

ABSTRACT

Title of Thesis: COMPARING MULTI-INFORMANT ASSESSMENT
MEASURES OF PARENTAL MONITORING AND
THEIR LINKS WITH ADOLESCENT DELINQUENT
BEHAVIOR

Tara M. Augenstein, Master of Science, 2014

Thesis directed by: Andres De Los Reyes, Ph.D., Associate Professor
Department of Psychology

Research has identified links between parents' poor monitoring of adolescents' whereabouts and activities and adolescents' increased engagement in delinquent behaviors. This study extended prior work by examining differential relations between parental monitoring measures (i.e., behavioral vs. knowledge measures) and informants (parent vs. adolescent) and adolescent self-reported delinquency. Seventy-four caregivers and adolescents completed survey measures of parental monitoring and parental knowledge, and adolescents completed self-report surveys of delinquent behavior. Adolescents' delinquent behavior related to measures of parental monitoring behaviors and parental knowledge; however, the magnitudes of these relations varied by informant. That is, I observed stronger magnitude relations between adolescent delinquent behavior and parental knowledge measures for parent-report relative to adolescent-report. Conversely, I observed stronger magnitude relations between adolescent delinquent behavior and measures of parental monitoring behaviors for adolescent-report relative to parent-report. These findings inform measurement selection in research and clinical assessments of parental monitoring and adolescent delinquent behavior.

COMPARING MULTI-INFORMANT ASSESSMENT MEASURES OF
PARENTAL MONITORING AND THEIR LINKS WITH ADOLESCENT
DELINQUENT BEHAVIOR

by

Tara M. Augenstein

Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Master of Science
2014

Advisory Committee:

Professor Andres De Los Reyes, Chair
Professor Carl Lejuez
Professor Andrea Chronis-Tuscano

Acknowledgements

First, I would like to thank my mentor, Dr. Andres De Los Reyes, for his continued support and guidance throughout my graduate training. I would also like to thank my Master's Thesis committee: Dr. De Los Reyes, Dr. Lejuez, and Dr. Chronis-Tuscano. It was incredibly instructive working with each of you, and your feedback throughout this process was invaluable for both the completion of the project as well as my continued professional development.

TABLE OF CONTENTS

Acknowledgements.....	ii
List of Tables	iv
List of Figures	v
Chapter 1: Introduction	1
Chapter 2: Method	11
Chapter 3: Results	19
Chapter 4: Discussion	22
Tables.....	31
Figures	36
References.....	39

List of Tables

Table 1. Means (M), Standard Deviations (SD), and Internal Consistency (α) Estimates of Survey Measures of Monitoring-Relevant Constructs (n = 74)

Table 2. Correlations among Survey Measures of Parental Monitoring-relevant Constructs (n = 74)

Table 3. Mean Differences on Survey Measures of Monitoring-Relevant Constructs (n = 74) as a Function of Adolescent Delinquent Behavior Status (No Self-Reported Delinquent Behavior [n = 40] vs. Self-Reported Engagement in Delinquent Behavior [n = 34])

Table 4. Generalized Estimating Equations Predicting Parent and Adolescent Reports of Monitoring-Relevant Constructs as a Function of Adolescent Delinquent Behavior Status (no delinquent behavior vs. any; n = 74)

List of Figures

Figure 1. Parental Monitoring-Relevant Constructs. Overview of the relation between parental monitoring and parental knowledge and how various active monitoring efforts may confound this relation.

Figure 2. Graphical representation of the interaction between informant providing the report (i.e., parent, adolescent) and domain assessed by each parental monitoring measure (i.e., parental monitoring behaviors, parental knowledge) on the relation between reports of monitoring-relevant constructs and adolescent self-reported delinquent behavior. On the y-axis, greater scores indicate greater likelihood of poorer parental monitoring. On the x-axis, I report adolescents' self-reported delinquent behavior based on whether the adolescent did not endorse delinquent behavior (i.e., "None") or did endorse delinquent behavior (i.e., "Any"). Two lines represent distinctions between adolescents' delinquent behavior status and likelihood of low levels of parental monitoring. The solid lines indicate distinctions between adolescents' delinquent behavior status on likelihood of poor levels of parental monitoring when based on measures of parental monitoring behaviors. The dotted lines indicate distinctions between adolescents' delinquent behavior status on likelihood of poor levels of parental monitoring when based on measures of parental knowledge. As indicated in the figure, when based on parent reports (left column), parental monitoring knowledge measures evidence a stronger relation to adolescent delinquent behavior status than do parental monitoring behaviors measures. Conversely, when based on adolescent reports (right column), parental monitoring behaviors measures evidence a stronger relation to adolescent delinquent behavior status than do parental monitoring knowledge measures.

Chapter 1: Introduction

Researchers commonly conceptualize parental monitoring as a construct encompassing the behaviors a parent actively employs to track her or his adolescent's whereabouts, activities, and peer associations (Dishion & McMahon, 1998). These behaviors may range from setting explicit rules to restrict an adolescent's engagement in certain activities (e.g., "You can't go out with your friends tonight."), to structuring an adolescent's environment in a way that assists in tracking his or her whereabouts (e.g., a parent driving an adolescent to activities vs. giving him or her the car keys). Several decades of research has consistently linked low levels of parental monitoring to increased risk for adolescents' engagement in maladaptive behaviors, such as early-onset substance use, deviant peer relationships, and severe antisocial behaviors (e.g., fire setting) (Smetana, 2008). Consequently, programs designed to prevent adolescent delinquent behavior, substance use, and other risk-taking behaviors commonly seek to increase parental monitoring behaviors (e.g., Pantin et al. 2009; Stanton et al. 2000, 2004; Wu et al. 2003).

Yet, researchers have called into question the relation between parental monitoring and adolescent delinquent behaviors due to previous measurement obstacles related to assessing parental monitoring (Stattin & Kerr, 2000). Specifically, traditional approaches to measuring parental monitoring largely consist of questions probing for information about the processes leading to low versus high parental monitoring (e.g., a parent's *knowledge* of her or his adolescent's actions or whereabouts; an adolescent's propensity to *disclose* information to parents about their whereabouts), rather than information about specific parenting behaviors indicative of *monitoring* (Kerr & Stattin,

2000). In other words, some measures of parental monitoring have actually been assessing what or how a parent *knows* about his or her adolescent's activities, and others assess what specific behaviors a parent *expresses* to monitor the adolescent (e.g., limit-setting).

Researchers often use the same term (i.e., *parental monitoring*) to describe the seemingly distinct constructs of parental knowledge and parental monitoring, leading to inconsistencies across studies in operational definitions of parental monitoring. In fact, a recent review highlighted these concerns (Racz & McMahon, 2011). In this review, across 46 "parental monitoring" studies, roughly one-quarter assessed parental knowledge, but incorrectly defined their assessments as reflecting parental monitoring behaviors; only seven of the 46 studies correctly assessed parental monitoring behaviors. These findings highlight inconsistencies in empirical work and the operational definitions of parental monitoring. The result of these inconsistencies is a diminished capacity to accurately estimate the relation between parental monitoring and adolescent delinquent behavior, thus hindering the identification of effective delinquency prevention programs.

The distinction between parental monitoring and parental knowledge is an important one to make for two reasons. First, both approaches have informed the development of distinct assessment methods. For example, items comprising the Poor Monitoring/Supervision subscale of the Alabama Parenting Questionnaire (APQ; Frick, 1991) assess overt parental monitoring behaviors (e.g., "You don't check that your child comes home at the time she/he was supposed to."). In contrast, the Parenting Practices Scales (PPS) developed by Stattin and Kerr (2000) contain items that appear to assess parental knowledge (e.g., "Do you know what your child does during his/her free

time?”). In fact, some researchers suggest that the term *parental monitoring* should be reserved for specific, active behaviors a parent engages in to monitor their adolescent’s actions and whereabouts (e.g., rule-setting; Dishion & McMahon, 1998; Stattin & Kerr, 2000). In contrast, researchers propose that the term *parental knowledge* should reflect mechanisms through which parents gain knowledge of their adolescent’s activities or whereabouts (e.g., an adolescent’s disclosure of his or her activities to his or her parent). For clarity, I collectively refer to parental monitoring behaviors and parental knowledge as *monitoring-relevant constructs*.

Second, parental monitoring and parental knowledge represent correlated but distinct parenting dimensions. For instance, recent longitudinal work examining monitoring-relevant constructs in a sample of early-to-mid adolescents finds that increased levels of an adolescent’s disclosure to his or her parent about his or her activities predicts increased levels of parental knowledge (Kerr, Stattin, & Burke, 2010). Yet, recent work also indicates that increased adolescent disclosure longitudinally predicts increased levels of parental solicitation, or a parent actively soliciting information about his or her adolescent’s whereabouts from friends and friends’ parents (Keijsers, Branje, VanderValk, & Meeus, 2010). Figure 1 provides an illustration of the observed relations between monitoring-relevant constructs. Given the interrelations among monitoring-relevant constructs, one key aim of this study was to examine similarities and differences among measures of these constructs and their links to adolescent delinquent behavior.

Multi-Informant Assessment of Monitoring-Relevant Constructs

Common practices within psychological assessment further complicate our understanding of the relation between monitoring-relevant constructs and adolescent delinquent behavior. Specifically, clinicians and researchers frequently collect information about adolescent and family functioning from multiple informants' perspectives (Hunsley & Mash, 2007). Typical informants include the adolescent, their parents, and their teachers, although clinician ratings and record reviews (e.g., police and school records) may augment assessments (De Los Reyes, 2013). Taking a multi-informant approach to assessing monitoring-relevant constructs carries with it both strengths and challenges. Specifically, a key strength of this approach is that it informs our understanding of an adolescent's behavior from multiple perspectives and contexts (Dirks, De Los Reyes, Briggs-Gowan, Cella, & Wakschlag, 2012). Adolescents may behave differently across contexts and informants differ in how or under what circumstances they observe adolescents, and thus reports gathered from multiple informants typically only yield low-to-moderate correspondence (Achenbach, McConaughy, Howell, 1987; De Los Reyes, Thomas, Goodman, & Kundey, 2013; Kraemer et al., 2003). In fact, parent and child/adolescent reports of monitoring-relevant constructs also evidence these low-to-moderate correspondence levels (e.g., De Los Reyes, Ehrlich et al., 2013; De Los Reyes, Goodman, Kliwer, & Reid-Quñones, 2008, 2010; De Los Reyes, Salas, Menzer, & Daruwala, 2013; Lippold, Greenberg, & Feinberg, 2011; Reynolds, MacPherson, Matusiewicz, Schreiber, & Lejuez, 2011). Yet, in addition to differences among parents and adolescents in the contexts in which they may observe behaviors indicative of monitoring-relevant constructs, parents and adolescents vary in

their perspectives of the family environment generally. That is, a robust finding in adolescent development work is that on average, parents tend to view the family in far more positive terms relative to adolescents (Fung & Lau, 2010; Gaylord, Kitzmann, & Coleman., 2003). Further, as adolescents progress from early to middle and late adolescent periods, they tend to view the family in increasingly negative terms relative to parents (Ohannessian, Lerner, Lerner, & von Eye, 2000; Ohannessian & De Los, Reyes, 2014). Researchers surmise that these increasingly negative views held by adolescents reflect normative developmental processes among adolescents, namely increased identity development (Blakemore, 2007, 2008; Smetana & Villalobos, 2009). Additionally, researchers propose that these changes may hold adaptive implications for the adolescent such as contributing to the adolescent's development of increased autonomy from the family as he or she moves towards adulthood (Zimmer-Gembeck & Collins (2003). Yet, despite the increasing interest in the use of multi-informant approaches to assessing monitoring-relevant constructs, we know relatively little about how to interpret the low correspondence among reports when estimating links between measures of these constructs and adolescent delinquent behavior.

Recently, researchers examined the role of multi-informant assessments in relations observed between monitoring-relevant constructs and adolescent delinquent behavior (e.g., Keijsers, et al., 2010; Kerr, Stattin, & Burke, 2010). Yet, previous studies have suffered from key limitations. Specifically, prior work relied on a single measure to examine monitoring-relevant constructs, namely the PPS (Stattin & Kerr, 2000). Although the PPS is a widely used measure, certain measurement characteristics such as the type of response scale provided, the type of behaviors or symptoms assessed, and the

wording of specific items have been shown to affect an individual's reports on his or her own behaviors (Schwarz, 1999). The potential consequences of such measurement effects hold clear implications for the measurement of monitoring-relevant constructs. For example, items on commonly used measures of monitoring-relevant constructs may differ in the valence of how the question is perceived (i.e., positively or negatively valenced). In fact, items on the PPS are worded in a positive direction (e.g., "Do you know which friends your child hangs out with during his/her free time?"), whereas items on the APQ are more negatively valenced (e.g., "You get so busy that you forget where your child is and what he/she is doing."). In light of the developmental literature discussed previously, it is possible that parents and adolescents interpret these questions differently and may respond differently to positively- versus negatively-valenced questions (see also De Los Reyes, Ehrlich et al., 2013).

Similarly, a parent's report of his own solicitation efforts with the adolescent may be influenced not only by his ability to accurately recall such behaviors or the valence of the questions but also by the way items are worded on the measure the parent completes. That is, a parent's response when asked "How often do you forget to ask your child about where he/she is going before he/she leaves the house?" may vary dramatically compared to "Do you ask your child to tell you where he/she is going before he/she leaves the house?" Importantly, these effects may also differ by informant, as parent- and adolescent-reports may be influenced by different memories of events and/or different interpretations of the same measurement items, in part, because they hold different perspectives when observing the behaviors assessed (see Kraemer et al., 2003). Consequently, a second key aim of this study involved assessing monitoring-relevant

constructs using parent- and adolescent-reports across two commonly used scales of monitoring-relevant constructs, namely the Kerr and Stattin PPS scales and the Poor Monitoring/Supervision subscale of the APQ (Frick, 1991).

Purpose and Hypotheses

The purpose of this study is to extend the literature on the assessment of monitoring-relevant constructs within a multi-informant framework and the relation between these constructs and adolescent delinquent behavior. Given the limited nature of prior literature examining these issues using multi-measure, multi-informant designs, I tested several specific hypotheses as well as a series of exploratory research questions. First, I examined differences between parent- and adolescent-reports on two commonly used measures of parental monitoring (i.e., APQ; Frick, 1991) and parental knowledge (i.e., parental knowledge and adolescent disclosure; Stattin & Kerr, 2000). As adolescence progresses, adolescents tend to perceive family functioning more negatively, relative to parents' perspectives on family functioning (Fung & Lau, 2010; Gaylord et al., 2003; Ohannessian et al., 2000; Ohannessian & De Los, Reyes, 2014). Thus, I hypothesized that parents would report higher scores on positively-valenced questions than adolescents (i.e., items on the PPS), whereas adolescents would report higher scores on negatively-valenced questions than parents (i.e., items on the APQ).

Second, I explored how monitoring-relevant constructs relate to adolescents' self-reported delinquent behavior. Consistent with prior work (Smetana, 2008), I expected that both lower levels of parental knowledge (i.e., PPS) and greater levels of poor parental monitoring (i.e., APQ) would relate to increased adolescents' self-reported delinquent behavior. However, I conducted exploratory analyses to test whether the

magnitude of the relation between monitoring-relevant constructs and adolescent delinquent behavior is qualified by the type of monitoring domain assessed (i.e., parental monitoring, parental knowledge) and/or the informant providing the report (i.e., parent, adolescent). With regard to monitoring domains, the complex set of interrelations among monitoring-relevant constructs (e.g., Figure 1) results in difficulty making specific predictions. One possible outcome is that I identify a stronger-magnitude link between low levels of parental knowledge and increased adolescent delinquent behaviors, relative to the link between increased poor monitoring and increased adolescent delinquent behavior. These results would help support recent claims that previously reported relations between parental monitoring and adolescent delinquent behavior occurred because researchers mistakenly reported results for parental monitoring when they were in fact measuring parental knowledge (see Kerr & Stattin, 2010). In other words, the significant relation between parental knowledge and adolescent delinquent behavior may have been masking the true nature of the relation between parental monitoring and adolescent delinquent behavior. Alternatively, I might observe a stronger link between increased levels of poor parental monitoring and increased adolescent delinquent behaviors, relative to the link observed between low parental knowledge and increased adolescent delinquent behavior. These results would suggest that despite the concerns and criticisms raised around previous operationalizations of parental monitoring, a significant relation does exist between monitoring behaviors and adolescent delinquency over and above the relation between parental knowledge and adolescent delinquent behavior. Given the possible domain effects on the relation between monitoring-relevant constructs and adolescent delinquent behavior, I examined whether the magnitude of the relation

between these constructs and delinquent behavior depends, in part, on whether the domain assessed reflects parental knowledge versus poor monitoring behaviors.

Despite the predictions described previously regarding parent- and adolescent-reports of monitoring-relevant constructs, one also encounters difficulty making specific predictions around the extent to which these hypothesized informant differences would affect the relations between monitoring-relevant constructs and adolescent delinquent behavior. Specifically, one possible outcome was that the magnitude of the relation between measures of monitoring-relevant constructs (i.e., parental knowledge vs. poor monitoring behaviors) and adolescents' self-reported delinquent behavior would not differ based on informant. For example, perhaps specific poor monitoring behaviors are easier for all informants to observe, relative to behaviors indicative of parental knowledge (see also Achenbach et al., 1987). If true, this might indicate that regardless of informant, measures of poor monitoring behaviors evidence stronger-magnitude relations with adolescent delinquent behavior, relative to links observed between adolescent delinquent behavior and parental knowledge. Alternatively, as described previously, adolescents might endorse negatively-valenced monitoring behaviors to a greater extent than parents, whereas parents might be more likely than adolescents to endorse positively-valenced monitoring behaviors. Within this scenario, the magnitude of the relation between measures of monitoring-relevant constructs and adolescents' self-reported delinquent behavior would differ based on informant. That is, adolescent reports of poor monitoring behaviors (i.e., negative-valence on the APQ) would evidence stronger-magnitude links with adolescent delinquent behaviors relative to links observed between adolescent delinquent behavior and adolescent reports of parental knowledge

(i.e., positive-valence on the PPS). In contrast, parent reports of parental knowledge (i.e., positive-valence on the PPS) would evidence stronger-magnitude links with adolescent delinquent behaviors, relative to links observed between adolescent delinquent behaviors and parent reports of poor monitoring behaviors (i.e., negative-valence on the APQ). Thus, similar to test of monitoring domain, I examined whether the magnitude of the relation between monitoring-relevant constructs and delinquent behavior depends, in part, on whether adolescents versus parents completed reports about monitoring-relevant constructs.

Chapter 2: Method

Participants

Participants included 74 caregiver and adolescent (28 boys, 46 girls) dyads who each participated in one of two community studies within which participants completed similar measures and tasks (De Los Reyes, Salas et al., 2013; De Los Reyes, Thomas et al., 2012). The sample consisted of 5 male caregivers and 69 female caregivers who self-identified as the adolescent's biological mother/father (93%) or another caregiver (7%; e.g., adoptive, step, or grandparent, aunt, or cousin). For the purposes of the current paper, I refer to these caregivers as "parents." The adolescent participants ranged in age from 14-17 years ($M = 15.3$, $SD = 1.05$), and self-identified as African American or Black (52.7%), Caucasian or European American (39.2%), Hispanic or Latino/a (6.8%), Asian American (2.7%), American Indian (1.4%), or Other (2.7%). Of note, these values surpass 100% because some parents self-identified as more than one racial/ethnic category.

Parents' reported marital status varied with 60.8% married, 20.3% divorced, 6.8% never married, 5.4% living together, 4.1% widowed, and 2.7% separated. All parents completed at least a high school education, and the majority of the parents (95.9%) had completed some higher education beyond high school (e.g. associate's, vocational, or bachelor's degree). Parents reported weekly household income across 10 categories that varied by \$100 increments (i.e., *Less than \$100 per week* through *901+ per week*). Based on this scale, 13.7% of the families had a weekly household income of \$500 or less, 24.4% had a weekly income between \$501 and \$900, and 61.6% earned \$901 or more per week.

Measures

Adolescents and parents completed measures assessing domains of adolescent and family demographics as well as a counter-balanced battery of measures assessing monitoring-relevant constructs (i.e., parental monitoring, parental knowledge). In Table 1, I reported means, standard deviations, and internal consistency (α) estimates for all measures of monitoring-relevant constructs. Additionally, adolescents self-reported on their engagement in delinquent behaviors.

Adolescent and family demographics. Demographic data were obtained through parent reports of adolescent age and gender, family/ethnicity/race, and family income via a computerized demographics questionnaire.

Monitoring-relevant constructs. To assess perceived *parental monitoring*, parents and adolescents provided independent reports on parallel versions of the Poor Monitoring/ Supervision subscale of the Alabama Parenting Questionnaire (APQ; Frick, 1991). The Poor Monitoring/Supervision subscale consists of 10 items rated on a five-point scale ranging from 1 (*never*) to 5 (*always*), with greater scores reflecting poorer monitoring. Parents and adolescents completed this subscale as part of the larger 42-item APQ which includes a variety of additional domains of parenting including positive parenting, parental involvement, corporal punishment, and inconsistent discipline. In the current study, one item was excluded from the measure (“You hit your child with a belt, switch, or other object when he/she has done something wrong” for the parent report; “Your parents hit you with a belt, switch, or other object when you have done something wrong” for the adolescent report) due to ethical considerations and confidentiality precautions.

To assess perceived *parental knowledge*, parents and adolescents completed parallel versions of two widely used scales, each of which contain items that are scored on a five-point Likert scale ranging from 1 to 5 and have extensive evidence attesting to their internal consistency and validity in samples of adolescents and their parents (e.g., De Los Reyes et al., 2008, 2010; De Los Reyes, Salas et al., 2013; Kerr & Stattin, 2000). First, the Parental Knowledge scale consists of 9 items (example item: *Do your parents know what you do during your free time?*), with greater scores indicating greater parental knowledge. Second, the Adolescent Disclosure scale consists of 5 items (example item: *Do you keep a lot of secrets from your parents about what you do during your free time?*), and was chosen for the current study due to prior evidence suggesting adolescent disclosure significantly informs parental knowledge to a greater extent than other aspects of parental knowledge typically assessed (e.g., parental solicitation; see Kerr, Stattin, & Burke, 2010).

Adolescent self-reports of delinquent behavior. Adolescents completed self-reports of delinquent behavior using the Problem Behavior Frequency Scales (PBFS; Farrell et al., 2000). The PBFS includes 51 items representing a variety of problem behavior domains including drug use, physical, nonphysical and relational aggression, and delinquent behaviors. On the PBFS, adolescents provide reports based on behaviors expressed within the previous 30 days. For the current study, I examined self-reported scores on the Delinquency subscale ($\alpha = .70$).

Data-Analytic Plan

Preliminary analyses. I conducted preliminary analyses to test for deviations from normality. Additionally, I calculated internal consistency estimates across each

measure of monitoring-relevant constructs (i.e., parental knowledge, parental monitoring behaviors) for both adolescent self-report and parent-report (see Table 1). In light of work reviewed previously on low informant correspondence in reports of monitoring-relevant constructs, I computed between-subject correlations to examine the correspondence between parent and adolescent reports (Table 2). Further, I conducted paired samples *t*-tests to assess mean differences between parent- and adolescent-reports of monitoring-relevant constructs (Table 1).

Composite scoring for parental knowledge. I observed significant and positive relations between/among within-informant reports of domains of parental knowledge (i.e., parental knowledge, adolescent disclosure). Specifically, within-informant reports of parental knowledge and adolescent disclosure yielded Pearson *r* correlations of .51 (parent-reports) and .62 (adolescent-reports; Table 2), whereas between-informant reports of parental knowledge and adolescent disclosure yielded correlations ranging from .41 (parental knowledge) to .42 (adolescent disclosure; Table 2). As mentioned previously, adolescent disclosure plays a key role in informing a parent's knowledge about his or her adolescent's whereabouts and activities. In line with prior work, my preliminary analyses supported integrating the Adolescent Disclosure and the Parental Knowledge subscales developed by Stattin and Kerr (2000) into a comprehensive assessment of parental knowledge. Specifically, the moderate correlations between parent- and adolescent-reports of parental knowledge confirmed that although the cross-informant reports were correlated, the information provided by each informant was not redundant with that endorsed by the additional informant. Therefore, to create my criterion variables of parental knowledge, I created composite scores by first converting the within-informant

scores of parental knowledge and adolescent disclosure into z-scores and then averaging these scores into a single composite score for each participant. The aim of this composite variable was to capture the full extent of a parent's knowledge of his or her adolescent's activities by including both the measured knowledge itself as well as the additional information about parental knowledge gained by measuring adolescent disclosure.¹

Scoring for adolescents' self-reported delinquent behavior. Adolescent self-reported engagement in delinquent behavior on the PBFS ($M = 0.23$, $SD = 0.40$) exhibited significant skewness (skewness = 2.35). Of note, the Delinquency subscale was positively skewed due to the modal endorsement of no engagement in delinquent behaviors. Prior research has demonstrated that transforming skewed data wherein zero represents the majority of responses fails to adequately correct resulting skewness (Atkins & Gallop, 2007). Therefore, adolescents were grouped dichotomously into those who self-reported no engagement in delinquent behaviors ($N = 40$) during the preceding 30 days and those who reported any engagement in delinquent behaviors ($N = 34$).² This

¹ To confirm that neither the parental knowledge nor the adolescent disclosure subscale was driving any subsequent statistical effects, I also ran all parental knowledge composite analyses with the parental knowledge and adolescent disclosure subscales individually. Of note, the general pattern of results acquired when examining the composite variable remain the same when examining the individual subscales separately. For a full report of secondary analyses, please contact the author.

² To provide a more conservative calculation of reported delinquent behavior, the groups were also organized independently as (1) adolescents endorsing the largest amount of delinquent behavior (i.e. the top 23%; $N = 17$) versus (2) adolescents endorsing less or no reported engagement in delinquent behavior (i.e. the bottom 77% ($N = 57$)). All analyses were repeated with this coding scheme, and the results remained consistent with the original group design.

dichotomous variable served as the key independent variable used in tests of my main hypotheses.

Hypothesis testing. Tests of my main hypotheses involved examining multiple informants' (parent and adolescent) parallel reports of monitoring-relevant constructs. It would be difficult to assume these measures are independent observations. That is, parent and adolescent reports often disagree yet still significantly correlate in the low-to-moderate range (e.g., De Los Reyes, Ehrlich et al., 2013; De Los Reyes et al., 2008, 2010; De Los Reyes, Salas et al., 2013; Lippold et al., 2011; Reynolds et al., 2011). Thus, this correlated data structure violated key assumptions underlying general linear modeling (GLM) of data. Due to this, I tested my primary aims regarding links between monitoring-relevant constructs and adolescent delinquent behavior using generalized estimating equations (GEE): an extension of the GLM that assumes correlated observations of dependent and/or independent variables (Hanley, Negassa, Edwardes, & Forrester, 2003). For GEE modeling, I used an identity binary logistic link function with an unstructured correlation matrix. The binary logistic link function reflected the dichotomous repeated-measures dependent variable, which I will describe next. I employed an unstructured correlation matrix in light of the small number of dependent variables used in each analysis and the fact that I obtained complete data on all constructs for the 74 families I examined.

Although delinquency status may intuitively present as the dependent variable for analyses, GEE requires a repeated-measures variable to function as the dependent variable. Therefore, in my GEE model I entered delinquency status as an independent variable. Given the cross-sectional nature of the hypotheses, the direction of the relation

between the independent and dependent variables does not affect subsequent interpretation. Consistent with GEE modeling procedures I created a nested, repeated-measures (i.e., two informants provided reports per variable, per family) dependent variable consisting of measures of parental knowledge (i.e., parent and adolescent composite scores of Parental Knowledge and Adolescent Disclosure) and parental monitoring (i.e., parent- and adolescent-reports on the APQ Poor Monitoring/Supervision scale). These measures employ different scaling methods and thus result in different response value ranges and estimates of central tendency. Consequently, to place these measures on the same scale, I created median splits for each parent and adolescent measure of parental knowledge and parental monitoring behaviors. Of note, the measures of parental knowledge and parental monitoring assessed these constructs in opposing directions. Thus, I reverse-coded the parental monitoring measures so that higher scores reflected poorer monitoring and higher scores on the parental knowledge composite variable reflected lower parental knowledge and adolescent disclosure. Thus, for all measures of monitoring-relevant constructs, I coded relatively high monitoring/knowledge (i.e., positive monitoring levels, greater levels of parental knowledge and disclosure) as 0 and relatively low monitoring (i.e., poor monitoring levels, lower levels of parental knowledge and disclosure) as 1.

To test the primary hypotheses, I statistically modeled the dependent variable as a function of several independent variables: (a) Informant (parent coded as 0 and adolescent coded as 1), (b) Domain of the measure (parental monitoring behaviors coded as 0 and parental knowledge coded as 1), (c) Adolescent Self-reported Delinquent

Behavior Status (no reported delinquent behavior as 0 and any delinquent behavior as 1),

(d) all possible 2-way interactions, and (e) all possible 3-way interactions.

Chapter 3: Results

Preliminary Analyses

Normality assumptions and internal consistency. Before testing the main hypotheses, I tested for deviations from normality. With the exception of the PBFS Delinquency Subscale mentioned previously, all measures conformed to normality assumptions (i.e., skewness and kurtosis; see Tabachnick & Fidell, 2001).

Correspondence between parent and adolescent reports of monitoring-relevant constructs. To examine correspondence among informants' reports of monitoring-relevant constructs, I conducted bivariate correlations between informants' reports on the APQ Poor Monitoring/Supervision, Parental Knowledge, and Adolescent Disclosure scales (Table 2). Consistent with prior work (De Los Reyes, 2011, 2013), I observed low-to-moderate correspondence between parent and adolescent reports of monitoring-relevant constructs.

Mean differences between parent and adolescent reports of monitoring-relevant constructs. In addition to examining between-informant correspondence, I examined mean differences between informants' reports of monitoring-relevant constructs. Specifically, I conducted paired-sample *t*-tests to compare means of parallel parent- and adolescent-reports on the APQ Poor Monitoring/Supervision, Parental Knowledge, and Adolescent Disclosure scales (Table 1). Consistent with prior work (De Los Reyes, Ehrlich, et al., 2013; De Los Reyes, Salas et al., 2013; Laird & De Los Reyes, 2013; Reynolds et al., 2011), parents reported significantly lower mean levels of poor monitoring than adolescents reported, and parents reported relatively higher levels of both parental knowledge and adolescent disclosure than adolescents reported.

Differences in parent- and adolescent-reports of monitoring-relevant constructs as a function of adolescent delinquent behavior. As a preliminary test before addressing our main hypotheses, I examined mean differences between reports of monitoring-relevant constructs for adolescents who did not report engaging in delinquent behavior and for adolescents who did report engaging in delinquent behavior (Table 3). Specifically, I conducted independent samples *t*-tests to compare means of parent- and adolescent-reports on the APQ Poor Monitoring/Supervision, Parental Knowledge, and Adolescent Disclosure scales (Table 3). Consistent with prior work (Smetana, 2008), relative to adolescents who did not report engaging in delinquent behavior, adolescents who did report engaging in delinquent behavior evidenced significantly greater levels of poor monitoring and significantly lower levels of both parental knowledge and adolescent disclosure, regardless of parental monitoring informant. The one exception to these findings was for adolescent-reports of adolescent disclosure, which did not significantly differ by adolescent delinquent behavior status. Importantly, effect size estimates of these mean differences indicate that measures of parental monitoring behaviors evidenced medium effects based on parent-reports and large effects based on adolescent-reports, based on Cohen's (1988) effect size conventions (i.e., small: $d = 0.2$; medium: $d = 0.5$; large: $d = 0.8$). Conversely, effect size estimates for parental knowledge measures indicated medium-to-large effects for parent-reports and low-to-moderate effects for adolescent-reports. These findings provide further justification for testing my main hypothesis.

Parent- and Adolescent-Reports on Measures of Parental Knowledge and Parental Monitoring Behaviors and Links with Adolescents' Delinquent Behavior Status

I examined the relations among parent- and adolescent-reports on measures of parental knowledge and parental monitoring behaviors with adolescents' self-reported delinquent behavior using the GEE modeling procedures described previously (Table 4). I observed non-significant main effects of adolescent age, gender, informant, and domain. I also observed non-significant Informant \times Domain, Domain \times Adolescent Delinquent Behavior Status, and Informant \times Adolescent Delinquent Behavior Status interaction effects.

Consistent with my hypotheses and the preliminary analyses reported in Table 3, I observed a significant main effect of adolescent delinquent behavior status, reflecting a significantly greater likelihood of adolescents who reported engaging in delinquent behavior to evidence greater levels of poor monitoring, relative to adolescents who did not report engaging in delinquent behavior. However, the main effect of adolescent delinquent behavior status was qualified by a significant Informant \times Domain \times Adolescent Delinquent Behavior Status interaction. Specifically, for monitoring-relevant construct reports provided by parents, measures of parental knowledge related to adolescents' self-reported delinquent behavior at greater magnitudes relative to measures of parental monitoring behaviors. In contrast, for monitoring-relevant construct reports provided by adolescents, measures of parental monitoring behaviors related to adolescents' self-reported delinquent behavior at greater magnitudes relative to measures of parental knowledge (Figure 2).

Chapter 4: Discussion

Main Findings

The purpose of this study was to extend the literature on the assessment of parental monitoring and the relation between parental monitoring and adolescent delinquent behavior. I observed three main findings. First, consistent with previous literature (e.g., De Los Reyes, 2011, 2013), low-to-moderate correspondence rates between parent- and adolescent-reports of monitor-relevant constructs were observed. This finding suggests that although parents and adolescents evidence some agreement on the presence of parental knowledge and parental monitoring behaviors, their reports are not redundant. Therefore, parent- and adolescent-reports offer unique information over and above the other report. Additionally, as hypothesized, parent- and adolescent-reports also differed based on the type of domain assessed. Specifically, parents reported significantly lower mean levels of poor monitoring than adolescents reported, and parents reported relatively higher levels of both parental knowledge and adolescent disclosure than adolescents reported.

These results are consistent with prior work (e.g., De Los Reyes, Ehrlich, et al., 2013) and may be accounted for by several interpretations. For instance, these reporting differences may reflect that adolescents and parents differ in their endorsement of positively- versus negatively-valenced items. As mentioned previously, measurement characteristics such as the valence of questions on a self-report questionnaire may influence reporting patterns (Schwarz, 1999). Therefore, these results may simply be a function of measurement characteristics, and future research should examine informant differences of monitoring-relevant constructs using multiple measures with both

positively- and negatively-valenced questions. Alternatively, these discrepancies may highlight different perspectives held by parents and adolescents regarding a parent's active monitoring behaviors and his or her knowledge of an adolescent's activities. Specifically, assuming both parent- and adolescent-reports of monitoring-relevant constructs are valid, these results highlight that parents may believe they are engaging in more monitoring behaviors and have more knowledge of their adolescents activities than they adolescent believes. A parent's inflated belief in the amount of his or her monitoring and knowledge may ultimately decrease the likelihood the parent will initiate increased monitoring efforts or actively seek additional knowledge. In other words, if a parent believes he or she is already engaging in a large amount of monitoring behaviors and is knowledgeable about his or her activities, the parent may be less motivated to increase his or her monitoring efforts. Previous literature has demonstrated that informant discrepancies in the assessment of monitoring-relevant constructs (a) remain consistent over time and (b) predict poor childhood outcomes over and above a single informant's reports alone (De Los Reyes, et al., 2010). Given these implications and the remaining questions about how best to interpret the informant discrepancies observed in this study, future research would benefit from further investigating the underlying cause of discrepancies between parent- and adolescent-reports of monitoring-relevant constructs.

Second, parent- and adolescent-reports of monitoring-relevant constructs were significantly related to adolescent self-reported delinquent behavior. In other words, significantly higher levels of parental knowledge and monitoring were reported for adolescents who did not report engaging in delinquent behaviors compared to adolescents who did report engaging in delinquent behaviors (Table 3). These findings support the

previously reported links between parental monitoring and adolescent delinquent behavior. However, a third set of findings from this study clarify this relation. Specifically, I observed that measures of monitoring-relevant constructs differentially related to adolescent self-reported engagement in delinquent behaviors, depending on the kind of measure and informant completing the measure. For parent-reports, measures of parental knowledge related to adolescent delinquent behavior at greater magnitudes than measures of parental monitoring behaviors. Conversely, for adolescent-reports, measures of parental monitoring behaviors related to adolescent delinquent behavior at greater magnitudes than measures of parental knowledge (Figure 2).

Lastly, the observed three-way interaction between domain of monitoring-relevant construct, the informant, and adolescent delinquent behavior supported my initial hypothesis that informants adopt differing perspectives around monitoring-relevant constructs. As discussed previously, adolescents and parents tend to disagree on aspects of family-related functioning as adolescents increase with age (e.g., family satisfaction, communication) (Ohannesian & De Los Reyes, 2014). Additionally, adolescents have been shown to view family-related factors more negatively than their mothers (Ohannesian & De Los Reyes, 2014). As discussed previously, different perspectives held by adolescents and their parents on level of family functioning may help explain the informant effects observed in this study. Specifically, my findings indicate that adolescents endorse more negatively-valenced monitoring-relevant items than parents and parents endorse more positively-valenced items than adolescents. Therefore, the different reporting patterns on the measures between parent- and adolescent-reports may reflect differences in parents and adolescents observing or recognizing positive versus

negative monitoring-related patterns. In other words, perhaps adolescents are more likely than parents to attend to the lack of parental monitoring behaviors being enforced relative to parents' awareness, whereas parents are more likely than adolescents to attend to amount of knowledge they have about their adolescent's whereabouts and activities.

In sum, these findings indicate that measures of monitoring-relevant constructs relate to adolescent delinquent behavior, but that the nature and extent of these relations depends on the type of parental monitoring measure completed and the informant providing monitoring reports.

Limitations

There are a few limitations to this study which warrant consideration. First, I only compared parent- and adolescent-reports of monitoring-relevant constructs to a single measure of adolescent delinquent behavior. Several factors contributed to the use of self-reported delinquent behavior status within the current study. For instance, inconsistent findings exist surrounding the incremental validity of collecting multi-informant reports of delinquent behaviors during adolescence. While traditionally, it has been believed that parents are strong reporters of disruptive behavior symptoms during childhood (Dirks et al., 2012), during adolescence, adolescents themselves are seen as vital reporters in the assessment of delinquent behaviors as they are privy to the presence of antisocial or delinquent symptoms across a much wider variety of contexts than parents (Hartung et al., 2005). Additionally, prior research examining both parent- and adolescent-reported adolescent engagement in delinquent behaviors has demonstrated that adolescents endorse higher levels of delinquent behaviors than parents report about their adolescent (Laird et al., 2003). These findings suggest self-reports of adolescent delinquent

behavior, relative to parent reports, may provide greater statistical power to detect our hypothesized effects. At the same time, future research should examine whether these effects extend to studies in which adolescent delinquent behavior is assessed using measures other than adolescent self-report (e.g., official records of judicial contact).

This self-report measure of adolescent delinquent behavior yielded scores that exhibited significant skewness, with the majority of adolescents in the sample endorsing no engagement in delinquent behaviors. Consequently, I chose to dichotomize the reports to test our main hypotheses. It is unclear whether these findings would generalize to other methods of assessing adolescent delinquent behavior, including measures relying on parent- or teacher-report or official records (e.g., police contacts, arrest records). I encourage future researchers to augment the assessment of adolescent delinquent behavior by including both self-report measures as well as measures not reliant on self-report.

Second, low levels of monitoring-relevant constructs have consistently been identified as a risk factor for the development of delinquent behaviors (Racz & McMahon, 2011). These findings indicate that measures aimed at assessing monitoring-relevant constructs differentially relate to the presence of adolescent delinquent behaviors, depending on the types of measures and informants used within a cross-sectional study. A key issue is whether these findings extend to use of these measures and informants within longitudinal studies. Thus, I encourage future research to use these promising findings as a resource for conducting prospective longitudinal research on the relations between multi-informant assessments of monitoring-relevant constructs and the development of delinquent behaviors during adolescence.

Third, although these results conform to the previously detailed developmental theory explaining how adolescents begin to view family-related factors more negatively than their parents (e.g., Ohannessian, et al., 2000), certain measurement characteristics of this study warrant further examination. Specifically, the valence differences between items on the APQ (i.e., negatively-valenced) and the PPS (i.e., positively-valenced) introduce some confusion when interpreting the three-way interaction. In particular, it is unclear whether the observed reporting differences are confounded by measurement effects caused by the differences in the valence of the items. In other words, are the reporting differences solely attributable to the perspectives held by each informant, or are the valence differences between measures affecting the results as well? To further clarify the underlying nature of these informant differences, future research should extend the methods used in this study to experimentally investigate the impact of these measurement characteristics on the multi-informant assessment of monitoring-relevant constructs. For example, do findings I observed in my study generalize to study circumstances in which parental monitoring is assessed with positively-valenced items in lieu of the negatively-valenced items comprising the APQ?

Lastly, I opted to specifically focus on assessing broadly-defined delinquent behaviors. Some prior researchers have included drug use behaviors in their operationalization of delinquent behaviors (e.g., Keijsers, et al., 2010); however, drug use was excluded from my analyses due to a general lack of drug use endorsed by the participants in this study. Specifically, preliminary analyses revealed that the majority of the adolescent participants in the study ($n = 55$) reported having engaged in no recent drug use. Future research may benefit from applying methods similar to those used in

this study to examine the previously established links between monitoring-relevant constructs and adolescent drug use due to the presence of remaining questions around the true nature of these relations. Specifically, similar to the issues raised previously, operationalization issues in the parental monitoring literature may have contributed to confusion around the exact relations between monitoring behaviors and parental knowledge and adolescent drug use.

Implications for Clinical Research and Practice

These findings have important implications for assessing the relation between monitoring-relevant constructs and adolescent delinquent behaviors. Specifically, the findings inform the clinical assessment of monitoring-relevant constructs. Indeed, prior research has consistently supported the link between poor parental monitoring and adolescent delinquent behavior (Smetana, 2008). Yet, these findings indicate that several aspects of the assessment affect the relation between monitoring and delinquent behavior. For example, use of measures that tap into parental monitoring behaviors versus parental knowledge may dictate the magnitude of the relation between monitoring-relevant constructs and delinquent behavior.

Furthermore, these findings suggest that the relation between parental monitoring and delinquent behaviors varies by informant. That is, different informants may hold unique perspectives on monitoring-relevant constructs (e.g., De Los Reyes, Ehrlich et al., 2013; De Los Reyes et al., 2008, 2010; De Los Reyes, Salas et al., 2013; Reynolds et al., 2011; Lippold et al., 2011). In other words, these findings indicate that measures of monitoring-relevant constructs may vary on whether they focus on aspects of monitoring (e.g., monitoring behaviors vs. parental knowledge) “fit” the perspective of the informant

completing the measure. Similarly, these findings help clarify which specific measure yields the strongest relation to delinquent behavior depends on the informant completing the measures (e.g., parent versus adolescent). Consequently, different perspectives held by the adolescent and parent on the relation between aspects of parental monitoring and delinquent behaviors may hold valuable information for treatment planning for the adolescent. For example, if an adolescent and his or her parent provide discrepant reports of monitoring-relevant constructs, the clinician can use this information to probe for the aspects of monitoring or knowledge that the adolescent and parent report as being present versus absent. The clinician can then use this information to foster consensus on treatment goals and on aspects of the parent-adolescent relationship that might be most amenable to change from the perspectives of both the parent and adolescent (e.g., increasing parent-adolescent communication). Indeed, parents are more likely than adolescents to be the source of clinical referral for adolescents' mental health concerns (Hunsley & Lee, 2010). Therefore, discrepant information gathered from reports of monitoring-relevant constructs completed by the parent and adolescent may prove especially useful in providing the clinician with valuable insight into the areas of concern specific to the adolescent's perspective, in addition to the referral concerns initially identified by the parent.

Concluding Comments

In sum, measures of monitoring-relevant constructs relate to adolescents' self-reported delinquent behavior. However, links between monitoring and adolescents' delinquent behavior vary by the kind of monitoring measure and the informant completing the measure. Specifically, for adolescent-reports, measures of parental

monitoring behaviors more strongly relate to adolescents' delinquent behavior than measures of parental knowledge. For parent-reports, measures of parental knowledge more strongly relate to adolescents' delinquent behavior than measures of parental monitoring behaviors. These findings hold important implications for the clinical assessment of parental monitoring and its links with adolescents' delinquent behavior, as the findings may inform how clinicians may tailor treatment planning to the specific perspectives held by family members. These findings also inform our understanding of important parameters that may modulate the relations observed between monitoring-relevant constructs and the presence of adolescent delinquent behavior. I encourage future research seeking to understand whether the links between informants' reports of monitoring-relevant constructs and adolescent delinquent behavior relate to informants' underlying attributions for the causes of adolescents' delinquent behavior.

Table 1

Means (M), Standard Deviations (SD), and Internal Consistency (α) Estimates of Survey Measures of Monitoring-Relevant Constructs (n = 74)

Variable	APQ: Poor Monitoring/Supervision Subscale			Kerr and Stattin Parental Monitoring Scales			Paired <i>t</i> Test	<i>p</i>
	<i>M</i>	<i>SD</i>	α	<i>M</i>	<i>SD</i>	α		
APQ							-6.04	$p < .001$
Parent Report	18.90	4.58	.72					
Adolescent Report	23.35	5.94	.77					
Parental Knowledge							5.58	$p < .001$
Parent Report				38.32	4.10	.80		
Adolescent Report				34.58	6.06	.84		
Adolescent Disclosure							2.77	$p < .05$
Parent Report				18.90	3.72	.68		
Adolescent Report				17.50	4.32	.72		

Table 2

Correlations among Survey Measures of Parental Monitoring-relevant Constructs (n = 74)

Variable	1	2	3	4	5	6
1 APQ, Parent Report		-.62**	-.36**	.30**	-.28*	-.26*
2 Parental Knowledge, Parent Report			.51**	-.41**	.41**	.23
3 Adolescent Disclosure, Parent Report				-.22	.18	.42**
4 APQ, Adolescent Report					-.59**	-.44**
5 Parental Knowledge, Adolescent Report						.62**
6 Adolescent Disclosure, Adolescent Report						

Note. APQ = Alabama Parenting Questionnaire-Poor Monitoring/Supervision subscale; * $p < .05$; ** $p < .01$.

Table 3

Mean Differences on Survey Measures of Monitoring-Relevant Constructs (n = 74) as a Function of Adolescent Delinquent Behavior Status (No Self-Reported Delinquent Behavior [n = 40] vs. Self-Reported Engagement in Delinquent Behavior [n = 34])

Variable	Adolescents Not Self-Reporting Engagement in Delinquent Behavior		Adolescents Self-Reporting Engagement in Delinquent Behavior		Independent Samples <i>t</i> Test	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
APQ							
Parent Report	17.65	4.13	20.38	4.69	-2.66	<i>p</i> < .05	-0.62
Adolescent Report	21.02	5.43	26.09	5.37	-4.01	<i>p</i> < .001	-0.94
Parental Knowledge							
Parent Report	40.00	3.20	36.35	4.20	4.23	<i>p</i> < .001	0.97
Adolescent Report	36.07	6.44	32.82	5.14	2.37	<i>p</i> < .05	0.56
Adolescent Disclosure							
Parent Report	19.95	3.50	17.67	3.65	2.73	<i>p</i> < .01	0.63
Adolescent Report	18.20	4.75	16.67	3.65	1.55	<i>p</i> = .12	0.36

Note. APQ = Alabama Parenting Questionnaire-Poor Monitoring/Supervision subscale.

Table 4

Generalized Estimating Equations Predicting Parent and Adolescent Reports of Monitoring-Relevant Constructs as a Function of Adolescent Delinquent Behavior Status (no delinquent behavior vs. any; n = 74)

Factor	Wald X²	OR	B (SE)	95% CI	p
Main and Interaction Effects					
Adolescent Age	1.04	1.20	0.18 (0.18)	[-.17, 0.54]	0.30
Adolescent Gender	1.54	0.65	-0.43 (0.34)	[-1.11, 0.25]	0.21
Informant	0.85	0.69	-0.36 (0.39)	[-1.13, 0.41]	0.35
Domain	0.07	0.89	-0.11 (0.41)	[-0.92, 0.69]	0.78
Adolescent Delinquent Behavior Status	4.25	2.77	1.02 (0.49)	[0.05, 1.99]	<i>p</i> <.05
Informant × Domain	2.07	1.98	0.68 (0.47)	[-0.25, 1.62]	0.15
Adolescent Delinquent Behavior Status × Domain	0.90	1.67	0.51 (0.54)	[-0.54, 1.58]	0.34
Adolescent Delinquent Behavior Status × Informant	2.21	2.50	0.92 (0.61)	[-0.29, 2.12]	0.13
Informant × Domain × Adolescent Delinquent Behavior Status	5.75	0.19	-1.65 (0.69)	[-3.00, -0.30]	<i>p</i> <.05

Note. Overall Parental Monitoring was calculated by creating a within-subject composite variable combining each participant's reports of parental monitoring behaviors (i.e., poor monitoring/supervision) and parental knowledge (i.e., parental knowledge, adolescent disclosure). OR = Odds Ratio; B = Unstandardized beta; SE = Standard error; 95% CI = 95% Wald confidence interval. Factor contrasts based on comparisons in descending order, with the Informant factor coded Parent = "0" and Adolescent = "1". Domain is coded Monitoring = "0" and Knowledge = "1". Adolescent Delinquent Behavior Status is

coded No Reported Engagement in Delinquent Behavior = “0” and Reported Engagement in Delinquent Behavior = “1”. For statistical tests of main and interaction effects, *p* values and 95% CIs reported reflect significance tests for the reported unstandardized betas.

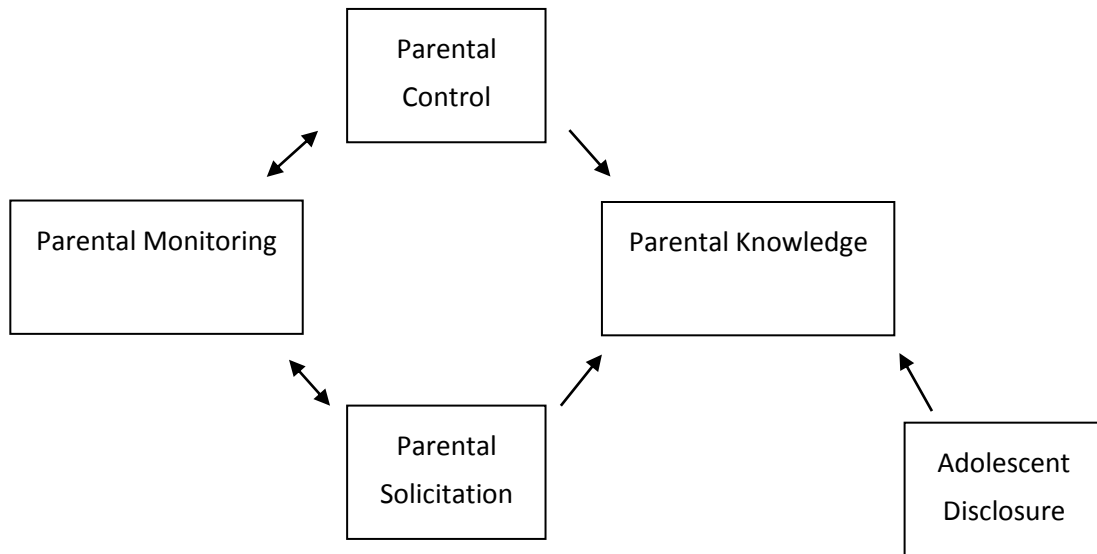


Figure 1. Parental Monitoring-Relevant Constructs. Overview of the relation between parental monitoring and parental knowledge and how various active monitoring efforts may confound this relation.

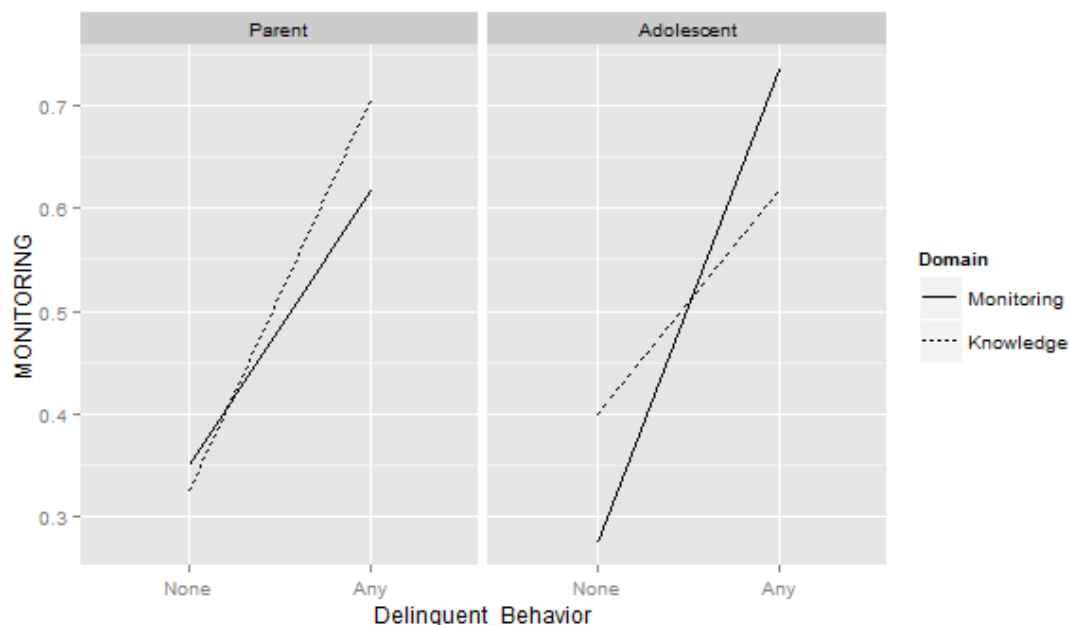


Figure 2. Graphical representation of the interaction between informant providing the report (i.e., parent, adolescent) and domain assessed by each parental monitoring measure (i.e., parental monitoring behaviors, parental knowledge) on the relation between reports of monitoring-relevant constructs and adolescent self-reported delinquent behavior. On the y-axis, greater scores indicate greater likelihood of poorer parental monitoring. On the x-axis, I report adolescents' self-reported delinquent behavior based on whether the adolescent did not endorse delinquent behavior (i.e., "None") or did endorse delinquent behavior (i.e., "Any"). Two lines represent distinctions between adolescents' delinquent behavior status and likelihood of low levels of parental monitoring. The solid lines indicate distinctions between adolescents' delinquent behavior status on likelihood of poor levels of parental monitoring when based on measures of parental monitoring behaviors. The dotted lines indicate distinctions between adolescents' delinquent behavior status on likelihood of poor levels of parental monitoring when based on measures of parental knowledge. As indicated in the figure, when based on parent

reports (left column), parental monitoring knowledge measures evidence a stronger relation to adolescent delinquent behavior status than do parental monitoring behaviors measures. Conversely, when based on adolescent reports (right column), parental monitoring behaviors measures evidence a stronger relation to adolescent delinquent behavior status than do parental monitoring knowledge measures.

References

- Achenbach, T.M, McConaughy, S.H., & Howell, C.T. (1987). Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*, *101*, 213-232. doi: 10.1037/0033-2909.101.2.213
- Atkins, D. C., & Gallop, R. J. (2007). Rethinking how family researchers model infrequent outcomes: A tutorial on count regression and zero-inflated models. *Journal of Family Psychology*, *21*, 726-735. doi: 10.1037/0893-3200.21.4.726
- Blakemore, S. J. (2007). The social brain of a teenager. *The Psychologist*, *20*, 600-602.
- Blakemore, S. J. (2008). The social brain in adolescence. *Nature Reviews Neuroscience*, *9*, 267-277. doi: 10.1038/nrn2353
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin*, *113*, 487-496. doi: 10.1037/0033-2909.113.3.487
- De Los Reyes, A. (2013). Strategic objectives for improving understanding of informant discrepancies in developmental psychopathology research. *Development and Psychopathology*, *25*, 669-682. doi: 10.1017/S0954579413000096
- De Los Reyes, A., Ehrlich, K.B., Swan, A.J., Luo, T.J., Van Wie, M., & Pabón, S.C. (2013). An experimental test of whether informants can report about child and family behavior based on settings of behavioral expression. *Journal of Child and Family Studies*, *22*, 177-191. doi: 10.1007/s10826-012-9567-3
- De Los Reyes, A., Goodman, K.L., Kliewer, W., & Reid-Quiñones, K.R. (2008). Whose depression relates to discrepancies? Testing relations between informant

characteristics and informant discrepancies from both informants' perspectives.

Psychological Assessment, 20, 139-149. doi: 10.1037/1040-3590.20.2.139

De Los Reyes, A., Goodman, K.L., Kliewer, W., & Reid-Quiñones, K. (2010). The longitudinal consistency of mother-child reporting discrepancies of parental monitoring and their ability to predict child delinquent behaviors two years later.

Journal of Youth and Adolescence, 39, 1417-1430. doi: 10.1007/s10964-009-9496-7

De Los Reyes, A., & Kazdin, A.E. (2005). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin, 131*, 483-509. doi:

10.1037/0033-2909.131.4.483

De Los Reyes, A., Salas, S., Menzer, M.M., & Daruwala, S.E. (2013). Criterion validity of interpreting scores from multi-informant statistical interactions as measures of informant discrepancies in psychological assessments of children and adolescents.

Psychological Assessment, 25, 509-519. doi: 10.1037/a0032081

De Los Reyes, A., Thomas, S.A., Goodman, K.L., & Kundey, S.M.A. (2013). Principles underlying the use of multiple informants' reports. *Annual Review of Clinical Psychology, 9*, 123-149. doi: 10.1146/annurev-clinpsy-050212-185617

Psychology, 9, 123-149. doi: 10.1146/annurev-clinpsy-050212-185617

De Los Reyes, A., Thomas, S.A., Swan, A.J., Ehrlich, K.B., Reynolds, E.K., Suarez, L., . . . Pabón, S.C. (2012). "It depends on what you mean by 'disagree'"; Differences between parent and child perceptions of parent-child conflict. *Journal of*

Psychopathology and Behavioral Assessment, 34, 293-307. doi: 10.1007/s10862-012-9288-3

- Dirks, M.A., De Los Reyes, A., Briggs-Gowan, M., Cella, D., & Wakschlag, L.S. (2012). Annual research review: Embracing not erasing contextual variability in children's behavior- theory and utility in the selection and use of methods and informants in developmental psychopathology. *Journal of Child Psychology and Psychiatry*, 53, 558-574. doi: 10.1111/j.1469-7610.2012.02537.x
- Dishion, T.J., & McMahon, R.J. (1998). Parental Monitoring and the prevention of problem behavior: A conceptual and empirical reformulation. *Clinical Child and Family Psychology Review*, 1, 61-75.
- Ehrlich, K.B., Cassidy, J., Lejuez, C.W., & Daughters, S.B. (2013). Discrepancies about adolescent relationships as a function of informant attachment and depressive symptoms. *Journal of Research on Adolescence*, 1-13. doi: 10.1111/jora.12057
- Farrell, A.D., Kung, E.M., White, K.S., & Valois, R. (2000). The structure of self-reported aggression, drug use, and delinquent behaviors during adolescence. *Journal of Clinical Child Psychology*, 29, 282-292. doi: 10.1207/S15374424jccp2902_13
- Frick, P. J. (1991) *The Alabama Parenting Questionnaire*. Unpublished rating scale, University of Alabama.
- Fung, J. J., & Lau, A. S. (2010). Factors associated with parent-child (dis)agreement on child behavior and parenting problems in Chinese immigrant families. *Journal of Clinical Child & Adolescent Psychology*, 39, 314-327. doi:10.1080/15374411003691693
- Gaylord, N. K., Kitzmann, K. M., & Coleman, J. K. (2003). Parents' and children's perceptions of parental behavior: Associations with children's psychosocial

adjustment in the classroom. *Parenting: Science and Practice*, 3, 23-47. doi:
0.1207/S15327922PAR0301_02

Zimmer-Gembeck, M. J., & Collins, W. A. (2003). Autonomy development during adolescence. In G.R. Adams, G. R. & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence*. (pp. 175-204). Oxford, UK: Blackwell Publishing Ltd.

Hanley, J. A., Negassa, A., & Forrester, J. E. (2003). Statistical analysis of correlated data using generalized estimating equations: an orientation. *American Journal of Epidemiology*, 157, 364-375. doi: 10.1093/aje/kwf215

Hartung, C.M., McCarthy, D.M., Milich, R., & Martin, C.A. (2005). Parent-adolescent agreement on disruptive behavior symptoms: A multitrait-multimethod model. *Journal of Psychopathology and Behavioral Assessment*, 27, 159-168. doi:
10.1007/s10862-005-0632-8

Hoeve, M., Dubas, J.S., Eichelsheim, V.I., van der Laan, P.H., Smeenk, W., & Gerris, J.R.M. (2009). The relationship between parenting and delinquency: A meta-analysis. *Journal of Abnormal Child Psychology*, 37, 749-775. doi:
10.1007/s10802-009-9310-8

Hunsley, J. & Mash, (2007). Evidence-based assessment. *Annual Review of Clinical Psychology*, 3, 29-51. doi: 10.1146/annurev.clinpsy.3.022806.091419

Keijsers, L., Branje, S. J. T., VanderValk, I. E., & Meeus, W. (2010). Reciprocal effects between parental solicitation, parental control, adolescent disclosure, and adolescent delinquency. *Journal of Research on Adolescence*, 20, 88-113. doi:
10.1111/j.1532-7795.2009.00631.x

- Kerr, M., & Stattin, H. (2000). What parents know, how they know it, and several forms of adolescent adjustment: Further support for a reinterpretation of monitoring. *Developmental Psychology, 36*, 366-380. doi: 10.1037/0012-1649.36.3.366
- Kerr, M., & Stattin, H., & Burk, W.J. (2010). A reinterpretation of parental monitoring in longitudinal perspective. *Journal of Research on Adolescence, 20*, 39-64. doi: 10.1111/j.1532-7795.2009.00623.x
- Kraemer, H.C., Measelle, J.R., Ablow, J.C., Essex, M.J., Boyce, W.T., & Kupfer, D.J. (2003). A new approach to integrating data from multiple informants in psychiatric assessment and research: Mixing and matching contexts and perspectives. *American Journal of Psychiatry, 160*, 1566-1577. doi: 10.1176/appi.ajp.160.9.1566
- Laird, R.D., Pettit, G.S., Bates, J.E., & Dodge, K.A. (2003). Parents' monitoring-relevant knowledge and adolescents' delinquent behavior: Evidence of correlated developmental changes and reciprocal influences. *Child Development, 74*, 752-768. doi: 10.1111/1467-8624.00566
- Larson, R.W., Richards, M.H., Moneta, G., Holmbeck, G., & Duckett, E. (1996). Changes in adolescents' daily interactions with their families from ages 10 to 18: Disengagement and transformation. *Developmental Psychology, 32*, 744-754. doi: 10.1037/0012-1649.32.4.744
- Lippold, M.A., Greenberg, M.T. & Feinberg, M.E. (2011). A dyadic approach to understanding the relationship of maternal knowledge of youths' activities to youths' problem behavior among rural adolescents. *Journal of Youth and Adolescence, 40*, 1178-1191.

doi: 10.1007/s10964-010-9595-5

Malle, B.F. (2006). The actor-observer asymmetry in attribution: A (surprising) meta-analysis. *Psychological Bulletin*, *132*, 895-919. doi: 10.1037/0033-

2909.132.6.895

Ohannessian, C. M., & De Los Reyes, A. (2014). Discrepancies in adolescents' and their mothers' perceptions of the family and adolescent anxiety symptomatology.

Parenting: Science and Practice, *14*, 1-18. doi: 10.1080/15295192.2014.870009

Ohannessian, C. M., Lerner, R. M., Lerner, J. V., & von Eye, A. (2000). Adolescent-parent discrepancies in perceptions of family functioning and early adolescent self-competence. *International Journal of Behavioral Development*, *24*, 362-372.

doi: 10.1080/01650250050118358

Pantin, H., Prado, G., Lopez, B., Huang, S., Tapia, M. I., Schwartz, S. J., et al. (2009). A randomized controlled trial of Familias Unidas for Hispanic adolescents with behavior problems. *Psychosomatic Medicine*, *71*, 987-995. doi:

10.1097/PSY.0b013e3181bb2913

Racz, S.J., & McMahon, R.J. (2011). The relationship between parental knowledge and monitoring and child and adolescent conduct problems: A 10-year update.

Clinical Child and Family Psychology Review, *14*, 377-398. doi: 10.1007/s10567-011-0099y.

Reynolds, E.K., MacPherson, L., Matusiewicz, A.K., Schreiber, W.M., & Lejuez, C.W. (2011). Discrepancy between mother and child reports of parental knowledge and the relation to risk behavior engagement. *Journal of Clinical Child and Adolescent Psychology*, *40*, 67-79. doi: 10.1080/15374416.2011.533406

- Schwarz, N. (1999). Self-report: How the questions shape the answers. *American Psychologist, 54*, 93-105.
- Smetana, J.G. (2008). "It's 10 o'clock: Do you know where your children are?" Recent advances in understanding parental monitoring and adolescents' information management. *Child Development Perspectives, 2*, 19-25. doi: 10.1111/j.1750-8606.2008.00036.x
- Smetana, J., & Villalobos, M. (2009). Social cognitive development in adolescence. In R. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (Vol. 1, 3rd ed., pp. 187-228). New York, NY: Wiley.
- Stanton, B., Cole, M., Galbraith, J., Li, X., Pendleton, S., Cottrell, L., et al. (2004). Randomized trial of a parent intervention: Parents can make a difference in long-term adolescent risk behaviors, perceptions, and knowledge. *Archives of Pediatrics and Adolescent Medicine, 158*, 947-955. doi: 10.1001/archpedi.158.10.947
- Stanton, B. F., Li, X., Galbraith, J., Cornick, G., Feigelman, S., Kaljee, L., et al. (2000). Parental underestimates of adolescent risk behavior: A randomized, controlled trial of a parental monitoring intervention. *Journal of Adolescent Health, 26*, 18-26. doi: 10.1016/S1054-139X(99)00022-1
- Stattin, H., & Kerr, M. (2000). Parental monitoring: A reinterpretation. *Child Development, 71*, 1072-1085. doi: 10.1111/1467-8624.00210
- Wu, Y., Stanton, B. F., Galbraith, J., Kaljee, L., Cottrell, L., Li, X., et al. (2003). Sustaining and

broadening intervention impact: A longitudinal randomized trial of 3 adolescent risk reduction approaches. *Pediatrics*, *111*, e32–e38. doi: 10.1542/peds.111.1.e32