Whose Depression Relates to Discrepancies? Testing Relations Between Informant Characteristics and Informant Discrepancies From Both Informants' Perspectives

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Abstract

This study examined whether mothers' and children's depressive symptoms were each uniquely related to mother–child rating discrepancies on a multidimensional dyadic construct: domains associated with parental monitoring (i.e., Child Disclosure, Parental Knowledge, and Parental Solicitation). Participants included a community sample of 335 mother/female-caregiver and child dyads (182 girls, 153 boys; 9−16 years old). Children's depressive symptoms were consistently related to each of the three domains of mother–child discrepancies. Mothers' depressive symptoms were related to perceived discrepancies in two domains (Child Disclosure and Parental Knowledge). Furthermore, these relations could not be accounted for by other informant characteristics (maternal stress, child age, child gender, child ethnicity). Findings provide important empirical support for theory suggesting that both informants' perspectives meaningfully contribute to their discrepancies in perceived behavior. Consideration of both informants' perspectives leads to valuable information as to whether any particular characteristic is an important correlate of discrepancies.

Keywords

In the clinical sciences, the absence of definitive measures of constructs makes it critical to gather information on a participant's psychosocial dysfunction from the perspectives of multiple informants (e.g., self, significant other, clinician, laboratory observer, biological indices). However, one of the most consistent yet poorly understood phenomena is that multiple informants provide inconsistent ratings of the same participant's psychosocial dysfunction (e.g., Achenbach, 2006; De Los Reyes & Kazdin, 2005). Discrepancies are critical for numerous reasons. First, they are present across measurement methods (De Los Reyes & Kazdin, 2005) and areas of psychological science (e.g., Barrett, 2006; Clancy, McGrath, & Oddson, 2005; Kenny, Albright, Malloy, & Kashy, 1994; Saudino, Wertz, Gagne, & Chawla, 2004). Second, discrepancies pose significant interpretive problems for researchers studying

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the prevalence of dysfunction, risk factors, types of dysfunction to target for intervention, and the identification of evidence-based interventions (De Los Reyes & Kazdin, 2005, 2006, 2008). Third, discrepant perceptions between informants are related to how they interact with one another and may predict and/or negatively affect psychosocial and physiological functioning (e.g., Beck, Hartos, & Simons-Morton, 2006; Ferdinand, van der Ende, & Verhulst, 2004; Kiecolt-Glaser et al., 2005). Thus, the implications of discrepancies highlight the importance of understanding why they exist.

Research on mechanisms accounting for discrepancies currently is at a preliminary stage (De Los Reyes & Kazdin, 2005). In fact, the clinical discrepancies literature has paid most attention to examining the relation between discrepancies and characteristics of the informants rating the target participant (e.g., demographics, emotional distress, family stress; Achenbach, 2006; De Los Reyes & Kazdin, 2005). The characteristic paid most attention has been examined almost exclusively in the clinical child assessment literature: informants' depressive symptoms. Indeed, one of the first hypotheses posited to explain why discrepancies exist is referred to as the depression-distortion hypothesis (Richters, 1992). The hypothesis posits that an informant's ratings of a child may be negatively biased by the informant's level of depressed mood. The putative mechanism is that negative mood may make an informant more likely to attend to, encode, and remember negative as opposed to positive or neutral information concerning child behavior and predominantly use this negative information to rate behavior (De Los Reyes & Kazdin, 2005; Youngstrom, Izard, & Ackerman, 1999). Research employing multiple study designs and examining ratings of various problem domains has frequently tested the hypothesis by examining the relation between mothers' depressive symptoms and mothers' ratings of their child's behavior relative to the ratings provided by another informant (e.g., child's teacher, child).[1]

Researchers examining the depression-distortion hypothesis have significantly advanced our understanding of the potential processes underlying discrepancies. At the same time, important issues remain to be addressed. First, the depression-distortion literature almost exclusively has examined depression in one informant (e.g., mother) of the discrepant dyad. This work perpetuates the unlikely idea that when discrepancies exist between two informants, only one of the two informant's "biased" perceptions is responsible. Conversely, recent theoretical work conceptualizes discrepancies as a function of differing informant perspectives (De Los Reyes & Kazdin, 2005; Kraemer et al., 2003). Ideally, testing whether depressive symptoms are related to discrepancies should involve examining the characteristic from both informants' perspectives.

Second, recent work indicates that youths' mood symptoms are associated with discrepancies between self-rated psychosocial functioning and the ratings of other informants (De Los Reyes & Prinstein, 2004; Youngstrom, Findling, & Calabrese, 2004). Thus, perhaps the mechanisms suggested to account for the relation between depressive symptoms and mothers' ratings might be implicated in youths' ratings as well. However, prior work has not examined both informants' levels of depressive symptoms simultaneously in relation to the discrepancies between their ratings of the same construct. This examination would critically test whether both informants' perspectives are important to consider in relation to their rating discrepancies.

Third, the depression-distortion literature is dominated by the examination of discrepancies on ratings of the child's behavior. In this work, the dependent variable is the discrepancy between

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[1]Although a rather consistent literature supports the depression-distortion effect, there are some exceptions (e.g., Conrad & Hammen, 1989; Weissman et al., 1987). These studies raise a key issue: The presence of depression might relate to greater agreement between informants or evidence of a depressive realism effect (e.g., Alloy & Abramson, 1979). Given the possibility of this effect, we address this possibility in secondary analyses reported in footnote 9.

informants' ratings of the child's behavior, and depression from the child's perspective is a measure of the child's behavior. This research conflates the relationship between one of the independent variables (child depression) and the dependent variable (discrepancy between ratings of the child's behavior): Any relationship identified might be parsimoniously attributed to shared method variance. A conservative test of these relations would employ a dyadic dependent variable. Interestingly, recent work in the child development literature has identified such a construct: parental monitoring of child whereabouts and behaviors. Recent literature underscores monitoring-relevant behaviors as both child-driven and parent-driven processes (e.g., Kerr & Stattin, 2000; Soenens, Vansteenkiste, Luyckx, & Goossens, 2006; Stattin & Kerr, 2000). Furthermore, prior work suggests that discrepancies exist between informants' ratings of parenting behaviors (e.g., Gonzales, Cauce, & Mason, 1996; Tein, Roosa, & Michaels, 1994). Therefore, discrepancy in perceived monitoring-relevant behaviors is a novel construct to examine whether informants' depressive symptoms are uniquely related to discrepancies in perceived behavior.[2]

The purpose of this study was to extend the literature on informant discrepancies in psychological assessment. We extended the literature on two fronts. First, we examined the unique relations among maternal and child depressive symptoms and mother–child discrepancies in perceived behavior. Second, we examined these discrepancies by using a multidimensional dyadic construct: monitoring-relevant behaviors. We expected that higher self-reported depressive symptoms in mothers would be related to decreased levels of monitoring-relevant behaviors reported by the mother, relative to the child. Similarly, we hypothesized that higher self-reported depressive symptoms in children would be related to decreased levels of monitoring-relevant behaviors reported by the child, relative to the mother. Furthermore, we hypothesized that each informant's levels of depressive symptoms would independently relate to rating discrepancies, while accounting for other characteristics suggested by prior work as relating to discrepancies (i.e., child age, gender, ethnicity; maternal stress).

Method

Participants

Participants included 335 mother/female-caregiver and child dyads (153 boys and 182 girls) that participated in a larger community study of 362 dyads.[3] In order to participate in the current study, families had to speak English, understand the consenting and interview process, and have completed information on all constructs. The sample for this study included families with a fifth- or eighth-grade child who lived in a midsize southern city in an area with moderate to high violence. Police crime statistics were used to identify neighborhoods with moderate to high crime. Thus, this was a community sample that was not screened a priori for the presence of psychopathology. Youths were enrolled in fifth (53%) and eighth (47%) grades and ranged in age from 9 to 16 years ($M = 12.11$, $SD = 1.60$). The majority of youths identified themselves as African American (91.3%), and the rest identified themselves as Caucasian or European American (3.6%), American Indian (2.4%), Asian American (0.3%), or other (2.4%).

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[2]Although the term *parental monitoring* has traditionally been defined as parent-driven behaviors (e.g., tracking of child's whereabouts and activities; Dishion & McMahon, 1998), recent work suggests that the assessment of monitoring has been limited to items tapping perceptions of parents' knowledge about child behavior (e.g., Kerr & Stattin, 2000; Stattin & Kerr, 2000). Moreover, some researchers maintain that parental knowledge is primarily child-driven (e.g., through disclosure; Kerr & Stattin, 2000), whereas other researchers emphasize the direct influence of parent behaviors (Fletcher, Steinberg, & Williams, 2004). Despite debate over the relative contribution of parent and child behaviors to parental knowledge, research and theory across diverse areas of the clinical and developmental sciences suggest that parent–child relationships are bidirectional; parent and child behaviors exert dynamic effects (e.g., Caspi et al., 2002; Granic & Patterson, 2006; Laird, Pettit, Bates, & Dodge, 2003; Stice & Barrera, 1995).

[3]Grant project entitled, *Youth drug use, violence exposure, and physiology* (Kliewer, 2003).

Female caregivers had a mean age of 36.60 years (*SD* = 6.30, range of 24−56). Caregivers were primarily biological mothers (86%), with a minority identifying as grandmothers (7%), adoptive mothers (2%), stepmothers (1%), or other female relatives (3%). Approximately one third (34%) of the families had a weekly household income of $300 or less; 30% earned $600 or more per week. About a quarter (23%) of the caregivers had not completed high school, 31% had completed high school or had a general education diploma, 23% had some education beyond high school but had not completed a post–high school degree, and 22% had completed an associate's, vocational, bachelor's, or master's degree. Caregiver marital status varied, with 40% never married, about one third (32%) married or cohabitating at the time of the study, 14% separated, 11% divorced, and 2% widowed.

Measures

Monitoring-relevant behaviors—Three scales (Child Disclosure, Parental Knowledge, and Parental Solicitation) were included to assess important constructs associated with parental monitoring, hereafter referred to as monitoring-relevant behaviors (MRB).[4] For each scale, mothers and children answered parallel items, with minor word changes as needed to frame the questions appropriately for the respondent. Mother and child responded to all items with a response scale ranging from 1 (*no, never*) to 5 (*yes, always*). Stattin and Kerr (2000) reported internal consistencies for all scales (.69−.82) and extensive evidence supporting construct validity. Child Disclosure (five items) assessed how often youths spontaneously disclosed information to their parents as well as efforts to conceal information (e.g., "Do you keep a lot of secrets from your parents about what you do during your free time?"). Alpha coefficients for this sample were .76 for the child-report items and .72 for the parent-report items. Average interitem correlations for this sample were .40 for the child-report items and .35 for the parent-report items. Parental Knowledge (nine items) assessed perceptions of parents' knowledge of the child's whereabouts, activities, and associations (e.g., "Do your parents know what you do during your free time?"). Cronbach's alpha coefficients for this sample were .80 for the child-report items and .78 for the parent-report items. Average interitem correlations for this sample were .32 for the child-report items and .30 for the parent-report items. Parental Solicitation (five items) assessed parents' efforts to gather information about the child's whereabouts, activities, and relationships (e.g., "How often do your parents initiate a conversation about things that happened during a normal day at school?"). Alpha coefficients were .75 and .65 for the child- and parent-report items, respectively. Average interitem correlations for this sample were .38 for the child-report items and .29 for the parent-report items.

Depressive symptoms—Depressive symptoms were assessed with two widely used self-report measures. The Child Depression Inventory (CDI; Kovacs, 1985), a 27-item self-report measure, was used to assess child depressive symptoms. The alpha coefficient for this sample was .84. The average interitem correlation for this sample was .17. The Depression subscale of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), which is comprised of six items, assessed maternal depressive symptoms. Mothers indicated the extent to which they experienced symptoms during the past week using a Likert scale ranging from 0 (*not at all*) to 4 (*extremely*); the possible range of scores was 0−24 (six items comprised the subscale). The alpha coefficient for this sample was .87. The average interitem correlation for this sample was .54.

Maternal life stress—Maternal life stress was assessed by the Life Stresses Scale (LSS), a 20-item measure that assesses life stressors that mothers experienced in the past 6 months. Fourteen items were based on a measure developed by the Conduct Problems Prevention

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Research Group (1998), and six items were developed for use in the Multisite Violence Prevention Project (Miller-Johnson, Sullivan, Simon, & the Multisite Violence Prevention Project, 2004) to reflect the concerns of an urban sample. Respondents rated each item on a 3-point scale (0 = *did not occur*, 1 = *caused minor stress*, or 2 = *caused major stress*). Item scores were averaged to obtain a mean severity rating, with high scores reflecting higher levels of stress. In the current sample, the alpha coefficient was .83. The average interitem correlation for this sample was .19.

Demographic characteristics—All demographic data were obtained through child and caregiver interviews. Children reported their age, gender, and ethnicity. Caregivers reported their age, relationship to the child, marital status, education, employment, and family income.

Procedure

Participants were recruited through community agencies and events and via flyers posted door-to-door in qualifying neighborhoods (i.e., neighborhoods targeted because of moderate to high rates of violent crime activity). Specifically, flyers advertising the study were posted in community agencies that served these neighborhoods (e.g., Parks and Recreation, Boys and Girls Clubs, churches). Approximately two thirds (63%) of the families who were eligible to participate in the study agreed to do so. This figure is better than those of many community-based studies for recruiting participants from disadvantaged neighborhoods (cf. Luthar & Goldstein, 2004). Although this recruitment strategy did not involve a clinical screening process, the ranges on measures of adjustment problems were comparable to what we would expect, based on prior community-based studies (cf. Farrell et al., 2006; Kliewer et al., 2004; Sullivan, Farrell, & Kliewer, 2006). Furthermore, the final sample was demographically representative of the geographic area (U.S. Census Bureau, 2004).

After respondents were screened for eligibility over the telephone, interviews were scheduled. To be eligible to participate in the study, families needed to have a 5th or 8th grader and female caregiver present for the interview. Interviews were conducted in participants' homes unless a family requested to be interviewed elsewhere. Additionally, interviewers completed extensive training before being approved to interview families. Specifically, interviewers were trained on research protocols and general interviewing techniques including multicultural sensitivity. Interviewer training took place over the course of 4 weeks with didactic sessions, practice sessions, and homework. Interviewers were also required to audiotape practice sessions with each other and with participants from the community who volunteered to be part of the interviewers' training. The study supervisor analyzed these tapes and gave written and verbal feedback to the interviewers. Interviewers were not released into the field until they had successfully completed training. Furthermore, a random sample of 10% of the families were called and queried about the conduct of the interviewers to ensure that interviewers maintained professional standards.

Teams of two interviewers conducted in-home interviews. After the caregivers provided written consent and the youths provided assent, the dyads were separated for individual interviews. Interviews were conducted face-to-face with visual aids, and all questions were read aloud, with the exception of a small portion of those asked during the youth interview. Specifically, youths who passed a reading screening test responded to CDI items in a booklet without assistance. The MRB items were interview-administered, with the interviewer reading the questions aloud. Families received a total of $50 in Wal-Mart gift cards (care-giver = $45 and child = $5).

Results

Preliminary Analyses

Frequency distributions for all variables were examined before conducting primary analyses, to detect deviations from normality. In inspecting skewness statistics for all variables, we found that skewness statistics for BSI–Depression subscale scores revealed mild positive skewness (skewness = 1.8). Therefore, BSI–Depression subscale scores were log-transformed according to recommendations by Tabachnick and Fidell (2001). The transformation resulted in some improvement (skewness = 1), and the transformed variable was employed for all analyses. The transformation did not affect findings reported below; the same findings resulted from analyses employing all untransformed variables.

Mother–Child Perceptions of MRB and Mother–Child Discrepancies

Mothers' and children's perceived MRB were assessed with index scores for mother- and child-rated Child Disclosure, Parental Knowledge, and Parental Solicitation. Discrepancies were measured with standardized difference scores (SDS), consistent with current recommendations (De Los Reyes & Kazdin, 2004). Specifically, SDS were created by first converting each child's ratings and his or her mother's ratings of each parenting subscale into z scores and then subtracting the child's z score on each subscale from the mother's z score on that same subscale, hereafter referred to as MRB—standardized difference scores (MRB–SDS). Prior work suggests directionality in the relations among discrepancies and informant characteristics (De Los Reyes & Kazdin, 2005). Thus, the signs (plus or minus) of MRB–SDS were maintained. The mathematical properties of SDS and correlations between SDS and characteristics have been reported elsewhere (De Los Reyes & Kazdin, 2004). As an aside, there are multiple methods available to assess informant discrepancies. One limitation to SDS is that the scores lose information about differences in the rating variances across informants. However, our findings did not change when employing the raw difference score, which accounts for these differences.[5]

Means, Standard Deviations, and Correlations Among Measures

Means and standard deviations for the mother- and child-completed measures are presented in Table 1. Correlations between mother- and child-rated MRB are presented in Table 2. Consistent with prior work (e.g., Achenbach, 2006; De Los Reyes & Kazdin, 2005; Tein et al., 1994), mother–child correspondence on MRB ratings was significant but low.

Correlations between informant characteristics and the MRB–SDS were calculated (see Table 3). None of the child characteristics were related to any of the MRB–SDS, and maternal stress was related to the MRB–SDS for Child Disclosure and Parental Knowledge. Nevertheless, all characteristics were employed as covariates, in order to provide conservative tests of our hypotheses. Lastly, children's depressive symptoms were related to all MRB–SDS, and maternal depressive symptoms were related to two MRB–SDS (Child Disclosure and Parental Knowledge).

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[5]When employing the raw difference score as the dependent variable, the second step of each regression model remained statistically significant for each domain of MRB: Child Disclosure, $\Delta R^2 = .09$, $p < .001$; Parental Knowledge, $\Delta R^2 = .11$, $p < .001$; and Parental Solicitation, $\Delta R^2 = .04$, $p < .01$. Furthermore, using the raw difference score, we found that results for analyses examining maternal and child depression scores were consistent with our findings employing the SDS for each MRB domain: Child Disclosure: BSI–Depression subscale score, $\beta = -.16$, $p < .01$, zero-order $r = -.19$, partial $r = -.15$, part $r = -.14$; CDI total score, $\beta = .27$, $p < .001$, zero-order $r = .26$, partial $r = .28$, part $r = .27$. Parental Knowledge: BSI–Depression subscale score, $\beta = -.19$, $p < .01$, zero-order $r = -.18$, partial $r = -.18$, part $r = -.17$; CDI total score, $\beta = .30$, $p < .001$, zero-order $r = .28$, partial $r = .30$, part $r = .29$. Parental Solicitation: BSI–Depression subscale score, $\beta = -.05$, ns, zero-order $r = -.03$, partial $r = -.04$, part $r = -.04$; CDI total score, $\beta = .19$, $p < .01$, zero-order $r = .18$, partial $r = .19$, part $r = .19$.

Relations Among Mothers' and Children's Depressive Symptoms and MRB Discrepancies

We hypothesized that greater levels of mothers' and children's depressive symptoms would be related to greater mother–child discrepancies in perceived MRB, when controlling for characteristics identified as correlates of discrepancies in previous investigations (maternal stress, child age, child gender, and child ethnicity). To test this, we conducted three hierarchical regression analyses, one analysis for each domain of MRB examined in this study (Child Disclosure, Parental Knowledge, and Parental Solicitation). For each MRB domain, the MRB–SDS was used as the criterion variable, with the LSS–Average Severity of Mother's Stressors score, child age, child gender, and child ethnicity entered in the first step and the BSI–Depression subscale score and CDI total score entered in the second step as independent variables. Results as reflected by ΔR^2 and beta statistics are presented in Table 4; for comparison, we report standardized beta, zero-order, partial, and part correlations in the text below.[6,7]

Child Disclosure—Results for analyses examining discrepancies in perceived child disclosure were consistent with our hypotheses for both mothers' and children's depressive symptoms (see Table 4). Specifically, in the first step of the equation covariates were significantly related to the MRB–SDS for Child Disclosure, although the only significant predictor in this step was the LSS–Average Severity of Mother's Stressors score. In the second step of the equation, the addition of the BSI–Depression subscale score and CDI total score contributed significant variance in the regression model. The BSI–Depression subscale score was significantly related to the MRB–SDS for Child Disclosure, when controlling for informant characteristics and the CDI total score, $\beta = -.18$, $p < .01$, zero-order $r = -.21$, partial $r = -.17$, part $r = -.16$. These results supported the hypothesis that greater maternal depressive symptoms would be related to discrepancies in perceived child disclosure. Most critically, the direction of the relationship was consistent with our hypotheses as well. Mothers with higher levels of depressive symptoms reported decreased levels in MRB, relative to the child. Similarly, in the second step of the equation, the CDI total score was significantly related to the MRB–SDS for Child Disclosure, when controlling for informant characteristics and the BSI–Depression subscale score, $\beta = .22$, $p < .001$, zero-order $r = .21$, partial $r = .23$, part $r = .22$. Again, the direction of the relationship was consistent with our hypotheses: Children with higher levels of depressive symptoms reported decreased levels in MRB, relative to the mother. Thus, both informants' levels of depressive symptoms were independently related to discrepancies in perceived child disclosure.

Parental Knowledge—Results for analyses examining discrepancies in perceived parental knowledge were consistent with our hypotheses for both mothers' and children's depressive symptoms (see Table 4). In the first step of the equation, covariates were not significantly related to the MRB–SDS for Parental Knowledge. In the second step of the equation, the addition of the BSI–Depression subscale score and CDI total score contributed significant variance in the regression model. The BSI–Depression subscale score was significantly related to the MRB–SDS for Parental Knowledge, when controlling for informant characteristics and

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[6]The bivariate correlation between LSS–Average Severity of Mother's Stressors score and BSI–Depression subscale score (two of the independent variables in the following regression models) was $r = .43$ (see Table 3). This significant and moderate relationship between maternal stress and depressive symptom scores might suggest that including maternal stress scores in the regression models would result in nonsignificant relations between maternal depressive symptom scores and discrepancies. However, findings drawn from the regression models we report below did not change, regardless of whether maternal stress scores were included in the models.

[7]One concern with this sample is that caregivers differed in terms of their relationship to the child being rated (e.g., biological mothers, adoptive mothers, or stepmothers), and prior work has identified differences in correlations among different pairs of informants (parent–child, parent–teacher, teacher–child; Achenbach, 2006). However, the findings we report below remained the same when controlling for whether or not the caregiver was the biological mother of the child. Furthermore, whether or not the caregiver was the biological mother of the child was not significantly related to MRB–SDS for Child Disclosure, $r = -.03$, *ns*; Parental Knowledge, $r = -.02$, *ns*; or Parental Solicitation, $r = -.01$, *ns*.

the CDI total score, $\beta = -.20$, $p < .01$, zero-order $r = -.20$, partial $r = -.19$, part $r = -.18$. Furthermore, the direction of the relationship was consistent with our hypotheses. Similarly, in the second step of the equation, the CDI total score was significantly related to the MRB–SDS for Parental Knowledge, when controlling for informant characteristics and the BSI–Depression subscale score, $\beta = .24$, $p < .001$, zero-order $r = .22$, partial $r = .24$, part $r = .24$, and the direction of the relationship was again consistent with our hypotheses. Thus, both informants' depressive symptoms were uniquely related to discrepancies in perceived parental knowledge.

Parental Solicitation—Results for analyses examining discrepancies in perceived parental solicitation were consistent with our hypotheses for children's depressive symptoms but not for mothers' depressive symptoms (see Table 4). In the first step of the equation, covariates were not significantly related to the MRB–SDS for Parental Solicitation. In the second step of the equation, the addition of the BSI–Depression subscale score and CDI total score contributed significant variance in the regression model. However, the BSI–Depression subscale score was not significantly related to the MRB–SDS for Parental Solicitation, when controlling for informant characteristics and the CDI total score, $\beta = -.06$, *ns*, zero-order $r = -.04$, partial $r = -.06$, part $r = -.06$, although the direction of the relationship remained negative. This finding was expected, given the nonsignificant bivariate relation between the BSI–Depression subscale score and the MRB–SDS for Parental Solicitation (see Table 3). In the second step of the equation, the CDI total score was significantly related to the MRB–SDS for Parental Solicitation, when controlling for informant characteristics and the BSI–Depression subscale score, $\beta = .16$, $p < .01$, zero-order $r = .15$, partial $r = .15$, part $r = .15$, and the direction of the relationship was consistent with our hypotheses. Furthermore, the beta denoting the relationship between the CDI total score and the MRB–SDS for Parental Solicitation significantly differed from that of the relation between the BSI–Depression subscale score and the MRB–SDS for Parental Solicitation, Williams (1959) $t = 3.06$, $p < .01$.[8] Thus, our analyses suggested only children's depressive symptoms were related to discrepancies in perceived parental solicitation.[9,10,11]

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[8]The Williams (1959) *t* test for comparing differences between dependent relationships was used to compare differences between the relations between the CDI total score and the MRB–SDS for Parental Solicitation and the relations between the BSI–Depression subscale score and the MRB–SDS for Parental Solicitation (see Steiger, 1980).

[9]We extended our analyses in an attempt to shed light on whether evidence supported a depressive realism effect rather than a depression-distortion effect. We addressed this issue in two ways: (a) we created scatterplots, with lines of best fit, consistent with Youngstrom et al. (1999), and (b) we examined the significance of the *y*-intercept. With regard to scatterplots (discrepancy on the *y*-axis, and BSI–Depression subscale score or CDI total score on the *x*-axis), visual inspection suggested that the scatter was evenly distributed above and below the *x*-axis (when discrepancy = 0). We created scatterplots for raw difference scores as well as SDS scores on the *y*-axis. With regard to the second analysis (examining the significance of the *y*-intercept), the regression coefficients for the constant (*y*-intercept) were not significantly different from 0 in any regression equations. Thus, the data were inconclusive as to whether depressive realism accounted for the associations between depressive symptoms and discrepancies.

[10]Although the depression-distortion hypothesis predicts a linear relation between depressive symptoms and discrepancies, a second consideration with our findings is that they do not take into account the possibility of nonlinear relations among depressive symptoms and discrepancies. Thus, we conducted exploratory analyses testing both linear and nonlinear regression equations separately for both mothers' and children's depressive symptoms for each of the MRB domains. Specifically, we conducted six linear, inverse nonlinear, and quadratic nonlinear regressions, employing either the BSI–Depression subscale score or CDI total score as the independent variable and the SDS representing Child Disclosure, Parental Knowledge, and Parental Solicitation MRB domains as dependent variables. Across the six sets of the analyses, none of the inverse nonlinear regression models significantly predicted the SDS. For the BSI–Depression subscale score, both the linear, $R^2 = .05$, $F(1, 333) = 15.94$, $p < .001$; $R^2 = .04$, $F(1, 333) = 14.44$, $p < .001$, and quadratic, $R^2 = .05$, $F(2, 332) = 8.82$, $p < .001$; $R^2 = .05$, $F(2, 332) = 8.57$, $p < .001$, regression models predicted the Child Disclosure and Parental Knowledge SDS, respectively, but did not predict the Parental Solicitation SDS. For the CDI total score, both the linear, $R^2 = .04$, $F(1, 333) = 14.63$, $p < .001$; $R^2 = .05$, $F(1, 333) = 16.56$, $p < .001$; $R^2 = .02$, $F(1, 333) = 7.19$, $p < .01$, and quadratic, $R^2 = .04$, $F(2, 332) = 7.73$, $p < .01$; $R^2 = .05$, $F(2, 332) = 8.75$, $p < .001$; $R^2 = .02$, $F(2, 332) = 3.63$, $p < .05$, regression models predicted the Child Disclosure, Parental Knowledge, and Parental Solicitation SDS, respectively. In each of these analyses, the R^2 was either identical between equations or the *F* value was larger for the linear versus the quadratic equation. Furthermore, although in some instances there is evidence for mild quadratic relationships, these findings were not hypothesized a priori. Given the complexity of the initial depression-distortion regression models, there is a concern about overfitting the data. Although nonlinear relationships may exist in the data, the exploratory nature of the analyses is such that nonlinear findings may have arisen by chance.

Discussion

This study investigated how the relations among informant characteristics and dyadic informant discrepancies may be conceptualized and examined from the perspectives of both informants. There were three main findings. First, children's depressive symptoms were significantly related to rating discrepancies in all three domains of MRB. Second, mothers' depressive symptoms were significantly related to rating discrepancies in two of the three domains: Child Disclosure and Parental Knowledge. Third, relations among depressive symptoms and rating discrepancies could not be explained by other characteristics. Thus, the results suggest that whether depressive symptoms relate to discrepancies in perceived behavior is a function of the level of depressive symptoms from both informants' perspectives.

These findings advance prior work indicating a relationship between the depressive symptoms of one informant in the dyad (usually the mother) and rating discrepancies (e.g., De Los Reyes & Kazdin, 2005). The results illustrate the utility in examining the relations between informant characteristics and discrepancies from both informants' perspectives. In fact, the most consistent relations were based on children's depressive symptoms—an important finding because children's depressive symptoms are not typically examined in discrepancies research.

Our findings may be attributed in part to two factors. First, although the study design was cross-sectional, the relations between informants' depressive symptoms and discrepancies are consistent with recent theory suggesting that the perspectives of both informants contribute meaningfully to their rating discrepancies (e.g., Kraemer et al., 2003). Such perspectives, particularly when accompanied by depressive mood symptoms, may result in informants' recalling negative as opposed to positive or neutral information on behavior and providing ratings of behavior based on these negative recollections. Most critically, these notions might inform future research on the development of strategies for decreasing informant discrepancies. For instance, work suggesting discrepancies correlate with informant perspectives might inform procedures that guide informants toward providing ratings of behavior based on their perceptions of both negative and positive aspects of behavior (e.g., situations in which children disclose all sorts of information and situations in which children keep information to themselves). On the basis of this information, informants might be given rules to provide ratings based, in part, on the consistency of whether the behavior is either negative or positive across situations (De Los Reyes & Kazdin, 2005). Thus, research on the associative characteristics of discrepancies might inform procedures that experimentally take discrepancies into account.

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[11]The importance of studying the relations between both mothers' and children's depressive symptoms and mother–child rating discrepancies raises a critical question: Do greater levels of both mothers' and children's depressive symptoms interact to produce greater mother–child rating discrepancies? To test the interactive effects of mothers' and children's depressive symptoms, we conducted tests of moderation (Baron & Kenny, 1986; Holmbeck, 1997, 2002). As outlined by Holmbeck (1997, 2002), tests of moderation were conducted by entering the interaction between mothers' and children's depressive symptoms into a third step in each of the three regressions reported previously. The BSI–Depression subscale score and CDI total score were each centered before computing the interaction term, and each were entered individually as centered variables in all analyses.

The interactive effect of the BSI–Depression subscale score and CDI total score on MRB–SDS was nonsignificant for Child Disclosure, $\beta = -.01$, ns; $\Delta R^2 = .000$, ns; Parental Knowledge, $\beta = -.08$, ns; $\Delta R^2 = .007$, ns; and Parental Solicitation, $\beta = .02$, ns; $\Delta R^2 = .000$, ns. The reliability of the interaction term was .73. As detailed in Aiken and West (1991), reliability of the interaction term may have decreased our effect size by two thirds (when reliability is .70) to half (when reliability is .80) of its original size. Assuming perfect reliability of the interaction term, our sample was well powered to detect interaction effects considered small, $f^2 = .02$; $\Delta R^2 = .02$; medium, $f^2 = .15$; $\Delta R^2 = .13$; and large, $f^2 = .35$; $\Delta R^2 = .26$, by effect size conventions outlined by Cohen (1988; see also Cohen, Cohen, West, & Aiken, 2003). With our sample size, we had power of .80 to detect a small interaction effect ($\Delta R^2 = .02$). Tests of statistical power indicate that our power to detect effects considered small, medium, and large, respectively, were as follows: Child Disclosure = .79, 1.00, and 1.00; Parental Knowledge = .78, 1.00, and 1.00; and Parental Solicitation = .75, 1.00, and 1.00. Furthermore, with regard to Parental Knowledge, in the only instance in which the interaction term contributed variance above .000 to the overall regression model, $\Delta R^2 = .007$, ns, our ability to detect a significant effect was 32%. In other words, our sample size of 335 achieved .32 power to detect an R-squared of .007 attributed to the interaction term using an F test with a significance level (alpha) of .05. In this instance, we would have needed a sample of 1,159 to detect a significant effect at a statistical power level of .80, assuming a significance level of .05.

Second, our findings may be attributed to the rated domain: MRB. We employed the term *monitoring-relevant behaviors* to capture monitoring as a multidimensional construct shaped by both child behavior and parent behavior. Although *parental monitoring* has historically been defined and measured as parental awareness of a child's activities and development, research and theory discussed previously suggests monitoring is a dynamic process in which both parent and child are causal agents. Thus, MRB is a useful construct for examining the relations among informants' perspectives and discrepancies. We encourage future research to employ MRB and other dyadic constructs to examine the associative characteristics of discrepancies. Most critically, future research examining discrepancies in dyadic behaviors ought to consider the contribution of both informants' perspectives. With regard to MRB, a critical issue to address in future research might involve examining the extent to which MRB domains are in fact positively valued by mothers and their children. For example, whether children's expectations for specific parental behaviors do not match their perceptions (i.e., "unmet expectations") may be important to consider in future research (Matza, Kupersmidt, & Glenn, 2001).[12] Despite compelling evidence to suggest that these behaviors are associated with positive youth adjustment, previous literature does not elucidate whether informants vary in their ascribing positive value to MRB.

Limitations

There are limitations to the present study. First, depressive symptoms were assessed via two self-report questionnaires. Beyond the usual concerns of employing self-report instruments, there has been a debate in the literature as to whether the two specific depression measures we employed adequately assess depressive symptoms in adults and youths. For example, prior work has raised concerns as to the discriminant validity of the BSI subscales. Specifically, studies are inconsistent in the number of BSI factors that emerge in results of factor analyses (e.g., Boulet & Boss, 1991; Gavazzi, Julian, & McKenry, 1996; Hayes, 1997; Skeem et al., 2006). However, among these inconsistencies, four factors tend to emerge: Depression, Anxiety, Somatization, and Hostility. Additionally, one study identified a single factor structure for the BSI, and yet this study found the Depression subscale had the highest item–subscale correlations of all nine subscales (Boulet & Boss, 1991). Similar factor structure concerns have been raised concerning the CDI (Cole, Hoffman, Tram, & Maxwell, 2000; Cole & Martin, 2005; Craighead, Smucker, Craighead, & Ilardi, 1998; Myers & Winters, 2002). At the same time, the CDI is moderately to highly correlated with other youth self-rated depressive symptom scales, supporting evidence of its convergent validity (Myers & Winters, 2002).

We employed the BSI and CDI because these are two widely used measures of depressive symptoms for both populations. The psychometric properties of these measures notwithstanding, we were interested in making our findings relevant to other clinical and community populations that assess depressive symptoms with self-report measures such as the BSI and CDI. Furthermore, and particularly as it relates to the CDI, the literature does not provide a definitive basis for choosing among self-reports (e.g., Klein, Dougherty, & Olino, 2005). Nevertheless, we encourage future research to employ additional depressive symptom measures relying on other informants' ratings (e.g., fathers, teachers) and methods (e.g., clinical interviews).[13]

Second, although informants' depressive symptoms are widely studied in relation to discrepancies, the effects observed for the relations between mothers' and children's depressive symptoms and MRB rating discrepancies were quite modest (see Table 4). The magnitudes of

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[12]Previous research indicates that adolescents rate parental warmth and acceptance as desirable qualities, relative to more controlling monitoring behavior (Matza et al., 2001). However, research has yet to address the extent to which monitoring, solicitation, and youth disclosure are deemed desirable by informants. Given the increased motivation for autonomy and increased value placed on peer relationships during adolescence, many adolescents may not desire parental solicitation.

these effects were likely attributable to the fact that the nature and extent of an informant's depressive symptoms comprise but a single feature of that informant's perspectives on their ratings of behavior. Other features, alone and in concert, may relate to discrepancies as well; this is reflected in controlling in our analyses for the effects of various other informant characteristics. Thus, our findings highlight the complexity in studying discrepancies: No single characteristic likely accounts for rating discrepancies among a set of informants. We encourage future research to examine multiple associative characteristics of discrepancies, taking into account that each informant likely has his or her own perspective on each associative characteristic.

Third, our tests of the relations among informants' depressive symptoms and discrepancies were rather robust and consistent across domains of MRB. However, this study was cross-sectional. Furthermore, we did not have a "gold standard" criterion by which to gauge the accuracy or validity of any one (or both) informant's ratings. Thus, our findings did not allow us to determine whether mothers' and children's depressive symptoms cause mother–child discrepancies or whether the relations among mothers' and children's depressive symptoms and discrepancies are indicative of true bias on the part of either one or both informants (for an extended discussion of these issues see De Los Reyes & Kazdin, 2005; Richters, 1992). At the same time, cross-sectional research findings have provided valuable insight regarding informant characteristics associated with discrepancies (e.g., Frick, Silverthorn, & Evans, 1994; Youngstrom et al., 2004, 1999), and the relationship between depressive symptoms and discrepancies has been replicated in work employing multiple research designs, including longitudinal and quasi-experimental designs. Additionally, the very reasons why informant discrepancies research is important are because there do not exist "gold standard" informants and measures of psychological constructs, and the presence of discrepancies makes it difficult to draw conclusions from research. Therefore, it is critical to evaluate the characteristics of informants that relate to discrepancies, so that research can inform experimental procedures that take into account discrepancies between pairs of informants. Nevertheless, our promising findings need to be followed up by longitudinal and laboratory-based research.

Lastly, sample characteristics could limit the generality of the findings. We studied a community sample of predominantly African American mothers and youths recruited via flyers passed out door-to-door and in community agencies. A community sample provided a useful test insofar as substantial heterogeneity was evident in MRB. Our findings may be applicable to samples from only an at-risk population that experiences wide variability in parenting behaviors. Other samples, such as clinic samples in which problems with parenting and child behavior problems warrant clinical intervention (e.g., children referred for oppositional, aggressive, and antisocial behavior; Kazdin, 2005), may not evidence these relations. At the same time, discrepancies are consistently present across various clinic and nonclinic samples and methods of assessing behavior. Moreover, MRB may be examined as change mechanisms for therapeutic interventions or as protective factors for preventive interventions with at-risk samples (e.g., Dishion & McMahon, 1998). Additionally, we previously cited evidence suggesting that our recruitment strategy resulted in a sample for which the proportion of families agreeing to participate was higher relative to prior work, ranges of scores on measures

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[13]The question also arises as to whether the CDI and BSI Depression subscale measure the same construct (depressive symptoms). We are not aware of any comparative literature on the CDI and BSI to directly answer this question. However, the research evidence suggests that depressive symptoms manifest differently across developmental periods (e.g., Cicchetti & Toth, 1998; Weiss et al., 1992). For example, the Diagnostic and Statistical Manual of Mental Disorders states that "irritable mood" can take the place of depressed mood as a symptom of depression for children and adolescents (American Psychiatric Association, 2000). As such, youth depressive symptoms may appear to be different in form and function from depressive symptoms in adults, perhaps because the construct operates differently in adults and youths. The most salient difference in the underlying constructs is that child depression may comprise an externalizing dimension (Cole et al., 2000; Cole & Martin, 2005; Craighead et al., 1998; Myers & Winters, 2002). Thus, if one acknowledges that the construct of depression operates differently between adults and youths, then in the absence of compelling data one could surmise that the CDI and BSI Depression subscale capture the same construct.

were consistent with prior community-based studies, and demographic characteristics of the sample matched those of previous population estimates of the geographic region of study recruitment. At the same time, understanding the phenomenon of discrepancies in perceived MRB is critical for both basic and applied research. It is important that future work replicate and extend our findings to both clinic samples and other nonclinic samples for which informant discrepancies are a concern.

Clinical Implications

Our findings have implications for clinical assessment, assessing informant discrepancies, and understanding the reasons why discrepancies exist in clinical assessment. For instance, recent work has recommended that clinicians and researchers assess for the reasons why discrepancies arise (e.g., differences in perspectives on need for treatment, differences in attributions of the causes of behavior; De Los Reyes & Kazdin, 2005). Our findings suggest that both informants' perspectives in a dyad contribute meaningfully to the differences between their ratings. However, when examining associative characteristics of discrepancies, clinicians and researchers may be tempted to focus their attention on characteristics present within only one of the informants in a dyad (e.g., maternal depression, maternal stress) as being responsible for differences between informants' ratings. For example, assessing only the mother's perspective might lead a clinician to infer that only the mother's level of depressive mood is responsible for discrepancies between her ratings and those of their child or the child's teacher. Thus, we emphasize that clinicians and researchers examining factors related to discrepancies should consider the contribution of both informants' perspectives: The same characteristics related to discrepant perspectives (e.g., depressive symptoms) might be present for both informants.

Concluding Comments

Our findings suggest that both mothers' and children's depressive symptoms are uniquely related to mother–child discrepancies in perceived MRB. The findings provide important empirical support for recent theory suggesting that the perspectives of both informants in a dyad contribute meaningfully to their rating discrepancies (De Los Reyes & Kazdin, 2005; Kraemer et al., 2003). Discrepancies among informants' perceptions of the same behavior are likely not merely reflections of only one of the informant's perspectives. Furthermore, examining rating discrepancies on dyadic constructs sheds light on the potential processes and associative characteristics of discrepancies, given that the discrepancies construct is likely comprised of dynamic processes. Future prospective investigations should elucidate how the interrelations among mothers' and children's depressive symptoms and mother–child discrepancies in perceived behavior operate temporally and under controlled laboratory conditions.

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Table 1

Means and Standard Deviations of Measures for the Total Sample (N = 335)

Measure	Mother		Child	
	M	*SD*	*M*	*SD*
Monitoring-relevant behaviors scale				
Child Disclosure	21.08	3.49	19.65	4.60
Parental Knowledge	39.79	4.50	37.82	6.13
Parental Solicitation	19.29	3.88	16.35	5.12
CDI total score			9.03	6.91
BSI-Depression subscale score[a]	9.80	4.69		
LSS-Average Severity of Mother's				
Stressors score	10.09	6.04		

Note. CDI = Child Depression Inventory; BSI = Brief Symptom Inventory; LSS = Life Stresses Scale.

[a]The BSI-Depression subscale score was log-transformed, and this transformation was employed for all subsequent statistical analyses. The new values for the variable after transformation were $M = 0.95$, $SD = 0.17$.

Table 2

Correlations Among Subscales of Mother- and Child-Rated MRB for the Total Sample (N = 335)

Variable	1	2	3	4	5	6
Mother-rated						
1. Child Disclosure	—	.65***	.37***	.23***	.27***	.12*
2. Parental Knowledge		—	.42***	.28***	.33***	.20***
3. Parental Solicitation			—	.20***	.20***	.25***
Child-rated						
4. Child Disclosure				—	.72***	.57***
5. Parental Knowledge					—	.54***
6. Parental Solicitation						—

Note. MRB = monitoring-relevant behaviors.

*
$p < .05$.

***
$p < .001$.

Table 3

Correlations Among Informant Characteristics, Mothers' and Children's Depressive Symptoms, and Mother-Child Rating Discrepancies (i.e., SDS) of MRB for the Total Sample (N = 335)

Variable	1	2	3	4	5	6	7	8	9
1. MRB–Child Disclosure SDS	—								
2. MRB–Parental Knowledge SDS	.57***	—							
3. MRB–Parental Solicitation SDS	.41***	.39***	—						
4. CDI total score	.21***	.22***	.15**	—					
5. BSI–Depression subscale score	-.21***	-.20***	-.04	.10	—				
6. LSS–Average Severity of Mother's Stressors score	-.20***	-.14**	.00	.03	.43***	—			
7. Child age	.08	-.03	.03	.06	-.04	.03	—		
8. Child gender	.06	-.02	.00	.02	.00	-.10	.00	—	
9. Child ethnicity	-.01	-.05	.02	-.14**	-.03	-.10	.03	.02	—

Note. SDS = standardized difference scores; MRB = monitoring-relevant behaviors; CDI = Child Depression Inventory; BSI = Brief Symptom Inventory; LSS = Life Stresses Scale. Child gender was coded as 0 = male, 1 = female. Child ethnicity was coded as 0 = African American, 1 = all other ethnicities.

**
$p < .01$.

***
$p < .001$.

Table 4

Hierarchical Regression Analyses Examining Associations Among Mothers' and Children's Depressive Symptoms and Mother-Child MRB Rating Discrepancies (i.e., SDS) for the Total Sample (N = 335)

Variable	Child Disclosure SDS				Parental Knowledge SDS				Parental Solicitation SDS			
	ΔR^2	B	SE	β	ΔR^2	B	SE	β	ΔR^2	B	SE	β
Step 1	.05**				.03				.00			
Maternal stressors		-0.03	0.01	-.13*		-0.01	0.01	-.06		0.01	0.01	.02
Child gender		0.09	0.13	.04		-0.07	0.12	-.03		-0.01	0.14	.00
Child age		0.05	0.04	.06		-0.03	0.04	-.05		0.01	0.04	.02
Child ethnicity		0.01	0.23	.00		-0.09	0.22	-.02		0.19	0.24	.04
Step 2	.07***				.08***				.03*			
Maternal depressive symptoms		-1.30	0.42	-.18**		-1.38	0.40	-.20**		-0.46	0.44	-.06
Child depressive symptoms		0.04	0.01	.22***		0.04	0.01	.24***		0.03	0.01	.16**

Note. For each regression model, regression terms for variables entered at Steps 1 and 2 are displayed on the basis of terms observed for these variables in Step 2 of the model. ΔR^2 statistics for each step were based on variables entered in that step. MRB = monitoring-relevant behaviors; SDS = standardized difference scores. Child gender was coded as 0 = male, 1 = female. Child ethnicity was coded as 0 = African American, 1 = all other ethnicities.

*
$p < .05$.

**
$p < .01$.

***
$p < .001$.