compared to prior studies that have utilized community samples of non-system involved youth (Bechtold et al., 2014; Snyder & Sickmund, 2006). A measure of self-reported offending was also used as studies have found this approach to be a more accurate measure of offending among youth than official records (Brame et al., 2012; Farrington et al., 2003; Maxfield et al., 2000).

The important analytical approaches used herein resulted in findings that further extend the existing knowledge on parenting dimensions and delinquency in important ways. First and foremost, findings indicate that parenting does matter in the level of youth offending, particularly the youth's perceptions of the parenting. Youth perceptions of parenting have the highest relative impact on offending. Parent reports also independently contribute significantly to the likelihood of youth offending, along with discrepancies in reporting between youth and parents.

Some distinctions in the relationship between parenting dimensions and offending by offense type exist. For example, parental knowledge plays the biggest role in the extent of youth involvement in property offending. Parental monitoring, especially the discrepancy between youth and parent reports of monitoring, plays a significant role in the prevalence of aggressive offending. It may be that aggression is a more impulsive behavior and thus more responsive to parental efforts of direct control as seen in the monitoring aspect of parenting.

Another important finding is that parenting matters for all youth including high-risk youth. Recall that the youth examined in this study were comprised of a high-risk population of incarcerated youth rather than a community sample, as is common in prior studies. Even for youth who were deeply embedded in offending and the criminal justice system, an opportunity for behavioral change and desistance remained as demonstrated by their responsiveness to positive parenting practices, especially in the extension of analyses to predict Time 2 offending. These findings reinforce the use of family-based prevention and treatment programs with serious juvenile offenders either while they reside in residential corrections facilities or as part of an aftercare planning process upon release.

Finally, it merits underscoring that both youth and parent perceptions of parenting matter. Although youth perceptions are a more robust predictor of offending, parent-reported knowledge uniquely contributes to the likelihood of property offending. In both community samples as determined in prior studies and with high-risk populations of youth as determined here, findings demonstrate the importance of measuring multiple reporters of parenting dimensions when studying the effects of parenting on delinquency as well as direction of reporting discrepancies between the youth and parent.

Important advances in the literature result from this study, but its limitations should be noted to contextualize these findings. Foremost, the analyses presented here rely on only two waves of data from the Pathways to Desistance study because sufficient collateral parent interviews were only available at those waves. It is likely that the nature of the parent-child relationship changes over time, and future research should extend these analyses over time to capture that variation. Related to our reliance on this study is the measures of key variables were predetermined by the study. We elected to keep the measures intact to maintain the integrity of these data. Still, as one reviewer noted some measures are limited. Specifically, parental monitoring items pertain to the imposition of time-limits on the youth's whereabouts which arguably overlaps with the measure of parental knowledge. Moreover, the parenting scale do not fully capture parental monitoring actions that may be available with current technology. We encourage researchers to consider new approaches to measuring these concepts in future studies.

Second, a limitation in survey research that may have influenced our findings is social desirability bias. This type of participant reporting bias is the tendency for individuals to alter their responses to align with their perceived societal expectations rather than to respond to questions directly and honestly. Although social desirability bias is more likely to occur when discussing taboo topics (Krumpal, 2013), youth can be especially sensitive to the need for social approval from the interviewer or be hesitant to report violent and non-violent behaviors (Davis, Thake, & Vilhena, 2010; Moncher & Miller, 1999; O'Donnell et al., 1999). Further, adult reporters may be defensive of their parenting skills as part of the collateral interviews associated with an effort focusing on high-risk youth (DiGiunta et al., 2020; Lange, Callinan, & Smith, 2019).

Third, our focus is on high-risk youth in this study. This is an advantage in extending existing literature by examining this unique group when community samples are typically the norm. It is important for researchers to determine whether these findings generalize to lower risk system involved youth and to youth who are not involved in the criminal justice system but may exhibit delinquent behavior. While not necessarily a limitation of the study itself, findings may not generalize in all cases. The use of a sample of high-risk youth may also account for the one counterintuitive result, that a greater degree of maternal warmth was associated with increased aggressive offending. Given that these youth were already involved in offending behavior, it is

possible that higher levels of maternal warmth may be perceived as tacit approval or tolerance of the youth's delinquent behavior. While we were not able to disentangle this finding here, future research should consider the interplay of youth and parent relationship characteristics over the course of a delinquent trajectory.

Lastly, we were not able to include characteristics of the neighborhoods in which these families resided or give full consideration of reciprocal relationships. Researchers have suggested that family processes vary and “parental monitoring, especially supervision, may be more strongly related to problem behavior in neighborhoods that are unsafe” (Lippold et al., 2011, pp. 1187). Thus, the social context of family dynamics, specifically parenting behavior, may be dependent upon factors such as level of neighborhood disorder and vary by indicators such as closure and integration (e.g., how many neighbors would tell your parents, etc.). Reciprocal relationships may also exist such that higher rates and frequency of delinquency may result in declining parental warmth and monitoring over time (see for example Williams & Steinberg, 2011). Accounting for reciprocal relationships between parenting and delinquency among youth of varying risk levels is an important next step in this area of research.

This paper aimed to advance knowledge on the role of parents in youth offending, and to understand the complexities associated with dimensions of both parenting and offending. Other factors not examined here likely contribute, mediate, or moderate these relationships as well. For example, while the composition of our sample reflected the general youth offender population, we suspect gendered effects of parenting on offending likely exist. Studies have found that in some families, parental warmth as well as discipline styles varying based on gender of the child (see for example Munoz-Suazo et al. (2020)). We strongly encourage researchers to consider these factors in future research endeavors.

When taken as a whole, the findings presented in this study demonstrate the importance of parent-youth communication patterns, along with the need to have a clearer understanding of the transactional process within the dyad to improve perceptual congruency. In addition to improving youth outcomes, Bechtold et al. (2014, pp. 1904) remind us that for system involved youth, parental perceptions of youth behavior are critical to clinical and juvenile justice professionals. System actors such as probation officers often solicit parental reports on youths' behavior and characteristics before making treatment and sanction recommendations to the courts. Findings that underscore the relevance of parent reports of parental knowledge and monitoring of youth activities for the reduction of juvenile property offending supports this continued reliance on parents in this role. Future research should investigate the youth-parent transactional communication process to improve dyadic communication. Equipping parents and youth with skills and tools to improve communication is important to possible regulation of youth behavior that has forethought and planning (i.e., property offenses). In contrast, researchers should determine more effective interventions that

aim to reduce offending that includes reactive or aggressive behaviors which may require a renewed focus on equipping the youth to improve their emotional reactivity.

Appendix

Scale Items for Parental Variables

Parental Knowledge – asked about “the person primarily responsible for you”.

- How much do they know about who you spend your time with?
- How much do they know about how you spend your free time?
- How much do they know about how you spend your money?
- How much do they know about where you go right after school/work?
- How much do they know about where you go at night?

Parental Monitoring – asked about “the person primarily responsible for you”.

- How often do you have a set time to be home on school/work nights?
- How often do you have a set time to be home on weekend nights?
- How often do they know what time you will be home when you have gone out?
- How often do you leave a note/call about where you are going?

Maternal Warmth ($\alpha = .92$) – asked about “mother/female guardian”.

- How often does your mom help you do something important?
- How often does your mom let you know she cares?
- How often has your mom listened to your point of view?
- How often does your mom act supportive toward you?
- How often does your mom act loving toward you?
- How often does your mom have a good laugh with you?
- How often does your mom let you know she appreciates you/your ideas?
- How often does your mom say she loves you?
- How often does your mom understand the way you feel?

Maternal Hostility (alpha = .85) – asked about “mother/female guardian”.

- How often does your mom get angry with you?
- How often has your mom gotten so mad she broke/threw things?
- How often does your mom shout because she was mad at you?
- How often does your mom threaten to hurt you physically?
- How often does your mom criticize your ideas?
- How often does your mom push/grab/hit/shove you?
- How often does your mom argue with you when you disagreed?
- How often does your mom slap or hit you with her hands?
- How often does your mom strike you with an object?
- How often does your mom boss you around?
- How often does your mom throw things at you?
- How often does your mom insult or swear at you?

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