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## Link between Monitoring Behavior and Adolescent Adjustment: An Analysis of Direct and Indirect Effects

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### Abstract

The purpose of the current investigation was to explore whether monitoring behavior (i.e., parental solicitation, child disclosure, and parental involvement) was directly and indirectly (via parental knowledge and parent-youth openness) related to adolescent adjustment (i.e., antisocial behavior, substance use, and school grades). The sample consisted of 206 families with adolescents (ages 10–18 years) from predominantly low-income, high-risk neighborhoods. Monitoring behavior (parent reports), parental knowledge and parent-youth openness (youth reports), and adolescent adjustment (parent and youth reports) were all based on questionnaire data collected during a laboratory assessment. Results showed that when the monitoring behavior factors were examined

simultaneously, only child disclosure was significantly and inversely related to youth antisocial behavior. In contrast, only parental involvement was significantly associated with less substance use. Moreover, school grades were significantly and incrementally predicted by both child disclosure and parental involvement. Parental solicitation was not significantly related to any of the adolescent outcomes. The findings also demonstrated evidence of indirect effects (via parental knowledge) in the link between monitoring behavior and adolescent adjustment. Implications regarding the socialization process during adolescence are discussed.

### Keywords

parental monitoring; child disclosure; parenting; adolescents; antisocial behavior; academic achievement

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### Introduction

A growing body of evidence has demonstrated that monitoring and supervision of child behavior are linked to a number of adolescent outcomes. For instance, studies have shown that high levels of parental solicitation and child disclosure are related to low levels of antisocial behavior (e.g., Laird, Marrero, Melching, & Kuhn, 2012; Padilla-Walker, Harper, & Bean, 2011; Stattin & Kerr, 2000) and substance use (e.g., Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006) and high levels of academic achievement (e.g., Blocklin, Crouter, Updegraff, & McHale, 2010; Kerr & Stattin, 2000). While recent investigations have focused on monitoring behaviors such as parental solicitation and child disclosure, few studies have explored whether simply spending time with children (i.e., parental involvement) is another means of gathering information. Moreover, there has been little attention paid to the underlying mechanisms linking monitoring and adolescent adjustment. For the first goal of the study, we examined the association between monitoring behavior (i.e., parental solicitation, child disclosure, and parental involvement) and adolescent adjustment (i.e., antisocial behavior, substance use, and school grades). Second, we explored potential indirect effects in this link.

Parental monitoring has been described in the literature as the extent to which parents are aware of or gather information regarding their children's lives and daily activities (Dishion & McMahon, 1998; Laird, Pettit, Bates, & Dodge, 2003). Prior to 2000, there was a lack of consistency and consensus regarding how the construct should be measured. Some investigators assessed the frequency of communication between parents and children regarding the children's daily activities, friends, and whereabouts (e.g., the extent to which the parent discusses the child's plans; Small & Kerns, 1993). Others evaluated the amount of time the adolescent spends in the presence of the parent (e.g., "How often do you spend time with your parent(s)"; Metzler, Noell, Biglan, Ary, & Smolkowski, 1994). Still other researchers measured the extent to which parents were aware or knowledgeable of their children's activities (e.g., "My parents know where I am after school"; Small & Luster, 1994). After 2000, however, the conceptualization and assessment of the monitoring construct was greatly influenced by two papers published by Stattin and Kerr (Kerr & Stattin, 2000; Stattin & Kerr, 2000). In particular, they argued that parents gather

information regarding their children's activities through *child disclosure* (i.e., the child's willingness to divulge information to their parents about their friends and daily activities) and *parental solicitation* (i.e., the extent to which the parent requests information from the child regarding the child's friends and daily activities). Furthermore, both child disclosure and parental solicitation were identified as sources of *parental knowledge*, which reflects the extent to which the parent is aware of the child's friends and daily activities.

In light of the reconceptualization of the monitoring construct, other researchers have incorporated child disclosure, parental solicitation, and parental knowledge items in measures of monitoring (e.g., Laird et al., 2012). The current investigation builds upon the previous literature by focusing on what will be called *monitoring behavior*. Monitoring behavior reflects the process by which the parent gathers information or tracks their child's behavior, friends, and daily whereabouts. This process can be initiated by the parent (i.e., parental solicitation) or the child (i.e., child disclosure). Parents also gain knowledge regarding their children's lives and activities by simply spending time with their children (e.g., driving places, having dinner, watching television), a concept we will refer to as *parental involvement*. For example, parents may be aware of their children's lives and daily activities because they are present when their children are having a soccer game or celebrating their birthday with friends. Although not included in more recent monitoring measures, items tapping parental involvement were part of several instruments published prior to 2000 (e.g., Dishion, Capaldi, & Yoerger, 1999; Patterson & Stouthamer-Loeber, 1984). As such, in the current investigation, monitoring behavior will be based on three factors: parental solicitation, child disclosure, and parental involvement.

Regardless of how it has been assessed, an extensive body of literature has demonstrated that high levels of monitoring behavior are related to low levels of youth antisocial behavior and substance use and high levels of academic achievement (e.g., Barnes et al., 2006; Blocklin et al., 2010; Padilla-Walker et al., 2011; Stattin & Kerr, 2000). For example, using a sample of adolescents (ages 13–16 years), Barnes and colleagues (2006) found that high levels of monitoring (i.e., child disclosure) were related to low levels of alcohol and drug use. These findings are comparable to those from Blocklin et al. (2010) who reported that high levels of adolescent disclosure and spending time with parents (i.e., parental involvement) were related to low levels of adolescent delinquency; child disclosure also was positively and significantly related to youth school grades. In addition, other investigators (e.g., Stattin & Kerr, 2000; Vieno, Nation, Perkins, Pastore, & Santinello, 2010) have found significant and inverse associations between parental solicitation and adolescent externalizing behaviors. One possible reason for these findings is that when a parent and adolescent discuss the youth's daily activities (via parental solicitation or child disclosure) or when a parent and adolescent spend time together (i.e., parental involvement), the young person may perceive their parent as being interested and concerned for their well-being, which encourages the youth to excel in school, avoid partaking in substance use, and stay away from deviant peers (Steinberg et al., 1994). Such parenting is also consistent with authoritative parenting as it reflects high levels of control and warmth. Moreover, monitoring often accompanies rules and appropriate (yet flexible) demands for behavior (e.g., Baumrind, 2013).

While research has shown monitoring behavior to be linked to adolescent adjustment, it is important to explore potential indirect effects as this can afford valuable information regarding the mechanisms and processes that underlie this association (Criss, Shaw, Moilanen, Hitchings, & Ingoldsby, 2009). Moreover, this information can be especially edifying in the development of intervention and prevention programs targeting at-risk youth (Herts, McLaughlin, & Hatzenbuehler, 2012). Although there have been few published studies examining indirect effects, a review of the literature has pointed to two potential underlying processes: parental knowledge and parent-youth relationship quality (i.e., degree to which the relationship is warm and supportive). Indeed, findings from a number of investigations have shown positive and significant links between monitoring behavior and parental knowledge and parent-child relationship quality (Kerr, Stattin, & Trost, 1999; Stattin & Kerr, 2000). In particular, parental knowledge has been hypothesized in the literature to be the end product of monitoring behavior (Kerr & Stattin, 2000). That is, parents are thought to obtain information about their youth via daily conversations or simply spending time together. In addition, monitoring behavior may enhance the quality of the parent-adolescent relationship by fostering mutual trust and affection between the parent and youth (Crouter, MacDermid, McHale, & Perry-Jenkins, 1990; Dishion & McMahon, 1998). In other words, when parents and their children have frequent conversations, it may increase the mutual trust in the relationship as both members of the dyad are demonstrating a clear interest in each other and are both willing to share information (Kerr et al., 1999).

In addition to this body of research, other studies have reported significantly links between parental knowledge and parent-youth relationship quality and adolescent adjustment (e.g., Kerr & Stattin, 2000). It is possible that parents who are highly knowledgeable of their children's lives and have close and supportive relationships with them are more effective at deterring their children from delinquent-reinforcing situations and contexts (Dishion & McMahon, 1998). In particular, these parents may be in a better position to intervene when their children go astray from prescribed family rules (e.g., poor school grades, affiliation with deviant peers; Laird, Criss, Pettit, Dodge, & Bates, 2008). Moreover, parental knowledge may serve as a feedback component in the socialization process allowing parents to determine whether their advice and socialization efforts have been effective (Crouter et al., 1990). In fact, research indicates that adolescents who have a positive bond or attachment with their parents are more likely to be open to their parents' socialization efforts with respect to the importance of school and choice of friends (Criss, Shaw, & Ingoldsby, 2003)

In summary, evidence from the literature has provided empirical and theoretical support that parental knowledge and parent-child relationship quality may underlie the link between monitoring behavior and adolescent adjustment. However, while there is evidence for the various links in this pathway, to our knowledge, there has been only one published study that has explicitly tested indirect effects involving these factors. Specifically, as part of a larger model tested by Soenens et al. (2006), the researchers reported that high levels of adolescent self-disclosure were related to high levels of parental knowledge, which in turn, were related to low levels of substance use and delinquency. Clearly, additional research is needed to explore the pathways between monitoring behavior and adolescent adjustment.

While the literature has added to our understanding of the monitoring construct, there have been several noticeable gaps. First, as mentioned previously, there has been only one published study (Soenens et al., 2006) that has tested potential indirect effects in the link between monitoring behavior and adolescent adjustment. Second, most of the studies in the literature regarding monitoring have been based on predominantly middle-class, European American samples (e.g., Laird et al., 2008; Metzler et al., 1994). Finally, the majority of empirical studies are limited as they only assessed a single adolescent outcome (e.g., Vieno et al., 2010). This is critical as there may be distinct pathways linking monitoring behavior to adolescent adjustment based on the outcome examined.

To address these gaps in the literature, there were two major research goals of the current study. The *first research goal* was to analyze the association between monitoring behavior (i.e., parental solicitation, child disclosure, and parental involvement) and adolescent adjustment (i.e., antisocial behavior, substance use, and school grades). It was hypothesized that high levels of parental solicitation, child disclosure, and parental involvement would be related to low levels of youth antisocial behavior and substance use and better school grades. The *second research goal* was to explore whether monitoring behavior was indirectly related to adolescent adjustment via parental knowledge and parent-youth relationship quality (i.e., openness). Based on theoretical and empirical evidence focusing on the individual links in the pathway, it was expected that evidence for indirect effects would be found in the current study.

## Method

### Participants and Procedure

The sample consisted of 206 families with adolescents who participated in the Family and Youth Development Project (FYDP), a study of the predictors and outcomes of adolescent emotion regulation. Data were collected from both adolescents ( $M$  age = 13.37 years,  $SD$  = 2.32, Age Range = 10–18 years; 51% female; 29.6% European American, 32% African American, 19.4% Latino American, 19% other ethnic groups) and their primary caregivers (83.3% biological mothers, 10.7% biological fathers, 2% grandparents, 4% other). The sample was predominantly comprised of low-income (*Median* annual income = \$40,000) families with an average of 4.35 people living in each home and 38.7% headed by single parents. Adolescents and their parents participated in a 2½ hour laboratory assessment. Data in the current investigation utilized questionnaire data. Both the parent and adolescent received \$60 compensation for their time spent in the lab and were debriefed after the study. This project was approved by the university IRB prior to data collection.

### Measures

**Monitoring behavior (parent reports)**—The monitoring behavior measure was created for the current project. Although this measure is similar to other instruments used in the literature (e.g., Laird et al., 2012; Stattin & Kerr, 2000), it differed in that it more explicitly assessed whether the parent (for the parental solicitation items) or child (for the child disclosure items) initiated the conversations. The new instrument also assessed different domains of the adolescent’s life (e.g., friends, school, free time). Parents rated the items

using a 5-point Likert scale (1 = “never,” 2 = “hardly ever,” 3 = “sometimes,” 4 = “frequently,” and 5 = “very often”). *Parental solicitation* reflects the frequency of parent initiated conversations with his/her child regarding the youth’s life and daily activities. The parental solicitation score was created by averaging ( $\alpha = .83$ ) the six items (e.g., “During the past year, how often did you begin or start conversations with your adolescent about what he/she did after school?”). *Child disclosure* assesses the frequency with which the youth initiated conversations with their parent regarding their daily activities. The score was constructed by averaging ( $\alpha = .88$ ) the six items (e.g., “During the past year, how often did your child begin or start conversation with you about what he/she did during free time?”). *Parental involvement* refers to how often the parent and child spend time together. This variable was created by averaging ( $\alpha = .79$ ) the 10 items (e.g., “During the past year, how often did you and your child watch TV together?”).

**Parental knowledge and parent-youth openness (youth reports)**—Parental knowledge and parent-youth openness were based on adolescent reports using a 5-point Likert scale (1 = “never,” 2 = “hardly ever,” 3 = “sometimes,” 4 = “frequently,” and 5 = “very often”). *Parental knowledge* reflects the extent to which the parent is aware or knowledgeable of the youth’s life and daily activities and was adapted from instrument developed by Brown, Mounts, Lamborn, and Steinberg (1993) and Dishion, Patterson, Stoolmiller, and Skinner (1991). The parental knowledge score was created by averaging ( $\alpha = .90$ ) the six items (e.g., “During the past year, how often did your parent really know what you did with friends?”). *Parent-youth openness* was adapted from the Student-Teacher Relationship Scale (Pianta, 2001) and the Adult-Child Relationship Scale (ACRS; Criss et al., 2003). This instrument assesses the extent to which the parent and child have an open, warm, and mutually responsive relationship. This variable was constructed by averaging ( $\alpha = .92$ ) the ten items (e.g., “If upset about something, I would talk with my parent about it?”).

**Adolescent adjustment (parent and youth reports)**—The three adjustment factors (i.e., antisocial behavior, substance use, and school grades) were based on parent and youth reports. Using multiple informants of adolescent adjustment has been well-established in the literature, including studies using structural equation modeling (e.g., Little, Lindenberger, & Nesselrode, 1999) and investigations focusing on monitoring (e.g., Kerr & Stattin, 2000; Stattin & Kerr, 2000) and high-risk youth (e.g., Criss & Shaw, 2005; Dishion et al., 1991). While parents and youth may not always agree on various phenomena, there still tends to be significant overlap in their reports of adolescent adjustment (e.g., Criss & Shaw, 2005; Dishion et al., 1991).

All items assessing antisocial behavior and substance use were rated on a 5-point Likert scale (1 = “never,” 2 = “1–2 times,” 3 = “3–4 times,” 4 = “5–6 times,” and 5 = “7 or more times”) on behavior during the past year and were adapted from the Problem Behavior Frequency Scale (Farrell, Danish, & Howard, 1992; Farrell, Kung, White, & Valois, 2000). Our instrument is nearly identical except for two minor changes. First, we used a slightly different rating scale to be consistent with other measures in our laboratory assessment. Second, we added items assessing prescription medicine and over-the-counter energy drinks/pills. *Youth antisocial behavior* consisted of 26 items that reflected the frequency of



aggressive and delinquent behaviors (e.g., “During the past year, how many times did you get into a fight in which someone was hit?”). Both parent ( $\alpha = .92$ ;  $M = 1.62$ ,  $SD = .53$ ) and youth ( $\alpha = .92$ ;  $M = 1.55$ ,  $SD = .50$ ) factors were created by averaging the 26 items. Parent and youth reports of youth antisocial behavior were strongly correlated ( $r = .51$ ,  $p < .001$ ). *Youth substance use* refers to the frequency of adolescent drinking alcohol, smoking cigarettes, and illegal drug use (e.g., “How many times did you use marijuana?”). Both parent ( $\alpha = .84$ ;  $M = 1.07$ ,  $SD = .26$ ) and youth ( $\alpha = .82$ ;  $M = 1.15$ ,  $SD = .36$ ) reports were created by averaging the 9 items. Parent and youth reports of youth substance use were strongly related ( $r = .71$ ,  $p < .001$ ). The *youth school grades* instrument was developed for the current project and reflects the student’s grade point average (A = 4, B = 3, C = 2, D = 1, F = 0) in four subjects: English, math, science, and history. Both parent ( $\alpha = .86$ ;  $M = 3.16$ ,  $SD = .75$ ) and adolescent ( $\alpha = .78$ ;  $M = 3.61$ ,  $SD = .65$ ) reports were created by averaging the 4 items. Parent and youth reports of school grades were significantly correlated ( $r = .80$ ,  $p < .001$ ).

### Analytic Plan

Descriptive statistics and bivariate correlations were computed. Next, to examine the first research goal, a series of structural equation models were built using Mplus version 6.12 (Muthén & Muthén, 1998–2010) where the links among the three monitoring behavior factors (i.e., parental solicitation, child disclosure, and parental involvement) were examined simultaneously as predictors of adolescent adjustment (i.e., antisocial behavior, substance use, or school grades). Separate models were tested for each adolescent adjustment factor. To investigate the second research goal, a series of structural models were created using Mplus to test the indirect effects of monitoring behavior on adolescent adjustment through parental knowledge and parent-youth openness. Specifically, the adolescent adjustment variable (antisocial behavior, substance use, or school grades) was regressed on the parental knowledge, parent-youth openness, and monitoring behavior factors with parental knowledge and parent-youth openness simultaneously regressed on the three monitoring behavior factors. Further, the three monitoring behavior factors were allowed to co-vary with each other, and parental knowledge and parent-youth openness factors were allowed to co-vary. In addition, indirect effects were estimated, and bootstrapping was used to estimate the standard errors and 95% biased-corrected confidence intervals of these coefficients (MacKinnon, 2008).

## Results

### Descriptive Statistics and Bivariate Correlations

Descriptive statistics and bivariate correlations are listed in Table 1. Within-domain correlations were consistent with expectations. Specifically, parental solicitation was positively and significantly related to child disclosure and parental involvement. Child disclosure also was positively and significantly associated with parental involvement. In addition, high levels of parental knowledge were significantly related to high levels of parent-youth openness. Bivariate correlations within the adolescent adjustment domain indicated that antisocial behavior was significantly and positively related to adolescent substance use and negatively related to adolescent school grades. Moreover, high levels of

adolescent substance use were related to low levels of school grades. The cross-domain correlations also were consistent with the current literature. In particular, high levels of parental solicitation, child disclosure, and parental involvement were related to high levels of parental knowledge and parent-youth openness. Moreover, child disclosure and parental involvement were significantly and negatively related to antisocial behavior and substance use and positively related to school grades. Parental solicitation was significantly and inversely correlated with youth antisocial behavior and substance use but was unrelated to school grades. The analyses also demonstrated that high levels of parental knowledge and parent-youth openness were significantly related to low levels of youth antisocial behavior and substance use and high levels of school grades.

### Research Goal #1

The first research goal was to examine whether monitoring behavior was significantly related to adolescent adjustment. To address this goal, a series of structural equation models were tested in which adolescent adjustment (i.e., antisocial behavior, substance use, or school grades) was regressed on the three monitoring factors (parental solicitation, child disclosure, and parental involvement). Parental solicitation, child disclosure, and parental involvement were single-indicator latent variables, and the parent and adolescent reports of each outcome were two indicators for each latent adolescent outcome factor. The measurement models were tested first, and the structural models were tested next with direct links from the three predictors to the outcome factor. Separate models were tested for each adolescent adjustment factor.

The structural model for *youth antisocial behavior* fit the data well,  $\chi^2(2) = 1.10, p = .58$ ; CFI = 1.00; RMSEA = .00; SRMR = .01. The results indicated that child disclosure was significantly and inversely related to youth antisocial behavior,  $\beta = -.32, p = .02$ ; parental solicitation and parental involvement were not significantly related to antisocial behavior in the model,  $\beta = .06$  and  $\beta = -.16, ns$ , respectively. Turning to the *youth substance use* analysis, the structural model fit the data well,  $\chi^2(3) = 7.78, p = .05$ ; CFI = .98; RMSEA = .09; SRMR = .02. The analysis indicated that high levels parental involvement were significantly related to low levels of substance use,  $\beta = -.28, p = .007$ . In contrast, parental solicitation and child disclosure were not significantly related to substance use,  $\beta = .06$  and  $\beta = -.10, ns$ , respectively. Finally, the structural model for *school grades* fit the data well,  $\chi^2(3) = 1.65, p = .65$ ; CFI = 1.00; RMSEA = .00; SRMR = .01. The findings showed that high levels of child disclosure and parental involvement were significantly related to high levels of school grades,  $\beta = .31, p = .004$  and  $\beta = .19, p = .047$  respectively. As with the other analyses, parental solicitation was not significantly related to school grades,  $\beta = -.14, ns$ . In sum, the analyses indicated that child disclosure was significantly related to youth antisocial behavior, parental involvement was significantly linked to substance use, and child disclosure and parental involvement were significantly and associated with school grades.

### Research Goal #2

We next investigated potential indirect effects in the link between monitoring behavior and adolescent adjustment. To address this research goal, the coefficients of indirect effects and the confidence intervals were estimated in Mplus using the bootstrap method. Using this



procedure, a confidence interval is constructed around the product of the two unstandardized path coefficients that makes up the pathway (e.g., parental knowledge regressed on parental solicitation X youth antisocial behavior regressed on parental knowledge). Separate analyses were computed for each adolescent outcome. Measurement models were tested first followed by the structural models.

**Youth antisocial behavior**—The antisocial behavior model fit the data well,  $\chi^2(4) = 3.16, p = .53$ ; CFI = 1.00; RMSEA = .00; SRMR = .02. As indicated in Figure 1, the results showed that child disclosure was positively and significantly related to parental knowledge and parent-youth openness. In addition, high levels of parental involvement were significantly related to parent-youth openness and marginally significantly related to parental knowledge. The analyses also showed that parental knowledge was significantly and inversely related to youth antisocial behavior; parent-youth openness was not significantly related to antisocial behavior. Using the bootstrapping method, the findings indicated significant indirect coefficients for child disclosure (estimate =  $-.04, p < .01$ , 95% CI =  $-.13, -.001$ ) and parental involvement (estimate =  $-.05, p < .01$ , 95% CI =  $-.15, -.004$ ) via parental knowledge. In addition, the direct links between child disclosure and parental involvement and youth antisocial behavior were not significant in the model indicating indirect (but not direct) effects. The parental solicitation factor was not significantly related to parent-youth openness, parental knowledge, or youth antisocial behavior in the model.

**Youth substance use**—The substance use model fit the data well,  $\chi^2(5) = 11.55, p = .04$ ; CFI = .98; RMSEA = .08; SRMR = .02. As in the previous model, child disclosure was positively and significantly related to parental knowledge and parent-youth openness (see Figure 2). In addition, parental involvement was significantly and positively related to parent-youth openness and significantly (albeit marginally) and positively associated with parental knowledge. In addition, parental involvement was significantly and inversely related to youth substance use. In contrast to the previous model, none of the indirect effect coefficients were significant, owing to the nonsignificant links between parent-youth openness and parental knowledge with youth substance use. Finally, the parental solicitation factor was not significantly associated with any of the factors in the model.

**Youth school grades**—The model for school grades also fit the data well,  $\chi^2(3) = 4.23, p = .24$ ; CFI = 1.00; RMSEA = .05; SRMR = .01. As shown in Figure 3, high levels of child disclosure were significantly related to high levels of openness and parental knowledge. Moreover, high levels of parental involvement were significantly related to high levels of parent-youth openness and marginally related to parental knowledge. The findings also showed that parental knowledge (but not parent-youth openness) was positively and significantly related to school grades. In addition, using the bootstrapping method, the findings indicated marginally significant indirect coefficients for child disclosure (estimate =  $.06, p < .10$ , 95% CI =  $.00, .16$ ) and parental involvement (estimate =  $.06, p < .10$ , 95% CI =  $.00, .20$ ) via parental knowledge. Given that child disclosure was significantly and positively related to school grades in the model, the evidence suggests both direct and indirect effects. In contrast, since parental involvement was not significantly related to school grades, this indicates indirect (but not direct) effects.

## Discussion

The purpose of this study was to analyze the direct and indirect links between monitoring behavior and adolescent adjustment. The findings demonstrated distinct pathways between each monitoring behavior and adolescent adjustment factor. In addition, there was evidence of indirect effects (via parental knowledge) in the link between monitoring behavior (i.e., child disclosure and parental involvement) and adolescent adjustment (i.e., antisocial behavior and school grades). Implications for the socialization process during adolescence are discussed.

### Link between Monitoring Behavior and Adolescent Adjustment

The first research goal was to investigate the link between monitoring behavior (i.e., parental solicitation, child disclosure, and parental involvement) and adolescent adjustment (i.e., antisocial behavior, substance use, and school grades). The SEM analyses supported the hypothesis in that high levels of child disclosure and parental involvement were related to better school grades. In addition, child disclosure was significantly related to less antisocial behavior. These results are consistent with previous research that reports monitoring behavior being linked to adolescent adjustment (Kerr & Stattin, 2000; Padilla-Walker et al., 2011). It is likely that being able to disclose and share information may convey to adolescents that their parents are concerned about their well-being, which may inspire the youths to excel in school and avoid behaviors that may disappoint their parents (Steinberg et al., 1994). Additionally, child disclosure may allow parents to be in a better position to provide guidance and support to the youth regarding their lives and daily activities (Crouter et al., 1990; Dishion & McMahon, 1998). While child disclosure was related to antisocial behavior and school grades, it was not significantly related to substance use. It is possible that adolescents who frequently use drugs and alcohol may have reasons to refrain from disclosing information about their daily activities to their parents. Furthermore, it is important to note that adolescents often choose what information they wish to disclose to their parents as a way to maintain a private sphere and to regulate what personal information their parents acquire (Smetana, 2000). In other words, it is possible that the benefits of child disclosure may be applicable to certain adolescent outcomes but not others.

Although it is critical for adolescents to disclose and share important aspects of their daily activities with their parents on a regular basis, the findings also demonstrated that it may be equally important for parents to simply spend time with their children. Indeed, parental involvement was significantly related to two out of the three adolescent adjustment outcomes. Consistent with previous research, parents who spend time with their children may directly influence the youth's behaviors and whom they interact with on a daily basis (Simpkins et al., 2009). For instance, spending time with their adolescents (e.g., riding in a car, playing games, sporting/school events, watching TV, etc.) may allow parents opportunities to have direct contact with their adolescents' friends, teachers, and other important individuals which may allow them to learn about their adolescents' friends and daily activities. Therefore, a highly involved parent may be in a better position to intervene when their teenager displays inappropriate behavior or hangs out with deviant peers (Simpkins et al., 2009).

The findings also showed that parental solicitation was not significantly related to adolescent adjustment after controlling for the other two monitoring behavior factors. The current literature is somewhat mixed regarding the importance of parental solicitation with some studies finding significant associations with adolescent adjustment (e.g., Vieno et al., 2010) and other investigations failing to find a significant link (e.g., Keijsers, Branje, VanderValk, & Meeus, 2010). It is possible that the monitoring process is just more effective when the adolescent initiates conversations with parents (i.e., child disclosure; Kerr & Stattin, 2000; Stattin & Kerr, 2000). That is, because adolescents are striving for increasing levels of autonomy as they get older (Smetana, 2000), they may prefer to control the flow of information to their parents. Furthermore, instead of being viewed by the youth as a sign of concern and interest, parental solicitation may be viewed as intrusive by the youth (e.g., Gaertner et al., 2010). Thus, parents' active efforts to gather information about their adolescents may either have no discernible impact on youth adjustment (as indicated by the current study), or these efforts may be related to poor outcomes, especially among older youth. Overall, the results from these analyses add to the literature by clarifying which monitoring factors may be particularly beneficial for fostering positive outcomes in three domains of adjustment among at-risk youth.

### Indirect Effects

For the second research goal, we examined whether monitoring behavior was directly and indirectly related to adolescent adjustment. While there have been few published investigations in the monitoring literature testing comparable models (see Soenens et al., 2006), these analyses are important because they provide critical information regarding the underlying processes and mechanisms linking monitoring behavior and adolescent adjustment (Criss et al., 2009) and thus can be especially instructive for interventions targeting at-risk youth. The findings from the current study indicated that parental involvement was directly (but not indirectly) related to adolescent substance use. In contrast, there was evidence of indirect effects for the other two adolescent outcomes. Specifically, child disclosure and parental involvement were indirectly related to youth antisocial behavior and school grades via parental knowledge. These findings suggest that monitoring behavior may be related to adolescent outcomes because it increases parents' knowledge about youth activities which may allow parents to be in a better position to deter their children from delinquent-reinforcing contexts and guide them to more adaptive trajectories (Dishion & McMahon, 1998). The lack of significant indirect effects involving parent-youth openness might be attributed to the somewhat conservative analytical approach in that both openness and knowledge were examined (along with all three monitoring factors) simultaneously in each model. It is equally possible that the pathway linking monitoring behavior and adolescent adjustment more likely may involve parental knowledge than openness. Future investigations are needed to explore this issue.

### Conclusions, Limitations, and Future Directions

Although this investigation provided valuable information regarding the role that monitoring behavior plays in shaping adolescent adjustment, there were limitations that must be acknowledged. First, although parent and adolescent reports were utilized in the current study, other approaches and methods (e.g., interviewer ratings, direct behavior observation,

school archival data) could provide additional insight into the importance of monitoring behavior during adolescence. Related to this point, it is acknowledged that this investigation utilized child disclosure and parental solicitation items that were somewhat different from others used in the field (e.g., Kerr & Stattin, 2000; Stattin & Kerr, 2000). The findings, nevertheless, replicate other studies in showing that child disclosure is more strongly related to adolescent adjustment (i.e., antisocial behavior and school grades) and parental knowledge (see Figures 1–3) in comparison to parental solicitation. Another limitation of the study was the use of a cross-sectional design in testing direct and indirect effects. Although there is strong theoretical evidence that monitoring behavior plays a critical role during adolescence, it is equally possible that youth adjustment may influence changes in monitoring as some longitudinal evidence in the literature has indicated (e.g., Laird et al., 2003). It also should be emphasized that the current sample included families from predominantly disadvantaged backgrounds. As such, different patterns of findings might be expected using middle-class, European American samples. Finally, it must be acknowledged that this was not meant to be an exhaustive examination of all possible processes and mechanisms that may underlie the link between monitoring and youth adjustment as there are other factors that also may play a role, such as social information processing and cognitive attribution styles.

In conclusion, the results demonstrated distinct pathways between each monitoring behavior factor and adolescent outcome. In addition, there also was evidence of indirect effects, though only through parental knowledge. This investigation adds to the literature by providing information regarding which aspects of the monitoring process may be particularly advantageous for specific domains of adjustment among youth from disadvantaged backgrounds. Moreover, the analyses also provide insight regarding potential underlying mechanisms and processes involved in the link between monitoring and adolescent outcomes. As such, the results from this study have clear implications for policy makers, service providers, and interventionists.

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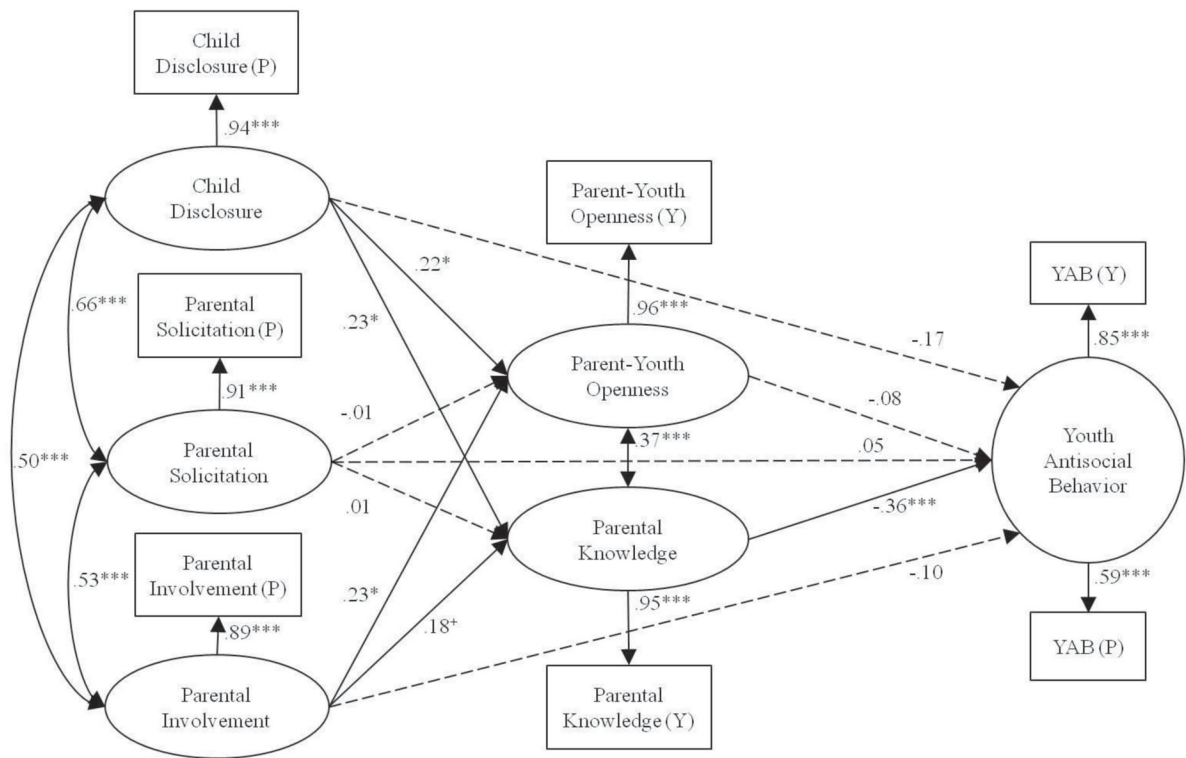
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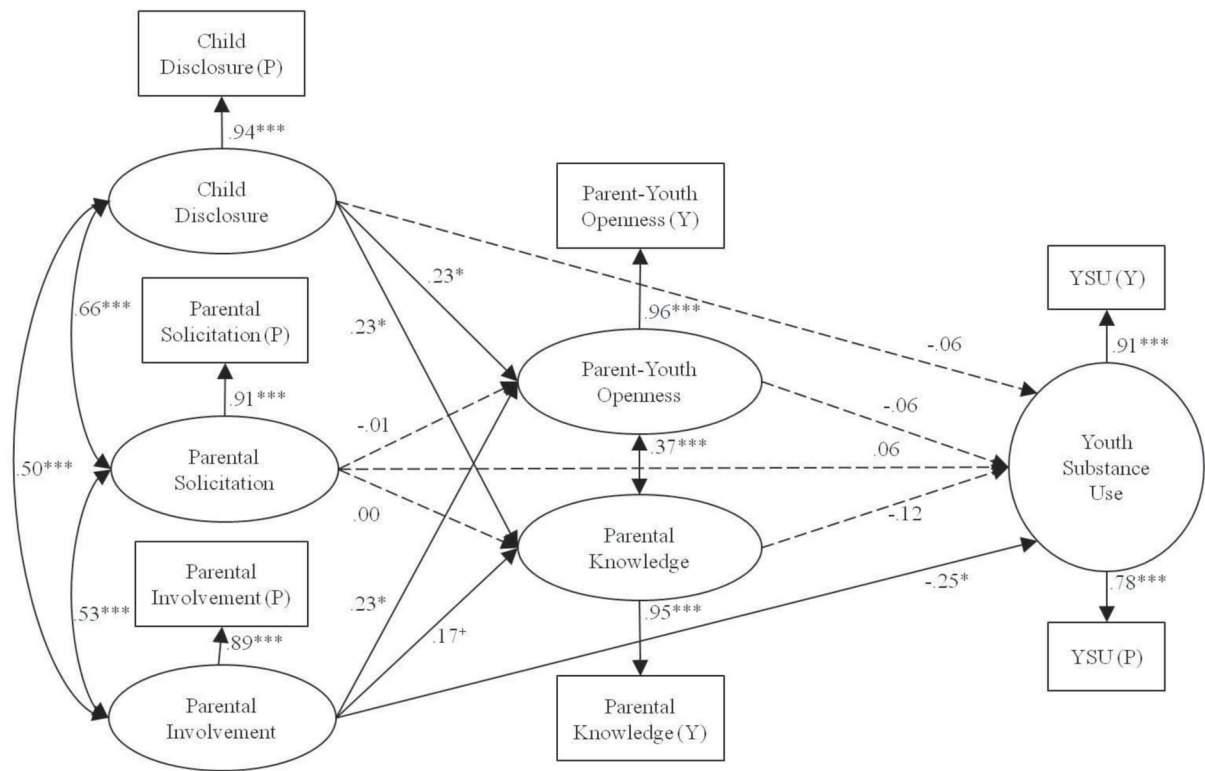
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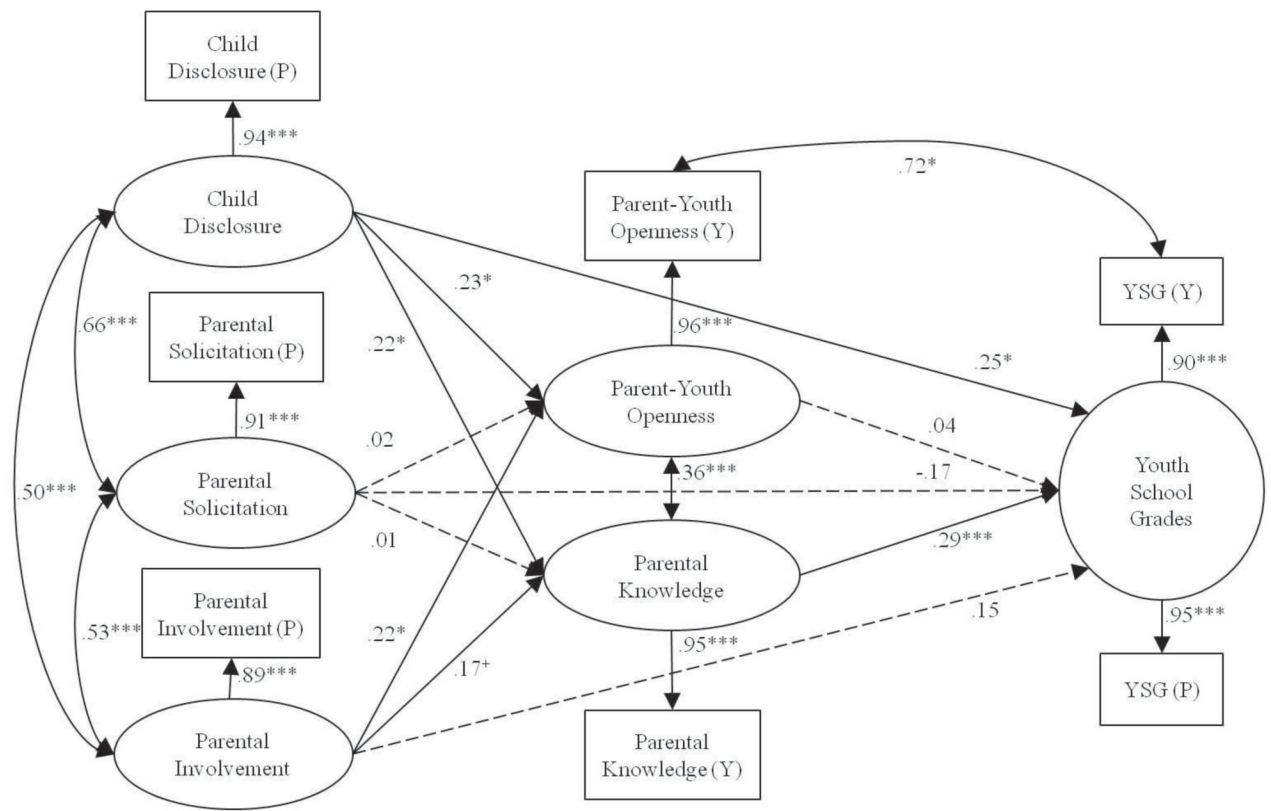




**Figure 1.** Structural equation model examining direct and indirect links between monitoring behavior factors and youth antisocial behavior  
 Note: Y = youth reports and P = parent reports.



**Figure 2.** Structural equation model examining direct and indirect links between monitoring behavior factors and youth substance use  
 Note: Y = youth reports and P = parent reports.



**Figure 3.** Structural equation model examining direct and indirect links between monitoring behavior factors and youth school grades  
 Note: Y = youth reports and P = parent reports.

**Table 1**

Bivariate correlations and descriptive statistics

	1	2	3	4	5	6	7	8	
1. Parental Solicitation (P)		.56***	.43***	.22**	.23***	-.18**	-.15*	.12	
2. Child Disclosure (P)			.42***	.29***	.30***	-.28***	-.19**	.27***	
3. Parental Involvement (P)				.25***	.29***	-.21**	-.24***	.23***	
4. Parental Knowledge (Y)					.42***	-.35***	-.21**	.35***	
5. Parent-Youth Openness (Y)						-.24***	-.17*	.27***	
6. Youth Antisocial Behavior (PY)							.50***	-.43***	
7. Youth Substance Use (PY)								-.21**	
8. Youth School Grades (PY)									
	<i>M</i>	4.11	3.51	3.54	3.55	3.61	1.58	1.11	2.98
	<i>SD</i>	.70	.86	.65	1.10	.97	.45	.29	.82

Note:

\*\*\*  $p < .001$ ,

\*\*  $p < .01$ ,

\*  $p < .05$ ;

P = parent reports, Y = youth reports, PY = average of parent and youth reports.