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Longitudinal Relations Among Parental Monitoring Strategies, Knowledge, and Adolescent Delinquency in a Racially Diverse At-Risk Sample

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Abstract

Parents raising youth in high-risk communities at times rely on active, involved monitoring strategies in order to increase both knowledge about youth activities and the likelihood that adolescents will abstain from problem behavior. Key monitoring literature suggests that some of these active monitoring strategies predict increases in adolescent problem behavior rather than protect against it. However, this literature has studied racially homogenous, low-risk samples, raising questions about generalizability. With a diverse sample of youth ($N = 753$; 58% male; 46% Black) and families living in high-risk neighborhoods, bidirectional longitudinal relations were examined among three aspects of monitoring (parental discussions of daily activities, parental curfew rules, and adolescent communication with parents), parental knowledge, and youth delinquency. Parental discussion of daily activities was the strongest predictor of parental knowledge, which negatively predicted delinquency. However, these aspects of monitoring did not predict later delinquency. Findings were consistent across gender and race/urbanicity. Results highlight the importance of active and involved parental monitoring strategies in contexts where they are most needed.

Adolescence is a vulnerable time for youth to experiment with risky behaviors, which, under insufficient parental engagement, can escalate to problem behaviors. Youth and families living in high-risk, impoverished neighborhoods are particularly vulnerable given the contextual risks associated with raising children in poverty (Brooks-Gunn & Duncan, 1997; Garbarino, 2000; Salzinger, Feldman, Stockhammer, & Hood, 2002). Parental monitoring,

or parental efforts to attain knowledge about the child's whereabouts, activities, and peer affiliations (Dishion & McMahon, 1998), is thought to have a twofold effect in buffering adolescents against problem behaviors (e.g., deviant peer affiliations, drug use, truancy): It increases parental knowledge, and it is said to be protective against delinquency (Crouter & Head, 2002; Fletcher, Steinberg, & Williams-Wheeler, 2004). In low-income neighborhoods, active and involved forms of parental monitoring (e.g., discussions with youth about daily activities, behavioral limit setting) that limit autonomy are thought to reduce adolescent engagement in antisocial behavior (Burton & Jarrett, 2000). Yet key monitoring studies suggest that some active efforts to obtain knowledge (e.g., solicitation) may actually have a deleterious influence on adolescent behavior (Kerr, Stattin, & Burke, 2010; Stattin & Kerr, 2000). As those studies were conducted with racially homogenous samples from low-risk settings, the current study examined (a) the extent to which active monitoring strategies and more passive means of obtaining information (e.g., youth sharing of information) contribute to parents' knowledge about their adolescents' daily activities, and (b) whether these aspects of monitoring negatively predict delinquency among racially diverse adolescents and families in high-risk neighborhoods.

Contextual Influences on Parental Monitoring in High-Risk Neighborhoods

Families living in poor, high-risk neighborhoods are exposed to a number of risk factors including physical assault, inadequate housing, and failing academic institutions (Brooks-Gunn & Duncan, 1997; Horn & Trickett, 1998). In addition to ever-present threatening conditions, poor parents must wrestle with poverty-related stressors that compromise psychological well-being and impair the ability to parent sensitively and attentively (Ceballos & McLoyd, 2002). In light of these contextual influences, ecological frameworks suggest that the socialization practices of parents raising adolescents in high-risk neighborhoods reflect an adaptive response to recurrent environmental perturbations sustained while residing in these communities (Kotchick & Forehand, 2002; Spencer, Dupree, & Hartmann, 1997). When access to local resources for parenting support is questionable, efficacious parents resort to involved and restrictive strategies for watching over their youth (Elder, Eccles, Ardel, & Lord, 1995; Furstenberg, 1993). These adaptive strategies are thought to help protect youth from dangers looming in their communities.

Ethnographic accounts of parenting in high-risk neighborhoods highlight attentive and involved strategies that promote youth safety and limit delinquent activity (Jarrett, 1997; Maton, Hrabowski, & Greif, 1998). One strategy is monitoring adolescents' daily activities. Parents may actively engage in frequent discussions of youth daily whereabouts and friendships, impose curfews on unsupervised time, and limit privileges (Jarrett, 1999; Jarrett & Jefferson, 2003). These active and involved monitoring strategies are a response to unique consequences linked to inadequate monitoring and knowledge in high-risk settings (e.g., arrest, death; Kotchick & Forehand, 2002; Spencer et al., 1997). For these parents, the stakes may be too high to rely on more passive means of obtaining information (e.g., waiting for youth to share information).

The protective effects of parental monitoring are well documented among high-risk samples (DiClemente et al., 2001; Kilgore, Snyder, & Lentz, 2000; O'Donnell, Richards, Pearce, &

Romero, 2012; Pardini, Fite, & Burke, 2008). However, conclusions about how active and involved monitoring strategies deter youth delinquency in risky contexts are scarce because most studies have operationalized monitoring as parental knowledge. Studies including parents' active strategies to measure monitoring have demonstrated negative associations with youth externalizing behaviors (e.g., Kilgore et al., 2000), relations that hold particularly for unsupervised youth living in unsafe neighborhoods compared to peers in safer settings (Pettit, Bates, Dodge, & Meece, 1999). Thus, although evidence is limited, active and involved monitoring strategies documented in qualitative accounts have the potential to be protective against antisocial behaviors for adolescents who need it most (Laird, Marrero, & Sentse, 2011).

Parental Monitoring in Normative Samples

Links to Delinquency.

A number of studies using normative racially homogenous samples have demonstrated that some active parental monitoring efforts have negligible or even deleterious effects on adolescent delinquency. Stattin and Kerr (2000) found that parents' active efforts to obtain information about their children's daily activities (i.e., solicitation) were *positively* associated with delinquency. Although a modest protective effect for this strategy on youth delinquency has been found (e.g., Eaton, Krueger, Johnson, McGue, & Iacono, 2009; Keijsers, Frijns, Branje, & Meeus, 2009), other research confirms the positive association with delinquency (Kerr & Stattin, 2000) as well as increases in delinquency over time (Kerr et al., 2010; Kiesner, Dishion, Poulin, & Pastore, 2009; Willoughby & Hamza, 2011). Less support has been found for limit setting (i.e., control) and curfew strategy effects on delinquency. When significant, these forms of parental control are weakly or modestly negatively related to mean levels of, and changes in, delinquency (Stattin & Kerr, 2000; Willoughby & Hamza, 2011). Also, Stattin and Kerr showed that youth disclosure about daily activities was *negatively* associated with adolescent delinquency, an effect that has been replicated in other studies using multiple informant designs (Eaton et al., 2009; Kerr et al., 2010). Together, these findings counter traditionally held assumptions about the importance and protective effects of active monitoring.

Links to Knowledge.

Cross-sectional research with low-risk samples suggests that, compared to waiting for youth to share information, active monitoring strategies are either not or only modestly positively related to parental knowledge (Eaton et al., 2009; Keijsers, Branje, VanderValk, & Meeus, 2010; Lahey, Van Hulle, D'Onofrio, Rodgers, & Waldman, 2008; Stattin & Kerr, 2000). Longitudinal studies provide limited support for a relation between active parental monitoring strategies and knowledge (Kerr et al., 2010; Willoughby & Hamza, 2011). Rather, Kerr et al. (2010) found that youth voluntary disclosure about daily activities better predicted parental knowledge 1 year later than did active parental monitoring efforts. Other studies examining racially homogenous, low-risk samples have replicated these effects (e.g., Keijsers et al., 2010; Willoughby & Hamza, 2011). In sum, these findings suggest that active monitoring in low-risk samples is modestly correlated with knowledge, tends not to predict levels of knowledge over time, and often has a negative influence on adolescent behavior.

Some researchers have argued that the recent support for the effectiveness of passive means of obtaining information fails to capture the positive impact of parents' active role in protecting youth from delinquency (Brody, 2003; Lahey et al., 2008). This argument is buttressed by evidence suggesting that less restrictive autonomy-granting parenting practices, although beneficial among middle-socioeconomic-status (SES) samples in low-risk environments, have detrimental effects for lower-SES families living in high-risk contexts (Lamborn, Dornbusch, & Steinberg, 1996). Indeed, more authoritarian and autonomy restricting practices are linked to positive outcomes for adolescents in underprivileged, risky environments (Gonzales, Cauce, Friedman, & Mason, 1996; Steinberg, Dornbusch, & Brown, 1992). Contextual influences also may interfere with effectiveness of passive monitoring processes. Without adequate resources and support, stressed parents may be less accessible, have less time to await adolescent communication, or react more harshly to youth voluntary disclosure of rule-breaking activity (Smetana, Villalobos, Tasopoulos-Chan, Gettman, & Campione-Barr, 2010). In turn, their youth may be less likely to voluntarily share information (Lahey et al., 2008). In sum, passive means may be less effective than active monitoring efforts in high-risk settings.

Even less is known about parent-child bidirectional influences on parents' willingness to engage in active efforts in these contexts (Pardini, 2008). Parental knowledge might give rise to concerns for youth safety and engagement in later active discussions. However, knowledge about activities and rule breaking may overwhelm or discourage further active information seeking. One interpretation of the decline in active monitoring and knowledge related to youth delinquency is that parents feel helpless and "give up" on active monitoring efforts (Burke, Pardini, & Loeber, 2008; Laird, Pettit, Bates, & Dodge, 2003). Analytic frameworks that model bidirectional parent-child influences among monitoring strategies, knowledge, and delinquency may help clarify the processes that contribute to or thwart active monitoring in these contexts.

The Current Study

The current study examined bidirectional temporal relations between (a) parental knowledge and youth delinquency, (b) three aspects of the monitoring process (parental discussions of daily activities, curfew rules, and adolescent communication with parents) and knowledge, and (c) these three monitoring aspects and delinquency. We adopted a data analytic approach similar to Kerr and colleagues (2010) but examined a racially diverse multicohort sample of youth and parents living in high-risk communities in four geographic areas of the United States. As in Kerr et al. (2010), we incorporated youth and parent ratings into single and cross-informant longitudinal bidirectional models (De Los Reyes et al., 2015).¹ Following ecological frameworks of parenting as adaptation to contextual risk (Furstenberg, 1993; Spencer et al., 1997), we hypothesized that (H1a) parental knowledge would negatively predict delinquency, (H2a) active and involved monitoring (e.g., parental discussions of daily activities) would be the strongest positive predictor of knowledge, and (H3a) active and

¹A multi-informant approach is critical given the low concordance between parent-youth reports of monitoring (Lippold, Greenberg, & Feinberg, 2011; Pettit, Laird, Dodge, Bates, & Criss, 2001), and potential parent-youth report discrepancies stemming from stress- and poverty-related parent psychopathology and associated biased parent item responses (Hughes & Gullone, 2010).

involved monitoring would negatively predict youth delinquency. As monitoring involves parent–child bidirectional influences (Laird et al., 2003), we hypothesized the following bidirectional longitudinal relations: (H1b) delinquency would negatively predict knowledge, (H2b) knowledge would negatively predict active and involved monitoring, and (H3b) delinquency would negatively predict active monitoring. Levels of monitoring and knowledge are higher for parents of girls compared to parents of boys, White compared to Black parents, and urban compared to rural situated families (Racz & McMahon, 2011). Yet, little is known about child gender and race/urbanicity differences in monitoring, knowledge, and delinquency *bidirectional relations*. Thus, we conducted multigroup analyses for each study goal examining gender and race/urbanicity as prospective moderators.

METHOD

Participants

Data for this study come from families who participated in a longitudinal multisite investigation of the development and prevention of childhood conduct problems in the United States (Fast Track; for details, see Conduct Problems Prevention Research Group [CPPRG], 1992). Within four geographically distinct sites, schools were classified as high risk and recruited based on crime and poverty statistics of the neighborhoods they served. At each site, schools were parceled into sets that were matched for demographics (size, percentage free or reduced lunch, race composition). These sets were then randomly assigned to control or intervention groups. Of the 9,594 kindergarteners initially screened over 3 years (1991–1993) and across 55 schools, youth scoring in the top 40% on teacher-rated externalizing behaviors (Teacher Observation of Child Adaptation–Revised Authority Acceptance Scale; Werthamer-Larsson, Kellam, & Wheeler, 1991) within each cohort and site were then invited to participate in an evaluation of parent-rated home externalizing behavior using items from the Child Behavior Checklist (Achenbach, 1991) and similar scales. Among families participating in the follow-up evaluation (91%, $n = 3,274$), 891 children were selected for high-risk sample inclusion and randomized to either high-risk control ($n = 446$) or intervention ($n = 445$) conditions. This sample comprised children with the highest severity-of-risk screening scores, drawn in descending order until the desired sample size was achieved for each site, group, and kindergarten cohort. Severity-of-risk scores were composed of standardized and summed initial teacher- and parent-report scores of child externalizing behavior. A stratified normative control subgroup ($n = 387$) was also recruited into the study. Youth in this subgroup were randomly drawn from each decile of the Teacher Observation of Child Adaptation–Revised distribution within each cohort and site in order to represent the range of behavior problems at each school. Families received \$75 for completing summer interviews; teachers were paid \$10 for completed classroom measures. Study recruitment, parent written consent, child verbal assent, and data collection procedures met the guidelines of the Institutional Review Boards at each participating university.

The current study utilized data from Grades 9 and 10 of the combined Fast Track high-risk control and stratified normative control (no intervention) samples previously described: Durham, North Carolina ($n = 210$); Nashville, Tennessee ($n = 214$); rural central

Pennsylvania ($n = 211$); and Seattle, Washington ($n = 197$). For all analyses, sampling weights were used to adjust for the overrepresentation of high-risk youth in the sample, permitting an analysis of the sample as a whole (Jones, Dodge, Foster, Nix, & CPPRG, 2002). Of the combined 833 participants, 79 were excluded from the normative sample due to their inclusion in both the high-risk control and normative control samples,² and one was excluded from analyses due to missing sampling weights.

The final sample included youth and parents in the normative and high-risk control groups ($N = 753$; 58% male; 46% Black, 50% White, 4% other). The average age of youth participants in ninth grade was 16.00 years ($SD = 0.90$). Of the 582 participants for whom caregiver demographic variables were available, 85.4% of respondents were the youths' biological mothers, 5% were the youths' biological fathers, 4.3% were grandmothers, and 5.3% were other relatives. Of the caregivers (Grade 9 $M_{age} = 41.39$ years, $SD = 7.12$) who filled out the questionnaires, 52.2% reported being married, 26.5% were separated or divorced, and 19.2% had never been married. In terms of education, 27% of caregiver respondents did not complete high school, 42% completed high school, and 31% had formal education beyond high school. With regard to annual income, 35% of the households in this sample had incomes less than \$20,000 per year, 41% between \$20,000 and \$50,000, and 24% greater than \$50,000 per year. Regarding neighborhood characteristics, 85% of youth reported having witnessed, and 46% reported having been the victim of, violent crime (e.g., physical altercation, assault with a weapon, gun shot, event leading to death or serious injury) in their homes, schools, and neighborhoods in the year prior to eighth grade. Based on these percentages, youth in this sample reported exposure to more violence and violent victimization rates than a representative sample of U.S. households from the same period (Rennison & Rand, 2003). Thirteen percent of parents reported being exposed to elevated levels of violent crime (reporting that muggings/burglaries/assaults occurred "fairly often" or "very often" in their community), and 34% reported that drug use/sale was a "fairly serious" or "very serious" problem in their community.

Procedures

Youth and parent self-report measures were administered during home interviews conducted annually starting the summer prior to Grade 1 entry and ending 2 years after the completion of Grade 12. Two research assistants conducted home visits, and each interviewed the parent or child separately. The interview included a battery of measures designed to assess areas of child and family functioning, including various characteristics of parent–youth relationships. Data for the current study were obtained during the summers after Grades 9 and 10, consistent with the developmental period we aimed to examine. Measures used to construct the parental knowledge, active and passive monitoring, and youth delinquency variables are described next.

²By design, the severity of behavior problems in the highest quintile of the normative sample was comparable to that observed in the high-risk control sample; thus, 79 children were considered part of both samples. They are excluded from the normative sample when studies combine both samples (e.g., McMahon, Witkiewitz, Kotler, & Conduct Problems Prevention Research Group, 2010).

Constructs and Measures

Parental Knowledge.—Parents and youth reported on parental knowledge using four items from respective caregiver and youth versions of the Supervision Questionnaire³ (Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998). Specifically, parents were asked, “If your child did not come home by the time that was set, would you know?” “Do you know who your child is with when he/she is not at home?” “When your child is out, do you know what time he/she will be home?” “When you and your child are both at home, do you know what he/she is doing?” Parallel questions were asked of youth respondents. Item responses were recorded on a 5-point Likert-type scale from 1 (*almost never*) to 5 (*almost always*). These scales showed acceptable reliability⁴ (α s = .67 and .72, for youth report in Grades 9 and 10, respectively; α s = .65 and .64 for parent report in Grade 9 and 10, respectively). All parenting measure scale scores were calculated as the average of responses to scale items.

Parental Discussions of Daily Activities.—Parents and youth reported on parental discussions of daily activities using two or three items from respective versions of the Supervision Questionnaire (Loeber et al., 1998). Parents were asked, “In the past 6 months, how often have you discussed with your child his/her plans for the coming day?” “In the past 6 months, about how often have you talked with your child about what he/she had actually done during the day?” Parallel questions were asked of youth respondents. In addition, youth were asked, “In the past 6 months, how often did your parent talk to you about how things were going at school?” Item responses were recorded on a 5-point Likert-type scale from 1 (*almost never*) to 5 (*almost always*). Reliability was acceptable (α s = .73 and .77, for youth report in Grades 9 and 10, respectively; α s = .73 and .75, for parent report in Grades 9 and 10, respectively).

Parental Curfew Rules.—Parents and youth reported on parental curfew rules using two items from respective versions of the Supervision Questionnaire (Loeber et al., 1998). Parents and children were asked, “Does your child (Do you) have a set time to be home on school nights?” “Does your child (Do you) have a set time to be home on weekend nights?” Item responses were recorded on a 5-point Likert-type scale from 1 (*almost never*) to 5 (*almost always*). Reliability was acceptable (α s = .72 and .79, for youth report in Grades 9 and 10, respectively; α s = .75 and .69, for parent report in Grades 9 and 10, respectively).

Adolescent Communication With Parents.—Parent and youth reported on adolescent communication with parents using four items from the Parent–Child Communication Questionnaire (Loeber et al., 1998; Thornberry, Huizinga, & Loeber, 1995). Parents were asked to respond to the following statements: “Your child tells you about personal problems.” “Your child keeps feelings to self.” “Your child lets you know what is bothering him/her.” “Your child admits mistakes without hiding them.” Youth were asked, “Are there things that you do not discuss with your parent?” “Do you discuss problems with your

³Constructs derived from the Supervision Questionnaire were based on dimensions reported in Loeber and colleagues (1998) and a confirmatory factor analysis supports their reliability and validity in this sample (Doyle & McCarty, 2001).

⁴Cronbach’s alpha was commensurate with youth-report (α = .63) and parent-report (α = .64) subscales in Loeber et al. (1998) and can be attenuated by few subscale items (Cronbach, 1951).

parent?” “Do you think that you can tell your parents how you really feel about some things?” “Can you let your parents know what is bothering you?” Item responses were recorded on a 5-point Likert-type scale from 1 (*almost never*) to 5 (*almost always*) and reverse-scored where applicable (higher ratings indicated more communication). Reliability was acceptable ($\alpha = .77$, for the youth report in both Grades 9 and 10; α s = .69 and .70 for parent report in Grades 9 and 10, respectively).

Youth Delinquency.—Youth-reported delinquency was assessed using the Self-Report of Delinquency Questionnaire (Elliot, Huizinga, & Ageton, 1985). This 34-item measure is an additive index of serious offenses youth committed in the past year. Scores are calculated as weighted sums: More weight is given to more serious offenses (Cernkovich & Giordano, 2001; CPPRG, 2010). Sample items include “In the past year ...” “have you run away from home?” “have you been drunk in a public place?” “have you purposely damaged or destroyed property that did not belong to you?” Higher scores indicate elevated levels of delinquency.

Analyses

Following Kerr et al. (2010), Figure 1 depicts the path diagram directing the current investigation. Using *Mplus* version 7.0 (Muthén & Muthén, 2010), we conducted path analyses to examine the bidirectional relations between parental knowledge and youth-reported delinquency, and then between aspects of monitoring and overall knowledge. Maximum likelihood estimation with auxiliary variables was used to address missing data (Graham, 2009). All analyses used Huber-White covariance adjustment (MLR estimation), which provides robust estimates when variables have non-normal distributions. In the sample, skewness for delinquency ranged from 3.78 to 4.12, and kurtosis ranged from 18.71 to 19.87. For parent and youth reports of knowledge, skewness ranged from -2.45 to -0.03 , and kurtosis ranged from -1.16 to 6.90. We used single-rater (all measures from one informant) and cross-rater (e.g., parental knowledge from one informant and adolescent communication, parental discussions, and curfew rules from the other informant) models in each analysis, for a total of four separate analyses. Follow-up multigroup analyses examined youth gender and race/urbanicity as moderators of associations between (a) knowledge and delinquency, (b) aspects of monitoring and knowledge, (b) and these aspects and delinquency. Participant race and urban/rural status were confounded, as nearly all Black participants lived in urban areas. Thus, moderation analyses used a race/urban status variable representing three groups (Urban White, 24.2%; Urban Black, 46.0%; Rural White, 25.7%; contrast coded). Other ethnic minorities were not included in these analyses due to the small sample sizes of these groups.

Missing Data.—Within the sample, 24% of participants ($n = 181$) were missing data from the ninth-grade interviews, and 25% of participants ($n = 192$) were missing data from the 10th-grade interviews. To explore the nature of this missingness, we created a dichotomous variable set to 1 if the case had the most common pattern of missing data (accounting for 20% of our cases with missing data) and 0 if it did not. We then ran a series of logistic regressions using demographic variables (gender, race, SES, and study site), delinquency and parenting reports from years prior to those focused on in the current analyses, and a set

of contextual risk variables obtained at the beginning of the study as predictors of missingness. These variables and measures are listed in CPPRG (2007, p. 1254) and described in greater detail at www.fasttrackproject.org.

Of the nearly 50 predictors tested, five were predictive of missingness, using a conservative alpha of .10. These were appropriateness score for emotion understanding ($b = 0.382$, $SE = 0.145$, $OR = 1.465$, $p = .008$), WISC intelligence score ($b = 0.192$, $SE = 0.108$, $OR = 1.212$, $p = .075$), parental report of monitoring in seventh grade ($b = -0.746$, $SE = 0.253$, $OR = 0.474$, $p = .003$), being from the Durham site ($b = -0.809$, $SE = 0.248$, $OR = 0.445$, $p = .001$), and being from the Nashville site ($b = 0.516$, $SE = 0.202$, $OR = 1.676$, $p = .011$). Thus, we can conclude that the data are not missing completely at random, but the extent to which these variables describe the missingness indicates that the data could be missing at random.

We followed missing data recommendations outlined by Graham (2009). Specifically, all path analyses were conducted using full information maximum likelihood estimation in *Mplus* 7.0 (Muthén & Muthén, 2010) and included the previously described complete set of auxiliary variables (CPPRG, 2007, p. 1254) to improve estimates and reduce bias in the event that our data were missing not at random (Collins, Schafer, & Kam, 2001). Although few individual variables were empirically predictive of missingness, the complete auxiliary variable set served to improve estimates to the extent that they were correlated with missing values or were predictive of missingness. Incorporating study variables from years prior to Grade 9 should help in this regard given the strong correlation with missing values in the study years of interest, as at least one of these variables is predictive of a case having missing data in these years.

RESULTS

Table 1 displays descriptive statistics and bivariate associations between all constructs used in the path analyses. Paired sample t-tests showed significant differences in some measures over time. Self-reported delinquency, parent reports of knowledge, and adolescent communication with parents all decreased over time, whereas parent reports of discussions increased over time (all $ps < .05$). Youth reports of knowledge, communication with parents, discussions, and curfew rules, as well as parent reports of curfew rules, did not change over time.

Bidirectional Associations Between Parental Knowledge and Youth Delinquency

We tested two (single- and cross-rater) autoregressive models with cross-lagged effects, examining longitudinal relations between knowledge and delinquency. All autoregressive stability paths were positive and statistically significant ($ps < .01$; H1a). In addition, both parent and youth reports of knowledge were associated with decreases in delinquency (standardized estimates were -0.095 and -0.115 , respectively; $ps < .05$; H1b). However, self-reported delinquency was not significantly associated with changes in either parent or youth reports of knowledge (standardized estimates were -0.005 and -0.058 , respectively).

Bidirectional Associations Between Aspects of Monitoring and Parental Knowledge

Next, we conducted four structural path models (two single-rater and two cross-rater models) to examine associations between parental knowledge and our three aspects of monitoring. Table 2 displays the results from the saturated models. We conducted analyses in which we removed a nonsignificant path from each model, thereby allowing us to assess model fit. All models yielded similar patterns of findings, indicating good model fit with comparative fit (Bentler, 1990) and Tucker-Lewis (Tucker & Lewis, 1973) indices equal to one in all analyses and root mean square error of approximation equal to zero. Chi-square values ($df=1$) ranged from .002 to .034 and were all nonsignificant.

Which Aspects of Monitoring Predict Parental Knowledge (H2a)?—As Table 2 shows, the most consistent predictor of parental knowledge was parental discussion of daily activities. This path was significant in three of four models: Higher ratings of these discussions led to gains in knowledge. One additional path was significant: adolescent communication with parents, which was significant in the model where parents provided reports of both constructs. Thus, parental discussions appear to be the strongest predictor of increased parental knowledge.

Does Parental Knowledge Influence Active Parental Monitoring (H2b)?—As shown in Table 2, one consistent result was that knowledge was associated with increased parental discussion of daily activities. This path was significant in all but one of the models (single-rater model based on youth reports). Less support was found for curfew rules, where only one of four models included a significant path (cross-rater model based on parent report of knowledge).

Other Cross-Lagged Paths.—We found no change in youth communication related to curfew rules or parental discussions (see Table 2). Also, neither single-rater path predicting changes in parental discussion of daily activities from adolescent communication was significant. The only significant path among these four models was in the cross-rater model in which parents provided the report of knowledge. Here, more youth communication was related to increased levels of parental discussions. In addition, only one of four models included significant paths predicting changes in adolescent communication with parents from knowledge, indicating that the association between knowledge and adolescent communication is at best weak in this sample.

Bidirectional Associations Between Aspects of Monitoring and Youth Delinquency

Next, we examined longitudinal links between delinquency and our three aspects of monitoring. We tested these links using two path models looking at bidirectional links between youth-reported delinquency and youth (single-rater) and parent-rated (cross-rater) monitoring strategies. All autoregressive stability paths were positive and statistically significant (Table 3).

Which Aspects of Monitoring Predict Youth Delinquency (H3a)?—As detailed in Table 3, none of the cross-lagged paths predicting changes in delinquency from parental discussions, curfew rules, and adolescent communication were significant. Thus, there was

no evidence that these aspects of monitoring have a direct impact on delinquency in this sample.

Does Delinquency Influence Active Parental Monitoring (H3b)?—We found no evidence of this relation among active monitoring strategies and delinquency (Table 3).

Other Cross-Lagged Paths.—We found a significant, positive association between parental discussions and curfew rules in both the single- and cross-rater models (last section of Table 3). The only other significant path in either of the models was between adolescent communication with parents and parental discussion of daily activities, with higher levels of adolescent communication in Grade 9 predicting higher levels of parental discussions in Grade 10.

Potential Moderators: Youth Gender and Race/Urbanicity

Do youth gender or race/urbanicity moderate the bidirectional links between aspects of monitoring, knowledge, and delinquency? We conducted two sets of multiple group analyses—first, comparing male ($n = 437$) and female ($n = 316$) individuals, and second, comparing White youth in urban settings ($n = 214$), White youth in rural settings ($n = 192$), and Black youth (all in urban settings; $n = 343$). The subsample of Black youth in rural settings ($n = 4$) was insufficient to test for moderation and excluded from those analyses only. Tests of moderation were performed by individually constraining paths in each model to be invariant between groups, and tested for a significant chi-square difference (indicating a statistically significant group difference) between constrained and unconstrained models using the Satorra and Bentler (2001) correction.

Our approach to moderation focused on a subset of pathways with greatest theoretical relevance to active and passive monitoring processes (e.g., discussions, communication, knowledge, delinquency). Neighborhood risk and youth behavioral-risk status were both considered initially as possible moderators. However, given that families in this study were recruited based on elevated crime and poverty statistics in the neighborhood surrounding their schools, the lack of a true low neighborhood risk comparison group precluded further examination of this moderating effect. Furthermore, preliminary analyses found no interaction effects between youth behavioral risk-level and parenting practices on any of our constructs of interest. Thus, we decided not to further investigate these factors as moderators.

Moderation Results.—We tested 43 paths (including both single- and cross-rater paths) for gender and race/urbanicity differences in the models just reported (86 tests total). Regarding gender, only one significant difference emerged (single-rater youth-rated path between parental discussions and curfew rules), $\chi^2(1) = 11.41, p < .001$. Given the number of tests conducted, this result is likely due to chance. We found six significant differences in tests of race/urbanicity moderation, $\chi^2(2)$ ranged from 6.22 to 26.22, with no coherent pattern to the results. Thus, there is no clear evidence of moderation by gender or race/urbanicity in the sample.

DISCUSSION

In the current study, bidirectional longitudinal relations between passive forms of obtaining information, active monitoring practices, parental knowledge, and youth delinquency were examined in a racially diverse sample of youth and families in high-risk communities. As expected, youth-and parent-reported knowledge negatively predicted youth delinquency 1 year later. Active and involved monitoring (e.g., parental discussions of daily activities) was the most consistent positive predictor of parental knowledge, in contrast to more passive (e.g. youth communication with parents) forms of obtaining youth information. However, contrary to our hypothesis, active and involved monitoring did not directly predict later youth delinquency. Relations found did not vary by gender or race/urbanicity. These findings build on qualitative and empirical accounts of the protective effects of active monitoring in high-risk contexts, showing that knowledge, which results from active, involved monitoring strategies, can have a particularly protective effect on adolescent problem behavior in high-risk communities.

Active Monitoring Strategies versus Passive Practices and Links to Knowledge

These results support our hypothesis that active parental monitoring efforts (e.g., parental discussions of daily activities) contribute to parental knowledge (Laird et al., 2003) among adolescents and families living in risky neighborhoods. The positive link between active monitoring efforts and parental knowledge has been found in studies with racially and economically diverse samples (Fletcher et al., 2004). When considering neighborhood influence on parenting practices (Furstenberg, 1993; Kotchick & Forehand, 2002; Spencer et al., 1997), parents raising children amidst a myriad of contextual risks may obtain more information from active forms of monitoring in light of the potential precarious outcomes associated with a lack of monitoring. Furthermore, and contrary to our hypothesis, parental knowledge encouraged later active monitoring efforts in this sample. Rather than overwhelm parents, knowledge appears to bolster concern for youth safety and promote active monitoring, perhaps in an attempt to shield against risk factors in their communities. Ethnographic work suggests that youth in risky settings have positive views of active monitoring practices, perceiving them to be a hassle but critical for social mobility and goal attainment (Jarrett, 1995; Spencer, Dupree, Swanson, & Cunningham, 1996). Thus, youth living in risky contexts may appreciate and benefit from active monitoring.

These analyses did not support the importance of passive forms of obtaining youth information, as adolescent communication with parents did not significantly contribute to parent knowledge. It may be that parents in these contexts are not as accessible to youth for communication purposes given work hours, sparse social support, and inadequate financial resources. Also, higher levels of problem behavior are linked to increased secrecy, lying, and nondisclosure (Lahey et al., 2008; Smetana et al., 2010). These youth may avoid communicating with their parents about problems or mistakes to elude harsh parental reactions. Indeed, poverty-related family stress (Wadsworth & Compas, 2002) and functionally adaptive coping (Wadsworth, 2015) models posit that youth living in low-SES, high-stress environments use avoidant coping strategies (e.g., nondisclosure of daily activities) to circumvent placing undue stress on taxed caregivers. Thus, communication

with parents in these settings may not function as a contributing factor to parental knowledge as it does among youth in low-risk settings.

The Effect of Parental Knowledge on Youth Delinquency

As other studies have found, parental knowledge was a significant negative predictor of youth delinquency (Fosco, Stormshak, Dishion, & Winter, 2012; Kerr et al., 2010; Laird et al., 2003). Interpretations of this relation have differed. Kerr et al. (2010) did not interpret the negative knowledge-delinquency effect because, as hypothesized, knowledge was not related to any active monitoring strategy. The authors argued that the relation would be easier to interpret “if knowledge could be seen as a consequence of parents’ efforts to monitor or control their youths’ activities and associations, but the evidence suggests that it cannot” (Kerr et al., 2010, p. 60). Our findings are consistent with traditional interpretations positing that knowledge is the result of active parental monitoring efforts (Dishion & McMahon, 1998) and that knowledge-delinquency links are evidence for the protective effects of these processes (Laird et al., 2003).

Although knowledge negatively predicted delinquency, how it actually functions remains unclear. Some studies report relatively small or modest effect sizes for parental knowledge on youth delinquency (Kerr et al., 2010; Laird et al., 2003; Lippold, Greenberg, Graham, & Feinberg, 2014; Willoughby & Hamza, 2011). Mediating and/or moderating variables may be implicated in the parental knowledge–youth delinquency relation. Research has yet to unveil what these parents *actually* do to prevent youth delinquency once they know about youth activities. Some parents may work adaptively to prevent problem behaviors, whereas others may disengage or respond in a punitive manner (e.g., Tilton-Weaver et al., 2010). Parents’ perceived efficacy in socialization attempts may influence their response to knowledge (Ardelt & Eccles, 2001). Moreover, most monitoring studies have used general measures of knowledge and youth activities; considering the specific youth activity monitored may prove fruitful. For example, the degree to which parents respond proactively, respond punitively, or feel efficacious in attempts to reduce problem behavior may vary by the nature or severity of problem behavior (e.g., aggression, early sexual activity, substance use).

Parental Discussions of Daily Activities and Youth Delinquency

Although these results suggest that parental knowledge negatively predicts later delinquency and that knowledge may be viewed as the end product of active monitoring efforts (e.g., parental discussions of daily activities), there was insufficient evidence to suggest that active monitoring negatively predicts delinquency. On the other hand, our results did not indicate that delinquency deterred or caused parents to “give up” on later active monitoring strategies. The nonsignificant discussions to delinquency path may be understood when considering the role of these discussions in protecting against delinquency. Perhaps the primary function of parental discussions is to gain knowledge about youth activities. It is then knowledge, and parental reactions to knowledge, that negatively predict delinquency. Future longitudinal designs should include sufficient data points to examine indirect and serial mediating effects of active monitoring efforts and passive access to information on

delinquency in order to unpack the effect of active monitoring on youth problem behavior (e.g., Fletcher et al., 2004; Lippold et al., 2014).

The nonsignificant pathway from parental discussions to youth delinquency also raises a question about whether the discussions measure sufficiently captured the range of strategies parents use to monitor youth in this sample. Parents in high-poverty contexts rely on kin networks and friends as monitoring agents when the family is overtaxed by stressors (Crouter & Head, 2002; Jarrett, 1995). Our measure of parental discussions did not assess the active monitoring efforts of other adults likely involved in these youths' lives. There may also be child- and parent-level moderators of the parental discussions to youth delinquency path. For instance, protective effects of parental solicitation of youth information have been found on later delinquency specifically for unsupervised youth with weak legitimacy of authority beliefs (Laird et al., 2011). Future research incorporating youth views on legitimacy of parental authority may show a protective effect of parental discussions on later delinquency.

Limitations and Future Directions

This study has limitations. The monitoring strategies examined were limited by the measures in the Fast Track data set. Thus, our study assessed only two forms of active parental monitoring. Other aspects included in key monitoring research (e.g., Kerr et al., 2010; Stattin & Kerr, 2000) should be included in future studies. The parental knowledge construct had low internal consistency ($.64 < \alpha < .72$), although significant results for this construct were still obtained. Also, adolescent communication items may not have assessed voluntary processes, as parental discussions may have initiated communication events that youth report on in the parent-child communication measure. Our exploratory approach to moderation testing was limited to a subset of theoretically informed pathways. As such, we acknowledge the possibility of Type 2 error as well as the preliminary nature of these findings. Because the sample comprised primarily Black and White youth, we could not examine ethnic diversity (e.g., Latino). Few studies have examined active monitoring and passive means of obtaining information in Latino samples (Pokhrel, Unger, Wagner, Ritt-Olson, & Sussman, 2008). Thus, we know little about how monitoring relates to delinquency in samples whose behavioral expression of respect for elders is viewed differently or whose family structures tend to be more patriarchal. Also, recent literature highlights parents' active role in monitoring youth's Internet activities, social media use (Vaala & Bleakley, 2015), and cyberbullying (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). As most poor American families own cell phones and computers (Siebens, 2013), future studies should examine these parents' active efforts to stay informed about youth cyberspace activities.

Conclusion

The literature on parental monitoring and delinquency has seen significant changes in the past 15 years. Both active monitoring strategies and passive forms of gaining youth information have been shown to make differential contributions to parental knowledge and delinquency (e.g., Kerr et al., 2010). This study adds further understanding about the complex relations among active parental monitoring and passive forms of obtaining youth information, knowledge, and delinquency. Findings suggest that family circumstances and

context matter for how parental monitoring strategies contribute to knowledge, which is important for preventing delinquency. Parents in high-risk communities who gain knowledge by engaging in frequent discussions about youth activities may be able to more effectively protect against delinquent activities. Yet the specific processes that enable knowledge to buffer against delinquency remain unknown. As researchers and practitioners await further clarification, preventive interventions targeting youth in high-risk communities should promote parental awareness about discussing their children's daily activities as a strategy for parental monitoring.

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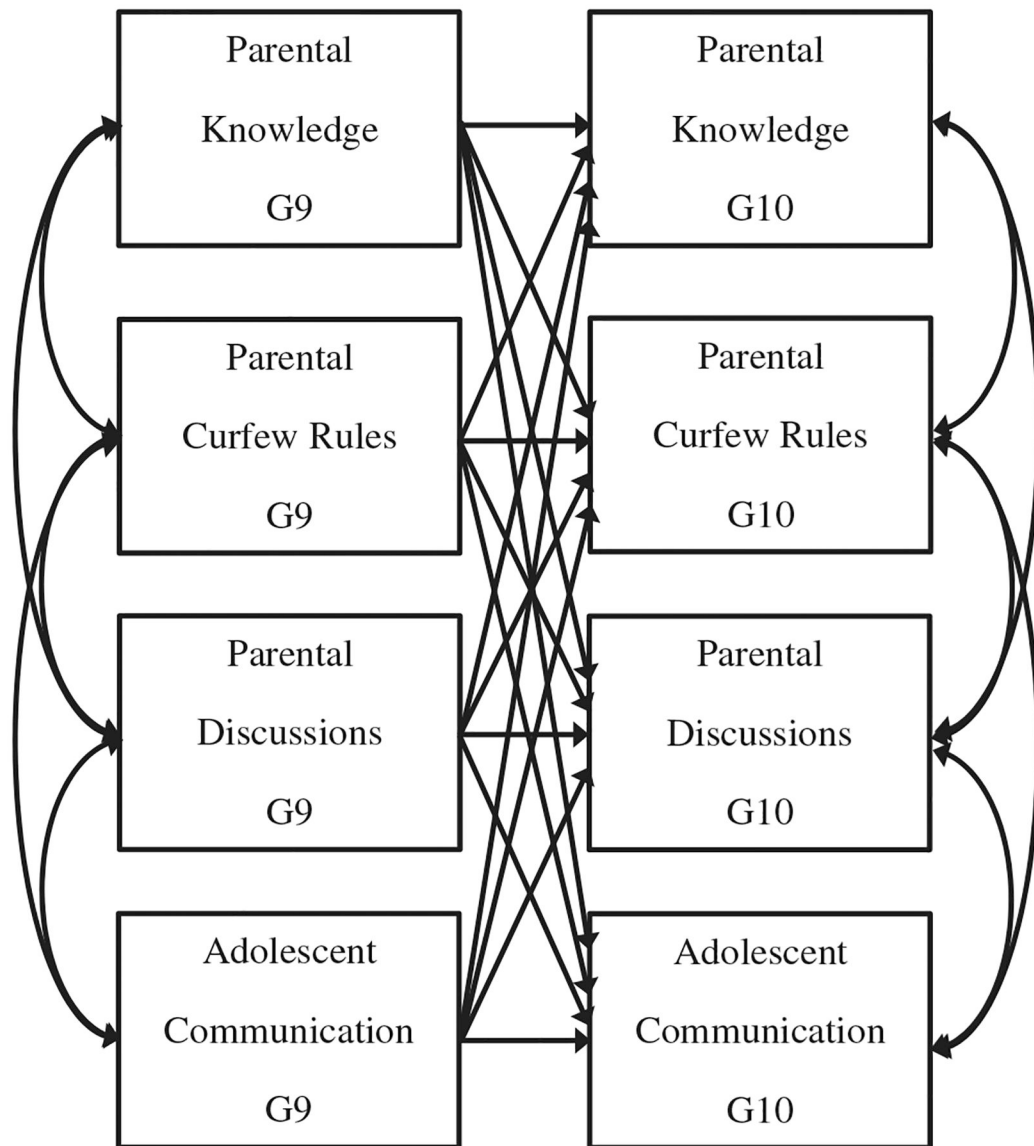


FIGURE 1.

Following Kerr et al. (2010), the conceptual saturated model of the relations between parental knowledge, parental curfew rules, parental discussions of daily activities, and adolescent communication with parents at Grade 9 (G9) and Grade 10 (G10).

TABLE 1
Means, Standard Deviations, and Bivariate Associations for All Constructs Used in the Structural Path Analyses

	Parent Report		Youth Report											
	M	SD	1	2	3	4	5	6	7	8	9	10		
1. G9 Delinquency	—	—	10.22	19.79	—	-.20*	-.16*	-.15*	-.01	.51*	-.18*	-.10*	-.14*	-.02*
2. G9 Knowledge	4.55	0.56	4.03	0.83	-.28*	—	.40*	.46*	.38*	-.21*	.57*	.26*	.47*	.23*
3. G9 Communication	3.33	0.80	3.32	0.88	-.13*	.51*	—	.41*	.09*	-.16*	.38*	.48*	.32*	.09*
4. G9 Discussions	3.99	0.85	3.44	0.92	-.18*	.51*	.53*	—	.20*	-.15*	.39*	.21*	.63*	.20*
5. G9 Curfew Rules	4.57	0.84	3.45	1.27	-.03*	.45*	.20*	.31*	—	.01	.20*	.02*	.21*	.37*
6. G10 Delinquency	—	—	7.85	17.51	.51*	-.27*	-.13*	-.18*	.02*	—	-.21*	-.14*	-.16*	.01*
7. G10 Knowledge	4.50	0.56	3.98	0.80	-.22*	.65*	.43*	.47*	.34*	-.31*	—	.32*	.53*	.32*
8. G10 Communication	3.09	0.44	3.35	0.86	-.05*	.35*	.54*	.34*	.16*	-.16*	.41*	—	.25*	-.01*
9. G10 Discussions	4.10	0.82	3.48	0.93	-.04*	.34*	.38*	.55*	.22*	-.15*	.46*	.57*	—	.24*
10. G10 Curfew Rules	4.54	0.88	3.39	1.36	-.10*	.35*	.21*	.32*	.55*	-.10*	.41*	.16*	.25*	—

Note: *N* = 753. Values above and below the diagonal reflect Pearson product moment correlations between parent-report and youth-report composites, respectively. G9 = Grade 9; G10 = Grade 10; Discussions = parental discussions of daily activities; Communication = adolescent communication with parents.

* *P* < .05.

TABLE 2

Cross-Lagged Paths to Knowledge

Measures	Single Rater			Cross Rater	
	Parent Report	Youth Report	Youth-Reported Knowledge ^a	Parent-Reported Knowledge ^b	
Autoregressive stability paths					
G9 Knowledge—G10 Knowledge	.445*	.517*	.619*	.537*	
G9 Curfew Rules—G10 Curfew Rules	.360*	.483*	.372*	.503*	
G9 Discussions—G10 Discussions	.518*	.457*	.569*	.437*	
G9 Communication—G10 Communication	.446*	.476*	.456*	.496*	
Cross-Lagged Paths					
Predicting Changes in Knowledge From Aspects of Monitoring					
G9 Communication—G10 Knowledge	.115*	.060	.056	.014	
G9 Curfew Rules—G10 Knowledge	.009	.032	.063	-.027	
G9 Discussions—G10 Knowledge	.137*	.168*	.029	.157*	
Predicting Changes in Active Monitoring Efforts From Knowledge					
G9 Knowledge—G10 Curfew Rules	.042	.067	.053	.105*	
G9 Knowledge—G10 Discussions	.213*	.033	.108*	.164*	
Predicting Changes in Active Monitoring Efforts From Communication					
G9 Communication—G10 Curfew Rules	.012	-.003	.006	.012	
G9 Communication—G10 Discussions	.045	.128	.071	.125*	
Cross-Lagged Paths to Communication					
G9 Curfew Rules—G10 Communication	-.074	-.001	-.048	.018	
G9 Discussions—G10 Communication	-.005	.069	.021	.082	
G9 Knowledge—G10 Communication	.108*	.069	.068	.027	
Cross-Lagged Paths Between Active Monitoring Efforts					
G9 Curfew Rules—G10 Discussions	.025	.005	.080	.012	
G9 Discussions—G10 Curfew Rules	.105	.132	.112	.130	

Note: *N* = 753; G9 = Grade 9; G10 = Grade 10; Discussions = parental discussions of daily activities; Communication = adolescent communication with parents.

^aParent-reported sources of knowledge.

^bYouth-reported sources of knowledge.

* $p < .05$.

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TABLE 3

Cross-Lagged Paths to Delinquency

<i>Measures</i>	<i>Single Rater</i>	<i>Cross Rater</i>
<i>Autoregressive Stability Paths</i>		
G9 Delinquency—G10 Delinquency	.526*	.527*
G9 Curfew Rules—G10 Curfew Rules	.507*	.376*
G9 Discussions—G10 Discussions	.469*	.578*
G9 Communication—G10 Communication	.508*	.471*
<i>Cross-Lagged Paths</i>		
<i>Predicting Changes in Delinquency From Aspects of Monitoring</i>		
G9 Communication—G10 Delinquency	.003	-.059
G9 Curfew Rules—G10 Delinquency	.041	.037
G9 Discussions—G10 Delinquency	-.113	-.037
<i>Predicting Changes in Active Monitoring Efforts From Delinquency</i>		
G9 Delinquency—G10 Curfew Rules	-.044	.024
G9 Delinquency—G10 Discussions	.053	-.047
<i>Predicting Changes in Active Monitoring Efforts From Communication</i>		
G9 Communication—G10 Curfew Rules	.013	.023
G9 Communication—G10 Discussions	.145*	.092
<i>Cross-Lagged Paths to Communication</i>		
G9 Curfew Rules—G10 Communication	.017	-.043
G9 Discussions—G10 Communication	.091	.027
G9 Delinquency—G10 Communication	.070	-.019
<i>Cross-Lagged Paths Between Active Monitoring Efforts</i>		
G9 Curfew Rules—G10 Discussions	.015	.090
G9 Discussions—G10 Curfew Rules	.146*	.119*

Note: N = 753. G9 = Grade 9; G10 = Grade 10; Discussions = parental discussions of daily activities; Communication = adolescent communication with parents.

* $p < .05$.