ASSOCIATIONS BETWEEN PARENTAL INTERNALIZING SYMPTOMOLOGY AND ADOLESCENT ADJUSTMENT: AN EXAMINATION OF DIRECT AND INDIRECT EFFECTS

By

JULIE STATON

Bachelor of Science in Human Environmental Science

Oklahoma State University

Tulsa, OK

2011

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
July, 2014

ASSOCIATIONS BETWEEN PARENTAL

INTERNALIZING SYMPTOMOLOGY

AND ADOLESCENT ADJUSTMENT:

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Thesis Approved:

Dr. Amanda Morris

Thesis Adviser

Dr. Michael Criss

Dr. Michael Merten

Name: JULIE STATON

Date of Degree: JULY, 2014

Title of Study: ASSOCIATIONS BETWEEN PARENTAL INTERNALIZING SYMPTOMOLOGY AND ADOLESCENT ADJUSTMENT: AN EXAMINATION OF DIRECT AND INDIRECT EFFECTS

Major Field: HUMAN DEVELOPMENT AND FAMILY SCIENCE

Abstract: The purpose of this study was to examine the link between parental internalizing symptomology (i.e. symptoms of anxiety or depression) and adolescent adjustment (i.e., antisocial behavior, depressive symptoms, prosocial behavior, emotion regulation) and whether this link was mediated by parent-child relationship quality or parental emotion socialization. The sample consisted of 206 families with adolescents who participated in the Family and Youth Development Project. The results indicate that high levels of parental anxiety symptomology were significantly related to high levels of youth antisocial behavior and low levels of prosocial behavior and emotion regulation. Parental symptoms of depression were also positively and significantly related to youth antisocial behavior. The results also indicated indirect effects of parental symptoms of anxiety on youth antisocial behavior, prosocial behavior, and anger regulation through the quality of the parent-child relationship. Implications of the findings for service providers and interventionists are discussed.

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CHAPTER I

INTRODUCTION

Sub-threshold, or mild, anxiety affects over 25% of the population (West and Newman, 2003). Depression is also prevalent, with 10-15% of adults experiencing depressive symptoms at any point in time (Johnson & Flake, 2007). Anxiety and depression impact both men and women, many of whom are parents to infants, young children, and adolescents. If a parent is experiencing symptoms of anxiety or depression, their children are at risk for adverse outcomes. Specifically, the presence of these symptoms has been linked to high levels of youth depression and antisocial behavior (Crouter et al, 2005; Gunlicks & Weissmann, 2008). Children of parents with symptoms of both anxiety and depression may be at an increased risk for these symptoms simply due to a genetic predisposition (Burstein, Ginsburg, & Tein, 2010).

Adolescents are experiencing transformations in their cognitive, moral, and social development. Adolescents' relationships are expanding as well (Keating, 2004). The parent-child relationship, in particular, is the forum for some of the greatest changes that adolescence brings (Steinberg & Morris, 2001). As such, the quality of this relationship between parent and adolescent is of utmost importance. Parents serve as role models for their developing adolescents. Youth look to their parents' examples for guidance in

interpreting and expressing their own emotions and behaviors. Emotion socialization, or parents' reactions to their children's experiences, may also affect the way in which their teens express emotions (Eisenberg, Cumberland, & Spinrad, 1998). The current study seeks to examine the impact of parental internalizing symptomology, specifically symptoms of anxiety and depression, on adolescent adjustment. Furthermore, parent-child relationship quality and parental emotion socialization will be investigated as potential mediators of the relationship between parental internalizing symptomology and youth outcomes (antisocial behavior, depressive symptoms, prosocial behavior, and emotion regulation).

Many studies address the impact of either anxiety or depression on adolescent adjustment. Several even acknowledge the comorbidity of anxiety and depression. Nevertheless, few have examined anxiety versus depression or the additive effects of both types of symptomology. This study seeks to accomplish both. In addition, the literature on adolescent adjustment has focused on the effects of parental psychopathology alone without taking into account the multiple mediation pathways that may also exist. This study also seeks to identify two possible indirect pathways through which parental internalizing symptomology impacts adolescent outcomes.

The proposed investigation has four research goals:

1. The first goal is to examine the link between parental internalizing symptomology (i.e. symptoms of anxiety or depression) and adolescent adjustment (i.e. antisocial behavior, depressive symptoms, prosocial behavior, and emotion regulation).
2. The second goal is to investigate the additive effects of the presence of both depression and anxiety symptomology on each of the adolescent outcomes (i.e.

antisocial behavior, depressive symptoms, prosocial behavior, and emotion regulation).

3. The third goal is to determine whether or not the quality of the parent-child relationship mediates the link between parental internalizing symptomology and adolescent adjustment.
4. The fourth goal is to investigate whether or not parent emotion socialization mediates the relationship between parental internalizing symptomology and adolescent outcomes.

CHAPTER II

LITERATURE REVIEW

To begin this review of the current literature, a summary of adolescent development that looks specifically at transformations within relationships, development, and emotion regulation will be discussed. Next, an overview of parental internalizing symptomology as it pertains to current literature and this study will be provided. This overview will include definitions, conceptualizations, and operationalizations of parental internalizing symptomology. Following this section, a review of current literature investigating the link between parental internalizing symptomology and adolescent adjustment will be presented. Next, possible mediation effects of both parent-child relationship quality and parental emotion socialization of this link will be explored. In closing, the research goals and hypotheses of the current study will be stated.

Transformations during Adolescent Development

Adolescence is characterized by many transitions for the parent and child. These transitions involve changes in relationships, development, and emotions. Adolescence has been described as a unique stage of life in that it involves changes and risks while at the same time preparing one for adulthood (Longmore, Manning, & Giordana, 2013; Steinberg & Morris, 2001). Transformations in relationships, particularly those between

parent and child, are a benchmark of this stage of development. Adolescents exercise an effort to gain autonomy, a process known as individuation (Longmore, Manning, & Giordana, 2013). Furthermore, this progression of independence is marked by a shift in the perceived authority of parents as youth begin to make more decisions for themselves and the relationship between parent and adolescent becomes more horizontal than vertical in nature (Paikoff & Brooks-Gunn, 1991). Even with this shift, the parent-teen relationship still serves as an important road map for navigating this period of change and growth.

Adolescence is also marked by transformations in multiple areas of development. While biological changes are taking place, youth also experience transitions in their cognitive, moral, and social development. For instance, as puberty begins to change their bodies, adolescents begin to question their self- identity and the way that others may see them (Mezulis, Hyde, Simonson & Charbonneau, 2011). A sense of invulnerability may also develop at this stage of life (Longmore, Manning, & Giordana, 2013). This change can lead to an increase in risk- taking behaviors and the questioning of morals and values that were established in childhood.

Adolescence is also marked by a transformation in the ways in which emotions are handled and expressed. Youth begin to experience a flux in emotions during this period of development, more so than when they were younger (Silk, Steinberg, & Morris, 2003). Regulatory processes are set in motion during this time as adolescents begin to differentiate between their actual and desired moods (Bell & Calkins, 2000). The underlying systems of the regulation of these moods and emotions develop and mature throughout adolescence (Silk, et al., 2003). Relationships have been found to play a key role in this maturation and regulation of emotion during adolescence (Bell & Calkins, 2000).

Defining Parental Internalizing Symptomology

In this study, symptoms of anxiety and depression are examined as a measure of parental internalizing symptomology that represents a change from previous functioning (DSM-IV; American Psychiatric Association, 1994). Anxiety is defined as the presence of "excessive anxiety and worry" about a variety of events or situations that occurs for at least six months (1994). Depression is defined as a change from a person's normal mood that impairs social, occupational, or other functioning over a period of at least two weeks (1994). The current study seeks to investigate the effects of parental symptoms of anxiety and depression on various adolescent outcomes and not to provide a mental health diagnosis. As such, symptoms of anxiety and depression will be ascertained through parental report of the frequency of symptoms over the past month. Possible symptoms of anxiety include an inability to relax, fear of losing control and nervousness while symptoms of depression include poor appetite, an inability to shake off the blues, and feelings of loneliness or sadness. While research has established a link between one form of psychopathology (i.e. anxiety or depression), few studies have examined the additive effects of both symptomologies. The current study will examine not only the direct effects of anxiety or depression alone, but will also investigate the additive effects of both symptomologies on adolescent outcomes. Previous research has found that children of parents with symptoms of either anxiety or depression are more likely to develop internalizing symptoms as well Burstein, Ginsburg, & Tein, 2010). On the other hand, children of parents with comorbid psychopathology have been found to develop more externalizing symptoms and less internalizing ones (Biederman, et al, 2006).

Link between Parental Internalizing Symptomology and Adolescent Adjustment

As stated above, parents experiencing mental health issues such as anxiety and depression are more likely to have adolescents with adjustment difficulties. Many times these difficulties manifest themselves in the form of **antisocial behaviors** such as aggression and conduct problems that disrupt the relationship between the adolescent and his or her social environment (Criss et al, 2003; West & Newman, 2003). For instance, symptoms of anxiety may lead parents to overcompensate in their parenting, leading their children to act out in a bid for control (West and Newman, 2003). The inability of mothers to regulate their own feelings of anxiety has been found to lead to overprotective parenting while their children are younger (Clarke et al, 2013). This overprotection, in turn, results in an undermining of the child's need for autonomy as he or she reaches adolescence. To break away from such overprotection, an increase in antisocial behavior is often seen (Bell & Calkins, 2000; Clarke, et al, 2013).

Youth may also exhibit behaviors that have been modeled for them. Women with depressive symptoms are more likely to find themselves in relationships with antisocial men, leading their children to be raised in homes where antisocial behaviors are modeled (Kim-Cohen, Moffitt, Taylor, Pawlby, & Caspi, 2005). Offspring of depressed parents may also act out in a bid for the attention of their otherwise withdrawn parent. Parents who are withdrawn may lack the willingness to address problem behaviors with their children (Bell & Calkins, 2000). Moreover, the antisocial behaviors of the child may be difficult for a depressed parent to deal with efficiently. Feelings of inadequacy may lead to a lack of parenting or ineffective efforts to curb such behaviors (Bell & Calkins, 2000; Conger et al, 2002). For example, Crouter and colleagues (2005) found, in a sample of families whose firstborn children were around 16.5 years old, that parents with depressive

symptomology are less likely to be conscious of their adolescents' activities and are therefore not as effective in reducing the incidence of antisocial behaviors which their youth may be exhibiting.

Much has already been stated about the deleterious effects of parental anxiety and depression on the outcomes of their adolescent children. One area where this may be especially important is that of the **adolescent's own internalizing problems**. Offspring of anxious and depressed parents are at an exponentially higher risk of developing internalizing behaviors of their own (Brennan, LeBrocque, & Hammen, 2003). Over 60% of these children will develop at least one psychiatric disorder by the end of adolescence (Silk, Shaw, Skuban, Oland, & Kovacs, 2006). Children whose parents are depressed are three to four times more likely to develop their own depressive symptoms than their peers whose parents are not depressed (Silk, et al., 2006). Transmission of depressive symptoms from parent to adolescent can happen across various pathways. For instance, multiple studies have identified a genetic link for depressive symptomology (Peterson, Compas, Brooks-Gunn, Stemmler, Ey, & Grant, 1993; Steinberg & Morris, 2001). In addition, the emotional availability of depressed parents as well as the quality of the relationship between parent and child may also serve as mechanisms through which depression is passed from parent to child (Peterson, et al, 1993). Furthermore, youth depressive symptoms may actually be the result of excessive anxiety as a child, which may be a direct reflection of parental anxiety (Steinberg & Morris, 2001; Zahn-Waxler, Klimes- Dougan, & Slattery, 2000).

Many studies have examined the harmful effects of psychopathology on the externalizing and problem behaviors of adolescents; however, few studies have examined

prosocial behavior, actions with the purpose of helping others, as an outcome of parents' symptoms of anxiety or depression (Padilla-Walker, Carlo, Christenson, & Yorgason, 2012). There is some evidence, however, that adolescents in these families are less likely to display these helping behaviors or a regard for the feelings of others (Solantaus, Paavonen, Toikka, & Punamaki, 2010). Carlo and colleagues (2011) found, from a sample of 478 participants who were mostly of European American decent (69%), that youth are far less likely to have positive behaviors modeled for them from parents suffering from anxiety or depression. As a result, the presence of prosocial behaviors in adolescents of anxious and depressed parents is likely greatly diminished (Conger et al, 1994.)

Adolescents must regulate the processes, both internal and external, that facilitate the initiation and intensity of exhibited emotions (Morris, Silk, Steinberg, Myers, & Robinson, 2007; Silk et al, 2006). This is known as **emotion regulation**. This regulation of emotion is often learned through the context of the parent child relationship (Bell & Calkins, 2000). When a parent suffers from symptoms of anxiety or depression they are unable to regulate their own emotions, much less model adequate processes for their offspring (Silk, et al., 2006). Without an adequate role model of emotion regulation from their parents, these adolescents are unable to downplay negative emotions and build up positive ones (Silk, et al., 2003). In a sample of 86 children ages 4-7, Silk et al. (2006) found that children of depressed parents had difficulty employing appropriate strategies for handling negative emotions, making them more vulnerable to psychopathology. Furthermore, Silk, et al. (2003) found that adolescents who had trouble regulating their emotions were at a greater risk for developing internalizing and externalizing behaviors.

Possible Mediators

While research has shown parental internalizing symptomology to be linked to adolescent adjustment, it is important to explore potential mediators in this link. Mediators explain *why* the independent variable and dependent variable are related (Baron & Kenny, 1986). Testing for mediation provides valuable insight regarding the underlying mechanisms and pathways linking two variables (Criss, Shaw, Moilanen, Hitchings, & Ingoldsby, 2009). In the current study, there are two factors that will be examined as possible mediators: parent-child relationship quality and parental emotion socialization. In testing for mediation, three criteria must be met. First, there must be a significant relationship between the independent variable (i.e. anxiety, depression) and the dependent variable (i.e. youth antisocial behavior, depressive symptoms, prosocial behavior, emotion regulation). Next, there must be a significant relationship between the independent variable and the mediator (i.e. parent-child relationship quality, parental emotion socialization). Finally, a significant relationship must be found between the mediator and dependent variable (Baron & Kenny, 1986).

Since relationships serve as the primary context from which adolescents develop self-regulation strategies (Steinberg & Morris, 2001), there is reason to believe that parent-child relationship quality may mediate the link between parental internalizing symptomology and youth outcomes. Adolescents' beliefs and corresponding behaviors are often associated with family relationships, in particular, the **relationship with their parents** (Bell & Calkins, 2000). Symptoms of psychopathology, such as irritability, restlessness and withdrawal, inhibit a person's ability to parent well (Low & Stocker, 2005). In turn, this lack of good parenting affects the outcomes of the children. Positive

parenting and parent-child relationships are linked to positive outcomes for youth (Brennan, LeBrocque, & Hammen, 2003). On the other hand, negative parenting and a conflictual parent-child relationship deny youth a safe context through which to learn important coping and problem solving skills (Keenan- Miller, Hammen, Brennan, 2010).

A parent experiencing symptoms of anxiety or depression models dysfunctional behaviors through the parent-child relationship (Brennan et al, 2003), and one way in which parents' internalizing symptomatology affects adolescents is likely through its effects on the parent-teen relationship. Parents experiencing symptoms of anxiety or depression have been found to display more negative emotional affect in interactions with their children, as well as being less warm and affectionate than parents without symptoms of anxiety or depression (Low & Stocker, 2005). These anxious and depressed parents may also have unrealistic and inappropriate expectations of their adolescents. They may rely on their teen for emotional support and struggle when their adolescent seeks needed independence (Johnson & Flake, 2007). In a study conducted by Brennan et al (2003), adolescents were asked to report on their parents' behaviors and their perceptions of maternal warmth and hostility. They found that children of depressed mothers were less likely to develop adverse outcomes when they perceived a warm and accepting relationship with their mothers. In the context of social learning theory, youth observe their parents' behaviors and then imitate and model those behaviors in their own lives (Chavis, 2012).

Another avenue through which these behaviors are learned is the through parent emotion socialization. **Parental emotion socialization** refers to the ways in which parents react to the emotional expression of their children which, in turn, may affect the

child's understanding and expression of future emotions (Eisenberg, Cumberland, & Spinrad, 1998). Parental internalizing symptomology inhibits the parent's ability to react to the child's emotions in a healthy and successful manner (Eisenberg & Sulik, 2012). Children in families who express more negative affect are more likely to experience adverse outcomes marked by aggression and antisocial behavior (Ramsden & Hubbard, 2002). Conversely, parents who are aware of the emotions of their children and react positively to these emotions are more likely to have children who can identify their own emotions and develop healthy strategies with which to display them (Morris, Silk, Steinberg, Myers, & Robinson, 2007; Ramsden & Hubbard, 2002).

Eisenberg and colleagues (2003) suggest that parents' adverse reactions to their children's undesirable emotions (i.e. anger, fear or sadness) actually place the child at risk for negative outcomes. As a result, these children learn to suppress their reactions to these negative emotions, leading to inappropriate and maladaptive responses later in life. On the other hand, Ramsden and Hubbard (2002) found that families who react positively to children's emotions are more likely to exhibit prosocial behaviors. In their sample of 120 fourth graders and their mothers, the parents reported on their awareness of and reactions to their children's management of their sadness and anger. In addition, teachers then reported on the aggression and emotion regulation of the children. Parents who were aware of and accepted their child's feelings and then instructed them on how to manage these emotions had children who were less likely to be aggressive (Ramsden & Hubbard, 2002). Thus, another way in which parent's internalizing symptomatology may affect adolescent adjustment is via its effects on parents' response to and socialization of emotion regulation.

Summary, Research Goals, and Hypotheses

In summary, previous research has established adolescence as a period of change for youth in both development and relationships, especially that of the parent and child (Steinberg & Morris, 2001). As the parent-child relationship serves as a context for adolescent adjustment the presence of anxious or depressive symptomology in the parent poses a risk to the outcomes for the youth (Gunlicks & Weissmann, 2008; Johnson & Flake, 2007). Previous research has established a link between parental psychopathology and adverse adolescent outcomes. Many of these studies, however, have only studied one form of psychopathology, such as depression *or* anxiety, and one to two adolescent outcomes, such as youth depression or antisocial behavior. Few studies have examined more than one type of internalizing symptomology in conjunction with multiple outcomes. In addition, many studies have examined possible mediators, such as parental knowledge. The research examining multiple mediators has been scarce.

To address these gaps in the literature, there will be four main research goals for the proposed study. The *first research goal* will be to examine the link between parental internalizing symptomology and adolescent adjustment. Parental internalizing symptomology will be based on parent reports of symptoms of anxiety or depression. Anxiety and depression will be examined individually. In addition, there will be four adolescent outcomes. Adolescent antisocial behavior, prosocial behavior, and emotion regulation will be based on both parent and youth reports while adolescent depressive symptoms will be based on youth reports alone. It is hypothesized that high levels of either anxiety or depression will be related to high levels of adolescent antisocial behavior and depression and low levels of prosocial behavior and emotion regulation.

The *second research goal* will be to investigate the additive effects of symptoms of both anxiety and depression on each of the adolescent outcomes. It is hypothesized that high levels of both parents' anxious and depressive symptomology will be related to high levels of adolescent antisocial behavior and depression and low levels of prosocial behavior and emotion regulation. The *third research goal* will be to investigate whether parent-child relationship quality mediates the link between parental psychopathology and the identified adolescent outcomes. Relationship quality will be based on observer ratings. It is hypothesized that relationship quality will mediate the effects of parental psychopathology such that associations between parental psychopathology and adolescent adjustment will be indirect through the effect of psychopathology on relationship quality. The significance of the relationship between parental internalizing behaviors and each of the adolescent outcomes is expected to decrease when parent-child relationship quality is added to the equation. The *fourth research goal* will be to examine whether parent socialization of negative emotions mediates the relationship between parental psychopathology and adolescent adjustment. Parent emotion socialization will be based on youth reports. It is hypothesized that higher levels of emotion socialization will mediate the effects of parental psychopathology on adolescent adjustment such that associations between parental psychopathology and adolescent adjustment will be indirect through the effect of psychopathology on emotion socialization. Again, a decrease in the significance of the relationship between parental psychopathology and each of the adolescent adjustment variables is expected when parents' emotion socialization is added to the model.

CHAPTER III

METHODS

Participants and Procedure

The sample for this study was taken from the Family Youth Development Project (FYDP). The FYDP study examines emotion regulation of youth from high-risk, low-income families in light of various predictors (e.g. parental anxiety and depression) and outcomes (youth antisocial behavior and adolescent depressive symptoms). Data were collected from 206 parent and youth dyads in the greater Tulsa area. Youth in the sample were between the ages of 10 and 18 (*M* age = 13.37, *SD* = 2.32; 32% African American, 19.4% Latino American, 29.6% European American, 19% other ethnic groups; 51% female, 49% male). Biological mothers made up the majority of the main caregivers (10.7% biological fathers, 83.3% biological mothers, 4% other primary caregivers, and 2% grandparents). Of the families interviewed, a large percentage reported low levels of income (20% of families had household incomes of less than $20,000 per year*; Median* annual income of $40,000). In addition, 38% of the families reported receiving income from welfare in the past year. Single parent households made up 38.7% of this sample. Each parent and youth dyad completed questionnaires separately and participated in videotaped discussion tasks pertaining to various conflicts between the parent and

adolescent as well as the emotions of the youth. Parents and youth were each asked to rate on a 5 point Likert scale (1= never, 2= hardly ever, 3= sometimes, 4= frequently, 5= very often) how often in the last year they had conflict in 45 different specific areas (i.e. homework, chores at home, tobacco, fighting with brothers and sisters) (Melby et al, 1998). The five highest scored topics from both the parent and youth ratings were then presented to each dyad. Parents and teens were instructed to talk through as many of the five selected topics as possible in six minutes using the given discussion prompts (e.g., what is the conflict we seem to have about this issue?) as a guide. Questionnaires completed by the parent included items measuring demographic information, parental psychopathology, parenting behaviors and styles, parent child relationships, as well as adolescent adjustment. Demographics, parent-youth relationships, and adjustment were also assessed in the youth questionnaires.

Measures: Parental Internalizing Symptomology

Parental symptoms of anxiety and depression served as an indicator of parental psychopathology. Symptoms of anxiety were measured using 21 items from the Beck Anxiety Inventory (BAI; Beck & Steer, 1990). For example, parents reported how often in the past month they felt "numbness or tingling" or were "unable to relax" on a scale of 0 (*Not at all*) to 3 (*Severely: it bothered me a lot*). The 21 items were summed (α =.93) to create the final parental anxiety measure. Symptoms of depression were assessed using 20 items from the Center for Epidemiological Studies Depression scale (CES-D; Radloff, 1977). For instance, parents reported how often in the past week they were "bothered by things that usually don't bother" them and how often they "felt lonely" on a scale of 0 (*Rarely or none of the time*) to 3 (*Most or all of the time*). The final parental depressive symptoms factor was created by summing (α =.84) the 20 items. Multicollinearity

statistics were also computed and were found to be in the acceptable range (tolerance=1.00, VIF= 1.00).

Measures: Adolescent Outcomes

Adolescent Antisocial Behavior. For the purposes of this study, adolescent antisocial behavior was defined as the degree to which the youth engaged in delinquent and aggressive behavior during the past year. A 26 item questionnaire adapted from the Problem Behavior Frequency Scale was completed by both parents and youth (Farrell, Danish, & Howard, 1992; Farrell, Kung, White, & Valois, 2000). Using a 5 point Likert scale (1 = "never," 2 = "1-2 times," 3 = "3-4 times," 4 = "5-6 times," and 5 = "7 or more times"), parents and youth reported how often during the past year the target youth "hit or slapped another kid." Youth- and parent- reported factors were created by averaging (αs = .92 & .92 for youth and parent reports, respectively) the 26 items. The final antisocial behavior factor was created by averaging (r = .51, p < .001) the youth and parent factors.

Adolescent Depressive Symptoms. The frequency of adolescent depressive symptoms was measured using the Mood and Feelings Questionnaire (MFQ; Angold, Costello, Messer, & Pickles, 1995). This measure consisted of 33 questions (e.g., "I slept a lot more than usual", "I thought nobody really loved me", and "I thought that life wasn't worth living") that were rated on a 3 point Likert scale (0 = "not true," 1 = "sometimes," 2 = "true"). The 33 items were summed (α = .931) to create the final adolescent depressive symptoms factor.

Adolescent Prosocial Behavior. Using 5 items from the Strengths and Difficulties Questionnaires (SDQ; Goodman & Scott, 1999) parents and adolescents reported on the prosocial behaviors, or actions with the purpose of helping others, of the adolescent over

the past year. Participants based their responses on a 3 point scale (0= "not true," 1= "sometimes," 2= "true") to items such as "I try to be nice to other people, I care about their feelings" and "I usually share with others." Youth and parent reports were averaged (r = .25, p < .001) to create the final prosocial measure.

Adolescent Emotion Regulation: The ability of the adolescent to regulate their emotions was measured using the anger and sadness scales of the Children's Emotion Management Scale (CSMS; Zeman, Shipman, & Penza- Clyve, 2001; CAMS; Zeman, Shipman, & Penza- Clyve, 2002). Both parents and youth completed this questionnaire which included the anger and sadness coping subscales. The 5 item sadness coping subscale included items such as "When I am feeling sad, I control my crying and carrying on" and "I stay calm and don't let sad things get to me." The 4 item anger coping subscale included items such as "When I am feeling mad, I control my temper" and "I can stop myself from losing my temper." Modifications were made to the wording of these measures for the parents' reports about the adolescent. Each of these subscales was rated on a scale from 0 (*Not true*) to 2 (*Very true*). By averaging the adolescent and parent reports (r = .22, p = .001 for sadness coping; r = .36, p < .001 for anger coping), a single score was created for adolescent sadness or anger coping.

Measures: Mediator Variables

Parent-Child Relationship Quality. For the purposes of this study, parent child relationship quality was defined as the degree to which the parent and adolescent had a positive, warm, and supportive relationship. Relationship quality was measured by observer ratings on a 9 point Likert scale during the 6 minute conflict resolution task using an adapted version of a scale developed by Melby et al (1998). Low scores

indicated an emotionally unsatisfying, unhappy, or frail relationship. Evidence of hostility, intrusiveness, lecturing or moralizing was considered an indication of poor relationship quality. High scores reflected a relationship between parent and youth that displayed emotionally satisfying, happy, and open interactions. Good communication, positive responses to the other's verbalizations, and awareness of the other person's daily activities were considered as evidence of high relationship quality. Approximately 20% of the tapes were double coded for reliability. Parent-child relationship quality interrater reliability was in an acceptable range (via intraclass correlations: $\rho = .71$, $p < .001$).

Parent Emotion Socialization. Youth reported on how their parents responded when they were feeling angry or sad. This was measured using an adaptation of the Emotions as a Child Scale (EAC, Klimes-Dougan et al., 2001; Magai et al., 2004). Adolescents reported on 12 items on separate sadness and anger subscales. These items included how often their parents would "not be around" or "understand why" they were angry or sad on a scale from 1 (*Not at all*) to 5 (*Very much*). The anger positive emotion socialization ($\alpha = .81$; M = 3.43, SD = 1.13) and sadness positive emotion socialization ($\alpha = .77$; M = 3.55, SD = 1.06) factors were created by averaging the 12 items. The final positive emotion socialization factor was created by averaging ($r = .71$, $p < .001$) the two factors. The same process was utilized to create a final negative emotion socialization factor. The anger negative emotion socialization ($\alpha = .79$; $M = 2.16$, $SD = 0.66$) and sadness negative emotion socialization ($\alpha = .66$; $M = 2.30$, $SD = 0.54$) factors were created by averaging the 12 items. The final negative emotion socialization factor was created by averaging ($r = .25$, $p < .001$) the two factors.

CHAPTER IV

RESULTS

Analytical Plan

To begin, descriptive statistics and bivariate correlations were computed on each of the study variables. To test for ethnic differences in the independent variables, an anova was also computed. Next, a series of regressions were computed to examine the direct relationship between parental psychopathology and adolescent adjustment (antisocial behavior, depressive symptoms, prosocial behavior, emotion regulation). In each regression, youth age and sex as well as primary caregiver education level were entered as covariates. Regression analyses were then calculated to test for the three criteria for mediation (i.e., IV → Mediator, Mediator → DV, and IV → DV). In testing the first two criteria for mediation (parental psychopathology → Mediator, Mediator → outcome variables), youth age and sex and primary caregiver level of education were entered as covariates. For the final criteria for mediation (parental psychopathology → outcome variables), the same covariates were entered in Step 1 and the mediator variable (parent-child relationship quality, parent emotion socialization) was entered in Step 2. Finally, the Sobel's indirect coefficient was computed to test whether relationship quality or emotion socialization partially explained the effects of parental psychopathology on

each of the adolescent outcomes (Preacher & Leonardelli, 2014).

Descriptive Statistics and Bivariate Correlations

Descriptive statistics and bivariate correlations are presented in Table 1. The patterns of associations between and within domains were consistent with expectations. Specifically, parental anxiety was positively related to parental depressive symptomology. High levels of parent-child relationship quality were related to high levels of positive emotion socialization and low levels of negative emotion socialization. In addition, positive emotion socialization was found to be positively related to negative emotion socialization. Bivariate correlations within the domain of adolescent adjustment indicated that youth antisocial behavior was significantly and positively related to youth depressive symptoms and negatively related to prosocial behavior and sadness and anger regulation. High levels of youth depressive symptoms were related to low levels of sadness and anger regulation. Moreover, prosocial behavior was positively related to sadness and anger emotion regulation while sadness regulation was also positively associated with anger regulation.

Bivariate correlations across domains indicated a significantly negative relationship between parental symptoms of anxiety and parent-child relationship quality as well as youth prosocial behavior and both sadness and anger regulation. High levels of parental anxiety were also related to high levels of negative emotion socialization, youth antisocial behavior and youth depressive symptoms. Parental symptoms of depression were negatively related to parent-child relationship quality and youth anger regulation. High levels of parental depressive symptomology were associated with high levels of negative emotion socialization and youth antisocial behavior. The findings showed that

high levels of parent-child relationship quality were related to high levels of youth prosocial behavior, sadness regulation, and anger regulation and low levels of negative emotion socialization, youth antisocial behavior, and youth depressive symptoms. In addition, high levels of positive emotion socialization were related to high levels of negative emotion socialization, prosocial behavior, sadness regulation, anger regulation, and antisocial behavior. Negative emotion socialization was positively associated with youth antisocial behavior and youth depressive symptoms and negatively associated with youth anger regulation.

Finally, bivariate correlations across demographic variable indicated a significant and negative relationship between gender and parent-child relationship quality as well as youth prosocial behavior such that high levels of these variables were more visible with girls than boys. Boys were also more likely to experience high levels of antisocial behavior. A positive relationship was indicated between age and youth antisocial behavior and depression such that older youth were more likely to exhibit these behaviors than younger members of the sample. Furthermore, parent-child relationship quality was found to be negatively related to age such that younger youth were more likely to have high levels of relationship quality. High levels of primary caregiver education were related to low levels of parental symptoms of anxiety and depression as well as negative emotion socialization and youth antisocial behavior and high levels of parent-child relationship quality. An ANOVA was also computed to test for ethnic differences in all of the variables. Native Americans were found to have higher ratings of observed parent-child relationship quality than other ethnic groups in this sample.

Research Goal #1

As a reminder, the first goal was to examine the link between parental internalizing symptomology (i.e. symptoms of depression and anxiety) and adolescent adjustment (i.e. antisocial behavior, depressive symptoms, prosocial behavior, and emotion regulation). To reach this goal, a series of regression were computed where demographic variables (child gender, age, and primary caregiver education level) were entered in Step 1 and the parent internalizing symptomology (anxiety or depression) were entered in Step 2 as predictors of adolescent outcomes (antisocial behavior, depressive symptomology, prosocial behavior, sadness regulation, anger regulation). Separate regressions were computed for anxiety and depression and each of the outcome factors. As illustrated in Table 2, parental symptoms of anxiety were not related to youth depressive symptoms when controlling for youth gender, age, and primary caregiver's level of education. High levels of parental anxiety were related to high levels of youth antisocial behavior and low levels of prosocial behavior as well as sadness and anger regulation. Parental depressive symptomology was only related to youth antisocial behavior when controlling for age, gender, and caregiver education.

Research Goal #2

The second research goal was to investigate the additive effects of symptoms of both depression and anxiety on each of the adolescent outcomes. To achieve this goal, another series of regressions were computed. Again, youth age and gender as well as primary caregiver education level were entered in Step 1 as covariates. Parental symptoms of both anxiety and depression were entered into Step 2. As illustrated in Table 3, when examined simultaneously with anxiety, depressive symptoms were no

longer significant. In contrast, parental anxiety was significantly and incrementally related to antisocial behavior and anger regulation.

Research Goal #3

The third research goal was to investigate whether or not parent-child relationship quality mediated the link between parental psychopathology and the identified adolescent outcomes. To accomplish this goal, a series of regressions were run to test for indirect effects. Youth age and sex as well as primary caregiver education were once again entered as covariates in Step 1. Since no significant relationship was found between either of the parental internalizing factors and youth depressive symptoms, these pathways were not examined for indirect effects. Likewise, parental symptoms of depression were only found to be significantly related to youth antisocial behavior. As a result, the only indirect pathways examined for parental symptoms of depression were for youth antisocial behavior through each of the possible mediators.

All indirect pathways are illustrated in Table 4. The first criterion for mediation is that the independent variable must be significantly related to the dependent variable. There was a significant, positive relationship between parental symptoms of anxiety and youth antisocial behavior. High levels of parental symptoms of anxiety were also related to low levels of youth prosocial behavior, as well as sadness and anger regulation. In addition, high levels of parental symptoms of depression were related to high levels of youth antisocial behavior. The second criterion for mediation is that the independent variable must be related to the mediator. Of the five possible mediation pathways, only four met the second criterion for mediation. High levels of anxiety symptomology were related to low levels of parent-child relationship quality. The relationship between depressive symptomology and parent-child relationship quality was not significant. The

third mediation criterion is that the mediator must be related to the dependent variable. High levels of parent-child relationship quality were related to low levels of youth antisocial behavior and high levels of youth prosocial behavior, sadness and anger regulation. Since the three criteria for mediation were met for parental symptoms of anxiety, parent-child relationship quality, and adolescent adjustment, the Sobel's indirect coefficient (Preacher & Leonardelli, 2014) was computed for each of the outcomes. No further analyses were computed for parental symptoms of depression and parent-child relationship quality as this relationship was not significant. The Sobel's coefficient indicated significant indirect effects of parental symptoms of anxiety on youth antisocial behavior, prosocial behavior, and anger regulation through parent-child relationship quality. Finally, to determine the extent of the direct or indirect effects, a series of regressions were computed where youth age, sex, and primary caregiver education were entered in Step 1 and parent-child relationship quality and anxiety were entered in Step 2. There was a slight decrease in the significance of anxiety symptomology on youth antisocial behavior when controlling for parent-child relationship quality (Figure 2a), providing evidence for both direct and indirect effects. When controlling for parent-child relationship quality, the relationship between parental symptoms of anxiety and youth prosocial behavior was no longer significant (Figure 2b), providing evidence for indirect effects. Finally, the relationship between parental anxiety symptomology and youth anger regulation is still significant when controlling for parent-child relationship quality (Figure 2c), indicating both direct and indirect effects.

Research Goal #4

As a reminder, the fourth and final research goal of this study was to determine whether or not parental emotion socialization mediated the relationship between parental internalizing symptomology and adolescent adjustment. Once again, high levels of parental symptoms of anxiety were related to high levels of depression and low levels of youth prosocial behavior, sadness, and anger regulation. High levels of parental depressive symptomology were related to high levels of antisocial behavior as well (Criterion 1). No significant relationship was found between anxiety or depression and positive emotion socialization. On the other hand, high levels of symptoms of anxiety were related to high levels of negative emotion socialization. High levels of depressive symptomology were also related to high levels of negative emotion socialization (Criterion 2). High levels of positive emotion socialization were related to low levels of youth antisocial behavior and high levels of youth prosocial behavior, sadness, and anger regulation. High levels of negative emotion socialization were related to high levels of youth antisocial behavior and low levels of youth anger regulation. No significant relationship was found between negative emotion socialization and youth prosocial behavior or sadness regulation (Criterion 3). No further analyses were computed for positive emotion socialization. Sobel's coefficients were computed for negative emotion socialization as a mediator of the relationship between parental symptoms of anxiety and youth antisocial behavior and anger regulation as well as the relationship between depressive symptomology and youth antisocial behavior. None of the Sobel's coefficients were significant, providing evidence for direct effects alone. Since the three crietion for mediation were not met, no further analyses were computed.

CHAPTER V

DISCUSSION

The current study sought to accomplish four goals. The first research goal was to examine the link between parental internalizing symptomology (i.e. symptoms of anxiety or depression) and adolescent adjustment (i.e. antisocial behavior, depressive symptoms, prosocial behavior, and emotion regulation). The second research goal was to investigate the additive effects of the presence of both anxiety and depressive symptomology on each of the adolescent outcomes. The third goal was to determine whether or not the quality of the parent-child relationship mediated the link between parental internalizing symptomology and adolescent adjustment. The fourth and final goal was to investigate whether or not parental emotion socialization mediated the relationship between parental internalizing symptomology and adolescent outcomes. The results indicated that high levels of parental anxiety and depressive symptomology were related to high levels of youth antisocial behavior. Parental symptoms of anxiety were also significantly and inversely related to youth prosocial behavior as well as sadness and anger regulation. In addition, parental symptoms of anxiety were found to have both direct and indirect effects on youth antisocial behavior, prosocial behavior and anger regulation through parent-child relationship quality. In summary, there is evidence that parental internalizing

symptomology is a significant predictor of adolescent adjustment.

Parental symptoms of anxiety → adolescent adjustment

In general, the findings supported the hypothesis that high levels of parental symptoms of anxiety were related to high levels of youth antisocial behavior and low levels of prosocial behavior as well as sadness and anger regulation. These findings are consistent with other research that has found a link between parental anxiety symptomology and adolescent outcomes (Burstein et al, 2010; Clarke, Cooper, & Criswwell, 2013; West & Newman, 2003). This suggests that parents experiencing symptoms of anxiety may be more likely to model erratic and undesirable behaviors for their teens who, in turn, exhibit these antisocial behaviors (West & Newman, 2003). In addition, parents with symptoms of anxiety are more likely to limit the activities of their children and refrain from encouraging them to engage in risk-taking behaviors in a bid to keep them safe (Brennan, LeBrocque, & Hammen, 2003; Clarke et al, 2013). These tighter limits may push the youths to act out in an effort to gain ore independence. In addition, parents with symptoms of depression are less likely to regulate their own emotions effectively potentially leading their adolescents to exhibit inappropriate regulation of their own emotions (Silk et al, 2006).

Parental symptoms of depression → adolescent adjustment

High levels of parental depressive symptomology were also related to high levels of youth antisocial behavior. These findings are consistent with other research that has found a link between parental depressive symptomology and adolescent outcomes (Gunlicks & Weismann, 2008; Johnson & Flake, 2007). For example, parents experiencing symptoms of depression are less likely to effectively monitor the activities

of their children (Johnson & Flake, 2007), giving youth more freedom to engage in risky or aggressive behaviors without the fear of consequences. On the other hand, no significant relationship was found between parental symptoms of depression and any of the other youth outcomes. Although parents experiencing symptoms of depression are less likely to have youth who exhibit prosocial behaviors (Solantus et al, 2010) and more likely to have youth with poor emotion regulation (Silk et al, 2006), parents experiencing mild or intermittent forms of depressive symptoms may have adolescents who experience less severe adverse outcomes than their peers whose parents experience longer or more intense depressive symptoms (West & Newman, 2003).

Parental internalizing symptomology → adolescent depressive symptoms

Interestingly, neither internalizing factor (anxiety or depression) was found to be related to youth depressive symptoms in the current sample. As was previously stated, depressive symptomology can be passed from parents to child in multiple ways. Youth may acquire such symptomology through a genetic link (Peterson et al, 1993; Steinberg & Morris, 2001). Since parents in this sample may report only mild or temporary symptoms of anxiety and depression, there may be no genetic predisposition to be passed along to their children. In addition, the emotional availability of parents experiencing internalizing symptomology may speed the development of similar symptomology in their children (Peterson et al, 1993). The current sample reported on symptoms occurring in the last month. Such symptoms may be temporary and have not yet had a lasting effect on their adolescents.

Additive Effects

The findings partially supported the hypothesis that high levels of both anxiety and depressive symptomology will be related to high levels of youth antisocial behavior and depressive symptoms and low levels of prosocial behavior and emotion regulation when examined concurrently. The results indicated that, when investigated simultaneously, the comorbidity of anxiety and depressive symptomology impacts youth antisocial behavior and anger regulation. Specifically, symptoms of depression are no longer significant and symptoms of anxiety are linked to higher rates of youth antisocial behavior and lower rates of anger regulation. As was stated earlier, parents with symptoms of anxiety or depression or a combination of the two are less likely to effectively manage their own emotions, making it difficult to model and direct their own children.

The significance of depressive symptoms disappears when examined simultaneously with symptoms of anxiety in the current sample. While research has found a link between parent and youth depression (Silk et al, 2006), parents in this sample may experience more anxiety than depression as a reaction to their current environment or situation. This may be due to their current living arrangements, source or lack of income, etc. Parents in high risk neighborhoods are more likely to experience symptoms of anxiety and become overprotective in an effort to keep their children safe (Clarke et al, 2013). The majority of the sample in the current study were minority groups (>70%) and the sample as a whole could be classified as high risk. Many may, at this one point in their lives, feel more anxiety about their current housing or work situation than depression about their lives overall.

Mediation Effects

Parent-child relationship quality and parental emotion socialization were examined as possible mediators of the relationship between parental internalizing symptomology and adolescent adjustment. Results indicate that the quality of the parent-child relationship plays an important role in the link between parental symptoms of anxiety and youth antisocial behavior, prosocial behavior and anger regulation. That is, there are direct effects of parental anxiety on youth antisocial behavior and anger regulation, but there are also indirect effects through the quality of the parent-child relationship. Furthermore, the findings indicate indirect effects alone on youth prosocial behavior through parent-child relationship quality. For example, parents suffering from symptoms of anxiety may be overprotective or lean too much on their adolescent for emotional support, leading to stressed and hostile relationships between parent and child (Johnson & Flake, 2007). When the quality of the parent-child relationship is poor, youth are more likely to aggressive and antisocial (Ramsden and Hubbard, 2002). On the other hand, youth who perceive a warm and accepting relationship with their mothers are less likely to experience adverse outcomes (Brennan et al, 2005).

No relationship was found between parental depressive symptoms and parent-child relationship quality. While evidence of a significant link between these two variables has been found in other studies (Brennan et al, 2003; Low & Stocker, 2005), results indicate that anxiety was more highly correlated to relationship quality in the current sample. Parents in this sample may be more anxious about their current situation (i.e. high risk neighborhood, low income) and less depressed because they may see this situation as temporary. The results indicated no indirect effects of anxiety or depression

on any of the youth outcomes through parental emotion socialization. The manner in which parents respond to their teen's emotions is important to the development of effective coping skills (Eisenberg et al, 2003; Silk et al, 2003). However, parents experiencing symptoms of depression are more likely to withdraw from family and social situations (Johnson & Flake, 2007). Anxious parents are more likely to overprotect their children and focus on their safety before taking their emotions into account (Clarke et al, 2013). This withdrawal and overprotection may limit the emotional availability of the parents in this sample and could offer an explanation for these null findings.

Implications

The results from this study have implications for family service providers and interventionists. The findings suggest that parental symptoms of anxiety and depression directly influence the development of social behaviors and emotion regulation in their adolescents. Specifically, presence of these internalizing symptomologies was significantly linked to more antisocial behaviors and less prosocial behaviors and emotion regulation. Given this information, it is suggested that service providers working with parents of adolescents be aware of the risk these symptoms pose for the teens in these families and encourage parents to develop and maintain a warm and open environment for their youth. In addition, interventionists should focus on developing effective programs for parents experiencing such symptomology to be able to recognize and work through their own symptoms as well as model appropriate social behaviors and emotion regulation for their adolescents. For example, Solantaus and colleagues (2010) found that interventions paired with mental health treatment of parents experiencing

internalizing symptomology led to a prevention of symptomology in their children. Furthermore, a decrease in already existing symptoms in children was found as well.

Another implication of this study is that parental internalizing symptoms have indirect effects on youth antisocial behavior, prosocial behavior, and anger regulation through parent-child relationship quality. These findings suggest that the quality of the parent-child relationship is yet another avenue through which parents can impact the behaviors and emotion regulation of their teens. Developing effective interventions may be especially imperative as the parent- child relationship serves as a key learning environment for adolescents (Bell & Calkins, 2000; Steinberg & Morris, 2001). Parents should be made aware that fostering a warm and caring relationship with their teen may deter the development of antisocial behaviors. Dishion and Kavanagh (2002) found that parental warmth effectively deterred problem behaviors. Coatsworth and colleagues (2010) found that the quality of the parent-child relationship improved as the parents became more mindful of their teen's activities. This, in turn, led to a decrease in delinquent behaviors.

Limitations and Future Directions

There are limitations to this study that should be acknowledged. First, this study was cross- sectional which makes it difficult to determine whether the youth outcomes examined were a result of prolonged exposure to parental internalizing symptomology. Furthermore, parents reported on the symptoms of anxiety and depression in the past week to a month. Future research would benefit from examining the duration of such symptomology and the resulting adolescent outcomes through a longitudinal study focusing on multiple points in time. Although there is strong evidence that parental

internalizing symptomology impacts adolescent adjustment, it is also possible that adolescence can influence internalizing symptomology. Future research studies may focus on the possible bidirectional relationship between parent symptomology and adolescent outcomes. Finally, this study was not meant to be an exhaustive investigation of all of the possible mediators in the link between parental internalizing symptomology and adolescent adjustment. In fact, there are other factors that may mediate this link, such as substance use, parental antisocial behavior, or parental emotion regulation.

Strengths & Conclusions

The current study fills a gap in recent research in multiple ways. To begin, the sample in this study represents a high risk population made up of multiple ethnicities and lower yearly income. Much of the reviewed literature employed samples that were European- American and higher socioeconomic status. In addition, the current study employed multiple informants in an effort to gain the best possible picture of the sample. Recent research has focused on either the parent or youth report while the current study obtained both. The current study also utilized observer ratings of parent-child relationship quality. The current study also examines prosocial behavior as a youth outcome. This is an area where future research could also focus. Finally, the current study focused on adolescence as a period in which to gain insight. While more research is beginning to focus on this stage of development, previous research has focused more on childhood experiences and the possible adolescent outcomes. Another way in which the current study fills a gap in literature is through the examined mediators. Findings from this study found that parent-child relationship quality significantly mediated several youth

outcomes. While the direct effects of parental internalizing symptomology are apparent, future research should investigate the multiple mediation pathways that may exist as well.

In conclusion, the current study examined the link between parental internalizing symptomology (i.e. symptoms of anxiety and depression) and adolescent outcomes (i.e. antisocial behavior, depressive symptoms, prosocial behavior, and anger and sadness regulation) and whether parent-child relationship quality or emotion socialization mediated this link. The results indicated indirect effects of parental symptoms of anxiety on youth antisocial behavior, prosocial behavior, and anger regulation through the quality of the parent-child relationship. No evidence of indirect effects were found through positive or negative emotion socialization. In closing, the results of this study illustrate the impact of parental internalizing symptomology on adolescent adjustment and offer clear implications for service providers and interventionists.

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APPENDICES

Table 1. *Descriptive statistics and bivariate correlations*

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Parent Anxiety		.75**	-.22**	-.04	.24**	.40**	.15*	-.17*	-.14*	-.21**	.06	.02	-.18*
2. Parent Depression			-.17*	-.08	.20**	.33**	.11	-.11	-.12	-.16*	.11	-.03	-.14*
3. Parent- Child RQ				.26**	-.25**	-.38**	-.23**	.31**	.19**	.34**	-.17*	-.16*	.24**
4. Positive ES					.17*	-.21**	-.11	.30**	.21**	.29**	-.06	-.11	.12
5. Negative ES						.25**	.43**	-.00	-.11	-.17*	-.01	.03	-.22**
6. Youth AB							.35**	-.48**	-.33**	-.57**	.18*	.19**	-.14*
7. Youth Depression								-.12	-.19**	-.32**	.05	.15*	-.18
8. Youth PB									.39**	.50**	-.31**	-.13	.07
9. Youth Sadness ER										.57**	.04	.06	.05
10. Youth Anger ER											-.10	-.05	.09
11. Gender												-.01	.01
12. Age													.01
13. PC Education													
M	13.11	19.73	4.73	3.50	2.24	1.45	12.24	1.60	1.20	1.10	.49	13.38	5.01
SD	11.61	8.96	2.65	1.01	.49	.37	11.03	.31	.37	.43	.50	2.33	1.16

Note: RQ= relationship quality, ES= emotion socialization, AB= antisocial behavior, PB= prosocial behavior, ER= emotion regulation, PC=primary caregiver

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

Table 2. *Multiple regressions examining parental anxiety and depression symptoms as predictors of adolescent adjustment*

		Youth Antisocial Behavior		Youth Depressive Symptoms		Youth Prosocial Behavior		Youth Sadness Regulation		Youth Anger Regulation	
Step	Predictor	Std β	ΔR^2	Std β	ΔR^2	Std β	ΔR^2	Std β	ΔR^2	Std β	ΔR^2
1	Sex	.19**	.09	.06	.04	-.32***	.13	.02	.01	-.11	.02
	Age	.19**		.15*		-.14*		.07		-.04	
	PC Edu	-.15*		-.12		.08		.05		.10	
2	Anxiety	.37***	.13	.12	.02	-.14*	.02	-.14*	.02	-.20**	.04
1	Sex	.19**	.09	.06	.04	-.32***	.13	.02	.01	-.11	.02
	Age	.19**		.15*		-.14*		.07		-.04	
	PC Edu	-.15*		-.12		.08		.05		.10	
2	Depression	.30***	.09	.10	.01	-.07	.00	-.11	.01	-.14	.02

Note: PC Edu= Primary Caregiver Education
*$p < .05$ **$p < .01$ ***$p < .001$

Table 3. *Multiple regressions examining the additive effects of parental anxiety and depression symptoms as predictors of adolescent adjustment*

		Youth Antisocial Behavior		Youth Depressive Symptoms		Youth Prosocial Behavior		Youth Sadness Regulation		Youth Anger Regulation	
Step	Predictor	Std β	ΔR^2	Std β	ΔR^2	Std β	ΔR^2	Std β	ΔR^2	Std β	ΔR^2
1	Sex	.19**	.09	.06	.04	-.32***	.13	.02	.01	-.11	.02
	Age	.19**		.15*		-.14*		.07		-.04	
	PC Edu	-.15*		-.12		.08		.05		.10	
2	Anxiety	.33**	.13	.11	.02	-.19	.02	-.13	.02	-.22*	.04
	Depression	.06		.01		.07		-.02		.03	

Note: PC Edu= Primary Caregiver Education
*$p < .05$ **$p < .01$ ***$p < .001$

Table 4. *Multiple regressions examining parent- child relationship quality and emotion socialization as mediators in the link between parental psychopathology and adolescent adjustment*

			IV→DV	IV→Mediator	Mediator→DV		IV→DVa
IV	Mediator	Outcome	Std β	Std β	Std β	Sobel	Std β
Anxiety	PCRQ	YAB	.37***	-.18*	-.32***	2.13*	.33***
		YPB	-.14*	-.18*	.24***	-1.92*	-.11
		YSR	-.14*	-.18*	.20**	-1.70	--
		YAR	-.20**	-.18*	.31***	-2.13*	-.16*
	PES	YAB	.37***	-.01	-.16*	--	--
		YPB	-.14*	-.01	.26***	--	--
		YSR	-.14*	-.01	.21**	--	--
		YAR	-.20**	-.01	.27***	--	--
	NES	YAB	.37***	.20**	.22***	1.79	--
		YPB	-.14*	.20**	-.01	--	--
		YSR	-.14*	.20**	-.11	--	--
		YAR	-.20**	.20**	-.16*	-1.53	--
Depression	PCRQ	YAB	.30***	-.13	-.32***	--	--
	PES	YAB	.30***	-.05	-.16*	--	--
	NES	YAB	.30***	.18*	.22***	1.80	--

Note: PCRQ= parent-child relationship quality, PES= positive emotion socialization, NES= negative emotion socialization, YAB= youth antisocial behavior, YPB= youth prosocial behavior, YSR= youth sadness regulation, YAR= youth anger regulation *$p < .05$ **$p < .01$ ***$p < .001$

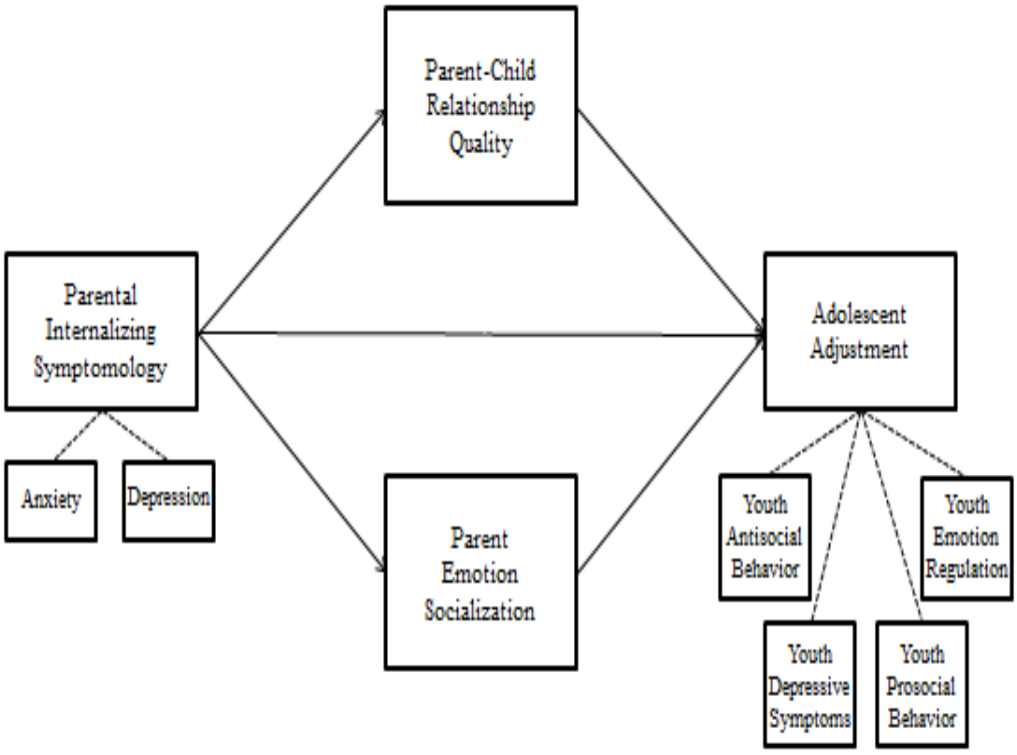

Figure 1: Theoretical model examining the relationship between parental psychopathology and adolescent adjustment with parent child relationship quality and parent emotion socialization as possible mediators

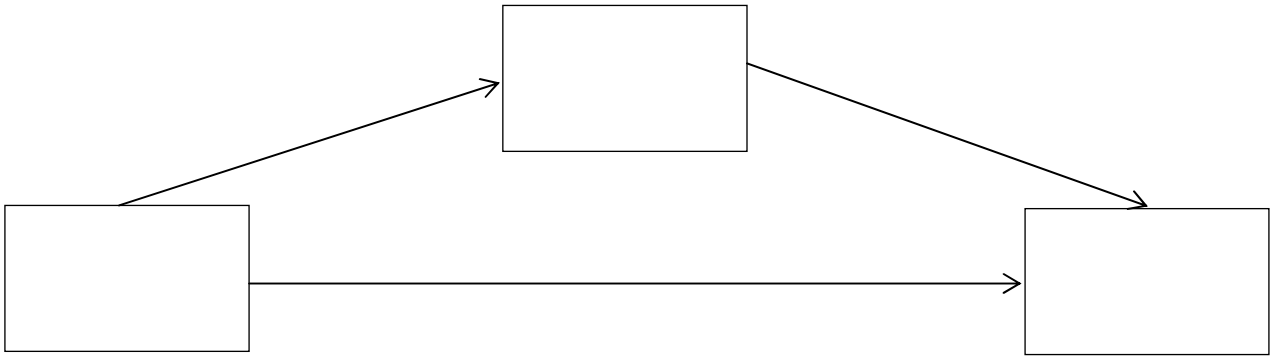

Figure 2a. Parent- child relationship quality mediates the association between parental symptoms of anxiety and youth antisocial behavior.

Note. Standardized betas in parentheses are based on analyses without the mediator.
* = $p < .05$. ** = $p < .01$. *** = $p < .001$.

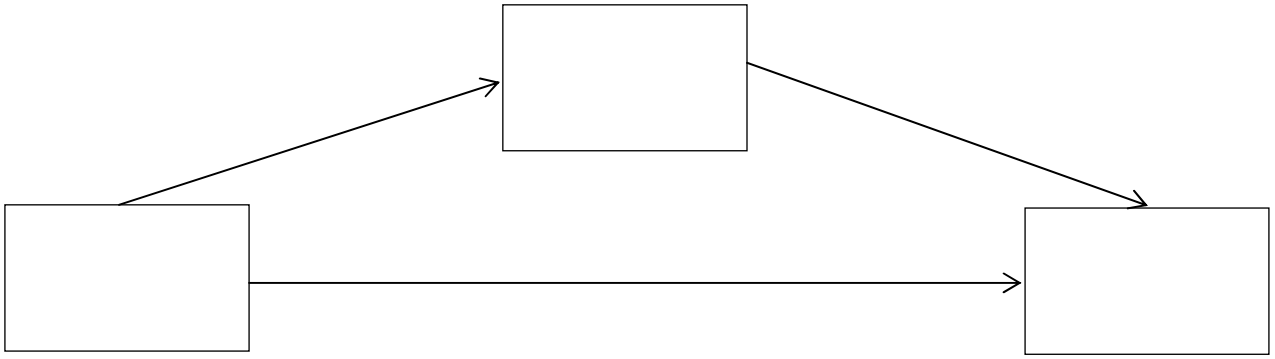

Figure 2b. Parent- child relationship quality mediates the association between parental symptoms of anxiety and youth prosocial behavior.

Note. Standardized betas in parentheses are based on analyses without the mediator.
* = $p < .05$. ** = $p < .01$. *** = $p < .001$.

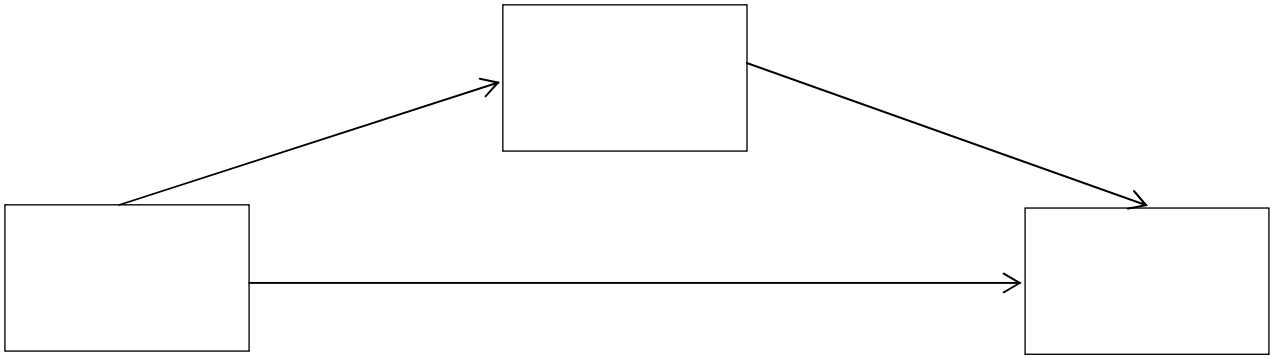

Figure 2c. Parent- child relationship quality mediates the association between parental symptoms of anxiety and youth anger regulation.

Note. Standardized betas in parentheses are based on analyses without the mediator.
* = $p < .05$. ** = $p < .01$. *** = $p < .001$.

VITA

Julie Y. Staton

Candidate for the Degree of

Master of Science

Thesis: ASSOCIATIONS BETWEEN PARENTAL INTERNALIZING SYMPTOMOLOGY AND ADOLESCENT ADJUSTMENT: AN EXAMINATION OF DIRECT AND INDIRECT EFFECTS

Major Field: Human Development and Family Science

Biographical:

Education:

Completed the requirements for the Master of Science in Human Development and Family Science at Oklahoma State University, Tulsa, Oklahoma in July, 2014.

Completed the requirements for the Bachelor of Science in Human Development and Family Science at Oklahoma State University, Tulsa, OK in 2011.

Experience:

August, 2011 – July, 2014: Graduate Research/Teaching Assistant, Department of Human Development and Family Science, Oklahoma State University, Tulsa, Oklahoma

Professional Memberships:

Society for Research in Human Development, 2014-2015