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All anxiety is not created equal: Correlates of parent/youth agreement vary across subtypes of anxiety

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Abstract

Research has examined patterns and correlates of parent/youth informant discrepancies in the reporting of youth anxiety. However, little work has examined whether it is better to conceptualize patterns and correlates of informant disagreement across anxiety broadly, or more useful to consider disagreement on specific symptom clusters. Using data from the Child Adolescent/Anxiety Multimodal Study (CAMS; $N = 488$; Walkup et al., 2008), the current study applied the most recent recommended analytic strategies to study informant discrepancies and examined differences in the magnitude and patterns of disagreement for: (a) broadband anxiety symptoms, versus (b) symptoms of specific anxiety diagnoses (or anxiety subtypes; e.g., separation, social anxiety). Correlates of informant discrepancies were also examined. Results indicated that there was variability in agreement across anxiety subtypes, with parent/youth agreement higher on separation anxiety and school refusal symptoms relative to other domains. Parental psychopathology was associated with disagreement on broadband anxiety symptoms, such that parental psychopathology was highest when parents reported higher symptoms than their children; however, this finding was largely driven by a relationship between parental psychopathology and disagreement on separation anxiety symptoms. Age was associated with disagreement on total and separation anxiety symptoms. Gender was not associated with disagreement. Clinical implications are discussed.

Keywords

informant agreement; anxiety disorders; youth psychopathology; youth assessment

An important challenge in the assessment and treatment of anxious youth is the consistent finding that multiple informants (e.g., parents, children, teachers) often report discrepant information about a child's symptoms and level of functioning (Achenbach, McConaughy,

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& Howell, 1987; De Los Reyes, Thomas, Goodman, & Kundey, 2013). Understanding contributors to cross-informant disagreement on anxiety symptoms is critical to accurate assessment of youth in need of mental health services, and has important implications for synthesizing information gathered in the context of multi-informant assessment, and evaluating the outcomes of clinical research trials (De Los Reyes & Kazdin, 2006a). Despite recognition that meaningful information may be associated with the extent of disagreement between parents and youth (Achenbach, 2011, De Los Reyes, 2011), interpretation of these discrepancies remains difficult (Smith, 2007). Little is known about whether clinical information can be drawn when a parent/youth dyad presents for treatment with high agreement on presenting concerns versus dyads who disagree. To the extent that consistent correlates of parent/youth agreement can be found, such findings could guide interpretation of assessment data when parents and youth present for treatment in high disagreement about the presence of symptoms.

One theoretical model of informant discrepancies, the Attribution Bias Context (ABC) Model (De Los Reyes & Kazdin, 2005), posits that these discrepancies arise due to each informant's unique perspective of the youth and the attributions they each make about the youth's behaviors. One factor that may contribute to these differing perspectives is the nature of the symptom being observed. For example, agreement has been found to be higher for more observable externalizing problems than for less observable internalizing problems (Achenbach et al, 1987). Given that different anxiety subtypes may also vary in the degree to which their symptoms are observable (e.g., separation versus generalized anxiety; Comer & Kendall, 2004), differences in agreement across subtypes of anxiety might also be expected. However, the majority of empirical studies of correlates of informant agreement in anxiety have focused on parent/youth agreement on broad measures of anxiety, which is in line with the conceptualization of anxiety as a unitary construct. While high comorbidity among anxiety disorders (Costello, Egger, Copeland, & Erkanli, & Angold, 2011) raises the question of whether anxiety is best conceptualized in this way (Richter, 2014), current nosological systems conceptualize anxiety into separate diagnoses (American Psychiatric Association, 2013) and studies have reported differentiation across these disorders in regards to prevalence, correlates, predictors, and course (Costello et al., 2011). However, little work has addressed whether it is better to conceptualize patterns and correlates of disagreement across anxiety broadly, or more useful to consider disagreement on symptoms of separate diagnoses, or subtypes.

One might expect varying agreement across subtypes, as anxiety disorders differ in the observability of symptoms (e.g., avoidance versus worry), the amount of self-awareness required to report symptoms (e.g., stomachaches versus anxiety about separating from parent), their relation to parental psychopathology (e.g., high levels of parental accommodation in separation anxiety; Lebowitz et al., 2013), and developmental factors (e.g., common onset of social anxiety in adolescence versus separation anxiety prevalence among younger youth; Costello, Egger, & Angold., 2005; Kessler et al., 2005). Although few studies have directly assessed this, there is preliminary evidence that patterns of agreement differ by anxiety diagnosis. That said, findings are mixed regarding which anxiety subtypes are associated with better or worse agreement. Some studies have found poorest agreement on generalized anxiety symptoms relative to other anxiety diagnoses symptoms

(Brown-Jacobson, Wallace, & Whiteside, 2011; Weems, Feaster, Horigian, & Robbins, 2011), whereas other work has suggested higher agreement on generalized anxiety symptoms and poorer agreement for separation anxiety and phobias (Edelbrock, Costello, Dulcan, Conover, & Kala, 1986; Stevanovic, Jancic, Topalovic, & Tadic, 2012). Previous studies differed in sample compositions (e.g., referred; [Brown Jacobson et al., 2011; Weems et al., 2011; Edelbrock et al., 1986] versus non-referred [Stevanonic et al., 2012]), participants' ages (adolescent; [Weems et al., 2011], versus school age/adolescent [Brown-Jacobson et al., 2011; Edelbrock et al., 1976, Stevanovic et al., 2012]), and anxiety as presenting concern (Brown-Jaconsbon et al., 2011) versus not presenting concern (Edelbrock et al., 1986; Stevanonic et al., 2012; Weems et al., 2011). These factors likely contribute to the variability of findings.

Additionally, previous studies examining agreement across anxiety subtypes largely studied diagnostic agreement. Little is known about how agreement may vary across anxiety subtypes on a dimensional level. Agreement on dimensional symptom measurement is of particular interest. There is an increasing move toward conceptualizing anxiety disorders as dimensional, rather than categorical, constructs (Brown & Barlow, 2005; Cuthbert, 2014). Use of dimensional measures is also in line with recommended practice for studying informant agreement (Achenbach, 2011). While checklists and diagnostic interviews can both provide options for continuous measurement of psychopathology (Boyle et al., 1997), checklists are of particular interest as they may be more easily transportable into clinical practice than are diagnostic interviews, and are used more often than diagnostic interviews in clinical practice (Jensen-Doss & Hawley, 2010).

Even less work has specifically examined whether youth and parent characteristics are differentially associated with informant agreement for subtypes of anxiety. According to the ABC Model, characteristics of informants, such as youth age or parental psychopathology, can contribute to discrepancies across informants, and these relationships may be moderated by problem type (De Los Reyes & Kazdin, 2005). In keeping with this notion, differential predictors for discrepancies on externalizing versus internalizing symptoms have been found (e.g., Kolko & Kazdin, 1993; Salbach-Andrae, Klinkowski, Lenz, & Lehmkuhl, 2009; Seiffge-Krenke & Kollmar, 1998; Treutler & Epkins, 2003), with male gender, the presence of comorbidity, and family stress related to greater discrepancies on externalizing but not internalizing symptoms, and higher parental psychopathology related to greater internalizing but not externalizing disagreement. This supports the idea that examining informant discrepancies for *specific types* of symptoms is useful. The goal of the present study was to examine patterns and correlates of informant discrepancies for anxiety symptoms, and examine whether discrepancies on *subtypes* of anxiety symptoms can provide better understanding of these correlates than discrepancies on more global anxiety symptoms.

Demographic factors such as youth age and gender have been frequently examined as correlates of informant agreement about anxiety, with mixed findings. Studies typically suggest lower agreement at younger ages for treatment-seeking anxious youth (Berg-Nielsen, Vika, & Dahl, 2003; Dirks et al 2013; Choudhury, Pimental, & Kendall, 2003; Grills & Ollendick, 2003), perhaps because youth require the developmental capacity and self-awareness to recognize and articulate fears and worries. However, some work indicates

lower agreement at older ages (Niditch & Varela, 2011), perhaps because adolescents may be less likely to discuss their anxieties with their parents than younger children. To further confuse the picture, recent meta-analytic data for informant agreement suggests no relation between parent-youth agreement and age on internalizing symptoms (De Los Reyes et al., 2015), although whether this null effect is obscured by differences in relationships between age and agreement across internalizing symptom subtypes is not known. Considering agreement at a more specific level may clarify these inconsistencies. For example, we may see poorer agreement on separation anxiety symptoms for younger youth, when parents may be most likely to initiate treatment and parental anxiety may play a strong role in treatment-seeking. In contrast, for social anxiety, we might expect higher disagreement at older ages, as adolescents keep some feelings to themselves and peer relationships occur increasingly outside of parents' view.

For gender, females are theorized to show higher agreement with their parents due to differences in socialization and general acceptability of discussing feelings (Grills & Ollendick, 2002), although empirical support for this has been mixed, with some studies suggesting higher agreement for females, (Choudhury et al., 2003) and others finding no gender differences in agreement (Carlston & Ogles, 2009; Pereira et al., 2014). To our knowledge, only one study examined gender's relationship to discrepancies on anxiety subtypes, with treatment-seeking anxious females less likely to agree with their parents than males on generalized anxiety symptoms, with no gender differences for other diagnoses (Brown-Jacobson et al., 2011). More research is needed to determine whether and/or how gender is associated with parent/youth agreement for anxiety symptoms subtypes.

There is support for the idea that higher parental psychopathology is related to greater disagreement on anxiety symptoms among youth with anxiety disorders, with parents reporting more symptoms than youth (De Los Reyes et al., 2011; Berg-Nielsen et al., 2003; Muller, Achtergarde, & Furniss, 2011). One proposed mechanism for this is a reporting bias wherein parents misattribute their own anxiety symptoms to their child. Alternatively, parents may be more accurate reporters than their children, having more awareness into these symptoms due to experiencing the same symptoms themselves (Grills & Ollendick, 2002). No studies have examined whether parental psychopathology predicts discrepancies by anxiety subtypes. One might expect parental psychopathology to be a particularly salient predictor of discrepancies for separation anxiety symptoms relative to other anxiety subtypes, due to an increased role of psychopathology in youth symptom maintenance. Higher parental anxiety is associated with greater accommodation of youth anxiety (Jones, Lebowitz, Marin, & Stark, 2015), perhaps in part due to parental distress at witnessing youth anxiety. Separation anxiety is associated with the highest levels of parental accommodation (Lebowitz et al., 2013). As a result of this high accomodation, youth with separation anxiety may have less opportunity to fully experience their symptoms of anxiety. Therefore, they may self-report particularly lower levels of separation anxiety symptoms when parent anxiety symptoms are high, leading to greater discrepancy.

In sum, while there have been numerous studies of parent/youth agreement at a broad level of youth symptomatology, there has been little work examining agreement at a more specific level. Such information could provide clarification for inconsistencies in the literature, as

well as inform us about how discrepant information is best interpreted. Furthermore, the study of correlates of informant agreement has been hampered by the use of diverse statistical methodologies, which can result in different conclusions (De Los Reyes & Kazdin, 2004). There is a need for additional research to support previous findings in the literature, using the most recent recommendations for the study of informant agreement (i.e., polynomial regression coefficients; Laird & De Los Reyes, 2013). This study addressed these limitations by examining magnitude of parent/youth agreement across subtypes of anxiety, and correlates of agreement using a treatment seeking sample of youth with anxiety disorders. Correlates of agreement were selected based on those most commonly examined in the literature and included youth age, gender, and parental psychopathology (global psychopathology, parental depression, and parental anxiety). We expected that the magnitude of agreement between parents and youth would vary across anxiety subtypes. We expected higher disagreement on symptoms when parental psychopathology was higher, and that this would be particularly salient for separation anxiety symptoms. Due to previous mixed findings in the literature, the effects of youth age and gender were considered exploratory correlates.

Method

Participants

Data were drawn from the 488 parent/youth dyads who participated in the Child/Adolescent Anxiety Multimodal Study (CAMS; Walkup et al., 2008; Ginsburg et al., 2011). CAMS was a multi-site NIMH-funded study of the relative efficacy of cognitive-behavioral therapy (CBT), sertraline, and their combination in comparison to pill placebo. The CAMS sample has been detailed extensively (Compton et al., 2010; Kendall et al., 2010) and is the largest clinical trial of pediatric anxiety to date. Youth participants were between the ages of 7 and 17 (M =10.7, SD = 2.8) and 49.6% female. Most participants were Caucasian (n = 385, 78.9%), with a small percentage of African Americans (n = 44, 9.0%) and Asians (n = 12, 2.5%); 12.1% (n = 59) of youth identified as Hispanic or Latino. Parent participants were those who accompanied their children to the study assessments, participated in the diagnostic interviews, and completed questionnaires. The majority of parents who reported on youth symptoms were mothers (n = 428, 88.1%).

Measures

Parent and youth report of anxiety symptoms—Discrepancies were examined using the parallel child and parent forms of the Screen for Child Anxiety Related Disorders (SCARED; Birmaher et al., 1997; 1999), a well-validated, commonly used measure of anxiety. Parents and children are asked to rate 41 items (e.g., I am nervous) about the child based on the past two weeks using a 3 point Likert scale (not true or hardly ever true, sometimes true, often true). The SCARED yields a Total Anxiety scale, as well as five subscales: generalized anxiety, social phobia, separation anxiety, panic disorder, and school anxiety. Prior reports of parent-child correlations on this measure are low, consistent with the broader literature on informant discrepancies (r = .33 for total score), with low to moderate agreement on SCARED subscales (range of agreement: r = .20 [social phobia] through .47 [separation anxiety and school phobia]; Birmaher et al., 1999). The SCARED has exhibited

excellent psychometric properties in several samples with diverse populations (Birmaher et al., 1999; Hale, Raaijmakers, Muris, & Meeus, 2005). SCARED scores in this sample also showed acceptable internal consistencies (Cronbach's αs = .93 and .90, for children and parents, respectively; all αs for subscales were acceptable (>.80, except for School Phobia, which was equal to .76 and .79 for children and parents, respectively). Recent work established measurement equivalence between parents and youth on the SCARED, indicating that differences between informants are not due to interpretations of scale items, supporting its use for the study of informant agreement and comparing scores across raters (Dirks et al., 2013).

Parental Psychopathology—The Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) assessed parental psychopathology. The BSI is a commonly used measure of psychopathology, and provides a range of subscales assessing domains of psychopathology, as well as a Global Severity Index (GSI). Items are rated on a 5-point Likert scale (0= *not at all*, 4 = *extremely*). For the current study, the GSI, Anxiety, and Depression, scales were used. These scales showed good reliability in this sample (Cronbach's alpha = .95, .81, and .85 for the GSI, Anxiety, and Depression scores, respectively; BSI GSI M = .48, SD = .42; BSI Anxiety M = 3.39, SD = 3.71; BSI Depression M = 2.62, SD = 3.45)

Anaysis Plan

Parent/youth agreement was indexed through Pearson correlation between parent and youth report of the SCARED on the Total Anxiety and SCARED subscale scores. Fisher's r to z transformation examined differences in correlation magnitude between subscales. A polynomial regression coefficients approach examined correlates of discrepancies. In this approach, an interaction term between parent and youth report of anxiety symptoms tests whether different patterns of informant discrepancies correlate with variables of interest (e.g., parental psychopathology, youth age), using the following equation: Y(Correlate of Interest) = b_o + b_1(Parent SCARED)+ b_2 (Parent SCARED^2) + b_3 (Youth SCARED) + b_4 (Youth SCARED^2) + b_5 (Parent by Youth SCARED) + error. The correlate of interest serves as the dependent variable in the analytic equation. Significant interactions can be probed to understand reporting patterns, such as differences between discrepant dyads in which parents report many symptoms and the youth reports few symptoms on the SCARED or vice versa ("parent high/youth low" and "parent low/youth high", respectively) versus dyads in agreement, where parents and youth either both report many or both report few symptoms ("parent high/youth high" and "parent low/youth low", respectively). This approach controls for the main effects of parent and youth scores on examined correlates, isolating the effect of the discrepancy from the individual informant effects on examined variables (c.f., Laird & De Los Reyes, 2013). Quadratic effects for each informant are also included in the model. To avoid underestimating the complexities of the relationships between informant scores and correlates of interest, Laird & De Los Reyes (2013) also recommended testing higher order interaction terms (parent report squared by youth report, youth report squared by parent report) as well as cubic effects. Because increasing the complexity of the model may limit power, the higher order terms were retained only when they were significant; otherwise, the first order model was interpreted. Analyses were run separately for SCARED Total and each

SCARED subscale to examine differential predictors by anxiety subtype. Parent and youth scores were centered for all analyses. Multiple regression was performed for all variables, except gender, for which multiple logistic regression was used.

Although probing interactions using simple slopes is preferred (Preacher, Curran, & Bauer, 2006), it is difficult to interpret them conceptually in this study, where the dependent variable is the correlate of interest, and the choice of whether parent or youth SCARED scores serves as the moderator is arbitrary. Thus, model-predicted means at one standard deviation above and below the mean for parent and youth report are presented for the following four discrepancy patterns: Parent High/Youth High (parents and children agreed that symptoms were high), Parent High/Youth Low (parents and youth disagreed, with parents reporting high symptoms and youth reporting low symptoms), Parent Low/Youth Low (parents and children agreed that symptoms were low), and Parent Low/Youth High (parents and children disagreed, with parents reporting low symptoms and youth reporting high symptoms). Simple slopes analyses determined which discrepancy groups significantly differed from one another; these results are available upon request from the first author.

Missing Data—There was little missing data from the CAMS baseline assessments. However, consistent with prior analyses of the CAMS dataset (Walkup et al., 2008; Ginsburg et al., 2011), multiple imputation, using 20 imputed datasets, handled missingness. The imputation model included baseline demographic (e.g., age, gender, SES) and clinical variables (e.g., baseline severity scores), as well as treatment outcome variables. Interaction terms were computed separately for each of the 20 datasets, and then analyzed using SPSS.

Results

Magnitude and Patterns of Agreement

Consistent with prior studies, correlations between parent and youth scores on the Total Anxiety score and all examined subscales were low to moderate (rs ranged from.40 - .56, ps < .01). Fisher's r to z transformations indicated that agreement on the separation subscale (r = .50) was higher than for the GAD subscale (r = .40; z = 1.96, p < .05), and agreement on school phobia (r = .56) was higher than agreement on the total anxiety, GAD, social, and panic scales (all zs > 1.96, ps < .05). On average, parents reported more symptoms than did youth for total anxiety and all subscales (all ps < .001) except for the panic subscale, where there was no difference in mean symptom score (see Table 1).

Correlates of Discrepancies

Age—A significant quadratic interaction term was found for total anxiety symptoms (parent squared by youth report, Table 2). Probing indicated that the discrepancy of low youth-reported symptoms and high parent symptoms was associated with the youngest age (Parent High/Youth Low Age M = 9.40) relative to the other three groups (Parent High/Youth High Age M = 11.29, Parent Low/Youth Low Age M = 10.67, Parent Low/Youth High Age M = 10.66). A quadratic interaction was also found for separation anxiety symptoms, with concordance of low youth- and parent-reported symptoms associated with the oldest age (Parent Low/Youth Low Age M = 12.44), relative to the other groups (Parent High/Youth

Low Age M = 9.31 Parent High/Youth High Age M = 9.54, Parent Low/Youth High Age M = 9.99). The effect size was small (R^2 associated with discrepancy = .02 and .01 for total and separation symptoms, respectively). No interactions were found for the GAD, social, panic, or school phobia subscales.

Gender—A significant quadratic interaction term was found for gender (youth squared by parent report, p = .04) on total anxiety symptoms. However, probing this interaction showed non-significant effects for the youth quadratic term at high and low levels of parent report. Thus, the linear interaction model was retained, where gender did not relate to disagreement. Gender did not relate to disagreement for any subscale scores.

Parental Psychopathology—A significant linear interaction term was found for parental global psychopathology and total anxiety scores. Probing via simple slopes indicated parental psychopathology was highest for the Parent High/Youth Low group (BSI GSI M = .60), and lowest for the Parent Low/Youth Low group (BSI GSI M = .37) relative to the other two groups (Parent High/Youth High BSI GSI M = .52, Parent Low/Youth High BSI GSI M = .51), suggesting higher parental psychopathology was associated with parents reporting more total symptoms than their children. For separation anxiety symptoms, parental global psychopathology and parental anxiety showed significant interactions, with similar patterns to total anxiety scores. Highest psychopathology was seen in the Parent High/Youth Low group (BSI GSI M = .59, BSI Anxiety M = 4.21) and lowest psychopathology in the Parent Low/Youth Low group (BSI GSI M = .38, BSI Anxiety M = 2.53), relative to the other groups (Parent High/Youth High BSI GSI M = .50, BSI Anxiety M = 3.79; Parent Low/Youth High BSI GSI M = .52, BSI Anxiety M = 3.91), suggesting higher global parental psychopatholoy and parental anxiety was associated with parents reporting more separation anxiety symptoms than their children. Effect sizes were generally small, and disagreement explained approximately 1% of BSI GSI and BSI Anxiety scores. No significant interactions were found for the GAD, social anxiety, panic, or school phobia subscales.

Post-hoc analyses examined whether relations between parental psychopathology and age with total anxiety scores were driven by the effects for separation anxiety score. Analyses for total anxiety scores were re-run substracting out separation anxiety symptoms, creating a revised total anxiety score. Without the inclusion of separation anxiety symptoms, the relationship between parent/child disagreement on total anxiety symptoms and parental psychopathology was no longer significant. However, the quadratic interaction for youth age remained significant.

Although not the central focus of the analyses, there were several main effects of youth and parent report. Main effects were interpreted in the absence of a significant interaction term to determine variables that influence parent and youth symptom reporting (see Table 2). Main effects for youth report indicated that higher youth symptom report, controlling for parent symptom report, was associated with older youth age and female gender for total and most subscale scores, with the exception of age with panic and symptoms and gender with social and school anxiety symptoms. Main effects for parent report indicated that higher parent-reported symptoms were, in general, associated with higher parental global psychopathology and parental anxiety, with the exception of global psychpathology with social anxiety and

parental anxiety with school anxiety. Higher parent reported symptoms were not associated with parental depression on any scale.

Discussion

The findings from the current study indicated that the magnitude of agreement between parents and youth differed by anxiety subtype, with the highest agreement for school and separation anxiety (arguably more observable symptom domains) and lowest agreement on generalized anxiety and social phobia. These findings are consistent with research suggesting higher agreement on more observable symptoms (e.g., Comer & Kendall, 2004), as well as with the ABC model, as symptoms of separation anxiety and school refusal are more overt than those of generalized or social anxiety. Given these differences, findings provide support for the idea that there is utility to looking at informant agreement for anxiety symptoms at a more specific level than the traditional broadband symptom approach.

Results also indicated that correlates of discrepancy patterns differed depending on the anxiety domain examined. For instance, although parental psychopathology related to greater disagreement on total anxiety symptoms, examination of the subscales indicated that this relationship held true only for separation anxiety symptoms. Furthermore, post-hoc analyses suggested that relations between parental psychopathology and total anxiety scores were likely driven by the separation symptoms contained within the total anxiety score. This finding may explain inconsistencies found in previous work that conceptualized anxiety as a unitary construct, and is consistent with our hypothesis that parental psychopathology, particularly parental anxiety, would play more of a role in agreement on separation anxiety symptoms relative to other anxiety disorder symptoms. Whether this is due to over-reporting by the parent and accurate youth reporting of fewer problems, or lack of awareness on the part of the youth due to parental over -control and accommodation is unknown. However, findings suggest that clinicians working with youth presenting with separation symptoms may benefit from directly assessing parental psychopathology to inform treatment planning when a parent high/child low reporting pattern is observed.

With respect to age and discrepancies, disagreement with parents reporting high and youth reporting low symptoms on total anxiety symptoms was associated with youngest child age. This is consistent with the majority of prior studies examining agreement on anxiety symptoms and the idea that younger youth may have more a poor capacity to recognize and articulate fears and worries. For separation anxiety, parents and youth were more likely to agree on the absence of symptoms when youth were older; this is likely due to low incidence of separation anxiety symptoms among older youth. Of note, while ages of CAMS participants ranged from 7-17, fewer were adolescent age (n = 126, 25.8%) than school-aged children (n = 362; 74.1%). It is possible this hindered an ability to detect relationships between age and disagreement for other subtypes of anxiety (e.g., social anxiety symptoms) in this sample. However, findings underscore the importance of testing complex, higher-order models when examining informant agreement patterns. Testing linear interactions only may lead to incorrect conclusions of the absence of an effect between correlates of interest and discrepancies.

However, in contrast to prior studies of anxiety symptoms agreement, although consistent with most recent meta-analytic findings (De Los Reyes et al., 2015), findings offered little support for the idea that gender related to agreement patterns. However, there were a number of main effects for informant report for all three examined variables across anxiety subtypes, with older age and female gender generally associated with higher youth-reported anxiety symptoms.

The presence of significant main effects for informant and the relatively few for patterns of disagreement suggest that, consistent with Laird and De Los Reyes (2013), previous work with difference scores finding associations between youth age, gender, and parental psychopathology, may have been artificially impacted by relationships between those variables and one informant's report. For example, youth gender has been inconsistently associated with parent/youth agreement in previous work, with some studies finding higher agreement for females. For most subscales, female gender was often associated with higher symptom report of their own symptoms, while parent report of youth symptoms was not related to gender. As parents of treatment-seeking youth tend to report more symptoms than their children (e.g., Carlston & Ogles, 2009, Berg-Nielsen, et al., 2003; De Los Reyes et al., 2011), and females reported more symptoms, higher agreement for females is likely to be observed. Thus, while these variables are certainly associated with individual informants' reporting, they may not always be associated with informant patterns that are clinically meaningful and interpretable.

Importantly, findings highlight advantages to understanding inter-rater disagreement at a more specific level than the typical broadband internalizing versus externalizing categories that are often employed. Future work should examing whether these advantages generalize to examining correlates of agreement of externalizing symptoms. This could be done by examining whether correlates of agreement differ by externalizing disoder (e.g., ADHD, ODD) or externalizing dimension (e.g., rule breaking behavior, aggression).

Results should be interpreted within the context of study limitations. All youth in this study were presenting voluntarily for a trial evaluating the treatment of anxiety disorders, which may impact how parents and youth report on symptoms. Specifically, a problem is likely to have already been identified by at least one informant at a threshold high enough to seek treatment. The results provide guidance for understanding informant agreement among treatment-seeking youth, but the findings do not generalize to a non-treatment seeking sample. This study did not identify any correlates of discrepancies for generalized, social, panic, or school anxiety symptoms, and effect sizes for identified correlates were small. Future work should include other potential correlates identified in the literature such as family functioning (Kolko & Kazdin, 1993), anxiety severity, and informant social desirability (De Los Reyes et al., 2015).

Findings offer several implications for clinical assessment. With greater attention being paid to tailoring treatments to specific problems and including evidence-based assessments in routine care (e.g., Lambert & Shimokawa, 2011; Jensen-Doss, 2011), knowledge of how to optimally apply information gathered from multi-informant assessment requires knowledge of how to most effectively integrate information from different informants. Our findings

suggest that clinicians can expect higher agreement for presenting concerns of separation anxiety and school anxiety relative to other anxiety disorders in youth. It may be particularly helpful for clinicians who suspect a child may have generalized or social anxiety concerns to elicit behavioral examples whenever possible to inform case conceptualization. In addition, parental psychopathology, particularly parental anxiety, is likely to be an important factor impacting parental report of youth symptoms for separation anxiety symptoms. As noted above, including a screen for parental psychopathology may be indicated in instances where parents report many more symptoms than youth, particularly for youth with separation anxiety symptoms. As higher parental psychopathology is predictive of poorer outcomes (Southam-Gerow, Kendall, & Weersing, 2001), ensuring early screening for parental anxiety may be particularly helpful in determining the extent to which parents may need to be incorporated into treatment and/or referred for their own treatment.

Of note, results provided little guidance for how to interpret reporting patterns when youth report higher anxiety symptoms than do their parents; future work with additional correlates, such as those discussed above, could potentially provide guidance in this area. Overall, our findings suggest that simply considering the magnitude of disagreement between parents and youth, which is what has been most commonly examined in previous studies, is less clinically useful than carefully considering reporting *pattern* (i.e., which informant reports more symptoms), and whether parents and youth are agreeing or disagreeing on the presence of high or low symptoms.

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Table 1

SCARED Scores and Cross-Informant Agreement for SCARED Scores

	Mean Child Report (*SD*)	Mean Parent Report (*SD*)	*t* value [a]	Correlation between parent and child
Total Anxiety	23.40 (15.09)	32.10 (12.81)	12.57***	.41**
Generalized Anxiety	6.18 (4.84)	9.53 (4.13)	14.91***	.40**
Social Anxiety	6.37 (4.42)	8.73 (4.09)	11.81***	.44**
Separation Anxiety	4.34 (4.24)	6.10 (3.87)	9.56***	.50**
Panic Disorder	4.26 (4.73)	4.53 (4.44)	1.23	.45**
School Phobia	2.26 (2.20)	3.20 (2.43)	9.36***	.56**

Note.

*$p < .05$,

**$p < .01$,

***$p < .001$.

[a]Paired *t*-test with $df = 487$

Table 2

Standardized Regression Coefficients for Cross-Sectional Associations with Parent/youth Informant Discrepancies

	Parent[a]	Youth[b]	Parent by Youth[c]	Parent^2	Youth^2	Parent^2 by Youth[d]	Youth^2 by Parent	Parent^3	Youth^3	Total R^2[d]	R^2 Change for Discrepancy[d]
Total SCARED Scores											
Age	-.19	.36***	.20**	-.04	-.10	-.39***	.21	.19	-.09	.06	.02
Gender	-.08	-.16**	-.07	.11	.13	--	--	--	--	.04	.002
BSI Depression	.08	.07	-.08	.03	.03	--	--	--	--	.02	.003
BSI Anxiety	.14**	.09	-.10	.02	.01	--	--	--	--	.04	.005
BSI GSI	.14**	.02	-.15*	.10	.04	--	--	--	--	.04	.01
Generalized Anxiety SCARED Scores											
Age	-.06	.38***	.07	-.05	.04	--	--	--	--	.16	.003
Gender	< -.01	-.17**	<.01	-.04	.10	--	--	--	--	.03	<.001
BSI Depression	.09	.01	-.06	-.02	.03	--	--	--	--	.01	.002
BSI Anxiety	.11*	.06	-.03	-.05	-.04	--	--	--	--	.02	<.001
BSI GSI	.13**	-.03	-.07	-.04	.03	--	--	--	--	.02	.003
Social Anxiety SCARED Scores											
Age	.04	.14**	.11	.02	.08	--	--	--	--	.06	.007
Gender	-.06	-.10	.02	.03	-.08	--	--	--	--	.03	<.001
BSI Depression	-.06	.04	.07	-.06	-.05	--	--	--	--	.01	.003
BSI Anxiety	-.11*	.05	-.03	-.08	-.08	--	--	--	--	.02	<.001
BSI GSI	-.08	< -.01	.03	-.08	-.05	--	--	--	--	.01	<.001
Separation Anxiety SCARED scores											
Age	-.40***	-.10	.29***	.04	-.17	-.29**	.05	.16	.09	.23	.01
Gender	.08	-.18*	-.12	.09	.13	--	--	--	--	.03	.006
BSI Depression	.03	.09	-.07	.02	-.04	--	--	--	--	.01	.003
BSI Anxiety	.11*	.07	-.15*	.08	.06	--	--	--	--	.04	.011
BSI GSI	.11*	.04	-.16*	.10	.02	--	--	--	--	.03	.012

	Parent[a]	Youth[b]	Parent by Youth[c]	Parent^2	Youth^2	Parent^2 by Youth[d]	Youth^2 by Parent	Parent^3	Youth^3	Total R^2[d]	R^2 Change for Discrepancy[d]
Panic Anxiety SCARED scores											
Age	.08	.12	.09	-.01	-.10	--	--	--	--	.03	.002
Gender	-.14	-.19*	-.09	.13	.23*	--	--	--	--	.03	.003
BSI Depression	.12	.11	<.01	-.06	-.01	--	--	--	--	.03	<.001
BSI Anxiety	.23**	.14	.10	-.09	-.14	--	--	--	--	.06	.003
BSI GSI	.17*	.12	.01	.01	-.10	--	--	--	--	.05	<.001
School Anxiety SCARED scores											
Age	<.01	.18**	.09	.03	-.14*	--	--	--	--	.03	.004
Gender	-.04	-.08	-.05	.02	.04	--	--	--	--	.01	.001
BSI Depression	.11	.02	.05	-.13*	.04	--	--	--	--	.03	.002
BSI Anxiety	.07	.05	-.10	-.10	.13	--	--	--	--	.03	.004
BSI GSI	.14*	-.01	-.04	-.11	.07	--	--	--	--	.03	.001

Note.

*$p < .05$,

**$p < .01$.

[a]Main effect of parent report.

[b]Main effect of youth report,

[c]Interaction between parent and youth report. BSI GSI = global severity index of the Brief Symptom Inventory.

[d]Nagelkerke Pseudo R^2 reported for gender analyses.

All analyses tested quadratic effects interaction term and cubic terms for each informant report. Effects of the first order interaction models only are presented in the absence of significant quadratic interactions.

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