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## The Relation between Family Functioning and Discrepancies in Parent-Child Reports of Child Psychopathology Symptoms

Sarah Meunier  
*University of New Orleans*

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The Relation between Family Functioning and Discrepancies in Parent-Child Reports of Child  
Psychopathology Symptoms

An Honors Thesis

Presented to

the Department of Psychology  
of the University of New Orleans

In Partial Fulfillment

of the Requirements for the Degree of  
Bachelor of Science, with University Honors  
and Honors in Psychology

by

Sarah M. Meunier

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## Abstract

Research on informant discrepancies between parents and children has provided conflicting findings, especially when considering the role of family functioning and parental psychopathology. The present study examined the respective moderating effects of family function and parental psychopathology in the association between parent and child reports of children's internalizing symptoms (i.e., depression and anxiety). Participants were 391 parent-child dyads with over half of parents and children being male. Children were eight to 17 years ( $M = 10.68$ ,  $SD = 2.28$ ). Children completed self-report questionnaires were completed self-report measures of depression and anxiety; parents completed measures about family functioning, child psychopathology, and their own depression and anxiety. Results showed that family functioning moderated the relation between parent and child reports for child depression and anxiety. While parent anxiety was not found to moderate the relation of parent and child reports of either depression or anxiety, parent depression moderated the relation between parent- and child-reports of child depression. Although parental psychopathology had less of a clear impact on discrepancies, the role of parent depression seems to have a greater moderating effect than parental anxiety. Furthermore, these findings highlight that family functioning not only moderated discrepancies in the present study, but should be further examined in future research.

Keywords: informant discrepancies, family functioning, parental psychopathology, child psychopathology, depression, anxiety.

# **The Relation between Family Functioning and Discrepancies in Parent-Child Reports of Child Psychopathology Symptoms**

*Sarah Meunier*

## **Introduction**

Based on data collected in the National Survey of Children's Health (NSCH; 2016), Ghandour et al. (2019) found children aged three to 17 years had a current diagnosis of anxiety (7.1%) and/or depression (3.2%). When evaluating child and adolescent mental health, other informants, such as caregivers, are often tasked with providing information about the child's functioning in addition to or in lieu of the child's self-report. However, research has revealed discrepancies between parent and child reports of child psychopathology (Achenbach et al., 1987; De Los Reyes & Kazdin, 2005; De Los Reyes et al., 2015; Treutler & Epkins, 2003). While the research is pervasively weakened by using different or revised measures across multiple informants (Carlston & Ogles, 2009), discrepancies remain an issue even in studies that provide the same measures for all informants (Goolsby et al., 2018). Achenbach (2011) highlighted the nuanced nature of informant discrepancies, emphasizing that these discrepancies are more than measurement error, but are rich with data (Carlston & Ogles, 2009; De Los Reyes & Ohannessian, 2016). Although discrepancies require additional work from clinicians, these differences reflect reporters' unique experiences and therefore may be of clinical utility.

De Los Reyes and Kazdin (2005) provide an in-depth conceptualization of informant discrepancies, the Attribution Bias Context (ABC) Model, intended to aid clinicians in understanding this complex data. This model identified three ways informants differ from one another, thus creating the potential for discrepant reports. First, informants may attribute a child's behavior or symptoms to various causes, such as personality or environmental factors;

specifically, De Los Reyes and Kazdin (2005) proposed observer informants (e.g., parents) are more likely to attribute behaviors to the child's disposition, while children are more likely to attribute behaviors to environment or contextual factors. Secondly, observer informants are more likely to recall memories associated with the negative areas of the child's behavior, while the child tends to access more memories involving the environmental aspects related to a problem behavior (De Los Reyes & Kazdin, 2005). This difference in perspective aligns well with the first component of the ABC model (i.e., informant attribution) and also provides an explanation for why observer informants tend to view treatment as necessary when compared to the child's perspective (De Los Reyes & Kazdin, 2005). Finally, these differences in informant attributions and perspective play a significant role in the clinical assessment process. Observer informants often have attributions and perspectives that most align with the goals of assessment, while children may have more discrepant attributions and perspectives to the goals (e.g., the child may feel their behavior does not need to be changed; De Los Reyes & Kazdin, 2005). Research has supported the ABC model's position that informants' perspectives towards treatment plays a significant role in outcomes (Goolsby et al., 2018). Beyond the ABC model, there is a lack of theoretical frameworks explaining parent-child report discrepancy (Carlston & Ogles, 2009). Goolsby et al. (2018), however, discuss some additional proposed reasons for parent-child discrepancy, including skewed perspectives due to informant psychopathology, disagreement in whether a symptom is a legitimate problem, insufficient communication of symptoms, and limited parental acceptance of a given behavior.

To increase the utility of informant reports of child functioning, it is imperative for research to highlight factors potentially related to discrepancies across reports. Since clinicians sometimes rely solely on parent reports, research on the implicated factors in discrepancies could

give clinicians important additional insight. Aspects of family functioning, such as parenting techniques, parental stress, and intrafamily conflict, are thought to be related to these discrepancies (De Los Reyes & Kazdin, 2005).

Generally, children self-report more symptoms, especially internalizing symptoms, as well as greater severity of symptoms than their parents reported about them (Bajeaux et al., 2018; Pereira et al., 2015; Baumgartner et al., 2020; Kim et al., 2016). However, a study by Goolsby et al. (2018) found that parents reported more severe symptoms than their children self-reported. Some research has shown that parents endorsing more severe internalizing symptoms also reported that their children experienced a greater number of internalizing symptoms than their child endorsed (Najman et al., 2010; van der Toorn et al., 2010). In Van Roy et al.'s (2010) study, children endorsed a greater quantity of symptoms than parents, but parents reported greater impact of identified symptoms. Stein et al. (2018) found larger adolescent-parent report discrepancies of depression and anxiety to be associated with negative outcomes in adolescents, such as aggressive behaviors, non-suicidal self-injury (NSSI), and suicidality.

Informant discrepancies may also be relevant to treatment with children and adolescents. In a clinical study treating 62 children through a cognitive-behavioral group therapy (Resilience Builder Program; Goolsby et al., 2018), families with greater parent-child discrepancy at the start of treatment had worse treatment outcomes. In particular, dyads in which the parent reported high levels of symptoms and the child reported low levels tended to have the lowest therapy efficacy (Goolsby et al., 2018). Consistent with the ABC model (De Los Reyes & Kazdin, 2005), Goolsby et al. (2018) hypothesized that informant discrepancies in which the child does not endorse as many symptoms as the parent, poor outcomes may be due to differing perspectives regarding the need and goals of treatment. An earlier study by Yeh and Weisz (2001) asked

parent-child dyads, recruited from mental health clinics, to report the child's primary difficulties in which they need the most assistance. Over 60% of the 381 dyads had no overlap between parent and child in terms of perceived areas of difficulty. A majority of parent-child dyads disagree on a specific presenting issue, often meaning that the child views treatment as unneeded (Carlston & Ogles, 2009). Clinicians' abilities to effectively develop treatment plans are directly affected by these discrepancies (Carlston & Ogles, 2009; De Los Reyes & Kazdin, 2005).

A fuller understanding of these discrepancies may better increase the validity of future research, as well as better inform best practices and interventions for children and adolescents with psychopathology symptoms. Research has shown that these inconsistencies in report agreement are potentially tied to internalizing (e.g., related to mood and anxiety) and externalizing (e.g., related to impulse-control and behavior) symptoms in the child, parent psychopathology, child age, and parent and child sex (De Los Reyes et al., 2015). Another factor thought to impact report discrepancies, as well as other related factors, is family functioning.

### ***Family Functioning***

Family functioning is defined by the way a family unit interacts, informing each individual member's social, biological, and environmental development (Epstein et al., 1978). A prominent family systems theory, The McMaster Model of Family Functioning (MMFF), is rooted in six dimensions: problem solving, communication, roles, affective responsiveness, affective involvement, and behavior control (Boterhoven de Haan et al., 2015). As explained by Epstein and Bishop (1978), the MMFF views families as an open-system that both contains smaller systems (e.g., parent-child dyads and mother-father dyads) and exists within larger societal systems (e.g., legal, education, industry, etc.). Therefore, when considering an individual, the family unit's general functioning should also be evaluated, including its structure,



organization, and transactional patterns (Epstein & Bishop, 1978). A wide array of family characteristics related to family functioning dimensions have been studied with respect to informant discrepancies. The vast majority of these studies focus on specific components of family functioning (e.g., family cohesion or parent-child relationship strength), rather than using all-encompassing family functioning measures.

Kolko and Kazdin (1993), for example, measured the effect of family stress and cohesion on parent-child report agreement, finding higher stress and lower cohesion to be significantly associated with higher report discrepancies. Expanding on this research, Treutler and Epkins (2003) highlighted the association between report discrepancies of child problem behavior and parent-child relationships. Relationship strength was indicated by both qualitative and quantitative aspects, such as quality time, conflicts, depth of discussion, and parental acceptance (Treutler & Epkins, 2003). Parent-child relationship strength affected discrepancies, especially for internalizing symptoms. Family structure and parent-child relationship factors, specifically parental engagement, have been found to be key predictor variables when children reported more symptoms and more significant impairment than their parents (Van Roy et al., 2010). Indeed, research has shown that greater report agreement may increase the benefits of treatment, likely as a result of stronger parent-child relationships and family functioning (Goolsby et al., 2018; Grills & Ollendick, 2003; Kolko & Kazdin, 1993; Treutler & Epkins, 2003; Van Roy et al., 2010). The relation of parent-child discrepancies and family functioning inform assessments, ultimately impacting treatment outcomes.

Research has shown that parental psychology, in addition to global family functioning, is associated with parent-child dyad report discrepancies (Hughes et al., 2008). Hughes et al. (2008) found that the poorer treatment outcomes for children with a diagnosed anxiety disorder

were significantly associated with lower family functioning, as were child anxiety and depression. Notably, child anxiety and depression were not predictive of family functioning, but paternal and maternal depression and anxiety levels significantly predicted family functioning. These results suggest that children's depression and anxiety symptoms may be exacerbated by poorer family functioning, whereas parental psychopathology may be contributing to family dysfunction. A recent study on children of parents diagnosed with bipolar disorder found that parental psychopathology had clear and significant impacts on family functioning (Shalev et al., 2019). The positive association between parental psychopathology and family functioning remained present, whether the parent had bipolar disorder or another type of psychopathology (Shalev et al., 2019). Family functioning and parental psychopathology both independently and simultaneously effect parent-child discrepancies.

### ***Parental Psychopathology***

While it is evident that parental psychopathology plays a significant role in family functioning and child mental health outcomes, the specific ways in which parental psychopathology impacts parent-child discrepancies remains less clear. Some research has noted that the impact of parental psychopathology on report-discrepancies may vary according to the population being studied (i.e., community vs. Clinical; Makol & Polo, 2018). There is also inconsistency within the literature regarding varying types of parent symptomatology. In a Taiwanese population, Chen et al. (2017) found increased parental psychopathology to be related to greater parent- and adolescent-reports of symptoms and less discrepancy overall. Meanwhile, Pereira et al. (2015) found increased maternal anxiety corresponded to higher discrepancies in which mothers reported more symptoms than their child, in a Portuguese sample.

In contrast, some studies examining parental depression have found no effect on report discrepancies (Kim et al., 2016; Makol & Polo, 2018). The depression-distortion hypothesis suggests child behavior is more likely to be perceived negatively by parents experiencing depressive symptoms (Richters & Pellegrini, 1989). The depression-distortion hypothesis has been supported in the research as potentially impacting parent-child discrepancies (De Los Reyes & Kazdin, 2005). However, this hypothesis is countered by studies where parental psychopathology (e.g., depressive symptoms; Makol & Polo, 2018) does not impact discrepancies. Thus, these findings suggest specific parental psychopathology symptoms have different effects on report discrepancies.

### ***Child Psychopathology***

Specific aspects of child psychopathology, as is the case for parental psychopathology, affect the discrepancies in reports. Research suggests internalizing symptoms (e.g., related to mood and anxiety) often have greater report discrepancies between parents and children, as these symptoms - unlike externalizing symptoms - are not as observable (Achenbach et al., 1987; Bajoux et al., 2018; De Los Reyes & Kazdin, 2005; Duhig et al., 2000; Grills & Ollendick, 2003; Kolko & Kazdin, 1993; Mascendaro et al., 2012; Sourander et al., 1999). Relatedly, Rescorla et al. (2018) found more agreement in severity of symptoms that are observable. Children tend to self-report higher rates of internalizing symptoms than parent reports reflect (Pereira et al., 2015; Bajoux et al., 2018). However, conflicting research suggests children with anxiety report fewer symptoms than their parents report on their behalf (Krain & Kendall, 2000). Children may report fewer symptoms as an attempt to appear more socially desirable (Jensen et al., 1988) or may lack the skills needed to understand and communicate their feelings and behaviors (Ollendick et al., 2001). Makol and Polo (2018) also found higher discrepancies in parents' reports of their

children's internalizing symptoms, emphasizing this may result in undetected depression and anxiety. Child depression symptoms have especially high report discrepancies, suggested by Grills and Ollendick's study (2003) with informants agreeing on less than 8% of child symptoms.

Van der Toorn et al. (2010) pointed to a distinction between community and clinical samples in discrepancy research: children typically report more internalizing symptoms than their parents in community samples (Braaten et al., 2001), while parents reported more symptoms in clinical samples (Grills & Ollendick, 2003; Kolko & Kazdin, 1993). As proposed in Baumgartner et al. (2020), parents of children in clinical samples may be more aware of symptoms, resulting in greater parent-child agreement of internalizing symptoms. Children in clinical samples are more likely to have more severe symptom presentations, while parents of children in community samples are more likely to under-report depressive symptoms (Makol & Polo, 2018). Beyond the type of symptoms, such as internalizing and externalizing child symptoms, other variables are likely contributing factors to informant discrepancies, such as the age and sex of parents and children.

### **The Present Study**

With high rates of multi-informant discrepancies in assessments of child and adolescent psychopathology, report discrepancy remains a critical area in psychological research. While research has examined the moderating effect of parental psychopathology on these discrepancies (Chen et al., 2017; Kim et al., 2016; Makol & Polo, 2018; Pereira et al., 2015; Shalev et al., 2019), few studies have investigated if general family functioning impacts parent-child discrepancies. The proposed study examined the effect of both family functioning and parent psychopathology on discrepancies between parent and child reports of child psychopathology. Furthermore, parent

and child sex, as well as child age, were accounted for in analyses, as these factors have also been associated with report discrepancies (De Los Reyes & Kazdin, 2005).

While extensive research exists on report discrepancies regarding child psychopathology (i.e., both internalizing and externalizing symptoms), the majority of findings have pointed to larger inconsistencies related to internalizing symptoms (Achenbach et al., 1987; De Los Reyes et al., 2015; Duhig et al., 2000). Hence, the present study focused on children's internalizing symptoms, specifically those related to depression and anxiety.

### ***Aims and Hypotheses***

The present study explored the impact of family functioning and parental psychopathology on discrepancies between parent and child report of child depression and anxiety scores, while accounting for age and sex. As such, two main hypotheses were tested.

**Hypothesis One.** Parent-reported family functioning would moderate agreement between parent- and child-reported psychopathology. Specifically, we expected that lower family functioning (i.e., more conflict and disharmony) would be associated with greater parent-child report discrepancies.

**1A.** Parents that reported lower family functioning would under-report child anxiety symptoms when compared to child self-reports of anxiety.

**1B.** Parents that reported lower family functioning would under-report child depressive symptoms when compared to child self-reports of depressive symptoms.

**Hypothesis Two.** Parent psychopathology symptoms would moderate agreement between parent- and child-reported psychopathology. Specifically, greater parent psychopathology symptoms would be associated with greater report discrepancies.

**2A.** Parents that self-reported higher levels of anxiety would over-report child anxiety when compared to the child self-reports of anxiety.

**2B.** Parents that self-reported higher levels of depression would over-report child depression when compared to the child self-reports of depression.

### **Methods**

**Participants.** The current study used data collected between April and May of 2020 in an online study by the Psychology Department at the University of New Orleans. Participants were parents and their children (aged eight to 17 years), who were located in the Gulf Coast region, but primarily the greater New Orleans area. The participant recruitment consisted of Facebook advertisements and posts about the study shared to relevant Facebook groups. Interested parents followed the provided link to the study in which they were asked to include information regarding up to three children. After completion of the Time 1 survey, parents who wished to be compensated received an Amazon e-gift card for \$10 and an additional \$5 per each additional child. The current study utilized data from the first of two waves, including parents and their first reported child. Of an original 1296 families from a larger study, 391 parent-child dyads were eligible for the current study as those children completed informed assent.

Most of the 391 eligible parents were male (69.6%) with over half between the age of 34 and 38 years of age, ranging from 26 to 61 ( $M = 36.43$ ). Parents reported their race in the demographics section with the vast majority selecting White (82.9%). Of the remaining parent participants, 7.7% selected Black, 4.9% Latinx, 1.5% Asian, 1.8% Native American, 0.5% Pacific Islander, and 0.8% chose “other” or declined to respond. 19.2% of parents identified as Hispanic and/or Latinx. The majority of parents were educated, with 40.7% reporting a

bachelor's degree and as little as .3% reported less than a high school diploma. The parents in this sample were predominately married (95.1%).

Parents also completed the child demographic section of the survey ( $n = 391$ ;  $age_M = 10.68$ ,  $age_{SD} = 2.28$ ). While most of the children (81%) were between eight and 12, 14.3% were between 13 and 15, and 4.6% were between 16 and 17 years. Similarly to the parent demographics, most of the child participants were male (72.7%). Furthermore, the race and ethnicity demographics remained similarly composed of non-minority status participants (82.6%), with 19.7% identifying as Hispanic/Latinx, 10.2% as Black, 2.8% as Asian, 4.9% as Native American, .3% as Pacific Islander, and .3% selecting "other."

With respect to the current study, key demographic information for testing hypotheses were the age of the child, along with the sex of both parent and child. Descriptive statistics for child age, parent and child sex, as well as family functioning and psychopathology are in Table 1.

### **Measures.**

***General Family Functioning.*** The Family Assessment Device- General Functioning Scale (FAD; Boterhoven, Hafekost, & Lawrence, 2015), completed by the parent, assessed general functioning in families. Parents rated the FAD's 12 items on a 4-point Likert scale (1 = strongly agree, 2 = agree, 3 = disagree, and 4 = strongly disagree). Six of the items represent healthy functioning, (e.g., in times of crisis we can turn to each other for support), while the other six represent dysfunction (e.g., we avoid discussing our fears and concerns). Scores were derived from dividing the total score by the number of items. Lower FAD total scores were indicative of healthier family functioning with a possible range of scores from 12-48. In this sample, scores ranged from 12 to 38 ( $M = 27.83$ ,  $SD = 4.44$ ).

***Child Anxiety Scores.*** The Screen for Child Anxiety Related Disorders (SCARED; Birmaher, Brent, Chiappetta, Bridge, Monga, & Baugher, 1999) questionnaire consists of 41 items on a 3-point Likert scale (0 = not true, 1 = somewhat true, and 3 = very true), which measures the signs and symptoms of anxiety in children over the last three months. This measure has five subscales that correspond to DSM-IV anxiety disorders (i.e., panic disorder, generalized anxiety disorder, separation anxiety, social anxiety disorder, and significant school avoidance). Each item corresponds to one of the subscales with varying cut-off scores indicative of the specific anxiety disorder. Indication of an anxiety disorder overall was found by adding up item scores. The possible range of scores is 0 to 82 with scores of 25 or greater suggesting the child may meet criteria for an anxiety disorder. Both the child self-report and parent forms of the SCARED measure were used to assess discrepancies. The children in this sample had scores ranging from 0 to 72 ( $M = 40.90$ ,  $SD = 14.23$ ,  $n = 367$ ). The parent reports ranged from 0 to 71 with similar results as the child self-reports ( $M = 39.27$ ,  $SD = 14.12$ ,  $n = 384$ ).

***Parental Anxiety Scores.*** The State-Trait Anxiety Inventory- Trait Anxiety (STAI-Trait; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) questionnaire asked parents to complete a 20-item inventory on a 4-point Likert scale (1 = almost never, 2 = sometimes, 3 = often, and 4 = almost always). The Trait Anxiety Scale (T-Anxiety) measures participants' trait anxiety symptoms generally, as opposed to currently present levels of anxiety (e.g., STAI - State Anxiety). This sample scored a range of 32 to 64 of a possible 20 to 80 with higher scores indicating greater anxiety ( $M = 50.35$ ,  $SD = 3.98$ ).

***Parent and Child Depression Scores.*** The Mood and Feelings Questionnaire- Self Report (Short form; MFQ; Angold, Costello, Messer, Pickles, Winder, & Silver, 1995) consists of 13 items about participants' feelings and actions over the past two weeks, scored on a 3-point scale



(0 = not true, 1 = sometimes true, and 3 = true). Parents completed the MFQ-SR (i.e., self-report) about their own depressive symptoms, as well as the MFQ-P (i.e., parent) about their child's feelings and behaviors. The MFQ-C (i.e., child) asked the child to self-report on their own feelings and behaviors. The MFQ-P and MFQ-C were used to assess discrepancies in parent-child reporting of the child's symptoms. Scores on the short version range from 0 to 26 with higher scores indicating more severe depressive symptoms. Generally, scores 12 or above may indicate that the individual is experiencing clinically significant symptoms of depression. In the current sample, children reported scores between 0 and 24 ( $M = 12.04$ ,  $SD = 5.15$ ,  $n = 363$ ). Parent reports on their child had scores ranging from 0 to 26 scores with a mean score of 11.99 ( $SD = 5.35$ ,  $n = 386$ ). Finally, the mean score for parent self-reports were 12.33 and ranged from 0 to 23 ( $SD = 4.88$ ,  $n = 386$ ).

**Data Analysis Plan.** Analyses were conducted using IBM SPSS Statistics for macOS, version 28.01 (IBM Corp., Armonk, N.Y., USA) and PROCESS version 3.5 (Hayes, 2018). Preliminary bivariate correlations were conducted on relations between parental psychopathology (i.e., MFQ and STAI), family functioning (FAD-12), child-reported psychopathology (MFQ-CR and SCARED-CR), parent-reported psychopathology (MFQ-PR and SCARED-PR), and both parent and child sex (see Table 2). Moderation models were performed using PROCESS macro (Hayes, 2018). In the first moderation model, Hayes' Model 1 was used to assess whether the relation between parent report of child symptoms (predictor variable) and child report of child symptoms (dependent variable) was moderated by family functioning (hypothesis one). A second moderation investigated whether parental psychopathology moderated on parent-child discrepancies (hypothesis two). A total of 12 models were conducted with either parent report or child report of child psychopathology as outcomes. Four of the 12

models included family function as the moderator, another four models with parent depression as moderator, and the final four with parent anxiety as moderator. Child age, parent sex, and child sex were designated covariates, as these three variables are often associated with parent-child report discrepancies, but not the primary focus of the present study.

## Results

### Preliminary Analyses

Descriptive statistics, including means and standard deviations, are noted previously in the Methods sections, as well as in Table 1. Bivariate correlations were conducted between all study variables and covariates (see Table 2). Child and parent reports of depression showed a strong positive association ( $r = .72, p < .01$ ). Similarly, reports of anxiety were also strongly, positively correlated ( $r = .81, p < .01$ ). Strong and positive correlations were also present between the child's self-reported depression scores and the parent-reported anxiety scores ( $r = .64, p < .01$ ), as well as the child self-reported anxiety scores and the parent-reported depression scores ( $r = .64, p < .01$ ). Children's self-reports of anxiety and depression also were strongly and positively associated ( $r = .64, p < .01$ ), as were parent-reports of child depression and anxiety ( $r = .69, p < .01$ ). An independent-samples t-test was conducted, as parent sex was significantly correlated with parent-reported child anxiety. A significant difference between male and female parent reports was found ( $t(149.03) = 2.09, p = .04, 95\% \text{ CI } [.09, 3.52]$ ) with fathers reported greater child anxiety scores ( $M = 12.66, SD = 5.29$ ) than mothers ( $M = 10.85, SD = 8.56$ ).

Family functioning was found to have a weak, positive correlation with parent depression ( $r = .33, p < .01$ ) in that healthy family functioning was associated with low parent depression. Likewise, parents' reports of child anxiety ( $r = .34, p < .01$ ) and depression ( $r = .33, p < .01$ ) were associated with poorer family functioning. An independent-samples t-test was conducted to

determine the relation between parent sex and family functioning, which indicated a significant difference between mothers and fathers ( $t(173.96) = 5.63, p < .001, 95\% \text{ CI } [1.92, 4.00]$ ). Female parents ( $M = 25.76, SD = 5.15$ ) reported healthier family functioning than male parents ( $M = 28.72, SD = 3.77$ ).

While self-reported parent anxiety scores were not significantly correlated with the other measures, parent depression scores were significantly correlated to many of the variables of interest. Parent depression was shown to have a moderate, positive correlation with family functioning ( $r = .33, p < .01$ ), as well as a moderate, positive correlation with child- ( $r = .54, p < .01$ ) and parent-reported anxiety ( $r = .59, p < .01$ ). Parent depression also moderately correlated with child-reported depression ( $r = .55, p < .01$ ), and strongly correlated with the parent-reported child depression ( $r = .64, p < .01$ ).

### **Regression Analyses**

I conducted multiple regression analyses examining the association between parent and child reports of child psychopathology, with family functioning and parent psychopathology (i.e., depression and anxiety) as moderators. Child and parent reports of child psychopathology were entered as both independent and dependent variables, as it was not evident how this would impact results. Variables were mean-centered across all models to improve interpretation of the simple slopes and reduce any potential issues with multicollinearity.

### ***Family Functioning as Moderator***

To examine family function as a potential moderator of parent-child reports of child depression and anxiety, four models were analyzed. Each of these models had significant interaction effects, suggesting family functioning was moderating the relation between parent- and child-reports. In two of the models, family function was not significant as a main effect, or

sole independent variable, despite the significant interactions. Finally, parent sex was significant in one of the models discussed below, but child age and child sex was non-significant.

**Child Depression Models.** As depicted in Table 3, a multiple linear regression was conducted with child-reported depression as an independent variable, family function as moderator, and parent-reported child depression scores as the outcome variable. The model explained 55% of the variance in parent reports of child depression scores ( $F(6, 353) = 70.67, p < .01, R^2 = .55$ ). The effect of child-reported depression was positive and significant ( $b = .65, t(353) = 12.43, p < .01, 95\% \text{ CI } [.57, .73]$ ) on parent-reported child depression. Similarly, the effect of family functioning was also positive and significant ( $b = .10, t(353) = 2.06, p = .04, 95\% \text{ CI } [.00, .20]$ ). The interaction of child-reported depression and family functioning scores (see Table 16 and Figure 1) explained an additional 2% of the variance in the parents' reports of child depression scores ( $R^2 = .02, F(353) = 14.20, p < .01$ ), suggesting moderation. A test of the simple slopes (depicted in Table 4 and Figure 1) of parent-reported child depression at 1 SD above and below the mean of family function scores showed that at high levels of family dysfunction, the correlation between parent and child report of symptoms is lower (i.e., less agreement) than in families with lower levels of family dysfunction (+1SD (i.e., +4.26):  $b = .52, t(353) = 8.16, p < .01, 95\% \text{ CI } [.39, .64]$ ; -1SD (i.e., -4.26): ( $b = .78, t(353) = 17.99, p < .01, 95\% \text{ CI } [.69, .86]$ ).

The next regression with family function as moderator included parent-reported child depression scores as the independent variable and child-reported depression scores as the outcome variable. As depicted in Table 5, this model explained 54% of the variance in child reports of depression:  $F(6, 353) = 67.95, p < .01, R^2 = .54$ . The effect of parent reports of child depression was significant ( $b = .63, t(353) = 15.77, p < .01$ ), but the effect of family functioning scores was not significant ( $b = .06, t(353) = .05, p = .25$ ). Parent sex was shown to have a

significant effect ( $b = .96$ ,  $t(353) = 2.15$ ,  $p = .03$ ). As highlighted by Table 5, the interaction of family functioning by parent-reported child depression was significant ( $b = -.03$ ,  $t(353) = -3.32$ ,  $p < .01$ , 95% CI [-.04, -.01]). The interaction accounted for an additional 1% of the variance in child-reported depression scores. A test of simple slopes (see Table 6 and Figure 2) of child reports of depression at 1 SD above and below the mean of family function scores showed that dyads of more dysfunctional families are more likely to have greater discrepancies in child depression reports (+1SD (i.e., 4.26):  $b = .51$ ,  $t(353) = 8.39$ ,  $p < .01$ , 95% CI [.39, .63]; -1SD (i.e., -4.26):  $b = .74$ ,  $t(353) = 17.60$ ,  $p < .01$ , 95% CI [.66, .83]).

**Child Anxiety Models.** Referencing Table 7, the third model with family function as moderator, child-reported anxiety as independent variable, and parent-reported child anxiety as dependent variable was significant ( $F(6, 355) = 128.47$ ,  $p < .01$ ,  $R^2 = .68$ ). The effect of child anxiety scores on parent-reported child anxiety scores were significant ( $b = .72$ ,  $t(355) = 20.95$ ,  $p < .01$ , 95% CI [.66, .79]), as well as the effect of family functioning ( $b = .37$ ,  $t(355) = 3.57$ ,  $p < .01$ , 95% CI [.17, .58]). As shown in Table 7, the interaction of child reported anxiety by family functioning scores was significant ( $b = -.02$ ,  $t(355) = -2.53$ ,  $p = .01$ , 95% CI [-.03, .00]) and explained an additional 1% of the variance in parent-reported child anxiety scores. A test of the simple slopes (depicted in Table 8 and Figure 3) of parent-reported child anxiety scores at 1 SD above and below the mean of family functioning showed that dyads with healthier family functioning tended to have greater agreement across child anxiety reports (+1SD (i.e., +4.31):  $b = .65$ ,  $t(355) = 12.05$ ,  $p < .01$ , 95% CI [.55, .76]; -1SD (i.e., at -4.31):  $b = .79$ ,  $t(355) = 24.74$ ,  $p < .01$ , 95% CI [.73, .86]).

A final model of family functioning as the moderator (see Table 9), as well as parent-reported anxiety as the independent variable and child reports of anxiety as the outcome, was

also significant ( $F(6, 355) = 118.33, p < .01, R^2 = .67$ ). Parent reports of child anxiety were significantly associated with child reports of anxiety ( $b = .79, t(355) = 21.09, p < .01$ ). While family function scores were not found to be significantly associated with child-reported anxiety ( $b = -.19, t(355) = -1.65, p = .10$ ), the interaction effect of parent-reported child anxiety by family functioning did yield a significant result (see Table 10;  $b = -.02, t(355) = -2.44, p = .02, 95\% \text{ CI } [-.03, .00]$ ). Specifically, the interaction explained an additional 1% of the variance ( $F(1, 355) = 5.93, p = .02$ ), suggesting moderation. A test of simple slopes (depicted in Table 10 and Figure 5) of child-reported anxiety at 1 SD above and below the mean of family function showed families with healthier functioning tended to have greater agreement (+1SD (i.e., 4.31):  $b = .72, t(355) = 12.49, p < .01, 95\% \text{ CI } [.61, .84]$ ; -1SD (i.e., -4.31):  $b = .87, t(355) = 24.88, p < .01, 95\% \text{ CI } [.80, .93]$ ).

### ***Parent Anxiety as Moderator***

To assess parental psychopathology as a potential moderator of parent-child reports, four models were conducted with parent anxiety as a moderator. None of the models were found to have significant interaction effects, suggesting parent anxiety did not moderate the relation between parent- and child-reports. Moreover, parent anxiety was not found to be a significant predictor variable when controlling other variables in the model. Except for parent sex in one of the models discussed below covariates were not significant.

**Child Depression Models.** The first of four parent anxiety models (see Table 11) included child-reported depression as independent variable and parent-reported child depression as the dependent variable, which was found to be significant overall ( $F(353, 5) = 63.62, p < .001, R^2 = .52$ ). Alternatively stated, 52% of the variance of parents report of child depression was explained by child depression reports, the parent self-reported anxiety, and the interaction. More

specifically, the main effect of child-reported depression was significantly and positively associated with parent reports,  $b = .73$ ,  $t(353) = 19.16$ ,  $p < .01$ , such that increases in child reporting was related to increases in parent reporting. Neither the lower order term of parent anxiety nor the interaction term of child-reported depression by parent anxiety were significant ( $b = -.01$ ,  $t(353) = -.21$ ,  $p = .83$ );  $b = -.01$ ,  $t(353) = -.21$ ,  $p = .49$ , 95% CI [-.02, .03], respectively). Finally, none of the covariates had a significant association with child depression (i.e., child age and parent and child sex).

A second model (reference Table 12) was tested regressing child-report of depression on an interaction between parent report of child depression and parent anxiety. This model was significant overall:  $F(6, 353) = 63.64$ ,  $p < .01$ ,  $R^2 = .52$ . In other words, 52% of the variance of child depression reports was explained by parent-reported child depression, parent anxiety, and the interaction. The main effect of parent-reported depression was significantly and positively associated with child reports ( $b = .70$ ,  $t(353) = 19.27$ ,  $p < .01$ ), such that increases in parent reporting was related to increases in child reporting. The main effect of parent anxiety was not significant ( $b = -.03$ ,  $t(353) = -.52$ ,  $p = .60$ ). Neither the covariates, nor the interaction effect ( $b = .02$ ,  $t(353) = 1.58$ ,  $p = .11$ , 95% CI [.00, .04]) were significant.

**Child Anxiety Models.** As depicted in Table 13, a third model was conducted with parent anxiety as moderator with child-reported anxiety (i.e., independent variable) and parent-reported child anxiety (i.e., dependent variable):  $F(6, 355) = 117.63$ ,  $p < .01$ ,  $R^2 = .67$ . Alternatively stated, 67% of the variance of parent reports for child anxiety was explained by child reports of anxiety, parent anxiety, and the interaction. In this model, child reports of anxiety were a significantly and positively associated with parent reports of child anxiety ( $b = .79$ ,  $t(355) = 25.81$ ,  $p < .01$ ), but parent anxiety scores were not found to be significant ( $b = .10$ ,  $t(355) = .90$ ,

$p = .37$ ). Parent sex was found to be significantly and negatively associated with parent reports of child anxiety ( $p < .01$ ). The interaction effect was also not found to be significant ( $b = .01$ ,  $t(355) = 1.04$ ,  $p = .30$ , 95% CI [-.01, .03]).

A final model with parent anxiety as the moderator (see Table 14), parent-reported child anxiety as the independent variable, and child anxiety scores as the dependent variable was significant overall:  $F(6, 355) = 115.36$ ,  $p < .01$ ,  $R^2 = .66$ . This model explained 66% of variance in child anxiety scores. Parent reports of child anxiety were significant ( $b = .83$ ,  $t(355) = 25.80$ ,  $p < .01$ ), but the parent anxiety scores were not ( $b = -.12$ ,  $t(355) = -1.02$ ,  $p = .31$ ). Finally, neither the covariates, nor the interaction effect of this model were significant ( $b = .00$ ,  $t(355) = .42$ ,  $p = .67$ , 95% CI [-.03, .02]).

### ***Parent Depression as Moderator***

To further examine parental psychopathology as a potential moderator of parent-child reports, four additional models were conducted with parent depression as moderator. While parent depression was a significant predictor variable for all four, only one model had a significant interaction effect. Of note, parent sex was significantly predictive in three of the four models described below.

**Child Depression Models.** A multiple linear regression was conducted with child-reported depression as the outcome variable, parent-reported child depression as the independent variable, and parent depression as the moderator (see Table 15). This model explained 54% of the variance in child-reported depression ( $F(6, 350) = 68.70$ ,  $p < .00$ ). The effect of parent-reported child depression on the child's self-report of depression was significant ( $b = .58$ ,  $t(350) = 12.47$ ,  $p = .00$ , 95% CI [.49, .67]), such that increases in parent-reported child depression were associated



with increases of child-report of depression. Parent depression was also significantly associated with child-reported depression ( $b = .16$ ,  $t(350) = 3.11$ ,  $p = .00$ , 95% CI [.06, .26]). The interaction of parent-reported child depression by parent depression was also significant ( $b = -.02$ ,  $t(-2.50)$ ,  $p = .01$ , 95% CI [-.03, .00]), suggesting moderation. This interaction accounted for an additional 1% of the variance in the child's depression scores. A test of the simple slopes (depicted in Table 16 and Figure 5) of parent-reported child depression at 1 SD above and below the mean of parent self-reported depression showed that low self-reporters tended to have more report agreement (+1SD:  $b = .51$   $t(350) = 8.65$ ,  $p < .01$ , 95% CI [.39, .62]; -1SD:  $b = .66$ ,  $t(350) = 12.45$ ,  $p < .01$ , 95% CI [.55, .76]). Importantly, parent self-report was significantly related to child self-report for both high and low reporters.

Three other models were conducted with parent depression scores as a moderator, but, unlike the previous model, the following had non-significant interaction effects. As shown in Table 17, the model with child self-reported depression as the independent variable, parent depression scores as moderator, and parent-reported child depression scores as the dependent variable was significant overall:  $F(6, 350) = 89.76$ ,  $p < .01$ ,  $R^2 = .61$ . In other words, this model explained 61% of the variance in parent-reported child depression scores. The effect of child reports of depression on the parent reports of child depression was significant ( $b = .52$ ,  $t(350) = 12.38$ ,  $p = .00$ ), as were parent depression scores ( $b = .39$ ,  $t(350) = 8.51$ ,  $p = .00$ ). The interaction effect was not significant ( $b = -.01$ ,  $t(350) = -.99$ ,  $p = .32$ , 95% CI [-.02, .01]), suggesting parent depression did not moderate the relation between child- and parent- reported depression scores.

**Child Anxiety Models.** Another model with parent depression as moderator (see Table 18), as well as parent-reported child anxiety as the independent variable and child-reported anxiety as the dependent variable, was statistically significant overall ( $F(6, 352) = 132.08$ ,  $p < .01$ ,  $R^2 =$

.69). This suggests 69% of the variation in children's anxiety scores were accounted for in this model. Parent sex was found to have a significant effect on parent-reported child anxiety scores ( $b = -2.24$ ,  $t(352) = 2.26$ ,  $p = .02$ ). Specifically, both child reported anxiety and parent depression were significant ( $b = .68$ ,  $t(352) = 18.94$ ,  $p = .00$  and  $b = .57$ ,  $t(352) = 5.45$ ,  $p = .00$ , respectively), but the interaction effect was not significant ( $b = -.01$ ,  $t(352) = -1.21$ ,  $p = .23$ , 95% CI [-.02, .00]).

The final model with parent depression as a moderator variable (reference Table 19), included parent-reported child anxiety as the independent variable and child-reported anxiety scores as the dependent variable. The model was found to be significant overall ( $F(6, 352) = 132.08$ ,  $p < .01$ ,  $R^2 = .69$ ), accounting for 69% of the variance in child anxiety scores. Parent reports and parent depression were both significant to child-reported anxiety scores ( $b = .76$ ,  $t(352) = 18.97$ ,  $p = .00$  and  $b = .31$ ,  $t(352) = 2.70$ ,  $p = .01$ , respectively). While child age and sex were not significant covariates, parent sex was found to be significant in this model ( $b = 2.15$ ,  $t(352) = 2.02$ ,  $p = .04$ ). The interaction effect was not significant ( $b = -.00$ ,  $t(352) = -.80$ ,  $p = .42$ , 95% CI [-.02, .01]).

## **Discussion**

The present study explored how family functioning and parental psychopathology may influence discrepancies in parent versus child report of child symptoms. Internalizing symptoms, such as those found in depression and anxiety, were chosen as variables of interest because research has shown that these disorders produce more discrepant informant reports in children and their parents than the more easily observable externalizing disorders (Bajeux et al., 2018; De Los Reyes & Kazdin, 2005; Mascendaro et al., 2012). Importantly, I also considered child age

and sex as variables influencing informant discrepancies. As such, two main hypotheses were tested.

With respect to hypothesis one, family functioning moderated the relation between parent- and child-reports of child psychopathology. For both child depression and anxiety, family functioning moderated the relation between parent and child reports, regardless of which was the independent or dependent variable. More specifically, it was expected that lower family functioning would correspond to greater report discrepancies. Across the four models, parents in dysfunctional families tended to have the greatest discrepancies in child depression and anxiety. Similarly to findings by Baumgartner et al. (2020), it may be that as child depressive symptoms become more pronounced and impactful, parents reporting healthier family functioning may be more attuned to symptoms in their children.

Second, parental psychopathology (i.e., depression and anxiety) was not found to moderate parent and child report discrepancies in seven of the eight applicable models. Given these models, the results do not align with the study's second hypothesis (i.e., parental psychopathology would moderate parent and child report discrepancies). Each of the four moderations conducted with parent anxiety as a moderator were not found to yield clear effects of discrepancies. This may indicate that parental anxiety, in particular, has less of an effect on reporting discrepancies. In fact, some previous studies have found effects of parent anxiety to be minimal or not found to have any impact (Krain & Kendall, 2000). Conversely, parental depression did have one of four models indicate moderation on parent-child reports. In this model, parent depression moderated the relation between parent- and child-reported depression. However, this result was not found in the model with parent-reported depression as the outcome variable. This may be related to the fact that in the former model the two independent variables

were both reports from the same informant- the parent (i.e., self-reported depression and parent-reported child depression). As parents and children reported greater child depression, it is possible that the parent's depression scores play less of a role. In other words, when child depressive symptoms are more evident or having a greater effect on the child, it may inherently lead to greater agreement between the parents and children. This would align with previous research that has found clinical populations of children with internalizing psychopathology to have greater agreement (Baumgartner et al., 2020; Rescorla et al., 2017).

### **Strengths and Limitations**

The current study had numerous strengths. First, the sample was majority male participants. This is especially needed in parent-child dyad research, including the discrepancy literature, due to the over-representation of maternal-child dyads and the relative dearth of paternal-child dyads. Many studies that plan to analyze parent sex and informant discrepancies, such as Baumgartner et al. (2020), do not have enough father participants to consider parent sex as a possible factor. Secondly, the study's measures (i.e., FAD, STAI, SCARED, MFQ) are all widely recognized for their validity and use in psychological and behavioral research (Angold et al., 1995; Birmaher et al., 1999; Boterhoven et al., 2015; Spielberger et al., 1983). Relatedly, the same measures were used to assess child internalizing symptoms from both parents and the child (i.e., MFQ-PR and MFQ-CR; SCARED-PR and SCARED-CR). With the exception of grammatical differences, the MFQ and SCARED measures consist of identical items in the parent and child reports. Carlston and Ogles (2009) cited identical item measures to be methodologically beneficial, as measures that ask about the same symptom with small, but notable, differences in a question may create discrepant reports even when agreement is high. Additionally, this study added to the existing discrepancy research, both in general and with

respect to the interactions between parental psychopathology and reporting, in the broader context of age and sex. Finally, this study's direct examination of the relation between family functioning and parent-child informant discrepancies contributes to an area of discrepancy research with noticeable gaps.

This study also contained limitations. Despite participants coming from a region with a roughly 60% Black population as the racial majority, the sample lacked racial and ethnic diversity. With more than 80% of the sample identifying as white and non-Hispanic, race was excluded as a covariate. Although not unique to this study, a second limitation is in the methodology of assessing discrepancy between informants. The two most common ways of testing discrepancies is through correlation and difference scores (Reynolds et al., 2011). Of the three types of difference scores (i.e., raw, standardized, and residual), De Los Reyes & Kazdin (2004) encourage the use of standardized difference scores in which one informant's standardized scores is subtracted from the other informant's standardized scores. In the current study, both Pearson's correlation coefficient and Hayes' Model 1 moderations were used to analyze the sample's parent-child discrepancies.

Another potential limitation is that participants completed the study remotely, which did not allow for a controlled, standardized environment or assurance of quality participation. For example, we could not guarantee age-appropriate assistance for the younger children nor privacy from parents for the child and adolescent participants. This may have directly impacted discrepancies if parents were overly involved in the child's item selections or if the child felt distracted or uncomfortable answering more sensitive questions about their mood. As Vales et al. (2021) discussed, there are many benefits afforded by remote data collection, but there are few studies examining the potential impact of remote data collection, as opposed to in the laboratory

where standardization can be assured. Finally, the present study only utilized data for one child, regardless of whether parents reported on three children. It is possible that having studied the differences in discrepancies across siblings and their parent may have led to a more complete understanding of the impact of family functioning on informant discrepancies.

### **Future Research and Implications**

Future research should aim to directly evaluate discrepancies with respect to potential third variables, including socioeconomic status (SES), as well as race, ethnicity, and culture. For instance, Chen et al. (2017) focused on the potential effect of socioeconomic status (SES) on parent-child discrepancies and found that families of higher SES had greater discrepancies than the lowest SES families. Another demographic feature that will expand our understanding of discrepancies relates to racial, ethnic, and cultural groups. Kim et al.'s (2016) study underscored the importance of ethnicity in discrepancy research. Specifically, they emphasized that different risk factors and cultural norms of different ethnicities may result in varying discrepant rates between parents and children. Carlston and Ogles (2009), for example, have proposed the possibility that parent-child discrepancy differences across various racial and ethnic groups may point to dimensions of family functioning. It remains unclear whether this is a matter of family functioning due to differences of cultural expectations within racial/ethnic groups or another factor entirely. Finally, it may be useful to conduct discrepancy research that accounts for all children in a family to better understand the role of family function on informant discrepancies. Research that studies this directly may be able to clarify important aspects of the parent-child dyad related to report discrepancies.

### **Conclusion**

In sum, research with respect to informant discrepancies of parents and children has provided conflicting findings, especially pertaining to the role of family functioning and parental psychopathology. Self-report questionnaires were completed by children for depression and anxiety; parents completed measures for family functioning, child psychopathology, and their own depression and anxiety. Results showed that family functioning had a moderating effect on both parent and child discrepancies for child psychopathology. While parent anxiety was not found to moderate the discrepancies, parent depression did moderate the relation between reports of child depression. Although parental psychopathology had less of a clear impact on discrepancies, the role of parent depression seems to have a greater moderating effect. Furthermore, these findings highlight that family functioning, in particular, should be further examined in future research. It may be that clinical assessments of children and adolescents should be tailored according to their family's general functioning.

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## List of Tables

**Table 1**

*Descriptive Statistics for Study Variables*

Variable	N	Range	Mean	SD
<b>Parent Sex</b>				
Male	272			
Female	119			
<b>Child Sex</b>				
Male	282			
Female	106			
<b>Child Age</b>	391	8-17	10.68	2.28
<b>Parent Psychopathology Scores</b>				
Depression	386	0-23	12.33	4.88
Anxiety	389	32-64	50.35	3.98
<b>Child Psychopathology Scores</b>				
Self-Reported Depression	363	0-24	12.04	5.15
Parent-Reported Depression	386	0-26	11.99	5.35
Self-Reported Anxiety	367	0-72	40.90	14.23
Parent-Reported Anxiety	384	0-71	39.27	14.12
<b>Family Functioning Scores</b>	389	12-38	27.83	4.44

*Note.* The parent psychopathology depression statistics indicate scores on the MFQ measure and anxiety statistics indicate scores on the STAI measure. The child depression statistics indicate scores from the MFQ measure, while the anxiety statistics are from the SCARED measure. Self-reported depression and anxiety represent the child's self-reported scores. Family functioning scores, measured by the FAD, were solely completed by the parent.

**Table 2**

*Bivariate Correlations for Variables of Interest and Covariates*

Variable	1	2	3	4	5	6	7	8	9	10
1. Family Functioning	-									
2. Parent Anxiety	-.078	-								
3. CR- Child Anxiety	<b>.218</b>	-.036	-							
4. PR- Child Anxiety	<b>.341</b>	-.008	<b>.810</b>	-						
5. CR- Child Depression	<b>.273</b>	-.043	<b>.643</b>	<b>.635</b>	-					
6. PR- Child Depression	<b>.334</b>	-.051	<b>.642</b>	<b>.686</b>	<b>.716</b>	-				
7. Parent Depression	<b>.331</b>	-.076	<b>.543</b>	<b>.593</b>	<b>.554</b>	<b>.642</b>	-			
8. Child Sex	-.129*	-.007	-.098	-.094	-.080	-.108*	-.006	-		
9. Parent Sex	<b>-.307</b>	-.028	-.058	<b>-.145</b>	.003	-.095	-.099	<b>.248</b>	-	
10. Child Age	-.019	-.051	.031	.034	.036	.042	.067	<b>.252</b>	<b>.232</b>	-

*Note.* All correlations significant at < .05 level (2-tailed) have a single \* following the *r* value (e.g., -.129\*) and all correlations significant at < .01 level (2-tailed) are bolded.

CR = child report, PR = parent report. Child and Parent Sex variables were dummy coded (1 = female, 0 = male).

**Table 3**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Parent-Reported Child Depression*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	11.41	.92	12.43	.00	[9.60, 13.22]
MFQ-CR (X)	.65	.04	15.62	.00	[.57, .73]
FAD (W)	.10	.05	2.06	.04	[.00, .20]
MFQ-CR x FAD	-.03	.01	-3.77	.00	[-.05, -.01]
Child Age	.09	.09	1.03	.30	[-.08, .26]
Child Sex	-.01	.45	-.02	.99	[-.89, .88]
Parent Sex	-.51	.46	-1.13	.26	[-1.41, .38]

*Note.* FAD = Family Assessment Device- General Functioning Scale, MFQ-CR = The Short Mood and Feelings Questionnaire – Child Report.



**Table 4**

*Simple Slopes for a Two-Way Interaction between Child-Reported Depression and Family Functioning on Parent-Reported Depression*

Family Functioning	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Low	.78	.04	17.99	.00	[.69, .86]
Mean	.65	.04	15.62	.00	[.57, .73]
High	.52	.06	8.16	.00	[.39, .64]

*Note.* Family Functioning = FAD (Family Assessment Device- General Functioning Scale)

scores. Low (-1 SD) = -4.26, Mean = 0, High (+1 SD) = 4.26. Low FAD scores indicate healthy family function and high FAD scores indicate dysfunctional family function.

**Table 5**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Child-Reported Child Depression*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	12.16	.90	13.44	.00	[10.38, 13.94]
MFQ-PR (X)	.63	.04	15.77	.00	[.55, .71]
FAD (W)	.06	.05	1.15	.25	[-.04, .15]
MFQ-PR x FAD	-.03	.01	-3.32	.00	[-.04, -.01]
Child Age	-.01	.09	-.17	.86	[-.18, .15]
Child Sex	-.11	.45	-.26	.80	[-.99, .76]
Parent Sex	.96	.45	2.15	.03	[.08, 1.84]

*Note.* FAD = Family Assessment Device- General Functioning Scale, MFQ-PR = The Short

Mood and Feelings Questionnaire – Parent Report.

**Table 6**

*Simple Slopes for a Two-Way Interaction between Parent-Reported Child Depression and Family Functioning on Child-Reported Depression*

Family Function	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Low	.74	.04	17.60	.00	[.66, .83]
Mean	.63	.04	15.77	.00	[.55, .71]
High	.51	.06	8.39	.00	[.39, .63]

*Note.* Family Function = FAD scores. Low (-1 SD) = -4.26, Mean = 0, High (+1 SD) = 4.26.

Low FAD scores indicate healthy family function and high FAD scores indicate dysfunctional family function.

**Table 7**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Parent-Reported Child Anxiety*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	38.72	2.02	19.22	.00	[34.76, 42.69]
SCARED-CR (X)	.72	.03	20.95	.00	[.66, .79]
FAD (W)	.37	.10	3.57	.00	[.17, .58]
SCARED-CR x FAD	-.02	.01	-2.53	.01	[-.03, .00]
Child Age	.09	.19	.49	.62	[-.28, .47]
Child Sex	.69	.99	.69	.49	[-1.26, 2.64]
Parent Sex	-1.61	1.00	-1.61	.11	[-3.58, .36]

*Note.* FAD = Family Assessment Device- General Functioning Scale, SCARED-CR = The

Screen for Child Anxiety Related Disorders – Child Report.

**Table 8**

*Simple Slopes for a Two-Way Interaction between Child-Reported Depression and Family Functioning on Parent-Reported Depression*

Family Functioning	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Low	.79	.03	24.74	.00	[.73, .86]
Mean	.72	.03	20.95	.00	[.66, .79]
High	.65	.05	12.05	.00	[.55, .76]

*Note.* Family Functioning = FAD (Family Assessment Device- General Functioning Scale)

scores. Low (-1 SD) = -4.31, Mean = 0, High (+1 SD) = 4.31. Low FAD scores indicate healthy family function and high FAD scores indicate dysfunctional family function.

**Table 9**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Child-Reported Child Anxiety*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	41.27	2.12	19.43	.00	[37.09, 45.45]
SCARED-PR (X)	.79	.04	21.09	.00	[.72, .87]
FAD (W)	-.19	.11	-1.65	.10	[-.41, .04]
SCARED-PR x FAD	-.02	.01	-2.44	.02	[-.03, .00]
Child Age	-.02	.20	1.89	.92	[-.42, .37]

Child Sex	-1.37	1.03	-1.33	.18	[-3.41, .66]
Parent Sex	1.99	1.06	1.89	.06	[-.08, 4.07]

*Note.* FAD = Family Assessment Device- General Functioning Scale, SCARED-PR = The

Screen for Child Anxiety Related Disorders – Parent Report.

**Table 10**

*Simple Slopes for a Two-Way Interaction between Parent-Reported Child Anxiety and Family Function on Child-Reported Anxiety*

Family Function	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Low	.87	.03	24.88	.00	[.80, .93]
Mean	.79	.04	21.09	.00	[.72, .87]
High	.72	.06	12.49	.00	[.61, .84]

*Note.* Family Function = FAD scores. Low (-1 SD) = -4.31, Mean = 0, High (+1 SD) = 4.31.

Low FAD scores indicate healthy family function and high FAD scores indicate dysfunctional family function.

**Table 11**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Parent-Reported Child Depression*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	11.33	.95	11.96	.00	[9.47, 13.19]
MFQ-CR (X)	.73	.04	19.16	.00	[.66, .81]
STAI (W)	-.01	.05	-.21	.83	[-.11, .09]
MFQ-CR x STAI	.01	.01	.70	.49	[-.02, .03]
Child Age	.10	.09	1.08	.28	[-.08, .27]
Child Sex	-.29	.46	-.63	.53	[-1.20, .62]
Parent Sex	-.85	.45	-1.87	.06	[-1.74, .05]

*Note.* MFQ-CR = The Short Mood and Feelings Questionnaire – Child Report, STAI = The

State-Trait Anxiety Inventory- Trait Anxiety Scale.

**Table 12**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Child-Reported Child Depression*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	11.94	.93	12.89	.00	[10.11, 13.76]
MFQ-PR (X)	.70	.04	19.27	.00	[.63, .77]

STAI (W)	-.03	.05	-.52	.60	[-.12, .07]
MFQ-PR x STAI	.02	.01	1.58	.11	[.00, .04]
Child Age	.00	.09	.04	.97	[-.17, .18]
Child Sex	-.38	.45	-.86	.39	[-1.26, .49]
Parent Sex	.74	.44	1.66	.10	[-.13, 1.61]

*Note.* MFQ-PR = The Short Mood and Feelings Questionnaire – Parent Report, STAI = The State-Trait Anxiety Inventory- Trait Anxiety Scale.

**Table 13**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Parent-Reported Child Anxiety*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	38.12	2.08	18.37	.00	[34.04, 42.21]
SCARED-CR (X)	.79	.03	25.81	.00	[.73, .85]
STAI (W)	.10	.11	.90	.37	[-.12, .32]
SCARED-CR x STAI	.01	.01	1.04	.30	[-.01, .03]
Child Age	.18	.20	.91	.36	[-.21, .57]
Child Sex	.15	1.02	.14	.89	[-1.86, 2.15]
Parent Sex	-2.85	1.00	-2.86	.00	[-4.80, -.89]

*Note.* STAI = The State-Trait Anxiety Inventory- Trait Anxiety Scale. SCARED-CR = The Screen for Child Anxiety Related Disorders – Child Report.

**Table 14**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Child-Reported Child Anxiety*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	40.80	2.13	19.13	.00	[36.61, 45.00]
SCARED-PR (X)	.83	.03	25.80	.00	[.77, .89]
STAI (W)	-.12	.11	-1.02	.31	[-.34, .11]
SCARED-PR x STAI	.00	.01	-.42	.67	[-.03, .02]
Child Age	.00	.20	-.01	.99	[-.40, .40]
Child Sex	-1.43	1.04	-1.37	.17	[-3.47, .62]
Parent Sex	1.86	1.03	1.81	.07	[-.16, 3.88]

*Note.* SCARED-PR = The Screen for Child Anxiety Related Disorders – Parent Report, STAI = STAI = The State-Trait Anxiety Inventory- Trait Anxiety Scale.

**Table 15**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Child-Reported Child Depression*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	12.31	.91	13.58	.00	[10.52, 14.09]
MFQ-PR (X)	.58	.05	12.47	.00	[.49, .67]
MFQ-SR (W)	.16	.05	3.11	.00	[.06, .26]
MFQ-PR x MFQ-SR	-.02	.01	-2.50	.01	[-.03, .00]
Child Age	-.02	.09	-.21	.83	[-.19, .15]
Child Sex	1.14	.45	-.68	.50	[-1.20, .58]
Parent Sex	-.31	.45	2.52	.01	[.25, 2.03]

*Note.* MFQ-PR = The Short Mood and Feelings Questionnaire- Parent Report, MFQ- SR = The

Short Mood and Feelings Questionnaire- Self Report.

**Table 16**

*Simple Slopes for a Two-Way Interaction between Parent-Reported Depression and Parent Depression on Child-Reported Depression*

Parent Depression	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Low	.66	.05	12.45	.00	[.55, .76]
Mean	.58	.05	12.47	.00	[.49, .67]
High	.51	.06	8.65	.00	[.39, .62]

*Note.* Parent Depression = MFQ-SR. Low (-1 SD) = -4.79, Mean = 0, High (+1 SD) = 4.79.

**Table 17**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Parent-Reported Child Depression with Parent Depression as Moderator*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	11.74	.86	13.60	.00	[10.04, 13.44]
MFQ-CR (X)	.52	.04	12.38	.00	[.44, .61]
MFQ-SR (W)	.39	.05	8.51	.00	[.30, .48]
MFQ-CR x MFQ-SR	-.01	.05	-.99	.32	[-.02, .01]
Child Age	.06	.08	.71	.48	[-.10, .22]
Child Sex	-.45	.43	-1.06	.29	[-1.29, .39]
Parent Sex	-.45	.43	-.89	.38	[-1.23, .47]

*Note.* MFQ-CR = The Short Mood and Feelings Questionnaire- Child Report, MFQ-SR = The Short Mood and Feelings Questionnaire- Self Report.

**Table 18**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Parent-Reported Child Anxiety*

Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	39.07	2.01	19.45	.00	[35.12, 43.02]
SCARED-CR (X)	.68	.04	18.94	.00	[.61, .75]
MFQ-SR (W)	.57	.10	5.45	.00	[.36, .77]
SCARED-CR x MFQ-SR	-.01	.00	-1.21	.23	[-.02, .00]
Child Age	.09	.19	.48	.63	[-.28, .47]
Child Sex	.18	1.00	.18	.86	[-1.78, 2.15]
Parent Sex	-2.24	.99	-2.26	.02	[-4.20, -.29]

*Note.* MFQ-SR = The Short Mood and Feelings Questionnaire- Self Report, SCARED-CR = The Screen for Child Anxiety Related Disorders – Child Report.

**Table 19**

*Summary of Multiple Linear Regression Analysis for Variables Predicting Child-Reported Child Anxiety*

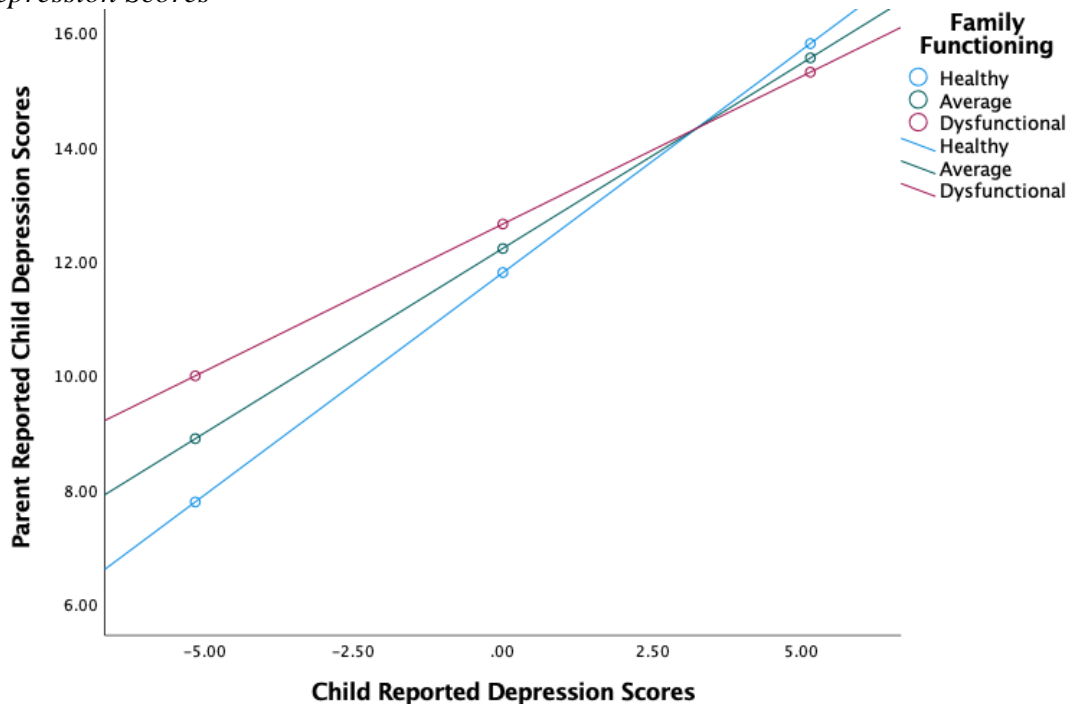
Predictor Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	41.17	2.13	19.37	.00	[36.99, 45.35]
SCARED-PR (X)	.76	.04	18.97	.00	[.68, .84]
MFQ-SR (W)	.31	.11	2.70	.01	[.08, .53]
SCARED-PR x MFQ-SR	.00	.01	-.80	.42	[-.02, .01]
Child Age	-.03	.20	-.14	.89	[-.42, .37]
Child Sex	-1.37	1.05	-1.30	.20	[-3.44, .70]
Parent Sex	2.15	1.06	2.02	.04	[.06, 4.24]

*Note.* MFQ-SR = The Short Mood and Feelings Questionnaire- Self Report, SCARED-PR = The Screen for Child Anxiety Related Disorders – Parent Report.

## List of Figures

**Figure 1**

*Family Functioning Scores Moderate the Association between Child- and Parent-Reported Depression Scores*

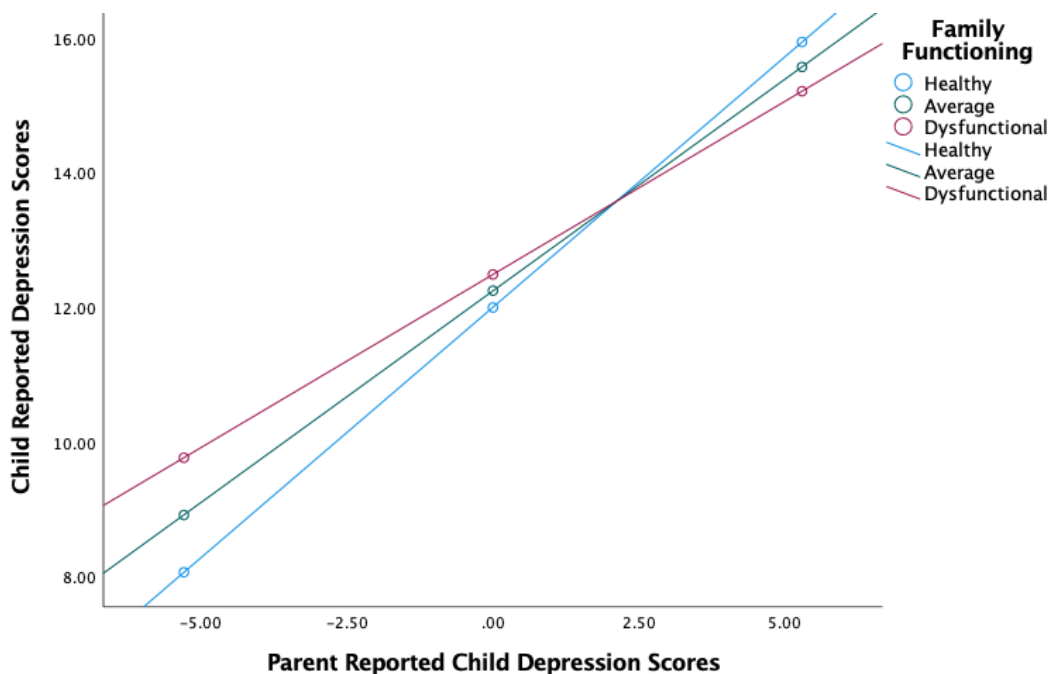


*Note.* Hayes' PROCESS Model 1. Low (-1 SD) = -4.26, Mean = 0, High (+1 SD) = 4.26.

Interaction effect (MFQ-PR x FAD) significant ( $p < .01$ ). Child Reported Depression (MFQ-CR scores) = The Short Mood and Feelings Questionnaire- Child Report, Parent Reported Depression (MFQ-PR scores) = The Short Mood and Feelings Questionnaire- Parent Report, and Family Function (FAD scores) = Family Assessment Device- General Functioning Scale. Low FAD scores indicate healthy family function and high FAD scores indicate dysfunctional family function.

**Figure 2**

*Family Functioning Scores Moderate the Association between Parent- and Child-Reported Depression Scores*



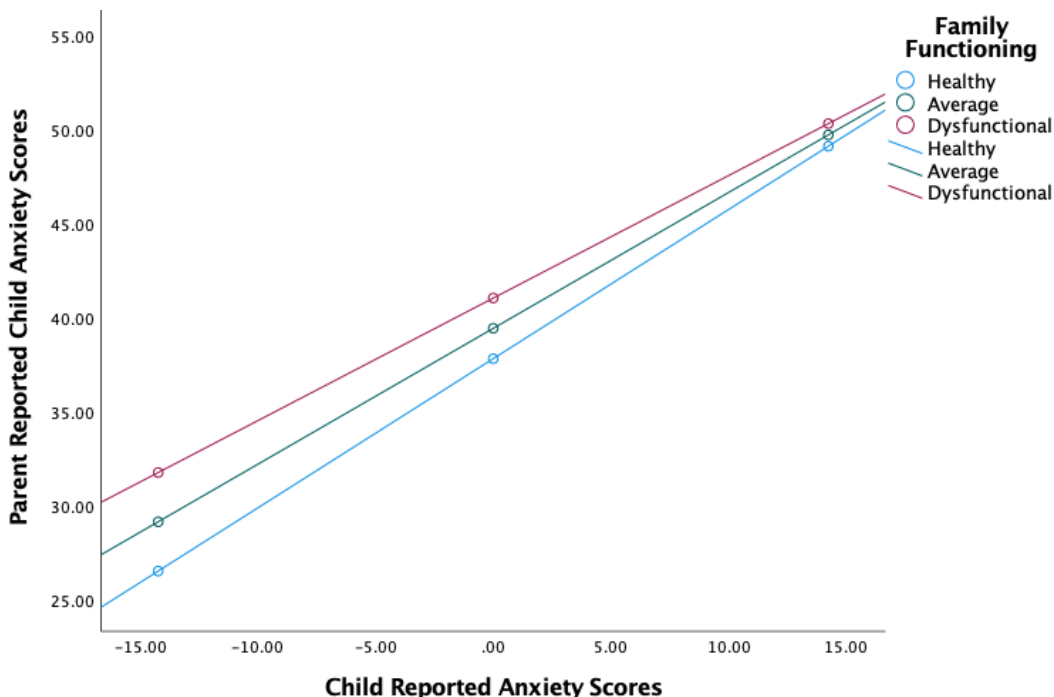
*Note.* Hayes' PROCESS Model 1. Low (-1 SD) = -4.26, Mean = 0, High (+1 SD) = 4.26.

Interaction effect (MFQ-PR x FAD) significant ( $p < .01$ ). Parent Reported Depression (MFQ-PR scores) = The Short Mood and Feelings Questionnaire- Parent Report, Child Reported Depression (MFQ-CR scores) = The Short Mood and Feelings Questionnaire- Child Report, and Family Function (FAD scores) = Family Assessment Device- General Functioning Scale. Low FAD scores indicate healthy family function and high FAD scores indicate dysfunctional family function.

### Figure 3

*Family Functioning Scores Moderate the Association between Child- and Parent-Reported Anxiety Scores*



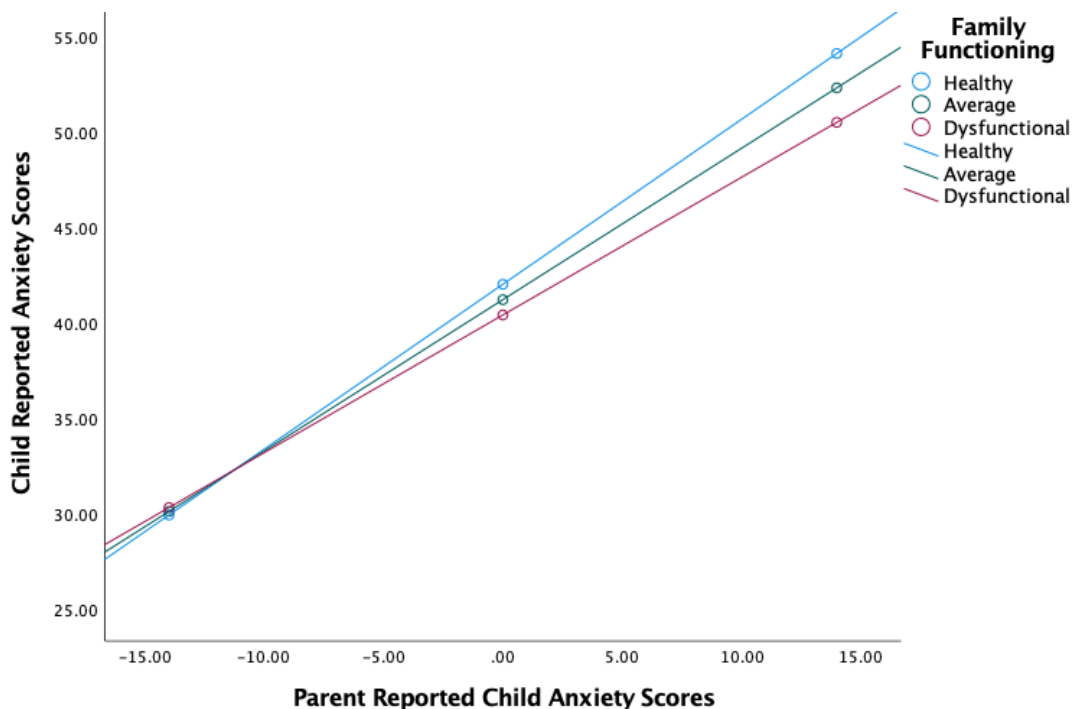


Note. Hayes' PROCESS Model 1. Low (-1 SD) = -4.31, Mean = 0, High (+1 SD) = 4.31.

Interaction effect (SCARED-CR x FAD) significant ( $p = .01$ ). Child Reported Anxiety (SCARED-CR scores) = The Screen for Child Anxiety Related Disorders – Child Report, Parent Reported Anxiety (SCARED-PR scores) = The Screen for Child Anxiety Related Disorders – Parent Report, and Family Function (FAD scores) = Family Assessment Device- General Functioning Scale. Low FAD scores indicate healthy family function and high FAD scores indicate dysfunctional family function.

#### Figure 4

*Family Functioning Scores Moderate the Association between Parent- and Child-Reported Anxiety Scores*

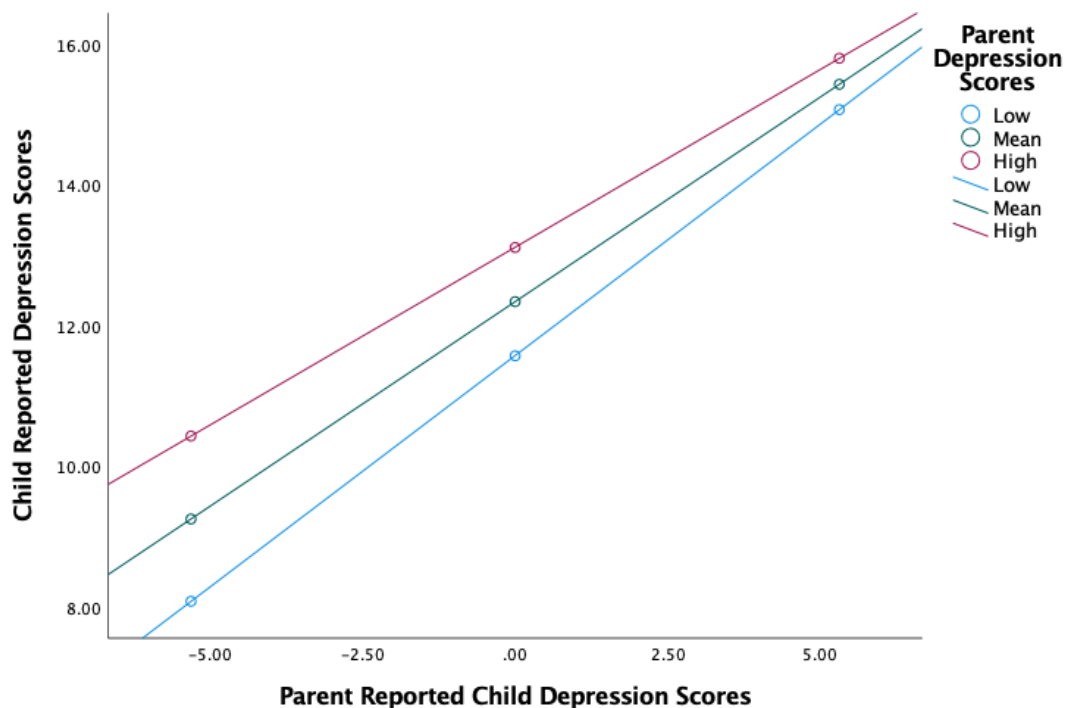


*Note.* Hayes' PROCESS Model 1. Low (-1 SD) = -4.31, Mean = 0, High (+1 SD) = 4.31.

Interaction effect (SCARED-PR x FAD) significant ( $p = .02$ ). Parent Reported Anxiety (SCARED-PR scores) = The Screen for Child Anxiety Related Disorders – Parent Report, Child Reported Anxiety (SCARED-CR scores) = The Screen for Child Anxiety Related Disorders – Child Report, and Family Function (FAD scores) = Family Assessment Device- General Functioning Scale. Low FAD scores indicate healthy family function and high FAD scores indicate dysfunctional family function.

### Figure 5

*Parent Depression Scores Moderate the Association between Parent- and Child- Reported Depression Scores*



*Note.* Hayes' PROCESS Model 1. Low (-1 SD) = -4.79, Mean = 0, High (+1 SD) = 4.79.

Interaction effect (MFQ-PR x MFQ-SR) significant ( $p < .02$ ). Parent Reported Depression (MFQ-PR scores) = The Short Mood and Feelings Questionnaire- Parent Report, Child Reported Depression (MFQ-CR scores) = The Short Mood and Feelings Questionnaire- Child Report, and Parent Depression (MFQ-SR scores) = The Short Mood and Feelings Questionnaire- Self Report.