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EMPIRICAL RESEARCH

Discrepancies in Adolescents' and Mothers' Perceptions of the Family and Mothers' Psychological Symptomatology

Christine McCauley Ohannessian[1] · Robert Laird[2] · Andres De Los Reyes[3]

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Abstract Research has shown that discrepancies in adolescents' and their parents' perceptions of the family are linked to adolescent adjustment. Of note, the majority of studies to date have focused on *differences* in perceptions between adolescents and their parents. However, recent research has suggested that convergence in adolescents' and their parents' perceptions of the family may be linked to adolescent psychological outcomes as well. To date, research examining adolescents' and parents' perceptions of the family in relation to outcomes has focused only on adolescent outcomes. Therefore, the goal of this study was to examine the relationship between adolescents' and their mothers' perceptions of the family and mothers' psychological symptomatology. Surveys were administered to 141 adolescents (56 % girls) and their mothers during the spring of 2007. The results indicated that adolescents viewed the family more negatively in comparison to their mothers. In addition, interactions between adolescents' and mothers' reports of open communication, communication problems, and family satisfaction predicted mothers' psychological symptoms. These interactions indicated that mothers reported the most psychological symptoms when adolescents and mothers agreed that family functioning was poor (e.g., low open communication, high communication problems, low family satisfaction). The findings from this study underscore the need to consider adolescents' and parents' perceptions of the family in tandem when considering parental psychological adjustment.

Keywords Adolescence · Family functioning · Informant discrepancies · Multiple informants · Maternal psychopathology

Introduction

Many changes occur within the individual during adolescence, including the development of autonomy and identity, pubertal development, and advances in cognitive abilities (Smetana et al. 2006; Spear 2000). These changes are embedded within various contexts, including the family. During adolescence, salient changes in the family system take place. Although most adolescents experience positive relationships with their families (Smetana et al. 2006), as adolescents negotiate more autonomy with parents, family satisfaction and cohesion decrease (Ohannessian et al. 2000; Smetana et al. 2006; Steinberg and Morris 2001), and family conflict increases (Montemayor 1983). As levels of family conflict rise, disagreements between adolescents and their parents increase as well (De Los Reyes et al. 2012), including differences in how adolescents and their parents perceive the family and their relationships with one another (Augenstein et al. 2016; De Los Reyes et al. 2016; De Los Reyes 2011; Ohannessian et al. 2000). For example, a mother might view herself as knowledgeable about her adolescent's friends and the whereabouts of her adolescent, whereas the adolescent might perceive the mother's level of knowledge as very low (De Los Reyes et al. 2013d). These discrepant views between adolescents and parents take place across many

✉ Christine McCauley Ohannessian
COhannessian@connecticutchildrens.org;
ohannessian@uchc.edu

[1] Connecticut Children's Medical Center, University of Connecticut School of Medicine, 282 Washington Street, Hartford, CT 06106, USA

[2] University of New Orleans, New Orleans, LA, USA

[3] University of Maryland, College Park, MD, USA

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areas of adolescent and family functioning (e.g., family conflict and relationship quality; parental monitoring; and adolescents' behavioral and emotional problems; for a review, see De Los Reyes 2013). Of note, these discrepancies in adolescent-parent perceptions comprise some of the most robust observations in clinical and developmental science (De Los Reyes et al. 2015) and occur in vastly different cultures worldwide (Rescorla et al. 2013).

Taken together, studies conducted to date indicate that adolescents tend to view the family more negatively in comparison to their parents (Fung and Lau 2010; Ohannessian and De Los Reyes 2014, Ohannessian et al. 2000; Shek 2007). Adolescents report lower levels of family satisfaction and family cohesion (Ohannessian et al. 1995, 2000), but higher levels of communication problems in comparison to their parents (De Los Reyes et al. 2016; Laird and De Los Reyes 2013; Reynolds et al. 2011; Yu et al. 2006).

Adolescents' increasingly negative perceptions of the family partially may be due to their developing cognitive abilities, allowing them to think about alternatives and to adopt perspectives that differ from those of other family members, particularly those of their parents (Blakemore 2007, 2008; Smetana et al. 2009). The adoption of more negative views may result in discrepant perceptions between adolescents and their parents, as parents tend to view the family in a relatively more positive light. In turn, these discrepant perceptions may play a role in adolescent autonomy development (enabling the adolescent to become more emotionally detached from the family) and ultimately the realignment of family relationships (Holmbeck and O'Donnell 1991; Montemayor and Flannery 1990; Shek 2002; Steinberg 1990, 1991). In line with this reasoning, in a study examining adolescents and their mothers, adolescent-mother discrepant perceptions of autonomy granting were related to an increase in mother-reported attachment in the adolescent-mother relationship 6 months later (Holmbeck and O'Donnell 1991). In other words, adolescents who disagreed more with their mothers on how much autonomy they were given had higher levels of mother-adolescent attachment 6 months later. In another study examining early adolescents, discrepancies in adolescent boys' and their fathers' perceptions of family functioning were related to higher levels of boys' self-competence (Ohannessian et al. 2000). Perhaps the presence of discrepant adolescent-parent perceptions allows adolescents to begin to emotionally separate from their parents. The process of becoming more emotionally independent and autonomous from parents may lead to higher levels of self-esteem and self-competence particularly for boys because they are less enmeshed in the family during early adolescence in comparison to girls (Gore et al. 1993). Taken together, these studies suggest that discrepancies in adolescent-parent perceptions may be necessary for the successful mastery of the primary developmental tasks of adolescence (e.g., the development of autonomy and identity) and may ultimately be adaptive for both the adolescent and the family (e.g., the realignment of relationships within the family).

In contrast to research suggesting that discrepant adolescent-parent perceptions may be adaptive, more recent work suggests that such discrepant perceptions may be associated with maladaptive adolescent outcomes including lower levels of self-competence, anxiety and mood problems, conduct problems, externalizing behaviors, and substance use (De Los Reyes 2011; De Los Reyes et al. 2010; Juang et al. 2007; Ohannessian et al. 2000; Ohannessian 2012; Ohannessian et al. 1995). Discrepant adolescent-parent perceptions also have been associated with higher levels of mother-reported conflict (Miller and Drotar 2003). This research suggests that underlying discrepant adolescent-parent perceptions is a lack of understanding in the family relationship, which may be associated with problems in family functioning, predisposing family members to maladaptive outcomes (Goodman et al. 2010).

Importantly, discrepancies in adolescent and parental views of the family may not only reflect changes in the adolescent but also may reflect changes in other family members. Moreover, each family member influences the perspective and behavior of other family members. According to relational developmental systems and transactional perspectives (Beveridge and Berg 2007; Lerner 2006; Lerner et al. 2011), adolescents and parents influence one another over the course of the adolescent's development. For instance, parents may encourage their adolescent's independent behavior, as well as defer to their adolescent's increasing push for autonomy (Soenens et al. 2007). Either action (or lack of action) influences the family system as well.

Taken together, studies examining discrepancies in adolescents' and their parents' perceptions of the family indicate that the stress and conflict associated with disagreements between family members may result in maladaptive outcomes for the adolescent and the family system. However, in the long term, discrepancies in adolescent-parent perceptions appear to play an important role in the process of adolescent individuation from the family and the realignment of family relationships. Although a fair amount of work now has been conducted focusing on discrepant adolescent-parent perceptions and the manner in which they are associated with adolescent adjustment, no study has yet to examine links between adolescent-parent perceptions and parents' psychological adjustment. The lack of research focusing on parental adjustment is a key gap given that according to family systems theory; family members intrinsically are connected to one another, and the behavior

of all individuals in the family system influences the behavior of all other family members (Bowen 1991; Minuchin 2002). Relational developmental systems and transactional perspectives (Beveridge and Berg 2007; Lerner 2006; Lerner et al. 2011) also purport that parents play an active role in adolescent development *and* are influenced by their relationships with others in the family. As such, discrepancies in adolescent-parent perceptions are likely to be associated with parents' psychological adjustment as well.

Of note, most research examining discrepancies in adolescent-parent perceptions has focused on young adolescents (e.g., middle school students). These studies have been informative; however, it would be important to include older adolescents who are more independent from the family because theories relating to adolescent autonomy suggest that discrepancies in adolescent-parent perceptions should increase as the adolescent becomes more autonomous (e.g., Baltes and Silverberg 1994). If that is the case, perceptions between older adolescent-parent dyads should be less discrepant in comparison to the younger adolescent-parent dyads examined in most studies to date.

Importantly, assessments of discrepant perceptions typically have relied on metrics of dubious reliability and validity, namely the calculation of difference scores between adolescents' and parents' (e.g., De Los Reyes and Kazdin 2004; De Los Reyes et al. 2010; Laird and De Los Reyes 2013). Recent research suggests that these difference scores statistically are redundant with the individual reports from which they are calculated. As such, difference scores cannot reveal additional information about discrepant perceptions beyond the effects accounted for by individual reports (De Los Reyes et al. 2013c). Because of this issue, some scholars now are using interactions within a multiple regression framework to examine discrepant perceptions in dyads. Interaction methods allow for the direct examination of whether differences between reports contribute to prediction beyond the main effects of individual reports (Laird and De Los Reyes 2013). Moreover, these methods can be modified for use to examine discrepant views as either predictors, outcomes, or both (De Los Reyes et al. 2016; Laird and LaFleur 2015).

In addition, another possibility when jointly considering adolescents' and parents' perceptions of the family involves examining points of convergence between adolescents' and parents' perceptions. Indeed, if discrepant adolescent-parent perceptions reflect a lack of understanding in the family relationship, then convergence in such perceptions may indicate consonance among family members about the nature and extent of family functioning. Recent work supports such a possibility. For example, in a study examining adolescents and their parents, increased scores on a task designed to assess emotion recognition performance (i.e., greater scores reflect greater ability to correctly recognize others' emotions) related to decreased discrepancies (i.e., more convergence) between adolescents' and parents' views on daily topics about the family (e.g., completing chores and homework; De Los Reyes et al. 2013b). In other work, convergence between adolescent and parents on high degrees of positive domains of family functioning (i.e., both adolescent and parent agree on high levels of parental acceptance of the adolescent) predicted lower levels of adolescent depressive symptoms (Laird and De Los Reyes 2013). Perhaps convergence in perceptions between adolescents and parents on positive domains of family functioning provides a buffer against negative outcomes. A relatively less understood phenomenon involves the predictive utility of convergence between adolescents' and parents' perceptions of *negative* domains of family functioning (e.g., both agree on relatively poor levels of communication among family members). Thus, a key aim of this study involves assessing the ability of convergence between adolescents' and parents' perceptions of both negative and positive domains of family functioning to predict variations in parents' psychological functioning.

The Present Study

Given limitations of the literature, the present investigation was designed to provide a more systematic examination of the relationship between discrepancies in adolescents' and their parents' perceptions of the family and parents' psychological adjustment. More specifically, in a community sample of older adolescents (10th and 11th grade students) and their mothers, the following research questions were addressed: (a) During late adolescence, do adolescents have more negative perceptions of the family than do their mothers? (b) To what degree are adolescents' and their mothers' perceptions of the family correlated with one another? (c) Do differences and/or similarities in adolescents' and their mothers' perceptions of the family predict mothers' psychological symptomatology? Consistent with work reviewed previously, we expected to find: (a) adolescents reporting relatively negative levels of family functioning relative to mothers; (b) adolescent-parent correspondence in reports of family functioning to be in the low-to-moderate range; and (c) relative to divergence between reports, convergence in adolescent-parent reports of high levels of positive domains of family functioning (e.g., open communication) and low levels of negative family functioning domains (e.g., communication problems) to be associated with relatively low levels of mothers' psychological problems.

Method

Participants

A sample of 141 adolescents (56 % girls, mean age = 15.99 years, SD .70, range = 15–18) and their mothers participated (all of the adolescents had to have a participating mother to be included). Seventy-five percent of the adolescents were European American, 12 % were African-American, 7 % were Latin American, and 2 % were Asian American (the rest described themselves as "other"). These percentages are reflective of the area from which the sample was drawn (71 % European American, 23 % African American, 4 % Asian American, 7 % Latin American; U.S. Census Bureau 2008). Most of the mothers (96 %) and fathers (99 %) had graduated from high school. Some of the parents also had completed 2 years of college (19 % of mothers and 16 % of fathers) or 4 years of college (35 % of mothers and 27 % of fathers) and a minority (13 % of mothers and 15 % of fathers) had attended graduate or medical school. The majority of the adolescents (72 %) lived with both of their biological parents.

Procedure

The University of Delaware's Institutional Review Board approved the study protocol. Public high schools in Delaware, Pennsylvania, and Maryland (within a 60 mile radius of the University of Delaware) were invited to participate in the study. The administration from seven public high schools (three schools from Delaware, three schools from Pennsylvania, and one school from Maryland) agreed to have their school participate. During the spring of 2007, 10th and 11th grade students from participating schools, who provided assent (at school immediately prior to the survey) and parental consent (sent via the mail), completed a self-report survey in school by trained research staff (all of whom were certified with human subjects training). Seventy-one percent of the adolescents attending the schools participated. The majority of the students who did not participate were absent on the day that the survey was administered. Only three percent of the adolescents present on the day of data collection decided not to participate.

All participants were told that participation was voluntary, that they could withdraw from the study at any time, and that the data collected were confidential. In addition, they were informed that an active Certificate of Confidentiality from the U.S. government further protected their privacy. The adolescent survey included measures on the family, coping, technology use, extracurricular activities, and their own and their parents' psychological symptoms and substance use. The survey took approximately 40 min to complete. Adolescents were given a movie pass for their participation.

Parents of participating adolescents were mailed a packet with an invitation to participate in the study. The parent packet included a cover letter, a consent form, a parent survey, and a prepaid envelope to return the survey and consent form. The parent survey included measures relating to the family, and their own and their adolescent's psychological symptoms and substance use. Parents were mailed a $20 gift card upon receipt of their completed survey. Both mothers and fathers were invited to participate. However, the response rate from fathers was relatively low (n = 67, 46 %). As such, only adolescents and their mothers ($n = 141$ adolescent-mother dyads) were included in this study. However, a focus on discrepancies between adolescent and mother reports is consistent with prior work in the informant discrepancies literature (see Augenstein et al. 2016; De Los Reyes et al. 2013a, b, c; De Los Reyes et al. 2010; Laird and De Los Reyes 2013).

Measures

All participants completed a demographic questionnaire which included questions relating to age, gender, race/ethnicity, and education. In addition, adolescents and their mothers completed the family measures described below.

Adolescent-Mother Communication

The Adolescent-Parent Communication Scale (PACS; Barnes and Olson 2003) was administered to both adolescents and mothers. Adolescents and their mothers responded to the same 20 items. The PACS includes 10-item subscales that reflect Open Communication and Communication Problems. Respective sample items are "I find it easy to discuss problems with my child/mother" and "I don't think I can tell my child/mother how I really feel about some things." The response scale ranges from 1 = *strongly disagree* to 5 = *strongly agree*. A total score (reversing communication problems items) also may be calculated. Previous research has supported the construct validity of this measure (Barnes and Olson 2003). In our sample, Cronbach alpha coefficients were .92 (Open Communication) and .78 (Communication Problems) for the adolescents' reports, and .86 (Open Communication) and .79 (Communication Problems) for the mothers' reports, respectively.

Family Satisfaction

Both adolescents and their mothers completed the 7-item Family Satisfaction Scale (FSS; Olson and Wilson 1989). A representative FSS item is "How satisfied are you with how close you feel to the rest of your family?" The response scale ranges from 1 = *dissatisfied* to

5 = *extremely satisfied*. Separate Family Satisfaction scores were calculated for adolescents and mothers. Prior research has supported the validity of the FSS (Olson 2011). In our sample, Cronbach alpha coefficients were .90 for the adolescents' reports and .83 for the mothers' reports.

Mother Psychological Symptomatology

Mothers also completed the 53-item Brief Symptom Inventory (BSI; Derogatis 1993) to assess their psychological distress. The BSI includes the following dimensional scales: Somatization, Obsessive–Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. A sample BSI item is "How much were you distressed by feelings of worthlessness?" The BSI response scale ranges from 0 = *not at all* to 4 = *extremely*. All items may be summed to create a Global Severity Index (GSI) reflecting overall psychological distress. The GSI was used in this study. Numerous studies have supported the validity and the reliability of the BSI (Boulet and Boss 1991; Long et al. 2007). In our sample, the Cronbach alpha coefficient was .95.

Analytic Plan

Paired *t* tests were conducted to assess mean-level correspondence between adolescents and mothers. In addition, correlations were calculated to assess congruence in adolescent and mother reports. Polynomial regression analyses were used to test whether adolescent-mother congruence in reports of family communication or satisfaction predicted mothers' psychological symptoms. This approach provides a more comprehensive and accurate test of whether informant discrepancies predict outcomes, relative to alternative procedures (e.g., computing difference scores between informants' reports; see Laird and De Los Reyes 2013). More specifically, in a series of models, each mother outcome was regressed on adolescent and mother reports of each family functioning variable and the two-way multiplicative interaction between adolescent and mother reports. The model also included quadratic terms of adolescent and mother reports because the interaction between adolescent and mother reports may reflect the quadratic effect of adolescent or mother reports if the quadratic effects are not modeled (Ganzach 1997). As recommended by Edwards (1994), analyses also tested the addition of a set of coefficients one order higher in magnitude to ensure that the model does not underestimate the complexity of the associations. The interaction term(s) tests the fundamental discrepancy hypothesis that associations between mother outcomes and reports of family functioning provided by mothers vary as a function of reports of family functioning provided by adolescents. However, the interaction term tests conditional associations generally. Post-hoc probing of significant interaction terms, via simple slopes analyses and plotting, was conducted to determine whether mothers' psychological symptoms are most common (a) when adolescents and mothers disagree on family functioning regardless of level or (b) when adolescents and mothers agree that family functioning is poor.

Results

Descriptive Statistics

Table 1 presents the descriptive statistics and correlations among family communication, family satisfaction, and mothers' psychological symptoms. Mean comparison via paired-sample *t* tests show that mothers reported significantly more open communication than did adolescents, $t(117) = 4.46$, $p < .001$, and that adolescents reported significantly more communication problems than did mothers, $t(122) = -7.16$, $p < .001$.

Correlations show modest, but statistically significant, rank-order agreement in adolescent and mother reports of open communication, communication problems, and family satisfaction. However, correlations linking different variables reported by the same informant were slightly stronger than were correlations linking reports of the same variable made by different informants. Further, less mother-reported open communication and satisfaction, and more adolescent-reported communication problems were associated with more mothers' psychological symptoms. Finally, correlations show that mothers' psychological symptoms were not associated with adolescent gender, age, or depression. Therefore, polynomial regression analyses did not include adolescent gender, age, or depression as control variables.

Polynomial Regression Analyses

Table 2 presents the results of the polynomial regression models predicting mothers' reports of their own psychological problems using adolescent and mother reports of family functioning. The results without the four gender terms are presented because in no case did the addition of the set of four terms significantly improve model fit. Two interaction terms of interest—adolescent reports × mother reports, and adolescent reports × mother reports squared, were significant for open communication. As shown in Fig. 1, the linear slope for mother reports of open communication is negative at low levels of adolescent-reported open communication, $B = -14.73$, $SE = 6.05$, $p = .015$, but flat at high levels of adolescent-reported open

Table 1 Descriptive statistics and bivariate correlations for family communication, satisfaction, and mother psychological symptoms

Variable	N	M (SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Open—M	118	40.28 (5.59)									
2. Open—A	118	37.01 (8.71)	.45***								
3. Problems—M	123	21.85 (6.45)	−.59***	−.25**							
4. Problems—A	123	27.67 (7.60)	−.30**	−.64***	.19*						
5. Satisfaction—M	125	26.11 (4.31)	.56***	.27**	−.25**	−.16					
6. Satisfaction—A	125	24.90 (5.63)	.22*	.47***	−.06	−.37***	.23**				
7. BSI Global	122	12.81 (16.88)	−.21*	−.13	.09	.20*	−.25**	−.19*			
8. Adol. Gender	128	56 % girls	.06	.08	−.03	−.12	.02	−.09	.02		
9. Adol. Age	128	15.98 (.70)	.01	.07	.02	−.12	−.04	.04	−.10	−.11	
10. Adol. Depression	121	34.07 (9.08)	.05	−.20*	.02	.15	−.02	−.41***	.07	.08	.06

M = mother-reported. A = adolescent-reported

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 2 Adolescent and mother reports of family functioning as predictors of the Global Severity Index (polynomial regression)

Parameter	Open communication			Communication problems			Family satisfaction		
	B	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Adolescent report	−.108	4.297	.980	1.184	2.008	.555	−5.475	2.790	.050
Mother report	4.694	6.445	.466	6.403	2.616	.014	−7.178	3.429	.036
Adolescent squared	−2.612	2.371	.271	−1.735	1.869	.353	4.782	3.413	.161
Mother squared	−2.159	5.703	.705	−1.425	2.742	.603	−4.937	6.344	.436
Adolescent × mother	8.955	4.341	.039	6.817	3.380	.044	12.794	5.760	.026
Adolescent cubed	−3.160	2.244	.159						
Mother × adolescent squared	−13.450	5.534	.015						
Adolescent × mother squared	17.139	9.241	.064						
Mother cubed	−4.871	7.618	.523						
Model R^2	.205	.068	.002	.087	.049	.080	.138	.059	.019
Parameter constraints	$X^2(4)$		*p*	X^2 (4)		*p*	X^2 (4)		*p*
Higher order terms removed	13.498		.0091	5.496		.2401	7.761		.1007

Adolescent and mother repots of open communication, communication problems, and family satisfaction were rescaled by dividing by 10 to resolve estimate problems resulting from very large variance estimates for higher order terms. Higher order terms were not retained for communication problems and family satisfaction because their removal did not adversely impact model fit

communication, $B = 1.642$, $SE = 6.34$, $p = .796$. Mothers reported the most psychological symptoms when adolescents and mothers agreed that communication was low. In addition, the interaction between adolescent and mother reports of communication problems predicted mothers' psychological problems. As shown in Fig. 2, the linear slope for mother reports of communication problems is positive at high levels of adolescent-reported communication problems, $B = 12.08$, $SE = 4.02$, $p = .003$, but not at low levels of adolescent-reported communication problems, $B = .73$, $SE = 3.66$, $p = .84$. Mothers reported the most psychological symptoms when adolescents and mothers agreed on high levels of communication problems. Finally, the interaction between adolescent and mother reports of family satisfaction predicted mothers' psychological problems as well. As shown in Fig. 3, the linear slope for mother reports of family satisfaction is negative at low levels of adolescent-reported satisfaction, $B = -15.80$, $SE = 5.27$, $p = .003$, but not at high levels of adolescent-reported satisfaction, $B = 1.45$, $SE = 5.08$, $p = .776$. Mothers reported the most psychological symptoms when adolescents and mothers agreed on low levels of family satisfaction.

Sensitivity Analyses

Three sets of analyses were conducted to assess the sensitivity and generalizability of the results. The first analysis

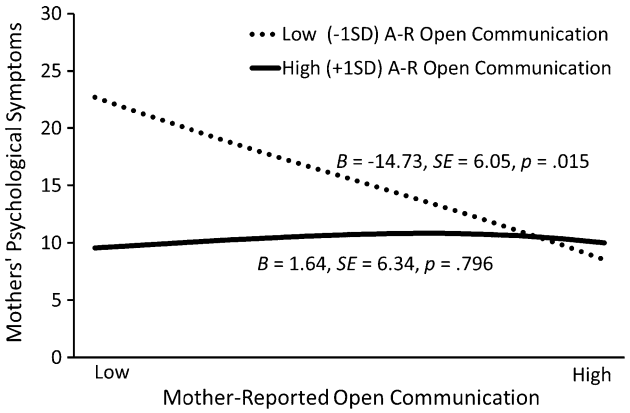

Fig. 1 Fitted regression model of mothers' reports of their own psychological symptoms regressed on mother-reported open communication at high and low levels of adolescent-reported open communication

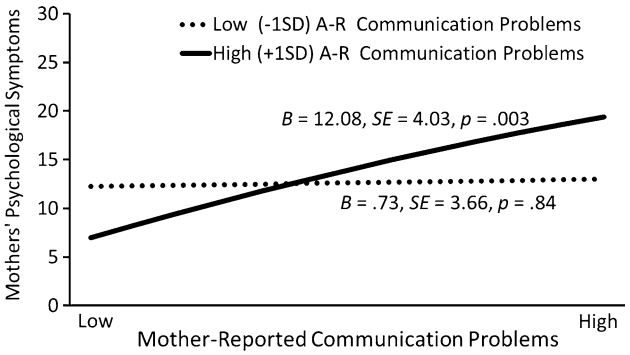

Fig. 2 Fitted regression model of mothers' reports of their own psychological symptoms (Global Severity Index) regressed on mother-reported communication problems at high and low levels of adolescent-reported communication problems

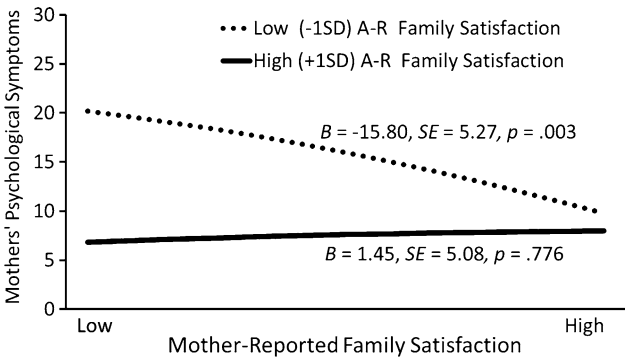

Fig. 3 Fitted regression model of mothers' reports of their own psychological symptoms (Global Severity Index) regressed on mother-reported family satisfaction at high and low levels of adolescent-reported family satisfaction

added gender to the model to test the three-way interaction between gender, adolescent-reports, and mother-reports as predictors of mothers' psychological symptoms. None of the three-way interactions including adolescent gender was statistically significant (i.e., all $ps > .05$). The second analysis added adolescent age to the model to test the three-way interaction between age, adolescent-reports, and mother reports as predictors of mothers' psychological symptoms. None of the three way interactions including adolescent age was statistically significant (i.e., all $ps > .05$). The third analysis tested adolescent and mother reports as predictors of five of the BSI dimensional scales (i.e., Depression, Anxiety, Hostility, Phobic Anxiety, and Interpersonal Sensitivity Symptoms). The interaction between adolescent and mother reports of open communication only predicted maternal depression symptoms. The pattern of the interaction was consistent with the global symptoms pattern shown in Fig. 1. Likewise, the interaction between adolescent and mother reports of communication problems only predicted maternal depression symptoms with the pattern of the interaction consistent with the global symptoms pattern shown in Fig. 2. The interaction between adolescent and mother reports of family satisfaction only predicted maternal anxiety symptoms. The pattern of the interaction was consistent with the global symptoms pattern shown in Fig. 3.

Discussion

Adolescents and their parents often perceive aspects of the family quite differently from one another (Ohannessian et al. 2000). These discrepant views comprise some of the most consistent observations in the social sciences (De Los Reyes et al. 2015), and these discrepancies manifest between adolescent and parent reports across vastly different cultures worldwide (Rescorla et al. 2013). Yet, it remains unclear whether these discrepant views increase risk for dysfunction and psychopathology. Scholars have just begun to examine whether differences (and more recently, similarities) in adolescents' and their parents' perceptions of the family are associated with adolescent adjustment. However, in this new wave of research, parents have been overlooked. Therefore, the purpose of this study was to extend the literature on discrepancies between adolescents' and parents' views of family functioning and their relation to parents' psychological adjustment. We observed three findings.

Consistent with research focusing on younger adolescents (Laird and De Los Reyes 2013; Ohannessian et al. 1995, 2000; Reynolds et al. 2011; Yu et al. 2006), adolescents in our study viewed the family more negatively in comparison to their mothers. More specifically, adolescents reported significantly less open communication than did mothers. In addition, adolescents reported significantly more communication problems in comparison to their

mothers. In addition, in keeping with prior work (Achenbach et al. 1997; De Los Reyes et al. 2015), we observed low-to-moderate levels of correspondence between adolescent and mother reports of family functioning. These findings are important because they suggest that differences in perceptions of the family between adolescents and their parents persist even after early adolescent developmental tasks (e.g., the development of autonomy) have become less salient. Discrepant adolescent-parent perceptions likely continue to play a role during middle adolescence as family relationships continue to be renegotiated. Indeed, the adolescent does not abruptly become a fully independent, mature individual. The development of autonomy and independence appears to be a gradual process involving continuous give and take between adolescents and their parents.

Importantly, consistent with our recent work (e.g., De Los Reyes et al. 2013c; Laird and De Los Reyes 2013), we found that convergence, not divergence, between adolescent and mother reports of family functioning predicted mothers' psychological problems. That is, *similarities* in adolescent-mother perceptions, not differences, were linked to mothers' psychological adjustment. More specifically, mothers' psychological symptomatology was highest when adolescents and mothers agreed that family functioning was poor (i.e., low levels of open communication, low levels of family satisfaction, and high levels of communication problems). These findings are in line with the idea that high convergence between adolescent and parent reports of either low levels of risk factors (e.g., inconsistent parenting practices) or high levels of protective factors may be a marker of consonance in understanding and expectations in parent–child dynamics (see also De Los Reyes et al. 2013b). If so, then convergent perceptions of either high levels of positive domains of functioning (open communication) or low levels on negative domains of functioning (communication problems) may provide a buffer against negative outcomes or portend positive psychosocial outcomes among parents, in line with research on psychosocial outcomes of adolescents (Laird and De Los Reyes 2013).

In addition to a focus on negative domains of family functioning, the findings from this study extend the extant research by showing that convergent adolescent-parent perceptions of family functioning are related to parental adjustment as well as adolescent adjustment (as observed by De Los Reyes et al. 2013c; Laird and De Los Reyes 2013). All of the research that has been conducted on adolescent-parent perceptions of the family and maladaptive outcomes to date has focused on the adolescent. Parent adjustment has been remarkably overlooked. However, family systems theory (Bowen 1991; Minuchin 2002), as well as relational developmental systems, and transactional perspectives (Beveridge and Berg 2007; Lerner 2006; Lerner et al. 2011), hold that parents play an active role in adolescent development and influence and are influenced by their relationships with their adolescent (Bowen 1991; Minuchin 2002). Indeed, results from this study show that parents are influenced by the degree to which their perceptions of the family correspond to their adolescents' perceptions.

Of note, our findings should be interpreted in light of the study's limitations. As with much of the work in the adolescent-parent discrepancies literature, parental data relied on mothers' reports. Although fathers were invited to participate in the larger project, we observed a relatively low response rate from fathers. Thus, we only included adolescent- and mother-report data in this study, and consequently we can only speculate as to the generalizability of our findings to discrepancies between adolescent and father reports. Nonetheless, prior meta-analytic work indicates that mother and father reports yield some of the largest levels of correspondence (i.e., *r*s in .50 s to .60 s) relative to other informant pairs (e.g., parent and teacher; teacher and child; Achenbach et al. 1987; De Los Reyes et al. 2015). Therefore, although mother and father reports are not redundant with each other, they correspond at large enough magnitude that there is a strong likelihood that our findings would generalize to understanding discrepant views between adolescents and fathers. Nonetheless, we encourage future research on these issues to include adolescent-father dyads as well. A related issue is that the study relied on self-report data. Of note, research has shown that individuals are accurate reporters of their own behaviors (Deković et al. 2006). However, it would be useful for future studies to replicate the study findings with research using other types of methodology. It also should be noted that the study design was cross-sectional. As such, the direction of the relations could not be addressed. Longitudinal research is needed to disentangle the direction of effect. Finally, the majority of participants were European-American and all of the families resided in the Mid-Atlantic United States. Therefore, the results may not generalize to families living outside of this area.

Conclusions

Recent work indicates that patterns of divergence and convergence between adolescent and parent reports of family functioning may be important tools for predicting adolescent psychological problems. Our findings extend this work to demonstrating that these same patterns of multi-informant reports have implications for predicting mothers' psychological problems. Taken together, observations from recent work focusing on adolescent outcomes

and the present study focusing on parent outcomes are in keeping with family systems theory (Bowen 1991; Minuchin 2002) and relational developmental systems and transactional perspectives (Beveridge and Berg 2007; Lerner 2006; Lerner et al. 2011), and emphasize that the amalgamation of adolescents' and parents' perceptions of the family environment may serve as an important marker for both adolescent and parent psychological functioning.

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Authors' Contributions CMO conceived the study, collected the data, managed the data, wrote the method section, and co-wrote the introduction and discussion sections; RL conducted the statistical analyses, wrote the results section, and prepared the tables and figures; AD co-wrote the introduction and the discussion sections. All of the authors read and approved the final manuscript.

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Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Human and Animal Rights Statement The study was approved by the appropriate institutional and/or national research ethics committee and has been conducted in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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References

Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin, 101*, 213–232.

Augenstein, T.M., Thomas, S.A., Ehrlich, K.B., Daruwala, S.E., Reyes, S.M., Chrabaszcz, J.S., & De Los Reyes, A. (2016). Comparing multi-informant assessment measures of parental monitoring and their links with adolescent delinquent behavior. *Parenting: Science and Practice*. doi:10.1080/15295192.2016.1158600.

Baltes, M. M., & Silverberg, S. B. (1994). The dynamics between dependency and autonomy: Illustrations across the life span. In D. L. Featherman, R. M. Lerner, & M. Perlmutter (Eds.), *Life-span development and behavior* (Vol. 12, pp. 41–90). Hillsdale, NJ: Lawrence Erlbaum Associates Inc.

Barnes, H., & Olson, D. H. (2003). *Parent-adolescent communication scale*. Minneapolis, MN: Life Innovations Inc.

Beveridge, R. M., & Berg, C. A. (2007). Adolescent-parent collaboration: An interpersonal model for understanding optimal interactions. *Clinical Child and Family Psychological Review, 10*, 25–52.

Blakemore, S. J. (2007). The social brain of a teenager. *The Psychologist. Special Issue: Nurturing the Next Generation, 20*(10), 600–602.

Blakemore, S. J. (2008). The social brain in adolescence. *Nature Reviews Neuroscience, 9*(4), 267–277.

Boulet, J., & Boss, M. W. (1991). Reliability and validity of the Brief Symptom Inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 3*, 433–437.

Bowen, M. (1991). Alcoholism as viewed through family systems theory and family psychopathology. *Family Dynamics of Addiction Quarterly, 1*(1), 94–102.

De Los Reyes, A. (2011). Introduction to the special section. More than measurement error: Discovering meaning behind informant discrepancies in clinical assessments of children and adolescents. *Journal of Clinical Child and Adolescent Psychology, 40*, 1–9.

De Los Reyes, A. (2013). Strategic objectives for improving understanding of informant discrepancies in developmental psychopathology research. *Development and Psychopathology, 25*, 669–682.

De Los Reyes, A., Augenstein, T. M., Wang, M., Thomas, S. A., Drabick, D. A. G., Burgers, D., & Rabinowitz, J. (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin, 141*, 858–900.

De Los Reyes, A., Ehrlich, K. B., Swan, A. J., Luo, T., Van Wie, M., & Pabón, S. C. (2013a). An experimental test of whether informants can report about child and family behavior based on settings of behavioral expression. *Journal of Child and Family Studies, 22*, 177–191.

De Los Reyes, A., Goodman, K. L., Kliewer, W., & Reid-Quiñones, K. (2010). The longitudinal consistency of mother–child reporting discrepancies of parental monitoring and their ability to predict child delinquent behaviors two years later. *Journal of Youth and Adolescence, 39*, 1417–1430.

De Los Reyes, A., & Kazdin, A. E. (2004). Measuring informant discrepancies in clinical child research. *Psychological Assessment, 16*, 330–334.

De Los Reyes, A., Lerner, M. D., Thomas, S. A., Daruwala, S. E., & Goepel, K. A. (2013b). Discrepancies between parent and adolescent beliefs about daily life topics and performance on an emotion recognition task. *Journal of Abnormal Child Psychology, 41*, 971–982.

De Los Reyes, A., Ohannessian, C. M., & Laird, R. D. (2016). Developmental changes in discrepancies between adolescents' and their mothers' views of family communication. *Journal of Child and Family Studies,*. doi:10.1007/s10826-015-0275-7.

De Los Reyes, A., Salas, S., Menzer, M. M., & Daruwala, S. E. (2013c). Criterion validity of interpreting scores from multi-informant statistical interactions as measures of informant discrepancies in psychological assessments of children and adolescents. *Psychological Assessment, 25*, 509–519.

De Los Reyes, A., Thomas, S. A., Goodman, K. L., & Kundey, S. M. A. (2013d). Principles underlying the use of multiple informants' reports. *Annual Review of Clinical Psychology, 9*, 123–149.

De Los Reyes, A., Thomas, S. A., Swan, A. J., Ehrlich, K. B., Reynolds, E. K., Suarez, L., et al. (2012). "It depends on what you mean by 'disagree'": Differences between parent and child perceptions of parent-child conflict. *Journal of Psychopathology and Behavioral Assessment, 34*, 293–307.

Deković, M., ten Have, M., Vollebergh, W. A., Pels, T., Oosterwegel, A., Wissink, I. B., & Ormel, J. (2006). The cross-cultural

equivalence of parental rearing measure: EMBU-C. *European Journal of Psychological Assessment, 22*(2), 85–91.

Derogatis, L. R. (1993). *BSI: Brief Symptom Inventory: Administration, scoring, and procedures manual*. Minneapolis: National Computer Systems.

Edwards, J. R. (1994). The study of congruence in organizational behavior research: Critique and a proposed alternative. *Organizational Behavior and Human Decision Processes*, *58*, 51–100. doi:10.1006/obhd.1994.1029.

Fung, J. J., & Lau, A. S. (2010). Factors associated with parent–child (dis)agreement on child behavior and parenting problems in Chinese immigrant families. *Journal of Clinical Child & Adolescent Psychology, 39*, 314–327.

Ganzach, Y. (1997). Misleading interaction and curvilinear terms. *Psychological Methods*, *2*, 235–247. doi:10.1037/1082-989X.2.3.235.

Goodman, K. L., De Los Reyes, A., & Bradshaw, C. P. (2010). Understanding and using informants' reporting discrepancies of youth victimization: A conceptual model and recommendations for research. *Clinical Child and Family Psychology Review, 13*, 366–383.

Gore, S., Aseltine, R. H., & Colten, M. E. (1993). Gender, socialrelational involvement, and depression. *Journal of Research on Adolescence, 3*, 101–125.

Holmbeck, G. N., & O'Donnell, K. (1991). Discrepancies between perceptions of decision making and behavioral autonomy. *New Directions for Child Development, 51*, 51–69.

Juang, L. P., Syed, M., & Takagi, M. (2007). Intergenerational discrepancies of parental control among Chinese American families: Links to family conflict and adolescent depressive symptoms. *Journal of Adolescence, 30*, 965–975.

Laird, R. D., & De Los Reyes, A. (2013). Testing informant discrepancies as predictors of adolescent psychopathology: Why difference scores cannot tell you what you want to know and how polynomial regression may. *Journal of Abnormal Child Psychology, 41*, 1–14.

Laird, R. D., & LaFleur, L. K. (2015). Disclosure and monitoring as predictors of mother–adolescent agreement in reports of early adolescent rule-breaking behavior. *Journal of Clinical Child and Adolescent Psychology,*. doi:10.1080/15374416.2014.963856.

Lerner, R. M. (2006). Developmental science, developmental systems, and contemporary theories of human development. In R. M. Lerner & W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology, vol. 1. Theoretical models of human development* (6th ed., pp. 1–17). Hoboken, NJ: Wiley.

Lerner, R. M., Lerner, J. V., Lewin-Bizan, S., Bowers, E. P., Boyd, M. J., Mueller, M. K., et al. (2011). Positive Youth Development: Processes, programs, and problematics. *Journal of Youth Development, 6*(3), 40–64.

Long, J. D., Harring, J. R., Brekke, J. S., Test, M. A., & Greenberg, J. (2007). Longitudinal construct validity of Brief Symptom Inventory subscales in schizophrenia. *Psychological Assessment, 19*(3), 298–308.

Miller, V. A., & Drotar, D. (2003). Discrepancies between mother and adolescent perceptions of diabetes-related conflict and adherence to treatment. *Journal of Pediatric Psychology, 28*(4), 265–274.

Minuchin, P. (2002). Looking toward the horizon: Present and future in the study of family systems. In J. P. McHale & W. S. Grolnick (Eds.), *Retrospect and prospect in the psychological study of families* (pp. 259–278). Mahway, NJ: Lawrence Erlbaum Associates Publishers.

Montemayor, R. (1983). Parents and adolescents in conflict: All families some of the time and some families most of the time. *Journal of Early Adolescence, 3*, 83–103.

Montemayor, R., & Flannery, D. J. (1990). Making the transition from childhood to early adolescence. In R. Montemayor, G. R. Adams, & T. P. Gullotta (Eds.), *From childhood to adolescence: A transitional period?* (pp. 291–301). Thousand Oaks, CA, US: Sage Publications.

Ohannessian, C. M. (2012). Discrepancies in adolescents' and their mothers' perceptions of the family and adolescent externalizing problems. *Family Science, 3*, 135–140.

Ohannessian, C. M., & De Los Reyes, A. (2014). Discrepancies in adolescents' and their mothers' perceptions of the family and adolescent anxiety symptomatology. *Parenting: Science and Practice, 18*, 1–14.

Ohannessian, C. M., Lerner, R. M., Lerner, J. V., & von Eye, A. (1995). Discrepancies in adolescents' and parents' perceptions of family functioning and adolescent emotional adjustment. *Journal of Early Adolescence, 15*(4), 490–516.

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

Olson, D. (2011). FACES IV and the circumplex model: Validation study. *Journal of Marital and Family Therapy*, *37*, 64–80.

Olson, D. H., & Wilson, M. (1989). Family satisfaction. In D. H. Olson & H. I. McCubbin (Eds.), *Family inventories*. St. Paul: Family Social Science, University of Minnesota.

Rescorla, L. A., Ginzburg, S., Achenbach, T. M., Ivanova, M. Y., Almqvist, F., Begovac, I., & Verhulst, F. C. (2013). Cross-informant agreement between parent-reported and adolescent self-reported problems in 25 societies. *Journal of Clinical Child & Adolescent Psychology, 42*, 262–273.

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

Shek, D. T. (2002). Chinese adolescents' perceptions of family functioning: Personal, school-related, and family correlates. *Genetic, Social, and General Psychology Monographs, 128*(4), 358–380.

Shek, D. T. L. (2007). A longitudinal study of perceived differences in parental control and parent-child relational qualities in Chinese adolescents in Hong Kong. *Journal of Adolescent Research, 22*(2), 156–188.

Smetana, J. G., Campione-Barr, N., & Metzger, A. (2006). Adolescent development in interpersonal and societal contexts. *Annual Review of Psychology, 57*, 255–284.

Smetana, J. G., Villalobos, M., Tasopoulos-Chan, M., Gettman, D. C., & Campione-Barr, N. (2009). Early and middle adolescents' disclosure to parents about activities in different domains. *Journal of Adolescence, 32*(3), 693–713.

Soenens, B., Vansteenkiste, M., Lense, W., Luyckx, K., Goossens, L., Byers, W., et al. (2007). Conceptualizing parental autonomy support: Adolescent perceptions of promotion of independence versus promotion of volitional functioning. *Developmental Psychology, 43*, 633–646.

Spear, L. P. (2000). The adolescent brain and age-related behavioral manifestations. *Neuroscience and Behavioral Reviews, 24*, 417–463.

Steinberg, L. (1990). Autonomy, conflict and harmony in the family relationship. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 255–276). Cambridge, MA: Harvard University Press.

Steinberg, L. (1991). Adolescent-parent relations. In R. M. Lerner, A. C. Petersen, & J. Brooks-Gunn (Eds.), *Encyclopedia of adolescence* (pp. 724–728). New York: Garland.

Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology, 52*, 83–110.

U.S. Census Bureau. (2008). *U.S. Census Bureau: State and county QuickFacts*. http://quickfacts.census.gov/qfd/states/10/10003.html.

Yu, S., Clemens, R., Yang, H., Li, X., & Stanton, B. (2006). Youth and parental perceptions of parental monitoring and adolescent-parent communication, youth depression, and youth risk behaviors. *Social Behavior and Personality, 34*, 1297–1310.

Christine McCauley Ohannessian is an Associate Professor of Pediatrics and Psychiatry at the University of Connecticut School of Medicine. She also is the Director of the Children's Center for Community Research at the Connecticut Children's Medical Center.

Robert Laird is a Professor in the Department of Psychology at the University of New Orleans. He also is the Director of the Applied Developmental Psychology program.

Andres De Los Reyes is an Associate Professor in the Department of Psychology at the University of Maryland at College Park. He also is the Director of the Comprehensive Assessment and Intervention Program and Editor-Elect of the Journal of Clinical Child and Adolescent Psychology.