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Longitudinal Examination of Observed Family Hostility and Adolescent Anxiety and Depression as Mediated by Adolescent Perspective Taking and Empathic Concern

Trevor Dennis Dahle
Brigham Young University

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Trevor Dennis Dahle

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James M. Harper, Chair
Sarah M. Coyne
Laura M. Padilla-Walker

School of Family Life

Brigham Young University

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ABSTRACT

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Trevor Dennis Dahle
School of Family Life, BYU
Master of Science

The purpose of this longitudinal study was to examine hostility in family interaction and its impact on adolescent depression and anxiety with adolescent perspective taking and empathic concern as mediators. Gender differences were also examined. Adolescents were from 353 two-parent families in a large north-western city in the United States and on average were 13.25 years old (SD=1.01) for girls and 13.30 years (SD=.99) for boys at the beginning of the study. This study utilized data from waves 3-5. Earlier waves of data were not used because some of the measures were not available for earlier waves. Results indicated that higher levels of hostility in family interaction were directly related to higher anxiety in boys and girls and higher depression in girls two years later. Hostility in family interaction was not related to adolescent perspective taking, and adolescent perspective taking was not significantly related to anxiety for boys or girls, but it was negatively related to depression at time 5 for girls only. Adolescent empathic concern significantly mediated the relationship between observed hostility in family interaction and adolescent depression and adolescent anxiety for girls but not for boys. Implications for future research and clinical practice are discussed.

Keywords: hostility, adolescent, anxiety, depression, perspective taking, empathic concern

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Longitudinal Examination of Observed Family Hostility and Adolescent Anxiety and Depression as Mediated by Adolescent Perspective Taking and Empathic Concern

The numbers of adolescents affected by anxiety and depressive disorders is a concerning public health issue. Anxiety disorders are estimated to affect 10-39% of U.S. adolescents, and depression affects approximately 11.7%, with the prevalence of both increasing (Costello & Egger, 2005; Merikangas, et al., 2010; Essau, Lewinsohn, Olaya & Seeley, 2014). These are likely conservative estimates since sub-syndromal anxiety and depression, where adolescents exhibit symptoms below the threshold for clinical diagnosis, still negatively impact adolescents in terms of social and academic functioning (Gledhill & Garraida, 2013; Lewinsohn, Rohde, & Seeley, 1998). The financial impact of adolescent depression and anxiety is also considerable, costing families and communities billions of dollars every year (Greenberg et al., 1999; Kessler et al., 2006; McCrone, Knapp, & Frombonne, 2005).

Numerous studies have examined the relationship between family interactions and adolescent adjustment (Dadds, Barrett, Rapee, & Ryan, 1996; Hudson & Rapee, 2001; Milevsky, Schlechter, Netter, & Keehn, 2007; Schwartz, Dudgeon, Sheeber, Yap, Simmons, & Allen, 2012; Vazsonyi & Belliston, 2006; de Wilde & Rapee, 2008; Wu, Kao, Yen, & Lee, 2007). Using the diathesis stress model (Zuckerman, 1999), this longitudinal study examined family hostility as an environmental stressor to predict adolescent depression and anxiety.

Literature Review

Theoretical Foundation

The diathesis stress theory posits that individuals have inherent vulnerabilities for developing mental illnesses and that these vulnerabilities, or diathesis, can be activated by

stressors (Zuckerman, 1999). Family hostility in the form of excessive harshness, contention between parents, and relational aggression has shown to be a stressor to adolescents and children (Buehler & Gerard, 2013; Bufferd, et al. 2014; Flouri, Midouhas, Joshi, & Tzavidis, 2015; Ha & Granger, 2016; McGonigle, Smith, Benjamin, & Turner, 1993; Stern & Zevon, 1990; Vangelisti, Maguire, Alexander, & Clark, 2007). Obradović, Bush, Stamperdahl, Alder, and Boyce (2010) found that children in high conflict settings, whose physiology was more reactive to minor stressors than their peers, experienced more negative outcomes. Adolescence, in particular, can be a time of heightened sensitivity to family stressors like family hostility due to the rapid physical, cognitive, and brain development taking place (Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). From a diathesis stress lens for the current study, family hostility is a stressor which is likely to result in increased depression and anxiety in the adolescent, and perspective taking and empathic concern are ways an individual responds, which may make the depression and anxiety worse. In the current study, observed family hostility, mother and father hostility toward the adolescent and adolescent hostility toward both parents, was considered a stressor which would be related to the development of depression and anxiety in adolescents.

The diathesis stress model also suggests that a person's characteristics may be processes through which a stressor such as family hostility affects adolescent depression and anxiety (Braet, Vlierberghe, Vandevivere, Theuwis, & Bosmans, 2013). In this study, adolescent empathic concern and perspective taking were hypothesized as two mediating characteristics through which family hostility is related to the adolescent's depression and anxiety.

Prevalence of and Factors Associated with Anxiety and Depression

Few studies have been conducted to measure the prevalence of psychiatric disorders among children and adolescents, and fewer still are nationally representative. Reported rates of

disorders vary a great deal depending on measures, population, study methodology, and interviewers, with percentages ranging from 2.4 to 39 % (Rapee, Schniering, & Hudson, 2009; Costello, Mustillo, Angold, Erkanli, & Keeler, 2003; Merikangas, et al., 2010). Costello et al. (2003) reported rates of psychiatric disorders as measured annually in a longitudinal study, and found that on average, roughly 2.4% of the adolescents experienced some sort of anxiety disorder in a given year.

Anxiety is the anticipation of real or perceived future threats, experienced through heightened activation of the autonomic nervous system (American Psychiatric Association, 2013). Merikangas, et al. (2010) found that 31.9% of adolescents from a nationally representative sample experienced an anxiety disorder by the time they were 18 years old. Specific phobias and social anxiety were among the most prevalent at rates of 19.3% and 9.1% respectively. According to these percentages, approximately 73.7 million adolescents in the U.S. alone suffer from an anxiety disorder today.

The *Diagnostic and Statistical Manual of Mental Disorders,* (American Psychiatric Association, 2013) describes depression symptoms as depressed mood for most of the day; diminished interest or pleasure in activities; significant weight loss or increase; insomnia or hypersomnia; psychomotor agitation, fatigue, feeling worthless, diminished cognitive abilities; and recurrent thoughts of suicide. The range for reported prevalence of depression among adolescents is narrower than for anxiety. Merikangas, et al. (2010) found that 14.3% of youth experience depression before adulthood, with 11.2% of them experiencing severe impairment or distress. Another study found that 9.5% of their sample experienced a depressive disorder by the time they were 16 years old (Costello, et al., 2003). This last study was not nationally representative, but it was thought to reflect current prevalence rates.

The presence of certain individual traits in adolescents, such as inhibited temperament, low self-esteem and chronic illness, are highly related to developing greater anxiety symptoms (Rapee, et al., 2009; Ferro & Boyle, 2015). Researchers (Zavos, Eley, Gregory, Essau, & Ollendick, 2013) have also found that genetic and heritability factors also contribute to developing anxiety (Chen, 2015).

The social environment including the characteristics of family, school, and peers are also related to anxiety in adolescence. For example, anxiety disorders are more likely among children whose parents are divorced and separated (Merikangas, et al., 2010). Conversely, adolescents whose families had regular rituals, such as eating dinner together and observing annual celebrations, had stronger social connections with each other and were thus less susceptible to anxiety disorders (Malaquias, Crespo, & Francisco, 2015). Studying the school environment, Caldwell, Sturges, and Silver (2007) identified that how adolescents felt about their school experience was significantly related to their level of anxiety. Further, the nature of peer involvement also plays a part. One study tested a classroom intervention where classmates wrote positive notes to each other for a period of three weeks. Three of the most socially withdrawn students were observed during the note-writing period and for a month after and appeared to be more comfortable engaging with peers as a result of the notes (Nelson, Caldarella, Young, & Webb, 2008). These studies indicate that adolescents benefit from having a positive environment provided for them as well as providing it for their peers. While genetic, psychological traits, and social environment all appear to be related to the development of anxiety, the current study will examine how one particular aspect of the family environment, observed family hostility, is related to adolescent anxiety.

Many individual factors contribute to the likelihood of adolescents developing depression. Researchers (Ferro & Boyle, 2015) found that chronic physical illness and low self-esteem both predict depressive symptoms. Van Voorhees and colleagues, (2008) identified that coming from a minority group, being female, ability to cope with stress, school performance, and religious activity also had a bearing on whether an adolescent experienced depression. The field of genetics also highlighted specific genetic characteristics that interact with environmental stressors, such as family conflict, which lead to depression. (Hankin, et al, 2015; Sales, et al., 2015).

Focusing specifically on family environment, one study found that adolescents in families who participated in a school-based program to assess and improve their interactions were at less risk for depressive symptoms (Fosco, Van Ryzin, Connell, & Stormshak, 2015). Additionally, Van Voorhees, et al. (2008) reported a reduction in the likelihood of adolescents developing depression when their families had fun together, helped them feel loved, and when their parents reported that they did not fight or talk about splitting up.

Along with the family environment, school environments may have an effect on whether an adolescent develops depression, though studies on the subject provide mixed results. Researchers in Finland were surprised to find that the support system at school with teachers and peers, as perceived by students, was not a reliable predictor of depression (Ellonen, Kääriäinen, & Autio, 2008). On the other hand, Isaacs (2013) found in his longitudinal study in Canada that some students who experienced a positive school environment in eighth grade had reduced risk of depressive symptoms 23 years later. Others who focused specifically on the influence of peers found that youths who participated in extracurricular activities and had a positive friend

environment presented with lower depressive symptoms and had less risk factors that could lead to depression (Mason, Schmidt, Abraham, Walker, & Tercyak, 2009; Uphold, 2014).

Hostility in Families and Adolescent Anxiety and Depression

Several studies have specifically examined how interaction patterns in families affect a child's level of depression or anxiety. One study found that parents who change their behavior in certain ways to reduce their child's anxiety can actually worsen the problem (Thompson-Hollands, Kerns, Pincus, & Comer, 2014). Another study found significant relationships between how intrusive the parents were when the child was displaying anxious behaviors and the child's overall level of anxiety (Hudson, Comer, & Kendall, 2008). Additionally, Dadds, et al. (1996) used observational data to find that family interactions have substantial effects on children's social-cognitive development.

Other studies have looked more directly at negative family interactions and how it affects the anxiety levels of children. Children whose parents alienated, or were otherwise rejecting towards them, experienced increased amounts of anxiety (Hale III, Engels & Meeus, 2006). At the other extreme, parental over-involvement exhibited negative effects as well. Parental interactions that would be characterized as intrusive and controlling have been connected to greater anxiety in children (Hudson & Rapee, 2001; de Wilde & Rapee, 2008).

Several studies have also examined the relationship between family interaction and child depression (Milevsky, et al., 2007; Wu, et al., 2007; Ogburn et al., 2010). Family interactions that are characteristically negative, such as controlling, authoritarian, aggressive, or unsupportive, were shown to be significantly related to depression in the children (Gerlsma, Emmelkamp, & Arrindell, 1990; Milevsky, et al., 2007; Schwartz et al., 2012; Ogburn et al., 2010). Schwartz, et al. (2012) examined the longitudinal relationship between aggressive

parental behaviors during parent-child interactions in a problem solving task and the development of depression and anxiety symptoms in a community-based sample of adolescents. This study is especially relevant to the current study because it was longitudinal and examined observed parent behaviors in relationship to adolescent depression and anxiety. However, the current study fills a gap by examining every family member's hostile behavior, including the adolescent's. It also extends the literature by examining whether adolescent characteristics such as perspective taking and empathic concern are diminished by family hostility which, in turn, is related to depression and anxiety.

While the published literature has established a connection between family interactions and anxiety and depression in children, the research methods that have been used vary in terms of rigor. Specifically, there is a scarcity of studies that are longitudinal, and observational methods are seldom used. The only exception would be the Schwartz, et al. study discussed above. The methods also ask participants to think of family dynamics retrospectively. For instance, Gerlsma et al. (1990) surveyed adults currently struggling with anxiety and depression and asked them to retrospectively recall the unaffectionate and controlling behaviors of their parents when they were younger. The current study seeks to fill this gap by using longitudinal methods that allow for a more rigorous test of mediation where the outcome variables are measured two years after the observational task in which family hostility was coded and where the mediating variables are measured in the year in between observed hostility and the outcome variables. Further, observational data provides a more accurate view of hostility than self-report through a questionnaire since individuals often under report their hostile behaviors (Janssens, De Bruyn, Manders, and Scholte, 2005).

Empathic Concern and Perspective Taking as Mediators between Observed Family Hostility and Adolescent Anxiety and Depression

Seligman (2004), a central figure in the positive psychology movement, proposed that positive characteristics such as empathy can be learned and can help an individual cope with interpersonal stress (Seligman, 2004). Empathic concern, an affective component of empathy, is related to feeling compassion and emotion when another is undergoing negative experiences, and perspective taking, the cognitive component of empathy, is about understanding the point of view of another person (Cojuharenco & Sguera, 2015; Hoffman, 2000).

Empathic concern has been shown in a number of studies to be a significant factor in adolescent functioning and outcomes (Harper, Padilla-Walker, & Jensen, 2014; Krevans & Gibbs, 1996; Light, et al., 2009; Psychogiou, Daley, Thompson, & Sonuga-Barke, 2008; Roberts & Strayer, 1996; Spinrad & Eisenberg, 2009; Zhou, et al., 2002). For instance, empathy has been associated with adolescent's reduced vulnerability and greater resilience in the face of stressful family situations (Trivits, 2005; Dallaire and Zeman, 2013) and depression (Keenan & Hipwell, 2005; Rosenfield, Vertefuille, & McAlpine, 2000). Empathy has also been used as a mediating variable in a number of studies on relationships (e. g. Boag & Carnelley, 2015; Burnett, Davis, Green, Worthington, & Bradfield, 2009; Fatfouta, Gerlach, Schroder-Abe, & Nerjkm 2015). The types of interactions that occur between family members form the context in which children learn to regulate their own emotion and to recognize emotions of others. Thus, family hostility may hinder an adolescent's empathy development. One of the functions of hostile behavior is to evoke fear, to invoke submissiveness, and to defend oneself (Keltner & Kring, 1998), and when a family member, especially a child, is afraid, being submissive, or defending, it is difficult to acknowledge and sense the emotion of the other person. Hostile,

angry behaviors typically tend to mask more vulnerable, underlying feelings such as sadness, hurt, or fear. Thus, hostile exchanges where another family member and an adolescent are angry make it difficult for the adolescent to identify and acknowledge these vulnerable feelings in other family members. Likewise, fear, defensiveness, and exhibiting hostility in response to the hostile exchanges interfere with taking on the perspective of the other family members (Strayer & Roberts, 2004). Batanova and Loukas (2012) found that conflict between parents and young adolescents hindered the development of empathy in adolescents. It is likely, then, that family hostility is related to decreased adolescent empathy.

While perspective taking and empathy are often mediating variables in studies, past and recent research suggests they are important motivators of prosocial behaviors and promote positive family relationships (Harper, et al., 2014). There are also some studies that examine how an adolescent's empathy is related to levels of anxiety and depression. Authors (e.g. Du Bois & Klink, 2007) have hypothesized that empathy and depression are inversely related, meaning that as empathy decreases, depression increases. Harper, et al., (2014) looked at empathy as a mediator between the quality of parent-child interaction and sibling and peer relationships and depression and found that empathy was related to adolescent depression. Empathy has also been found to be related to depression in people of other ages (Patrizia, et. al. 2011). Another study has also found that perspective taking is distorted in depressed adolescents (Gilman, Rice, & Carboni, 2014).

For those adolescents whose situations are stressful, their ability to see another's perspective and feel what another person is feeling is associated with their ability to cope with their situation. For example, among female adolescents who were either at-risk or involved in the juvenile justice system, those with higher levels of cognitive and affective empathy had

greater rates of using coping strategies such as problem solving, emotional regulation, and cognitive restructuring, among others (Trivits, 2005). Empathy was also an adaptive response in a study by Dallaire and Zeman (2013) of children of incarcerated parents. Their peers generally rated them as being more aggressive, but when the children reported higher levels of empathy, their peers rated them as being no more aggressive than children whose parents were not incarcerated. Additionally, those who are more able to empathize with others also have been found to have higher overall happiness (Totan, Doğan, & Sapmaz, 2013), suggesting that empathy is good indicator of whether a person can deal with difficulties.

In this study, empathy is examined as a mediator between family hostility and adolescent anxiety and depression for several reasons. Empathic concern and perspective taking are characteristics that initially develop in the context of socialization, especially the context of family interaction. As discussed above, empathy appears to be related to depressive symptoms in adolescents, but no studies could be found that examine empathic concern and perspective taking separately. Likewise, no studies that examine empathy and anxiety in adolescents could be found. It may be that empathic concern and perspective taking mediate the relationship between family hostility and depression and anxiety differently. It may also be that perspective taking as a cognitive dimension of empathy is not negatively related to depression and anxiety whereas empathic concern, an emotional process, is more likely to be significantly related to depression and anxiety.

Gender Differences in Anxiety, Depression, Empathy, and Effects of Hostility

Differences between boys and girls experiencing anxiety appear to exist, but little is understood about these differences outside of prevalence rates, with girls consistently experiencing more anxiety symptoms than boys. A nationally representative study in the U.S.

reported that 38.1% of girls and 26.1% of boys would experience anxiety symptoms at some point during their adolescent years. These rates persisted from early to late adolescence (Merikangas, et al., 2010). Ingles and colleagues (2015) reported that girls have higher rates of anxiety than boys, but girls reported less symptoms as they reached later teen years. One study found gender differences among adolescents experiencing anxiety, specifically that boy's psychosocial functioning, subjective well-being, and self-esteem were more affected than their female peers (Derdikman-Eiron, et al., 2012).

Similar to anxiety symptoms, depression is reported more often among girls than in boys, about twice as much, and rates appear to increase as adolescents get older (Derdikman-Eiron, et al., 2012; Merikangas, et al., 2010; Reed, Nugent, & Cooper, 2015). A particular gender difference emerged in more than one study; that girls were more affected by relational attacks, in the form of cyberbullying and relational victimization, than boys (Reed, et al., 2015; Stange, Hamilton, Abramson, & Alloy, 2014). The differences in boy's and girl's depression and anxiety suggest a need for gender-based assessment and treatment.

The literature on how boys and girls are affected by hostility from their parents shows that girls are affected more than boys (Calvete & Orue, 2013; Little & Seay, 2014). One study even found that girls' depressive symptoms were significantly related to parental hostility and psychological control while there was no such association in boys. Girls are generally socialized to value relationships which may cause them to be more affected when their parent-child relationships involve hostility (Lewis, Collishaw, Thapar, & Harold, 2014).

Findings related to gender differences in empathy have not led to a clear conclusion. Van der Graaff and associates (2014) followed adolescent boys and girls from age 13 to 18 years and found that adolescent's rate of increase in perspective taking was higher for girls than for

boys, and that girls exhibited higher levels of empathic concern. Eisenberg and Lennon (1983) conducted a meta-analysis and found that self-report measures generally result in large sex differences that favor females. They also found that moderate differences favoring females came from measuring reflexive crying and self-report in a laboratory, and no sex differences were found when the measures were either physiological or unobtrusive observations of nonverbal reactions. These findings suggest that gender is important to examine when considering empathy.

The Current Study

The purpose of this study was to examine the relationship between observed hostility in family interactions and adolescent depression and anxiety two years later with the adolescent's empathic concern and perspective taking (measured in the wave in between family process and depression and anxiety) as potential mediating variables. The overall measurement and hypothesized model is shown in Figure 1, and the following hypotheses which represent the paths in that model. Family hostility was the only latent variable in the model because creating latent variables for the outcomes and the mediators would have created so many paths to be estimated that statistical power would be lost because the sample size was not large enough for the number of paths this would have created.

The following hypotheses were tested (see Figure 1):

1. Observed hostility in family interaction at time 3 will be positively related to adolescent depression and anxiety at time 5.
2. Adolescent perspective taking and empathic concern at time 4, will be significant partial mediators of the relationship between observed hostility in family interaction at time 3 and adolescent depression and anxiety at time 5.

Little is known about how the paths among these variables differ between male and female adolescents so it is difficult to develop a hypothesis about gender differences. However, because of the literature reviewed earlier that shows gender differences for each variable in this study, it is important to ask the research question, "How do the relationships between these variables differ for boys and for girls?" Using group comparison in Structural Equation Modeling, this question will be addressed by comparing the relationships among variables in the hypothesized model in Figure 1 between girls and boys.

This study is unique in that it includes observational data and is longitudinal, something few studies have done. This methodology allows a richer assessment of family interaction because the measurement of family hostility is actually observed and includes not only both parents' hostility toward the adolescent but also the adolescent's hostility toward each parent. In self-report surveys, individual's perceptions, especially of hostility, may not be an accurate assessment of their behavior (Janssens, et al., 2005). Additionally, observational research allows real-time reactions of family members to each other's behavior (Dadds, et al., 1996). Also, the longitudinal aspect of the current study allows for the examination of how the family's interactions affect adolescents two years later. This study fills a gap in research on the effects of family process on adolescent anxiety and depression.

Method

Participants

The data for this study were taken from waves 3-5 of the Flourishing Families Project (FFP). The FFP is a longitudinal study of inner family life involving families with a child between the ages of 10 and 14 at the first wave of data collection. 353 two-parent families participated in the initial wave. The average number of children in the families was 2.48

(SD=1.13) in families where a girl was the target child and 2.41 (SD=.91) in families where a boy was the target. The average age of the target children in Wave 3 was 13.25 (SD=1.01) for girls and 13.30 years (SD=.99) for boys. The average age of mothers was 45.40 (SD=5.67) and 47.34 (SD=5.98) for fathers. 76% of the girls and 79.6% of the boys were Caucasian; (repeating in the same order) 5.4% and 3.6% were African-American; 1.8% and 0.6% were Hispanic; 4.2% and 3.6% were Asian-American, and 12.5% and 12.5% were multi-ethnic. The other 12.5% of girls and 12.6% of boys did not respond with their ethnicity. At Wave 3 40.5% of girls and 36.5% of boys were in the 7th grade; 29.2% and 30.% were in the 8th grade, and 24.6% of girls and 20.1% of boys were in the 9th grade. 5.7% of girls and 8.4% of boys did not indicate what their grade in school was. Relating to family income in the same wave, 22.6% of families reported that they made less than $59,000 per year, 32.8% reported $60,000-99,000, 29.9% reported $100,000-149,000, and 14.7% reported making $150,000 or more per year. 60% of mothers and 70% of fathers reported having at least a bachelor's degree.

Procedures

Families participating in the FFP were selected from a large northwestern city and were interviewed during the first eight months of 2007 for a wave 1 data sample. Subsequently, families were interviewed at yearly intervals for a second (2008), third (2009), fourth (2010), and fifth time (2011). Families were chiefly recruited using a purchased national telephone survey database (Polk Directories/InfoUSA). This database claimed to contain 82 million households across the United States and had detailed information about each household, including presence and age of children. Families identified using the Polk Directory were randomly selected from targeted census tracts that mirrored the socio-economic and racial stratification of reports of local school districts. All families with a child between the ages of 10 and 14 living within the target

census tracts were deemed eligible to participate in the FFP. Of the 692 eligible families contacted, 423 agreed to participate, resulting in a 61% response rate for the first wave. However, the Polk Directory national database was generated using telephone, magazine, and internet subscription reports which underrepresented families of lower socio-economic status. Therefore, in an attempt to more closely mirror the demographics of the local area, a limited number of families were recruited into the study through other means (e.g., referrals, fliers; n = 77, 15%). By broadening our approach, we were able to significantly increase the social, economic and ethnic diversity of the sample.

All families were contacted directly using a multi-stage recruitment protocol. First, a letter of introduction was sent to potentially eligible families. Second, interviewers made home visits and phone calls to confirm eligibility and willingness to participate in the study. Once eligibility and consent were established, pairs of interviewers made an appointment to come to the family's home to conduct an assessment interview that included video-taped interactions, as well as questionnaires that were completed in the home. The most frequent reasons cited by families for not wanting to participate in the study were lack of time and concerns about privacy. It is important to note that there were very little missing data. As interviewers collected each segment of the in-home interview, questionnaires were screened for missing answers and double marking. The visits consisted of a one-hour video of the family interacting in discussion tasks and a one-and-one half hour self-administered questionnaire for each family member. The one-hour video tasks were coded using the Iowa Family Interaction Rating Scales (IFIRS). Survey and video data from all family members were used in the current study. The current study utilizes variables of the observational data from wave 3 (antisocial interactions), the mediating

variables (adolescent empathic concern and perspective taking) were measured at wave 4, and the outcome variables (child anxiety and child depression) were taken from wave 5.

Measures

Adolescent depression, times 3 and 5. Children's depression at times 3 and 5 was assessed using the *Center for Epidemiological Studies Depression Scale for Children* (CES-DC), a 20-item self-report (Weissman, Orvaschel, & Padian, 1980). The time 3 variable will be used as a control variable. Using a Likert-type scale ranging from 1 (*not at all*) to 4 (*a lot*), adolescents responded by rating how much they have experienced each item in the past week. Higher scores indicate greater depressive symptoms. Sample items included, "I was bothered by things that usually don't bother me," and "I felt lonely, like I didn't have any friends." The Cronbach's alpha for the current sample was .92 for both times 3 and 5. The mean of items will be used for the variables.

Adolescent anxiety, times 3 and 5. Children's anxiety at times 3 and 5 was assessed using the six-item generalized anxiety disorder subscale from the *Spence Child Anxiety Inventory* (Spence, 1998). Participants responded using a 4-point Likert scale ranging from 0 (*never*) to 3 (*always*) with higher scores reflecting greater levels of anxiety. Sample items included, "I worry a lot about things," and "When I have a problem, my heart beats really fast." The reliability coefficients for this sample were .83 for time 3 and .84 for time 5. The mean of items was used in the model.

Adolescent perspective taking, time 4. Adolescent perspective taking was measured using the Perspective Taking subscale from Davis' *Interpersonal Reactivity Index* (1983). Participants were asked to rate seven items on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items included "I try to understand my friends better by imagining how

things look from their point of view," "I believe that there are two sides to every question and try to look at both," and "I try to look at everybody's side of a disagreement before I make a decision." The Conbach's alpha for this sample was 77.

Adolescent empathic concern, time 4. Adolescent empathic concern time 4, was measured using the Empathic Concern subscale from Davis' *Interpersonal Reactivity Index* (1983). Using a Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), participants answered seven items. Sample items included, "I often have tender, concerned feelings for people less fortunate than I," "I feel very sorry for other people when they are having problems," and "When I see someone being taken advantage of, I feel protective toward them." Previous reliability studies for this subscale reported a coefficient of .72 (Barber, 2002). For the current sample from wave 4, the Cronbach's Alpha coefficient was .80.

Observed hostility in family interaction. The latent variable, observed hostility in family interaction, was created using specific coded behavior in two nine-minute discussion tasks, one with the mother and adolescent and the other with the father and adolescent. The participants sat either at a table or together on a couch. Parents and adolescents were then given a stack of cards with the following questions on them and were asked to discuss them in order, trying to discuss as many as possible in the nine minutes. On average, the parents and adolescents discussed through question 10.

<u>Card 1 (adult)</u>

What do I think have been some of my child's biggest accomplishments during the past year?

What do I think he or she is most proud of?

How do each of us feel about this?

(Please discuss each other's answers.)

Card 2 (youth)

What sorts of things do I usually do with Mom?

What do I especially enjoy doing with her?

What would I like to do with just Mom if we had more time to spend together?

(Please discuss each other's answers.)

Card 3 (adult)

How do I know what's going on in my child's life, like in school, with friends, or other activities?

(Please discuss each other's answers.)

Card 4 (youth)

How does Mom want me to act?

What are her rules?

How fair are her rules?

(Please discuss each other's answers.)

Card 5 (youth)

What does Mom do when I do something she doesn't like?

Does she always do what she says she will do when this happens?

(Please discuss each other's answers.)

Card 6 (adult)

What was one of the last things that caused problems or disagreements between the two of us?

What did each of us do or say?

(Please discuss each other's answers.)

Card 7 (youth)

What does Mom do or say when I have done a good job at something, like in school or around the house? Give some examples.

(Please discuss each other's answers.)

Card 8 (youth)

If Mom says I will be rewarded for doing something, does she always do what she says she will? Give some examples.

(Please discuss each other's answers.)

Card 9 (youth)

If friends tried to get me into trouble, what would I do?

What would Mom want me to do?

(Please discuss each other's answers.)

Card 10 (adult)

What does my child do after school and on weekends?

Do I approve?

(Please discuss each other's answers.)

Card 11 (adult)

In my opinion, what has been my child's biggest disappointment or difficulty during the past year?

How do each of us feel about this?

(Please discuss each other's answers.)

Card 12 (youth)

If I ever have children, in what ways will I raise them like my Mom has raised me?

In what ways will I raise my children differently?

(Please discuss each other's answers.)

Card 13 (adult)

If each of us could change anything about our family, what would we like to change? Why? Do we agree or disagree about this?

(Please discuss each other's answers.)

Card 14

If there is still time left, please discuss the earlier questions or anything else you would like to talk about until the interviewer returns.

Using the Iowa Family Interaction Rating Scales (Melby & Conger, 1998), the coded behaviors from adolescent to parent and parent to adolescent included hostility, contempt, and antisocial communication. Hostility is defined as the degree to which the individual displays hostile, angry, critical, disapproving, and/or rejecting behavior toward another interactor's behavior, appearance, or state. Examples include "Shut up, Mom. She's asking me," or "You always do it wrong!" Contempt is a specific form of hostility that assesses the amount of disgust, disdain, derision, and scorn shown toward another interactor, such as rolling eyes in response to the other person, or saying something like "You're an embarrassment." Antisocial communication is a more general type of hostility such as being uncooperative, obnoxious, self-centered, or insensitive to the other person. The mother and father each received three ratings (hostility, contempt, and antisocial), and the adolescent received three ratings of these three behaviors toward mother and three ratings of the same behaviors toward father.

These twelve ratings were used as indicators of a latent variable called observed family hostility on the assumption that hostility is contagious in families. Combining the individual

codes was a way of measuring the general climate of family hostility because the family climate overall was of more interest than examining the specific hostile behaviors alone. These observed behaviors are codes from the Iowa Family Interaction Rating Scales, IFIRS (Melby & Conger, 1998). After watching the interaction, trained coders assigned a rating that ranged from 1 (*not at all characteristic of this interaction*) to 9 (*totally characteristic of this interaction*) for each person in the task. For example, the mother received a rating for her hostility, a rating for her contempt, and a rating for her antisocial communication during the task. The adolescent also received a rating for each of the three behaviors exhibited during the task toward the mother and toward the father. As shown in Figure 1, this created four hostility indicators (mother's hostility, adolescent hostility toward mother, father hostility, and adolescent hostility toward father), four contempt indicators, and four antisocial communication indicators as indicators for the latent variable. One-fourth of the tasks were coded by a second reliability coder where neither the primary coder nor the reliability coder knew that the task was coded by another coder. The tasks were randomly assigned, and the coders were blind to the fact that another coder was rating the interaction. Intraclass correlation coefficients for inter-rater reliabilities ranged from .82 to 85. Coders were trained in a semester-long research course, and their inter-rater reliability had to be above 80% in order for their coding to be accepted into the database.

Analysis Plan

Descriptive statistics including means, standard deviations, and correlations were calculated, and independent t-tests were calculated to compare means for boys and girls for each variable.

Multiple group analysis in Structural Equation Modeling via AMOS 20 was used to compare both the measurement errors and the structural paths between boys and girls. Bias

corrected bootstrapping with 2000 sample draws (Preacher & Hayes, 2008) was used to test for mediation. A fully constrained model was compared to a fully unconstrained model, and a Chi Square difference test was used to determine if the differences in the Chi Square values and degrees of freedom for the two models were statistically significant. Assuming there would be gender difference, further models were created by a step by step constraining of each path for girls and boys and examining which model produced the best fit. The final model will be considered a good fit to the data if the Chi Square is not significant, and *CFI* is above .95, and the *RMSEA* is less than .05 (Kline, 2010).

Results

Mean Scores and Correlations

Mean scores were calculated for girls and boys for the predictor, mediator, and outcome variables (see Table 1). The means of the observed hostility variables ranged from 1.07 (*SD*=.39) on father contempt toward adolescent for girls, to 2.22 (*SD*=1.69) on adolescent antisocial with mother for boys. These relatively low mean scores for hostility highlight the nature of the community sample in that the families, on average, did not demonstrate high levels of hostility. However, ranges varied from 1 to 9 for these hostility variables indicating that some families were high in hostility in the study.

Independent samples t-tests were conducted to determine if girls and boys differed on any of the measured variables. Results showed that girls were higher than boys on perspective taking (t = -3.85, p<.001), empathic concern (t = -6.26, df = 333, p<.001), depression Time 5 (t = -2.87, df- 333, p<.01), and anxiety Times 3 and 5 (t = -3.23, df- 333, p<.001; t = -5.44, df = 333, p<.001). There were no gender differences for any of the other variables. Correlations between the family hostility indicators and adolescent depression at Time 5 were mostly statistically

significant for girls, ranging from .14 to .25 for girls. However, only three of the 12 indicators for family hostility were correlated for boys (adolescent antisocial with mother, $r = .18$, $p<.05$; father antisocial with adolescent, $r = .18$, $p<.05$; adolescent antisocial with father, $r = .25$, $p<.001$). The majority of correlations between family hostility and adolescent anxiety at time 5 were statistically significant for girls (*r's* ranged from .15 to .22) and for boys (*r's* ranged from .15 to .24).

Path Model Results

Group comparison. A fully unconstrained model was compared against a fully constrained model, and the X^2 difference test was statistically significant. The constraint on one path at a time was freed beginning with the paths where the Beta coefficients were the most different. This was continued until a model with the best fit was reached. In that model, all paths were constrained to be equal except for three paths. Those were the paths from observed hostility in family interaction T3 to adolescent empathic concern T4 and to adolescent depression T5 and the path from adolescent perspective taking T4 to adolescent depression T5. The fit indices for that model showed that $X^2 = 138.37$ (df = 114, $p= .06$) and the *CFI* was well above .95 (*CFI* =.987), and the *RMSEA* was below .05 (*RMSEA* =.029).

As shown in Figure 2, adolescent depression and anxiety at time 3 were used as control variables by creating paths between them and both outcome variables as well as paths to both mediating variables. Other control variables included age since studies cited in the literature review showed that both anxiety and depression increase from early to middle adolescence and the approximate average age of both boys and girls at time 3 was 13 so at time 5, they were, on average, 15 years old. Age is not shown in Figure 2 because it was not significantly related to any of the variables in the model.

Structural equation modeling (Figure 2) showed that the latent variable, observed hostility in family interaction at time 3, predicted adolescent depression at time 5 for girls (β = .21, p<.01) but not for boys (β = .06). Therefore, the portion of the first hypothesis that family hostility would be positively related to depression was supported for girls but not for boys. Observed hostility in family interaction at time 3 predicted adolescent anxiety at time 5 for both boys (β = .17, p<.05) and girls (β = .19, p<.05) which supported the part of hypothesis 1 concerning anxiety.

Tests for mediation. As can be seen in Figure 2, hostility in family interaction at time 3 was not related to adolescent perspective taking at time 4 for boys or girls, and adolescent perspective taking time 4 was not significantly related to anxiety for boys or girls, but it was negatively related to depression at time 5 for girls only (β= -.20, p <.05). Observed family hostility was only related to adolescent empathic concern time 4 for girls (β =-.18, p<.05). Bootstrapping results showed that adolescent perspective taking was not a significant mediator for either girls or boys. Therefore, the portion of hypothesis 2 that perspective taking would be a significant mediator was not supported for either girls or boys. However, adolescent empathic concern significantly mediated the relationship between observed hostility in family interaction time 3 and adolescent depression time 5 (β = -.041, 95% *CI* -.026 to -.113, p<.05) and adolescent anxiety time 5 (β = -.043. 95% *CI* -.019 to -107, p<.05) for girls. It, of course, did not mediate the relationship for boys since family hostility was not related to empathic concern for boys. Therefore, the portion of the second hypothesis that stated that adolescent empathic concern at time 4 would partially mediate the relationship between observed family hostility at time 3 and adolescent depression at time 5 and adolescent anxiety at time 5 was supported for girls but not for boys.

Discussion

The purpose of this longitudinal study was to examine hostility in family interaction and its impact on adolescent depression and anxiety with adolescent perspective taking and empathic concern as mediators. Observed family hostility, coded at the beginning of the study, was positively related to anxiety two years later for adolescent girls and boys. Observed hostility was also related to adolescent depression for girls but not for boys. Adolescent empathic concern partially mediated the relationship between family hostility and adolescent anxiety for girls but not for boys. Adolescent perspective taking did not mediate the relationships between family hostility and depression and anxiety for either girls or boys.

The finding that family hostility is associated with anxiety in adolescents two years later is a contribution to the literature on family environment and anxiety since previous studies have been primarily cross-sectional. These findings connecting hostility in families with anxiety in adolescents are consistent with findings from Hale, Engels and Meeus (2006) who used questionnaires to examine adolescent perceptions of parental rejection and alienation and found these parenting behaviors associated with generalized anxiety disorder in both females and males. Caster, Inderbitzen, and Hope (1999) also found that both girls and boys who perceived their family environments as more shaming exhibited higher social anxiety.

The finding that family hostility was associated with adolescent depression for girls but not for boys was similar to what Schwartz, et al. (2012) found. In their study, parents' self-reports of restricting and punishing parent behaviors were associated with higher levels of depressive symptoms in adolescent girls. However, in an earlier study, Schwartz and colleagues (2011) investigated how mothers' aggressive and dysphoric behaviors were related to the onset of Major Depressive Episodes in children over a six-year period from the time the children were

12-18 years. They found that maternal aggression predicted the onset of a Major Depressive Disorder for both boys and girls. However, girls were more likely to develop depression at a higher propensity than boys. Others (Calvete & Orue, 2013; Little & Seay, 2014) found that adolescent girls are more negatively affected by hostility in families. Lewis and colleagues (2014) suggested that this gender difference is a function of socialization where girls are encouraged to be more focused on relationships, so they are affected more deeply than boys when hostility arises between them and others.

No previous studies could be found which examined adolescent perspective taking and empathic concern as mediating variables between family hostility and depression and anxiety. It appears that family hostility does not interfere with an adolescent's cognitive ability to understand how another person views a situation. However, family hostility was related to empathic concern for girls. One explanation for this gender difference may be that girls are more tuned into family hostility because they are socialized to attend to emotion in relationships (Bronstein, Biones, Brooks, & Cowan, 1996) whereas boys are socialized to work toward instrumental goals, and to not allow distressful emotions in relationships get in the way of these goals.

Empathic concern was positively related to adolescent depression and anxiety for both girls and boys; a finding that is similar to those of Pikos and Pinczes (2014). Some (Uche, 2010) have speculated that mentally placing self in the emotional position of someone else can lead to a disconnection with one's own feelings. O'Connor (2006) concluded that the limbic and paralimbic systems which are active in emotional empathy are over active in people suffering from depression. They argue that high sensitivity to another's distress is related to depression through experiencing guilt for not being able to make other peoples' lives better. However, these

findings are in contrast to those in other studies (Du Bois & Klink, 2007) which found that empathy was negatively related to depression. One reason for this different finding may be related to the measurement and conceptualization of empathy. They did not separate empathy into its components of perspective taking and empathic concern, and the measure they used appears to be a mixture of both.

Clinical Implications

The findings of this study support the Diathesis-Stress Theory which assumes that stress in one's environment can trigger psychopathology. In this case, family environment was the stressor related to anxiety and to depression for adolescent girls. The theory also assumes that adaptive responses, such as understanding how others think and feel, can alleviate the effects of stress.

One implication for therapists is the importance of teaching empathic skills to adolescent girls, especially those who complain of aggressive and hostile families. A family therapist might extend beyond the individual adolescent and teach empathic skills to all members of the family. If parents and adolescents both have appropriate ways to deal with their stress, the latent hostility in their environment may not surface, thus protecting the adolescents from heightened anxiety and depression symptoms. Coping skills such as mindfulness, deep breathing, or those used in dialectical behavior therapy have also shown to be effective in therapy (Coholic, & Eys, 2016; Trupin, Stewart, Beach, & Boesky, 2002; Yalcin, Unal, Pirdal, & Karahan, 2015).

The findings of this study also support a systemic approach to working with anxious and depressed adolescents. The strong association between family hostility and adolescent psychopathology necessitates at least the parents being involved in treating adolescent anxiety and depression. Interventions that involve the whole family in therapy for adolescents are

garnering more support (Young & Fristad, 2015). Further, along with involving families in treating adolescent anxiety and depression, our findings suggest a need for gender specific assessment and treatment. Girls and boys may experience and report psychopathologies differently, thus clinicians must be familiar with these differences so they can successfully navigate cases involving both boys and girls (Derdikman-Eiron, et al., 2012). Clinicians should also be aware of gender differences in how adolescents talk about empathy. One study found that females scored higher than males on empathy in self-report, but when brain regions associated with empathic reactions were examined in an fMRI while participants viewed scenes of people being hurt, there were no gender differences (Michalska, Kinzler, & Decety, 2013).

Finally, our results suggest that while empathy may be a helpful characteristic in responding to stress, too much empathy can actually be harmful, particularly in girls. Thus, in working with adolescents with anxiety and depression, clinicians must assess their level of affective empathy or how much they take other's emotional pain upon themselves. A therapist might intervene by helping an adolescent girl create stronger boundaries so she is clear which feelings belong to others and which feelings are her own. This would help her differentiate from her family (Bowen, 1985).

Limitations and Implications for Future Research

Limitations of this research should be noted. The sample only included two-parent families and did not distinguish between biological married, biological cohabitating, step married and step cohabitating families. It is possible that differences exist between different family structures that could affect relationships among variables in this study. Also, while the ethnic diversity of families in the sample were similar to the demographics in the geographical area, there were few Latino families and Asian-American families in the sample so the findings should

not be generalized to those groups. Likewise, since all of the families were from the Northwestern United States, the findings may not generalize to other parts of the U.S. or globally.

The findings of this study raised several questions. How might family hostility best be measured? How is temperament related to the hostile reciprocated behaviors in a family? What other mediators can help understand the relationship between family hostility and anxiety and depression? What processes buffer the effects of hostility on anxiety and depression for girls? Further research is needed to examine how family interactions affect adolescent well-being in different family types, and cultures, and with different mediators that may affect the impact of hostility in families and adolescent functioning.

Conclusion

The diathesis-stress model suggests that latent psychopathologies can be triggered by stressful situations in families. This study lends support to this theory as hostility in family interactions as a whole predicted anxiety in male and female adolescents. Hostility in family interactions also predicted depression in girls. While empathy is generally considered a healthy trait for a child to exhibit, too much empathy may make it difficult for an adolescent to deal with guilt and diffuse emotional boundaries which can lead to depression and anxiety. It is important for therapists to involve parents in treating anxiety and depression in adolescents, and to assess and address excessive empathic concerns.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Association.

Barber, B. K. (2002). Positive interpersonal and intrapersonal functioning: An assessment of measures among adolescents. In K. A. Moore & L. H. Lippman (Eds.), *What do children need to flourish?* (pp. 147-161), New York: Springer.

Batanova, M. D., & Loukas, A. (2012). What are the unique and interacting contributions of school and family factors to early adolescents' empathic concern and perspective taking? *Journal of Youth and Adolescence*, *41*(10), 1382-1391. doi:10.1007/s10964-012-9768-5

Boag, E. M., & Carnelley, K. B. (2015). Attachment and prejudice: The mediating role of empathy. *British Journal of Social Psychology*, *55*(2), 337-356. doi:10.1111.bjso.12132

Bronstein, P, Briones, M., Brooks, T., & Cowan, B, (1998). Gender and family factors as predictors of late adolescent emotional expressiveness and adjustment: A longitudinal study. *Sex Roles, 34*(11/12), 739-765. doi:10.1007/BF01544314

Bowen, M. (1985). *Family therapy in clinical practice.* Lanham, MD: Rowman & Littlefield Publishers, Inc.

Braet, C., Vlierberghe, L. V., Vandevivere, E., Theuwis, L., & Bosmans, G. (2013). Depression in early, middle and late adolescence: Differential evidence for the cognitive diathesis–stress model. *Clinical Psychology & Psychotherapy*, *20*(5), 369-383. doi:10.1002/cpp.1789

Buehler, C., & Gerard, J. (2013). Cumulative family risk predicts increases in adjustment difficulties across early adolescence. *Journal of Youth and Adolescence, 42*(6), 905-920. doi:10.1007/s10964-012-9806-3

Bufferd, S. J., Dougherty, L. R., Olino, T. M., Dyson, M. W., Laptook, R. S., Carlson, G. A., & Klein, D. N. (2014). Predictors of the onset of depression in young children: A multi-method, multi-informant longitudinal study from ages 3 to 6. *Journal of Child Psychology and Psychiatry, 55*(11), 1279-1287. doi:10.1111/jcpp.12252

Burnette, J. L., Davis, D. E., Green, J. D., Worthington, E. L., & Bradfield, R. (2009). Insecure attachment and depressive symptoms: The mediating role of rumination, empathy, and forgiveness. *Personality and Individual Differences, 46*(3), 276-280.

Caldwell, R. M., Sturges, S. M., & Silver, N. C. (2007). Home versus school environments and their influences on the affective and behavioral states of African American, Hispanic, and Caucasian juvenile offenders. *Journal of Child & Family Studies*, *16*(1), 119-132. doi:10.1007/s10826-006-9073-6

Calvete, E., & Orue, I. (2013). Cognitive mechanisms of the transmission of violence: Exploring gender differences among adolescents exposed to family violence. *Journal of Family Violence*, *28*(1), 73-84. doi:10.1007/s10896-012-9472-y

Caster, J. B., Inderbitzen, H. M., & Hope, D. (1999). Relationship between youth and parent perceptions of family environment and social anxiety. *Journal of Anxiety Disorders, 13*(3), 237-251. doi:10.1016/S0887-6185(99)00002-X

Chen, J. (2015). Genetic and environmental contributions to anxiety among Chinese children and adolescents: A multi-informant twin study. *Journal of Child Psychology & Psychiatry, 56*(5), 586-594.

Coholic, D., & Eys, M. (2016). Benefits of an arts-based mindfulness group intervention for vulnerable children. *Child & Adolescent Social Work Journal*, *33*(1), 1-13. doi:10.1007/s10560-015-0431-3

Cojuharenco, I., & Sguera, F. (2015). When empathic concern and perspective taking matter for ethical judgment: The role of time hurriedness. *Journal of Business Ethics, 13*(3), 717-727. doi: 10.1007/s10551-014-2259-8

Costello, E. J., Egger, H., & Angold, A. (2005). 10-year research update review: The epidemiology of child and adolescent psychiatric disorders: I. methods and public health burden. *Journal of the American Academy of Child & Adolescent Psychiatry, 44*(10), 972-986. doi:10.1097/01.chi.0000172552.41596.6f

Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry*, *60*(8), 837-844. doi:10.1001/archpsyc.60.8.837.

Dadds, M. R., Barrett, P. M., Rapee, R. M., & Ryan, S. (1996). Family process and child anxiety and aggression: An observational analysis. *Journal of Abnormal Child Psychology, 24*(6), 734. Retrieved from http://search.proquest.com.erl.lib.byu.edu/docview/1300096546?accountid=4488

Dallaire, D. H., & Zeman, J. L. (2013). II. Empathy as a protective factor for children with incarcerated parents. *Monographs of the Society for Research in Child Development*, *78*(3), 7-25. doi:10.1111/mono.12018

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology*, *44*(1), 113–126. doi:10.1037/0022-3514.44.1.113

de Wilde, A., & Rapee, R. M. (2008). Do controlling maternal behaviours increase state anxiety in children's responses to a social threat? A pilot study. *Journal of Behavior Therapy and Experimental Psychiatry, 39*(4), 537. doi:10.1016/j.jbtep.2007.10.011

Derdikman-Eiron, R., Indredavik, M., Bakken, I., Bratberg, G., Hjemdal, O., & Colton, M. (2012). Gender differences in psychosocial functioning of adolescents with symptoms of anxiety and depression: Longitudinal findings from the Nord-Trøndelag health study. *Social Psychiatry & Psychiatric Epidemiology, 47*(11), 1855-1863. doi:10.1007/s00127-012-0492-y

Du Bois, R., & Klink, F. K. (2007). Emotional deprivation and narcissistic regulation: Development and treatment of depressive crisis in children and adolescents. *Praxis der Kinderpsychologie und Kindwerpsychiatrie, 56*(3), 206-223. pmid:17451151

Eisenberg, N., & Lennon, R. (1983). Sex differences in empathy and related capacities. *Psychological Bulletin, 94*(1), 100-131. doi:10.1037/0033-2909.94.1.100

Ellonen, N., Kääriäinen, J., & Autio, V. (2008). Adolescent depression and school social support: A multilevel analysis of a Finnish sample. *Journal of Community Psychology*, *36*(4), 552-567. doi:10.1002/jcop.20254

Essau, C. A., Lewinsohn, P. M., Olaya, B., & Seeley, J. R. (2014). Anxiety disorders in adolescents and psychosocial outcomes at age 30. *Journal of Affective Disorders, 163*, 125-132. doi:10.1016/j.jad.2013.12.033

Fatfouta, R., Gerlach, T. M., Schroder-Abe, M., & Merkl, A. (2015). Narcissism and lack of interpersonal forgiveness: The mediating role of state anger, state rumination, and state empathy. *Personality and Individual Differences, 75*, 36-40. doi.org/10.1016/j.paid.2014.10.051

Ferro, M. A., & Boyle, M. H. (2015). The impact of chronic physical illness, maternal depressive symptoms, family functioning, and self-esteem on symptoms of anxiety and depression in children. *Journal of Abnormal Child Psychology*, *43*(1), 177-187. Retrieved from http://eds.a.ebscohost.com/eds/detail/detail?sid=21b76219-dbd8-42b6-8c55-cda4291543f4%40sessionmgr4003&vid=0&hid=4108&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=000347694100015&db=edswss

Flouri, E., Midouhas, E., Joshi, H., & Tzavidis, N. (2015). Emotional and behavioural resilience to multiple risk exposure in early life: The role of parenting. *European Child & Adolescent Psychiatry, 24*(7), 745-755. doi:10.1007/s00787-014-0619-7

Fosco, G. M., Van Ryzin, M. J., Connell, A. M., & Stormshak, E. A. (2015). Preventing adolescent depression with the family check-up: Examining family conflict as a mechanism of change. *Journal of Family Psychology, 30*(1), 82-92. doi:10.1037/fam0000147

Gerlsma, C., Emmelkamp, P. M. G., & Arrindell, W. A. (1990). Anxiety, depression, and perception of early parenting: A meta-analysis. *Clinical Psychology Review, 10*(3), 251-277. doi:10.1016/0272-7358(90)90062-F

Gilman, R., Rice, K. G., & Carboni, I. (2014). Perfectionism, perspective taking, and social connection in adolescents. *Psychology in the Schools, 51*(9), 947-959. doi.org/10.1002/pits.21793

Gledhill, J., & Garralda, M. E. (2013). Sub-syndromal depression in adolescents attending primary care: Frequency, clinical features and 6 months outcome. *Social Psychiatry and Psychiatric Epidemiology*, *48*(5), 735-744. doi:10.1007/s00127-012-0572-z

Greenberg, P. E., Sisitsky, T., Kessler, R. C., Finkelstein, S. N., Berndt, E. R., Davidson, J. R., . . . Fyer, A. J. (1999). The economic burden of anxiety disorders in the 1990s. *The Journal of Clinical Psychiatry, 60*(7), 427-435. Retrieved from http://eds.a.ebscohost.com/eds/detail/detail?sid=0b1cdc67-ca2f-4e5d-b98c-b4ffaf77b665%40sessionmgr4001&vid=0&hid=4108&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=10453795&db=cmedm

Ha, T., & Granger, D. A. (2016). Family relations, stress, and vulnerability: Biobehavioral implications for prevention and practice. *Family Relations, 65*(1), 9-23. doi:10.1111/fare.12173

Hale III, W. W., Engels, R., & Meeus, W. (2006). Adolescent's perceptions of parenting behaviours and its relationship to adolescent generalized anxiety disorder symptoms. *Journal of Adolescence, 29*(3), 407-417. doi:10.1016/j.adolescence.2005.08.002

Hankin, B. L., Young, J. F., Abela, J. Z., Smolen, A., Jenness, J. L., Gulley, L. D., & ... Oppenheimer, C. W. (2015). Depression from childhood into late adolescence: Influence of gender, development, genetic susceptibility, and peer stress. *Journal of Abnormal Psychology*, *124*(4), 803-816. doi:10.1037/abn0000089

Harper, J. M., Padilla-Walker, L. M., & Jensen, A. C. (2014). Do siblings matter independent of both parents and friends? Sympathy as a mediator between sibling relationship quality and adolescent outcomes. *Journal of Research on Adolescence, 26*(1), 101-114. doi:10.1111/jora.12174

Hoffman, M. L. (2000). *Empathy and moral development: Implications for caring and justice*. New York, NY: Cambridge University Press.

Hudson, J. L., & Rapee, R. M. (2001). Parent–child interactions and anxiety disorders: An observational study. *Behaviour Research and Therapy, 39*(12), 1427. doi:10.1016/S0005-7967(00)00107-8

Hudson, J. L., Comer, J. S., Kendall, P. C. (2008). Parental responses to positive and negative emotions in anxious and nonanxious children. *Journal of Clinical Child & Adolescent Psychology, 37*(2), 303-313. doi:10.1080/15374410801955839

Ingles, C. J., Garcia-Fernandez, J. M., Marzo, J. C., Martinez-Monteagudo, M. C., & Estevez, E. (2015). School anxiety inventory–short version factorial invariance and latent mean differences across gender and age in Spanish adolescents. *Measurement and Evaluation in Counseling and Development*, *48*(4), 247-265. doi:10.1177/0748175615578738

Isaacs, D. (2013). Adolescent depression and school environment. *Journal of Pediatrics & Child Health*, *49*(11), 983-984. doi:10.1111/jpc.12423_2

Janssens, J. M. A. M., De Bruyn, E. E. J., Manders, W. A., & Scholte, R. H. J. (2005). The multitrait-multimethod approach in family assessment: Mutual parent-child relationships assessed by questionnaires and observations. *European Journal of Psychological Assessment, 21*(4), 232-239. doi: 10.1027/1015-5759.21.4.232

Keenan, K., & Hipwell, A. E. (2005). Preadolescent clues to understanding depression in girls. *Clinical Child and Family Psychology Review, 8*(2), 89-105. doi: 10.1007/s10567-005-4750-3

Keenan-Miller, D., Hammen, C. L., & Brennan, P. A. (2007). Health outcomes related to early adolescent depression. *Journal of Adolescent Health*, *41*(3), 256-262.

Keltner, D., & Kring, A. M., (1998). Emotion, social function, and psychopathology. *Review of General Psychology, 2*(3)*,* 320-342. Retrieved from http://dx.doi.org/10.1037/1089-2680.2.3.320

Kessler, R. C., Akiskal, H. S., Ames, M., Birnbaum, H., Greenberg, P., Hirschfeld, R. A., & ... Wang, P. S. (2006). Prevalence and effects of mood disorders on work performance in a nationally representative sample of U.S. workers. *American Journal of Psychiatry*, *163*(9), 1561-1568. Retrieved from http://search.proquest.com/docview/220489821?accountid=4488

Kline, R. B. (2010). *Principles and practices of structural equation modeling, 3rd edition*. New York: Guilford.

Krevans, J., & Gibbs, J. C. (1996). Parents' use of inductive discipline: Relations to children's empathy and prosocial behavior. *Child Development, 67*(6), 3263-3277. doi:10.1111/1467-8624.ep9706244859

Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1998). Major depressive disorder in older adolescents: Prevalence, risk factors, and clinical implications. *Clinical Psychology Review, 18*(7), 765-794. doi:10.1016/S0272-7358(98)00010-5

Lewis, G., Collishaw, S., Thapar, A., & Harold, G. T. (2014). Parent–child hostility and child and adolescent depression symptoms: The direction of effects, role of genetic factors and gender. *European Child & Adolescent Psychiatry*, *23*(5), 317-327. doi:10.1007/s00787-013-0460-4

Light, S. N., Coan, J. A., Zahn-Waxler, C., Frye, C., Goldsmith, H. H., & Davidson, R. J. (2009). Empathy is associated with dynamic change in prefrontal brain electrical activity during

positive emotion in children. *Child Development, 80*(4), 1210-1231. doi:10.1111/j.1467-8624.2009.01326.x

Little, M., & Seay, D. (2014). By-gender risk paths of parental psychological control effects on emerging adult overt and relational aggression. *Journal of Social and Personal Relationships*, *31*(8), 1040-1067. doi:10.1177/0265407513517808

Malaquias, S., Crespo, C., & Francisco, R. (2015). How do adolescents benefit from family rituals? Links to social connectedness, depression and anxiety. *Journal of Child and Family Studies*, *24*(10), 3009-3017. doi:10.1007/s10826-014-0104-4

Mason, M. J., Schmidt, C., Abraham, A., Walker, L., & Tercyak, K. (2009). Adolescents social environment and depression: Social networks, extracurricular activity, and family relationship influences. *Journal of Clinical Psychology in Medical Settings, 16*(4), 346-354. doi:10.1007/s10880-009-9169-4

McCrone, P., Knapp, M., & Fombonne, E. (2005). The Maudsley long-term follow-up of child and adolescent depression: Predicting costs in adulthood. *European Child & Adolescent Psychiatry, 14*(7), 407-413. doi:10.1007/s00787-005-0491-6

McGonigle, M. M., Smith, T. W., Benjamin, L. S., & Turner, C. W. (1993). Hostility and nonshared family environment: A study of monozygotic twins. *Journal of Research in Personality, 27*(1), 23-34. doi:10.1006/jrpe.1993.1003

Melby, J., Conger, R., Book, R., Rueter, M., Lucy, L., Repinski, D., . . . Scaramella, L. (1998). *The Iowa Family Interaction Rating Scales*. Ames, Iowa: Institute for Social and Behavioral Research, Iowa State University.

Merikangas, K. R., He, J., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., . . . Swendsen, J. (2010). Lifetime prevalence of mental disorders in U.S. adolescents: Results from the

National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & and Adolescent Psychiatry, 49*(10), 980-989. doi:10.1016/j.jaac.2010.05.017

Michalska, K. J., Kinzler, K. D., & Decety, J. (2013). Age-related sex differences in explicit measures of empathy do not predict brain responses across childhood and adolescence. *Developmental Cognitive Neuroscience, 3*, 22-32. doi:10.1016/j.dcn.2012.08.001

Milevsky, A., Schlechter, M., Netter, S., & Keehn, D. (2007). Maternal and paternal parenting styles in adolescents: Associations with self-esteem, depression and life-satisfaction. *Journal of Child & Family Studies, 16*(1), 47. doi:10.1007/s10826-006-9066-5

Nelson, J. A. P., Caldarella, P., Young, K. R., & Webb, N. (2008). Using peer praise notes to increase the social involvement of withdrawn adolescents. *Teaching Exceptional Children, 41*(2), 6-13. Retrieved from http://eds.b.ebscohost.com.erl.lib.byu.edu/eds/detail/detail?sid=d0947a6d-ccab-4712-b5e7-277002c09e52%40sessionmgr112&vid=0&hid=112&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=EJ842550&db=eric

Obradović, J., Bush, N. R., Stamperdahl, J., Adler, N. E., & Boyce, W. T. (2010). Biological sensitivity to context: The interactive effects of stress reactivity and family adversity on socioemotional behavior and school readiness. *Child Development, 81*(1), 270-289. doi:10.1111/j.1467-8624.2009.01394.x

O'Connor, R. (2006). *Undoing perpetual stress: The missing connection between depression, anxiety, and 21st century illness.* New York: Berkley Books

Ogburn, K. M., Sanches, M., Williamson, D. E., Caetano, S. C., Olvera, R. L., Pliszka, S., ... & Soares, J. C. (2010). Family environment and pediatric major depressive disorder. *Psychopathology, 43*(5), 312-318. Retrieved from http://web.b.ebscohost.com.erl.lib.byu.edu/ehost/detail/detail?vid=7&sid=d5c8a153-9c6d-4357-9d32-58f5c1cfdcb%40sessionmgr114&hid=115&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#db=aph&AN=53416353

Patrizia, T., Zalewski, I., von Reventlow, H. G., Norra, C., Juckel, G., & Duam, I. (2011). Cognitive and affective empathy in depression linked to executive control. *Psychiatry Research, 189*(3), 373-378. doi.org/10.1016/j.psychres.2011.07.030

Pikos, B. F., & Pinczes, T. (2014). Impulsivity, depression and aggression among adolescents. *Personality and Individual Differences, 69*, 33-37. doi:10.1016/j.paid.2014.05.008

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891.

Psychogiou, L., Daley, D., Thompson, M. J., & Sonuga-Barke, E. (2008). Parenting empathy: Associations with dimensions of parent and child psychopathology. *British Journal of Developmental Psychology, 26*(2), 221-232. doi:10.1348/02615100X238582

Rapee, R. M., Schniering, C. A., & Hudson, J. L. (2009). Anxiety disorders during childhood and adolescence: Origins and treatment. *Annual Review of Clinical Psychology, 5*(1), 311-341. Retrieved from http://www.annualreviews.org/doi/abs/10.1146/annurev.clinpsy.032408.153628

Reed, K. P., Nugent, W., & Cooper, R. L. (2015). Testing a path model of relationships between gender, age, and bullying victimization and violent behavior, substance abuse,

depression, suicidal ideation, and suicide attempts in adolescents. *Children and Youth Services Review*, *55*, 128-137. doi:10.1016/j.childyouth.2015.05.016

Roberts, W., & Strayer, J. (1996). Empathy, emotional expressiveness, and prosocial behavior. *Child Development, 67*(2), 449-470. Retrieved from http://www.jstor.org/stable/1131826

Rosenfield, S, Vertefuille, J., & McAlpine, D. D. (2000). Gender stratification and mental health: An exploration of dimensions of the self. *Social Psychology Quarterly, 63*(3)*,* 208-223. doi:10.2307/26995869

Schwartz, O. S., Dudgeon, P., Sheeber, L. B., Yap, M. B. H., Simmons, J. G., & Allen, N. B. (2011). Observed maternal responses to adolescent behaviour predict the onset of major depression. *Behaviour Research and Therapy, 49*(5), 331-338. doi:10.1016/j.brat.2011.02.008

Schwartz, O. D., Dudgeon, P., Sheeber, L. B., Yap, M. B. H., Simmons, J. G., & Allen, N. B. (2012). Parental behaviors during family interactions predict changes in depression and anxiety symptoms during adolescence. *Journal of Abnormal Child Psychology, 40*(1), 59-71. doi: 10.1007/s10802-011-9542-2

Seligman, M. E. (2004). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York, NY: Simon and Schuster.

Spence, S. H. (1998). A measure of anxiety symptoms among children. *Behaviour Research and Therapy, 36*(5), 545-566. Retrieved from http://www.sciencedirect.com.erl.lib.byu.edu/science/article/pii/S0005796798000345

Spinrad, T. L., & Eisenberg, N. (2009). Empathy, prosocial behavior, and positive development in schools. In E. Gilman, E. S. Heubner, & M. J. Furlong (Eds.) *Handbook of positive psychology in schools*, (pp. 119-129). New York, NY: Routledge.

Stange, J. P., Hamilton, J. L., Abramson, L. Y., & Alloy, L. B. (2014). A vulnerability-stress examination of response styles theory in adolescence: Stressors, sex differences, and symptom specificity. *Journal of Clinical Child & Adolescent Psychology*, *43*(5), 813-827. doi:10.1080/15374416.2013.812037

Stern, M., & Zevon, M. A. (1990). Stress, coping, and family environment: The adolescent's response to naturally occurring stressors. *Journal of Adolescent Research, 5*(3), 290-305. doi:10.1177/074355489053003

Strayer, J., & Roberts, W. (2004). Empathy and observed anger and aggression in five-year-olds. *Social Development, 13*(1), 1-13. doi:10.1111/j.1467-9507.2004.00254.x

Thompson-Hollands, J., Kerns, C. E., Pincus, D. B., & Comer, J. S. (2014). Parental accommodation of child anxiety and related symptoms: Range, impact, and correlates. *Journal of Anxiety Disorders, 28*(8), 765-773. doi:10.1016/j.janxdis.2014.09.007

Totan, F., Doğan, T & Sapmaz, F. (2013). Emotional self-efficacy, emotional empathy and emotional approach coping as sources of happiness. *Cypriot Journal of Educational Sciences, 8*(2), 247-256. Retrieved from http://www.world-education-center.org/index.php/cjes/article/view/8.2.9

Trivits, L. (2005). A comparison of coping and coping resources in at-risk and seriously delinquent female adolescents. *Dissertation Abstracts International*, *66*, 578.

Trupin, E., Stewart, D., Beach, B., & Boesky, L. (2002). Effectiveness of a dialectical behaviour therapy program for incarcerated female juvenile offenders. *Child & Adolescent Mental Health*, *7*(3), 121-127. Retrieved from http://web.b.ebscohost.com.erl.lib.byu.edu/ehost/pdfviewer/pdfviewer?sid=da8aeab5-ec00-45cb-a03c-d9421691b973%40sessionmgr101&vid=27&hid=123

Uche, U. (2010). Is there a link between empathy and depression? *The Journal of Psychology: Interdisciplinary and Applied, 150*, 25-35. doi:10.1080/00223980.2014.992382

Uphold, H. D. (2014). *The importance of positive social environments on adolescent depression and health behaviors* (Doctoral dissertation). Retrieved from http://search.proquest.com/docview/1496775883?accountid=4488 (Order No. 3608485)

Van der Graff, J., Branje, S., De Wied, M, Hawk, S., Van Lier, P., & Meeus, W. (2014). Perspective taking and empathic concern in adolescence: Gender differences in development changes. *Developmental Psychology, 50*(3), 881-888. doi:10.1037/a0034325

Van Voorhees, B. W., Paunesku, D., Kuwabara, S. A., Basu, A., Gollan, J., Hankin, B. L., . . . Reinecke, M. (2008). Protective and vulnerability factors predicting new-onset depressive episode in a representative of U.S. adolescents. *Journal of Adolescent Health, 42*(6), 605-616. doi:10.1016/j.jadohealth.2007.11.135

Vangelisti, A. L., Maguire, K. C., Alexander, A. L., & Clark, G. (2007). Hurtful family environments: Links with individual, relationship, and perceptual variables. *Communication Monographs, 74*(3), 357-385. doi:10.1080/03637750701543477

Vazsonyi, A. T., & Belliston, L. M. (2006). The cultural and developmental significance of parenting processes in adolescent anxiety and depression symptoms. *Journal of Youth and Adolescence, 35*(4), 491-505. doi://dx.doi.org.erl.lib.byu.edu/10.1007/s10964-006-9064-3

Weissman, M. M., Orvaschel, H., & Padian, N. (1980). Children's symptom and social functioning self-report scales: Comparison of mothers' and children's reports. *Journal of Nervous Mental Disorders, 168*(12), 736–740.

Wu, W., Kao, C., Yen, L., & Szu-Hsien Lee, T. (2007). Comparison of children's self-reports of depressive symptoms among different family interaction types in northern Taiwan. *BMC Public Health, 7*, 116-10. doi:10.1186/1471-2458-7-116

Yalcin, B. M., Unal, M., Pirdal, H., & Karahan, T. F. (2015). The effect of a stress and anxiety coping programme on objective structured clinical exam performance in medical students, a randomised clinical trial. *Educational Psychology.* Advanced online publication. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/01443410.2015.1050355

Young, A. S., & Fristad, M. A. (2015). Family-based interventions for childhood mood disorders. *Child and adolescent psychiatric clinics of North America*, *24*(3), 517-534. Retrieved from http://dx.doi.org/10.1016/j.chc.2015.02.008

Zavos, H., Eley, T. C., & Gregory, A. M. (2013). Genetic and environmental influences on child and adolescent anxiety. In C. A. Essau, & T. H. Ollendick (Eds.), *The Wiley-Blackwell handbook of the treatment of childhood and adolescent anxiety* (pp. 69-88). Chichester, West Sussex, UK: John Wiley & Sons, Ltd. doi:10.1002/9781118315088.ch4

Zahn-Waxler, C., Klimes-Dougan, B., & Slattery, M. J. (2000). Internalizing problems of childhood and adolescence: Prospects, pitfalls, and progress in understanding the development of anxiety and depression. *Development and Psychopathology, 12*(3), 443–466. Retrieved from http://journals.cambridge.org.erl.lib.byu.edu/action/displayAbstract?fromPage=online&aid=55135&fulltextType=RA&fileId=S0954579400003102

Zhou, Q., Eisenberg, N., Losoya, S. H., Fabes, R. A., Reiser, M., Guthrie, I. K., ... & Shepard, S. A. (2002). The relations of parental warmth and positive expressiveness to children's

empathy-related responding and social functioning: A longitudinal study. *Child Development, 73*(3), 893-915. Retrieved from http://www.jstor.org/stable/3696258

Zuckerman, M. (1999). *Vulnerability to psychopathology: A biosocial model*. Washington, DC, US: American Psychological Association. doi:10.1037/10316-001

Table 1.Means, Standard Deviations, and Correlations for All Measured Variables.

Variables	1	2	3	4	5	6	7	8	9	10
Observed Hostility in Family Interaction										
1.Mother Hostility Toward Adolescent	**1.0**	.39***	.16*	.16*	.62***	.29***	.05	.15	.81***	.28***
2.Adolescent Hostility Toward Mother	.31***	**1.0**	.18*	.27***	.29***	.78***	.07	.17*	.33***	.80***
3.Father Hostility Toward Adolescent	.08	.25***	**1.0**	.28***	.18**	.19**	.58***	.30***	.06	.23**
4.Adolescent Hostility Toward Father	.20**	.30***	.27***	**1.0**	.19**	.27***	.18*	.72***	.06	.23**
5.Mother Contempt Toward Adolescent	.84***	.30***	.01	.20**	**1.0**	.16	.04	.16*	.57***	.26***
6.Adolescent Contempt Toward Mother	.20**	.78***	.12	.30***	.21**	**1.0**	.05	.18**	.23**	.64***
7.Father Contempt Toward Adolescent	.12	.18**	.77***	.19**	.14	.17*	**1.0**	.23**	.11	.17*
8.Adolescent Contempt Toward Father	.14	.23**	.29***	.73***	.16*	.20**	.34***	**1.0**	.09	.19*
9.Mother Antisocial with Adolescent	.82***	.29***	.17*	.16*	.73***	.21**	.04	.16*	**1.0**	.31***
10.Adolescent Antisocial with Mother	.44***	.74***	.20**	.29***	.36***	.66***	.05	.19**	.31***	**1.0**
11.Father Antisocial with Adolescent	.22**	.21**	.68***	.17*	.16*	.16*	.46***	.47***	.14	.22**
12.Adolescent Antisocial with Father	.19**	.32***	.23***	.66***	.18*	.24***	.20**	.57***	.09	.33***
13.AdolescentPerspective Taking T4	.04	-.03	-.10	-.11	.06	-.10	-.06-	.03	-.15	-.10
14.Adolescent Empathic Concern T4	-.11	-.17*	-.18**	.-22**	-.09	-.15*	..17*	-.20**	-.11	-.19**
Adolescent Depression										
15.Time 3	.17*	.13	.05	.09	.11	.11	.07	.05	.08	.15*
16.Time 5	.13	.08	.05	.11	.08	.03	.06	.05	.14	.18*
Adolescent Anxiety										
17.Time 3	.18**	.18**	.15*	.15*	.18**	.12	.11	.15*	18**	.14
18.Time 5	.19**	.24***	.15*	.19*	.15	.23***	.18*	.12	.22**	.12
19.Age of Adolescent	.10	.18**	-.09	-.01	.04	.20**	-.10	.01	-.03	-.13
20.Family Size	.05	-.10	.11	-.01	.03	-.14	-.01	.05	-.05	-.08
Mean for Girls	1.31	1.71	1.19	1.59	1.11	1.37	1.07	1.35	1.38	2.15
SD for Girls	.83	1.23	.60	1.24	.47	.91	.39	.81	.92	1.65
Mean for Boys	1.35	1.68	1.22	1.36	1.2	1.36	1.11	1.19	1.41	2.22
SD for Boys	.91	1.31	.75	.91	.61	1.11	.50	.63	.91	1.69

Table 1. Continued

Variables	11	12	13	14	15	16	17	18	19	20
Observed Hostility in Family Interaction T3										
1.Mother Hostility Toward Adolescent	.15*	.18**	-.15*	-.15*	.19**	.18**	.25***	.22**	.02	-.08
2.Adolescent Hostility Toward Mother	.21**	.33***	-.10	-.17*	.18**	.19**	.26***	.22**	.02	-.10
3.Father Hostility Toward Adolescent	.69***	.35***	-.12	-.18**	.24**	.15*	.17*	.15*	.05	.04
4.Adolescent Hostility Toward Father	.34***	.78***	-.05	-.20**	.24**	.19**	.22**	.19**	-.08	.06
5.Mother Contempt Toward Adolescent	.15*	.16*	-.10	-.15*	.14	.12	.14	.16*	.09	-.09
6.Adolescent Contempt Toward Mother	.16*	.27***	-.01	-.10	.20**	.15*	.24***	.21**	-.05	-.07
7.Father Contempt Toward Adolescent	.43***	.17*	-.00	-.11	.20**	.14	.19**	.18*	.08	.04
8.Adolescent Contempt Toward Father	.47***	.57***	-.03	-.18*	.25***	.15*	.18**	.12	.01	.05
9.Mother Antisocial with Adolescent	.16*	.16*	-.15	-.17*	.21**	.19**	.19**	.22**	-.03	-.05
10.Adolescent Antisocial with Mother	.22***	.33***	-.08	-.18*	.25***	.18**	.20**	.15*	-.13	-.08
11.Father Antisocial with Adolescent	**1.0**	.40***	-.10	-.15*	.16	.18**	.23**	.14	.11	.02
12.Adolescent Antisocial with Father	.40***	**1.0**	-.01	-.20**	.24**	.25***	.20**	.16*	-.05	.03
13.Perspective Taking T4	.01	-.09	**1.0**	.48***	-.09	-.18**	-.05	.19**	.02	-.10
14.Empathic Concern T4	.01	-.12	.48***	**1.0**	-.17*	-.21**	.03	.18**	.02	-.01
Adolescent Depression										
15.Time 3	.06	.11	-.09	.15*	1.0	.47***	.65***	.35***	.12	.20**
16.Time 5	.18*	.25***	-.10	.19**	.47***	**1.0**	.31***	.49***	.01	.16*
Adolescent Anxiety										
17.Time 3	.18**	.14	-.13	.23**	.65***	.31***	**1.0**	.55***	.12	.17*
18.Time 5	.14	.16*	-.11	.24***	.35***	.49***	.55***	**1.0**	-.04	.18**
19.Age of Adolescent	.11	-.05	.02	.02	.12	.01	.12	-.04	**1.0**	.03
20.Family Size	.02	.03	-.10	-.01	.20*	.16*	.17*	.18**	.03	**1.0**
Mean for Girls	1.36	1.99	3.42	4.03	1.60	1.78	.97	1.13	13.23	2.48
(*SD* for Girls)	.83	1.52	.71	.54	.51	.64	.53	.62	.96	1.13
Mean for Boys	1.33	1.67	3.14	3.63	1.55	1.60	.78	.80	13.25	2.41
(*SD* for Boys)	.91	1.22	.63	.61	.44	.51	.51	.50	.96	.91

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

Correlations for Boys are below diagonal; Correlations for Girls are above diagonal.

Figure 1. Measurement and Hypothesized Structural Model with Observed Hostility in Family Interaction at Time 3 Predicting Adolescent Depression and Anxiety, Time 5 with Adolescent Empathy at Time 4 as a Potential Mediating Variable.

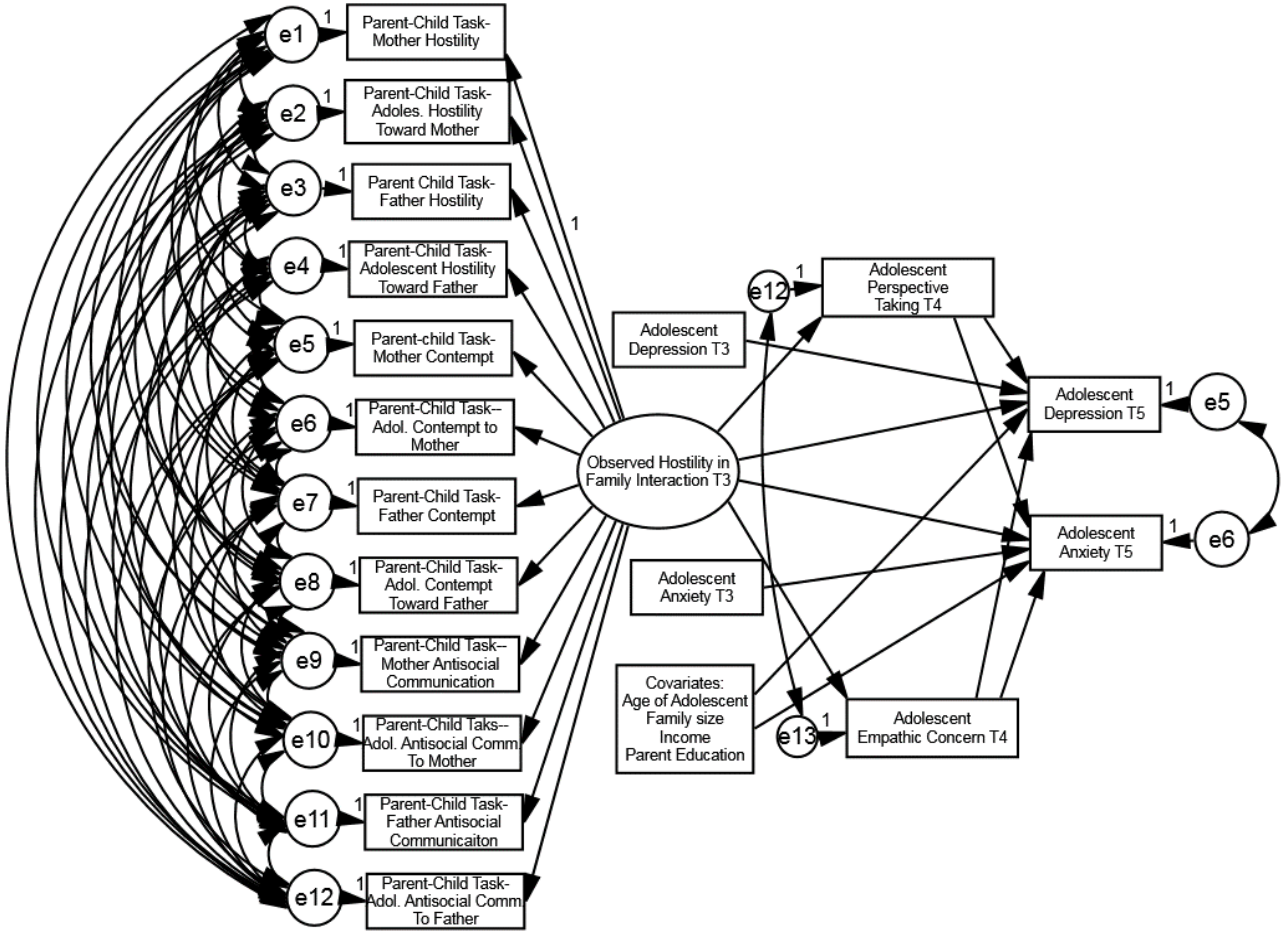
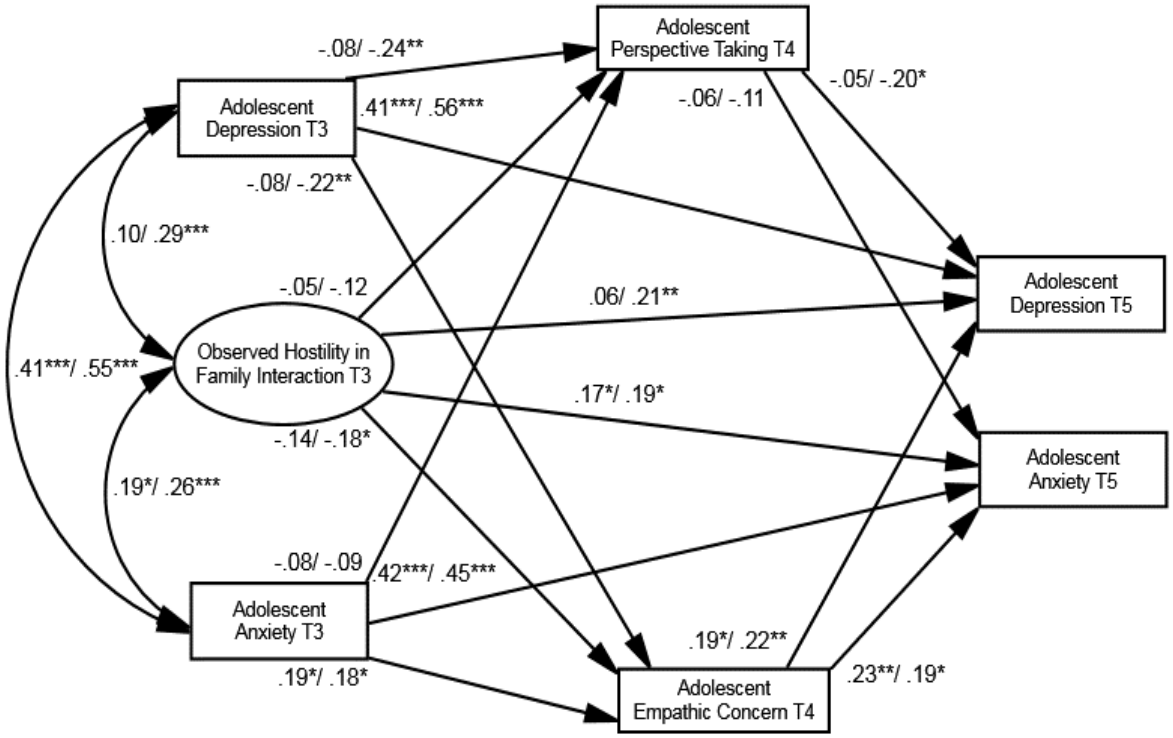


Figure 2. SEM Results with Observed Hostility in Family Interaction at Time 3 Predicting Adolescent Depression and Anxiety at Time 5 with Adolescent Perspective Taking and Empathic Concern as Mediating Variables. Boys results appear on the left and girls on the



X^2 = 138.37, *df* = 114, *p*= .06
CFI= .987, *RMSEA* = .029
*=*p*<.05, **=*p*<.01, ***=*p*<.001