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The Relationship of Attributions and Parental Characteristics with Parental Problem Recognition

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by

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Abstract

A significant number of youth experience mental health disorders for which they suffer negative consequences. Although there are evidence-based therapies available to help children and their families, most youth do not receive treatment. Parental problem recognition is likely a primary barrier in this process. This study begins to address why parents may have difficulty recognizing mental health problems by extending existing models and integrating evidence about parental perceptions. Specifically, the study aimed to investigate the relationship between parental attributions and parents' problem determination, and to examine the influence that parental characteristics have on this judgment process. Participants included 164 parents of youth ages 6-11 years. Purposive sampling was used to recruit mothers and fathers from both lower and higher SES communities. Parents completed self-report measures of parental characteristics, including: parental psychopathology, parenting stress, parental tolerance, and parental self-efficacy. Parents read ten brief child behavior vignettes and completed a version of the Written Analogue Questionnaire to rate the cause of each behavior (assuming it was their own child in the vignette) along four dimensions. Parents also rated the extent to which the behavior was seen as a problem. Results indicated that parents' causal attributions were highly associated with parents' problem ratings, and the attributions of stability and controllability were particularly robust predictors of problem determination. Hypotheses regarding parental characteristics as moderators of the relationship between attributions and problem determination were not supported. Findings are discussed in

light of clinical and public health implications; results suggest that recognizing the influence of parental beliefs and attributions may help to increase the efficacy of outreach efforts for early intervention and help seeking for parental concerns.

Introduction

A substantial number of youth in the U.S. suffer from mental health problems. Estimates suggest that about 13% of children, or one in every four to five, will experience a mental health disorder in a given year (CDC, 2013). Psychological problems can interfere with functioning in nearly every domain of development. The symptoms that youth experience often create difficulties with peer relationships, academic struggles, physical health concerns, and family disruption. Although there have been a number of evidence-based treatments for youth developed and available, most youth with mental health needs do not receive any treatment, let alone evidence-based treatment (Merikangas et al., 2010; Shanley, Reid, & Evans, 2008). There is a well-established gap between the percentage of youth whose functioning is impaired because they meet criteria for some mental health disorder and the percentage of youth who utilize mental health services. Untreated mental health disorders can continue to worsen with time, cause difficulties with developmental transitions, and linger into adulthood (Boulter & Rickwood, 2009). Parents can serve a critical role in helping youth avoid this adverse developmental trajectory, as they are typically the ones who bring youth to treatment. In this sense, they are often called "gatekeepers" of whether youth receive mental health services. So, why are parents not taking their children with mental health problems to get help?

There are several explanations offered to address this question including stigma associated with mental health problems, barriers to seeking and accessing services (e.g., financial constraints, scheduling, transportation to services), and issues related to parental recognition of a problem (Girio-Herrara, Owens, & Langberg, 2013; Kazdin, Holland, & Crowley, 1997; Owens

et al., 2002; Raviv, Sharvit, Raviv, & Rosenblat-Stein, 2009; Teagle, 2002; Turner & Liew, 2010). Parents tend to be reluctant to classify their children's emotional or behavioral problems as psychological for fear this will negatively affect the perception that others have of them (as an individual or as a parent) and the child. This stigma may not be openly expressed, but greatly affects the help-seeking decisions parents make. For example, the mothers and fathers in Raviv et al. (2009) were more willing to refer a friend's child to mental health services than they were to take their own child to professional services, even if imagining that their own child was displaying identical symptoms as the friend's child. Parents often justify youth behavior by viewing problems as a developmental "phase" that will pass or believing they, as a parent, should be able to "handle" or "fix" their child's problem on their own (Pavulri, Luk, McGee, 1996; Raviv et al., 2009). Those parents who acknowledge their child's mental health needs and seek services to address these needs often report an additional set of barriers which Owen et al. (2002) described as structural constraints. For parents to get their child to treatment, they would need to locate an appropriate clinic/mental health professional, schedule appointments, transport the child to sessions, arrange childcare for other children, pay for treatment, and likely also be involved in the therapy sessions. Any of these steps may present challenges for families in need of services (Cohen, Calderson, Salinas, Sengupta, & Reiter, 2012; Kazdin et al., 1997; Owens et al., 2002).

Unlike stigma and structural barriers to care, the role of parental problem recognition in untreated youth mental health problems has been relatively neglected in empirical research. This is interesting considering that models of help seeking (e.g., Srebnik, Cauce, & Baydar, 1996) consistently posit that problem recognition by parents must occur prior to any decision about what to do about problem behaviors. Further, evidence suggests that over 50% of parents whose

children have diagnosable mental health problems do not identify these problems of their children (Girio-Herrara et al., 2013; Sayal, 2006; Thurston, Phares, Coates, & Bogart, 2014). Given that most parents have not had specific training in child development or abnormal psychology it stands to reason that they may not know what problematic behaviors to look for or whether a behavior is considered normal or abnormal for the child's developmental stage. In fact, clinical lore and research both suggest that there is great variability in what individual parents consider to be problematic or a reason for seeking professional mental help services (Brestan, Eyberg, Algina, Johnson, & Boggs, 2003; Forehand et al., 2011).

It is not well understood how parents make judgments about their child's behavior, and more specifically how they come to determine the threshold of problematic behavior. The present study extends the literature by investigating several factors that may influence parents' problem determination. Findings offer a greater understanding of how parents interpret child behavior and their recognition of child psychopathology. As such, this study has significant implications regarding assessment practices for youth psychopathology and educational efforts to help parents recognize emotional and/or behavioral problems in their children.

Problems with Parental Recognition of Problems

Most research on youth psychopathology tends to rely on parents' reports of their child's behavior. While this appears to be the easiest way to gather data regarding the frequency and/or severity of behaviors demonstrated by a youth, extensive literature has demonstrated that there is considerable discrepancy among different informants regarding the rates of child behavior (Achenbach, McConaughy, & Howell, 1987; De Los Reyes & Kazdin, 2005; Girio-Herrera et al., 2013; Mulvaney, Mebert, Flint, 2007; Schroeder, Hood, & Hughes, 2010; Stokes, Pogge, Wecksell, & Zaccario, 2011). Evidence suggests that characteristics of mothers, fathers, and

other important adults (i.e., teachers) are associated with ratings of a particular child's behavior. For example, parents who are more depressed or angry have been shown to perceive their child as displaying more problem behaviors (De Los Reyes & Kazdin, 2005; Mulvaney et al., 2007). Numerous studies have also found overall fathers tend to report less internalizing and externalizing behaviors than mothers (Schroeder et al., 2010). Given that these ratings of different informants only tend to correspond to a low-to-moderate degree, some have argued that the accuracy of parental report measures is questionable (e.g., Duhig, Renk, Epstein, & Phares, 2000; Hay et al., 1999). To clarify this issue, De Los Reyes and colleagues (2005, 2009) have provided convincing evidence that each of the various informants may provide unique meaningful information on a child's functioning. They suggest that, by the nature of their roles (e.g., father, mother, teacher), informants observe children in different settings. This is important because within these different settings children may act differently, and the nature of the setting or activity in which the child is being observed may offer separate sets of expectations and behavioral interactions between the child and the informant. For example, a mother completing a measure about her child's behavior may be more likely to call to mind her child's oppositional behavior during the morning and evening routine, for which she has expectations that the child obey the first time he or she is asked. On the other hand, a father may be more likely to call to mind soccer practice, where the child is behaving in a similar manner to other children, and the child meets the expectations to have fun and cooperate.

In addition, the characteristics of the person filling out the measure (e.g., mother or father) may predict the level and type of reported child behavior. As a result of parents' personal characteristics, affective states, beliefs, or interactions with the youth, behaviors may be over- or under-reported compared to the actual level of the behavior. Results from several studies have

shown that parents who endorse more parental stress tend to report more disruptive behaviors in their children (Calzada, Eyberg, Rich, & Querido, 2004; Solem, Christophersen, & Martinussen, 2011; Stokes et al., 2011). To extend previous findings regarding the effect of affective states on parental reports of child behavior, Mulvaney and colleagues (2007) examined mothers' and fathers' reports of their first grade children's behaviors as well as their own affective states and assessments of other parental characteristics. The children's teachers also provided information on the children's behavior. Parents who experienced more state anger or depressed symptoms reported more behavior problems in their children than did other adults rating the same children, beyond typical setting discrepancies (Mulvaney et al., 2007). Other parental characteristics, such as traditional parenting beliefs and neuroticism, have also exhibited a similar pattern: parents who endorse traditional beliefs about childrearing (e.g., "Children should always obey their parents") or score higher on the neuroticism personality trait (e.g., "I often feel inferior to others") rate their children higher on problem behaviors (Kurdek, 2003; Mulvaney et al., 2007; Roberts, Alegria, Roberts, & Chen, 2005). Some parents may view their children as more problematic or difficult because of their particular beliefs or other characteristics. In other words, certain parental beliefs, attitudes, or characteristics may be related to parents' perceptions of child behavior. These findings highlight the need to consider the importance of the lens through which parents view their children's behavior, and suggest that psychological factors may influence this lens.

In addition to these factors that are associated with the way parents perceive and report child behaviors, other factors appear to create difficulty for parents in recognizing mental health problems. Numerous studies have demonstrated this with various methods. For example, in a cross-sectional study (N= 1420) examining the development of youth psychopathology and

associated service use, Teagle (2002) found that 61% of the parents whose 9-11-year-old children met the criteria for one or more psychiatric diagnoses did not recognize problems in their child. The youth in this study were assessed by trained interviewers who completed structured instruments to determine diagnostic symptoms. Parents were also administered structured interviews about the child's symptoms, their perception of the youth's need for help, and their perception of the impact that the child's behavior had on family functioning. Although there were a considerable number of children in this study (about 12%) experiencing one or more disorders (e.g., anxiety, attention-deficit/hyperactivity disorder, depressive disorders) according to the structured interview, a relatively small percentage of parents reported that they perceived any problems (approximately 39%). There was also a small but noteworthy group (10%) of parents who perceived one or more problems, even though their child did not meet criteria for a psychiatric disorder. A large proportion of parents under- or over-identify mental health problems in their own child as compared to clinician rated diagnoses. Even among a sample of young children with elevated risk for behavioral health concerns (n = 269), which was defined as children whose parents rated them at or above the 90th percentile on the internalizing, externalizing, and/or dysregulation domain of a screening tool, parents did not appear to be too concerned by their ratings (Ellingson, Briggs-Gowan, Carter, & Horwitz, 2004). Within this sample of 1-3 year olds, only 17.8% of the parents reported that they spoke to a service provider regarding their child's behavioral/emotional problems (87% of those who endorsed talking to a professional reported talking to a pediatrician). In addition, only 37.8% of the parents reported "worrying" about their child's social-emotional behavior (Ellingson et al., 2004).

Other researchers have examined parents' recognition of child problems by utilizing vignette methodology (Krech & Johnston, 1992; Lapatin et al., 2012; Mendenhall & Frauenholtz,

2013). For example, Thurston and colleagues (2014), asked mothers and fathers to read three vignettes that depicted a 10-year-old child with an internalizing problem (anxiety), an externalizing problem (ADHD), and developmentally typical issues that would not meet a clinically significant diagnosis. Parents then responded to a series of questions about each vignette. The questions revolved around the perceived needs of the child, whether the participant believed the child had a mental health disorder, and the participant's hypothetical willingness to seek help for the child in each vignette. Almost half of the parents in the study did not recognize a problem in the internalizing vignette, and more than one third did not identify a problem in the externalizing vignette. Similarly, parents endorsed being more willing to seek help when they recognized a mental health problem in the vignettes than when they did not perceive any problem, thus highlighting the critical role of recognition in the process of helping youth receive needed services (Thurston et al., 2014). Another vignette study utilized a nationally representative sample of U.S. adults (not limited to parents) to determine how well "the public" was able to recognize several commonly diagnosed youth mental health problems (e.g., ADHD, depression) above and beyond non-clinical "daily troubles" (Pescosolido, Jensen, Martin, Perry, Olafsdottir, & Fettes, 2008). While 60% correctly listed depression as a problem in the depression vignette, over 30% of respondents did not endorse any mental disorder being present in the vignette. For the ADHD vignette, only 42% were able to correctly identify ADHD, and over 50% of respondents did not endorse any mental disorder being present in this vignette. These rates are fairly similar to parents' responses in the Thurston et al. (2014) study. However, adults in general appear to recognize internalizing problems more readily than parents, whereas parents are more apt to recognize externalizing behaviors.

Parents appear to struggle with identifying abnormal behaviors that may indicate psychopathology in reference to their own child as well as a hypothetical child in a vignette. However, there is great variability in the way that parents classify child behavior, and some parents also appear to over-identify problems even when the child's behavior is within an average range for their developmental stage. Given the evidence regarding the complexity of parental recognition of child problems, there is a critical need to understand why and how parental judgments about child behavior vary so much.

How do Parents Make Judgments about Child Behavior?

Given the fundamental role of parental recognition, it is important to understand why parents form different judgments when observing the same child behavior and address the question of why parents have difficulty recognizing mental health problems. Existing studies attempting to increase understanding of the parental recognition problem have focused on interparental discrepancy on rating scales of child problem behavior and the role of parental problem recognition in relation to receiving services for their children. Many studies that have investigated concordance between mothers' and fathers' ratings of child behavior have also examined moderator variables that make parental agreement/disagreement more likely, or factors associated with parental discrepancies (De Los Reyes & Kazdin, 2005; Duhig et al., 2000; Moreno, Silverman, Saavedra, & Phares, 2008; Schroeder, Hood, & Hughes, 2010; Treutler & Epkins, 2003). There are some consistent findings, including greater parental agreement on externalizing or oppositional behavior compared to internalizing symptoms, as well as higher concordance for specific symptoms rather than clusters of symptoms or subscales. In general, significant discrepancies are often found for the severity ratings of symptoms, with most studies showing that mothers tend to rate behaviors as more problematic than fathers. For example,

Christensen, Margolin and Sullaway (1992) investigated interparental agreement at the individual item level for the CBCL. Overall, they found low levels of agreement on child problem behaviors. When examining more specifically the items not agreed upon, it was found that parents disagreed on an average of 28.4 different problem behaviors, and only agreed on their ratings for approximately 11 behaviors. Consistent with other studies, mothers reported significantly more negative behaviors than fathers. Their results also suggested that several other factors were correlated with greater parental discrepancies such as distress level of the family and increased overall child problem behavior. Despite the study authors going beyond simple description of the existence of parental discrepancy in recognizing child problem behavior, their discussion of these results regarding correlations with parental agreement was speculative, and it is unclear how all the parent, child, and family variables the authors describe as potential moderators of parental agreement may be related. The lack of a purposeful theory-driven approach to guide the development of this study limits its interpretations and how future research can build upon it.

More recently, Moreno et al. (2008) conducted a study on parental agreement regarding children's anxiety symptoms and behavior problems and also explored the effects of parental psychopathology on parental ratings. They did not propose a particular model or theory to guide their design, but pointed to previous research which showed that mothers tend to report more behavioral and emotional problems in their children than do fathers. The authors sought to explore whether this was true for families with an anxious child, and whether it was related to each parents' respective psychopathology. Consistent with previous research, results from this study showed higher interparental agreement for externalizing behavior problems than for internalizing. For the internalizing and anxious/depressed subscales of the CBCL, parental

agreement was moderate to low (r =0.55, 0.42, respectively). Maternal self-ratings of global psychopathology predicted mothers' ratings of their child on the CBCL Internalizing scale, and paternal psychopathology predicted the fathers' ratings of their child's problems on both the CBCL Internalizing and Anxious/Depressed scales. The two studies described above are limited in the interpretations and implications of their findings because they lack an a priori theory-driven approach to their design. In fact, most of the studies examining parental discrepancies have been limited to descriptive understandings, rather than evaluating information according to existing theories.

Some theory-driven work that includes parental recognition of child psychopathology has been conducted in the context of help-seeking models (e.g., Godoy, Mian, Eisenhower, & Carter, 2013; Horwitz et al., 2003; Teagle, 2002). However, these theories are not focused on parental problem recognition. Rather, their emphasis is on the latter part of the help-seeking process, namely, help-seeking behaviors. While applying the constructs and theorized relationships in help-seeking models, these studies have examined whether certain factors (e.g., severity of symptoms, disruption of family life) led to increased problem recognition, and whether increased problem recognition predicted seeking/obtaining services. For example, the family network-based service access model by Costello et al. (1998) includes two components of parental problem recognition: 1) parental perception, which refers to whether the parent identifies the child as possessing mental health needs, and 2) family impact, which refers to the parent's perception regarding the type (and severity) of disruption caused by the child's problem behaviors/psychopathology. In this model, both components are theorized to predict service use. Based on this model, Teagle (2002) measured both components of parental problem recognition and evaluated their ability to predict service use. Although Teagle (2002)

emphasized the finding that both components were significant predictors of service use, the study also revealed that family impact was correlated with parental perception that their child had a mental health problem.

Similarly, Horwitz et al. (2003) conducted a study based on the pathways proposed in several models of help seeking and examined the extent to which recognizing mental health problems in children predicted parents help seeking behaviors. They also investigated factors that may be associated with the recognition and care-seeking phases. They specifically utilized the Behavioral Model of Health Services (Andersen, 1995) and the Health Belief Model (Rosenstock, 1966) to postulate certain demographic variables and beliefs about susceptibility or need as predictors that a parent will recognize a problem. Both models have a construct of perceived need, which the authors proposed was related to the severity of child problems, and they predicted that greater severity of problems in the child and increased parental worry about the atypicality/severity of the problems would predict better problem recognition. These hypotheses were supported. Parental characteristics were also expected to predict recognition due to the proposed contributions of family relations, parental psychopathology, and parental education in these models. Results indicated that parental factors did predict parental problem recognition, such that parents who recognized problems tended to have a higher education level, endorse a high level of anxiety symptoms, and perceive low levels of social support. A notable finding from this study was that most of the covariates related to recognizing problems (e.g. parental worry about behavior, parent anxiety, parent low social support, reported developmental delay, use of child care) were different than the covariates related to help-seeking behaviors (e.g., parental worry about language, parent anxiety, use of public assistance, conflict in family) (Horwitz et al., 2003). This suggests that each stage in the help-seeking process probably

requires independent, focused study to reveal what factors influence parents' perceptions and what factors influence their decision making.

In sum, extant research suggests that there are specific factors that contribute to, or help predict, parental recognition of child problems and that problem recognition is predictive of seeking help for child mental health problems. However, a major shortcoming in this work has been the lack of theory-driven investigations that focus on the early phases of the help seeking process. More specifically, there is a need to understand parents' thoughts and behaviors regarding recognition of problem behaviors in their children. There is a lack of research specifically focused on problem recognition. The majority of researchers have only measured problem recognition in relation to whether and when parents seek help for their children. Given the limitations of the existing literature, the present study builds upon several theories to help to conduct a more in-depth and theoretically-driven investigation of the process by which parents form judgments about their children's behaviors.

Social Judgment Theory

The Social Judgment Theory (SJT) stems from Brunswik's Lens Model and provides a framework for how people make judgments from a variety of ambiguous stimuli in the environment (Hammond, Stewart, Brehmer, & Steinmann, 1986). According to SJT, when individuals are confronted with environmental stimuli, they must determine which aspects of the situation ("cues") are relevant to help them make a judgment. This may include both objective observations from stimuli, as well as inferences that are then used as cues. For example, in the scenario of a teacher's perception of students' abilities, the objective cues could include an exam grade or whether the student is in his/her seat during the math lesson, whereas inference cues would include teacher judgments of hyperactivity or low interest in math. After cues are

considered, they are selected and weighted as to their relative importance to the criterion being estimated, and then the individual makes a judgment. According to the model, the goal for the judgment process is to make a judgment as close to the objective value (i.e., reality) as possible (Cooksey, Freebody, & Davidson, 1986; Hammond et al., 1986). For example, a teacher strives to integrate clues from observations and knowledge about students to predict their math achievement, so that his/her prediction is as close as possible to a gold standard, such as the students' actual scores on a standardized achievement test (Heald, 1991).

Some researchers have demonstrated the utility of the SJT for tasks within parents' lives. For example, Dhir and Markman (1984) examined parents' cognitions related to conflict and resolution and found SJT to be a useful framework. Each family member may possess their own cognitive sets (e.g., expectations, information sources), and these differences can create disagreements about various everyday decisions or how to conceptualize a solution to a problem. Couples working together to make joint parental decisions are likely to have conflict when they disagree in approach (how to solve a problem) and/or in practice (inconsistency in applying their approach; Dhami & Olsson, 2008). In their case study regarding judgments made about a hypothetical couple's marital stability, the husband and wife initially demonstrated low agreement in the overall ratings (Dhir & Markman, 1984). Considering the SJT framework, this was not surprising, given that there was low correspondence between each person for the weightings of the cue variables (e.g., degree of communication, mutual respect, finances). After receiving feedback about their response choices and their partner's response choices, the couple discussed their judgment process. When the couple completed a new set of vignettes independently, their level of agreement greatly increased, suggesting that greater awareness of their underlying cognitive sets increased consistency in using certain cues, which then increased

agreement (Dhir & Markman, 1984). In other words, the cues used by a person greatly influence the judgments that a person makes.

Although the model has not been empirically applied to parents' judgments about their child's behavior, there are aspects of SJT that can be used to help understand that process. Specifically, parents attend to cues about the child's behavior and emotional functioning that are likely to be complex and ambiguous and select those that they believe may be helpful in making an overall judgment of whether there is a problem in the child's functioning. However, the SJT does not provide guidance about which cues individual parents are likely to choose, how they weight cues, or at what point the cues signify that a problem exists.

Weiner's Attribution Theory

Attribution theories are helpful ways to organize how people interpret information they perceive and, more specifically, the causes to which they ascribe (i.e., attribute) some occurrence. The first theory of this kind that received prominent attention was Weiner's (1985) attribution theory of motivation and emotion, which focused on achievement-related tasks. Weiner acknowledged that there is a fundamental human desire to understand and explain why an event has occurred, and he desired to analyze how individuals explained events to create a structure of causality. This led to the development of his theory with three dimensions of causality: locus, stability, and controllability. The locus dimension refers to whether the cause of the event is perceived as internal to the individual (i.e., ability) or external/ in the environment (e.g., teacher incompetence, mean peers). The stability dimension refers to whether the cause of the event is more permanent, like a constant capacity, or more variable across time and situations (e.g., an illness at the time of performance). The controllability dimension refers to whether the cause of the event is perceived as being under the volitional control of the individual.

Weiner's theory integrated these components and presented a temporal sequence of motivation. The sequence begins with an event that is perceived as either positive or negative (goal attainment or nonattainment). The appraisal of the situation creates a pleasant (happy) or unpleasant (frustrated) affective state. Then, the individual initiates a causal search to understand the event. Certain antecedents influence the causal explanations reached. The individual ultimately forms a judgment, which can be described by the dimensions of causality (i.e., stability, locus, control). By examining these dimensions of causality, we can predict the individual's expectancy of future success, intrapersonal feelings (e.g., pride, shame), and social emotions—factors which are then assumed to influence the subsequent behavior of the individual. Weiner's model suggests that one's perception of stability is predictive of his/her relative expectancy of future success (e.g., low ability perceived to be stable suggests anticipated failures). The locus of cause is proposed to influence pride, such that internal attributions for success elicit greater feelings of pride, whereas the opposite is true for failure. According to the theory, controllability influences social emotions, such that controllable failures are linked to higher amounts of guilt. These expectancies and emotions are then assumed to influence the subsequent behavior of the individual: Successful experiences attributed to stable causes are likely to be predictive of pride and excitement for engaging in the same activity in the future, whereas unsuccessful experiences attributed to a lack of ability are likely to be predictive of discouragement and avoidance of the same activity in the future (Weiner, 1985).

Similar to the SJT, Weiner's attribution theory emphasizes the idea that people interpret events through their personal lens. This theory provides more structure about the types of cognitions that individuals use during this judgment process, which are helpful for predicting reactions to one's experience and for predicting subsequent behavior. This model has been

applied across several different types of behaviors and situations. Weiner's theory was originally focused on understanding achievement-related behavior, so many of his studies examined individuals' causal inferences about classroom experiences (e.g., Weiner, 1979, 2000). However, the model was also utilized to guide studies examining help-seeking behaviors (Schmidt & Weiner, 1988) and work-related behaviors, including work exhaustion and leader-member relations (Martinko, Douglas, & Harvey, 2006; Moore, 2000). However, since Weiner's attribution model was developed to broadly address individuals' interpretations of events and/ or behaviors, the theory does not provide enough guidance about what specifically influences the different types of attributions within specific population groups, such as parents. For this reason, Weiner's model has been adapted to guide the study of several different populations, such as organization leadership (Ashkanasy, 2002) and individuals with physical illness (Roesch & Weiner, 2001). Given the potential relevance of this theory to parent-child interactions, it is not surprising that Weiner's attribution theory was also extended to parent's perspectives of their child's behavior.

Social cognitive model of parent attributions. Dix and colleagues (1986, 1989) adapted the theories of attribution from social cognitive theories to understand how parents appraise and explain their children's behavior. They proposed that when parents observe their child's behavior, their parenting behavior is adjusted based on inferences about the factors that contribute to that behavior such as "children's moods, motives, and intentions; children's understanding of the situation; and environmental supports and pressures" (Dix, Ruble, Zambarano, 1989, p. 1374). They suggest that the overall process of inferences that parents make is guided by a primary question of whether the behavior was caused by something internal and controllable to the child, external and related to the situation, or by a developmental

constraint (i.e., child is not competent to foresee or intend the outcome of his/her behaviors). In fact, this team's work suggests that parents engage in ongoing appraisals of children's behaviors to give meaning to the child's behavior (Bugental et al., 1989; Dix, Ruble, Grusec, & Nixon, 1986; Dix & Lochman, 1990). According to this model, parents seek to understand the cause of child's behavior because this guides their socialization efforts. This is particularly true for child behaviors that are inappropriate, negative, or unexpected. Parents' attributions regarding the locus (internal/external), stability, controllability, and intentionality dimensions of the child's behavior are likely to result in particular emotional responses in the parents (Nelson, O'Brien, Calkins, & Keane, 2013).

Much of the literature on parental attributions has emphasized the role these judgments play in helping parents determine a course of action or how to discipline their child (Johnston & Ohan, 2005; Montemayor & Ranganathan, 2012). A number of studies have shown that the more parents attribute misbehavior to causes that are internal, controllable, and/or stable, the more harshly they punish for the behavior (Dix et al., 1989; Montemayor & Ranganathan, 2012; Smith & O'Leary, 1995; Sheeber et al., 2009). This finding has been demonstrated with typically-developing children (Montemayor & Ranganathan, 2012), children with ADHD (Johnston & Freeman, 1997), children with disruptive behaviors (Nelson et al., 2013), and youth with internalizing symptoms (Sheeber et al., 2009). The effect of parental attributions on parental behaviors can be seen in the findings of Sheeber et al. (2009). During a problem solving discussion, when parents provided more negative attributions of their child's behavior (as compared to positive attributions), both mothers and fathers were more likely to demonstrate more aggressive and less facilitative parenting behaviors. Notably, the association between parenting behavior and parents' causal attribution remained after accounting for the variance in

parenting behavior associated with the youths' behavior (e.g., aggressive, facilitative; Sheeber et al., 2009). Evidence suggests that causal attributions may add unique predictive information in terms of parents' reactions to their children's behaviors. Parental attributions predicted parents' affective reactions after accounting for other parental cognitions, such as parents' trait conceptions of the child (e.g., critical, friendly; Sacco & Murray, 1997). Another study investigating mothers' discipline in response to child noncompliance found that parental attributions better predict parental discipline than their evaluation about the severity of the (compliance/noncompliance) behavior (Strassberg, 1997).

Given the influence of parental attributions on parenting behaviors, it is not surprising that they have also been shown to influence extent to which they seek treatment for the child. For example, if parents believe that a child problem behavior is caused by something internal and is stable, they may not believe that any treatment would help to change the behavior. Not only will these attributions affect whether the parent considers treatment, it will also affect the parent's likelihood to engage in their child's treatment, as well as their beliefs about the likelihood of change in their child's behaviors (Morrissey-Kane & Prinz, 1999). In fact, there has been some empirical work investigating ways parental attributions may impact this process as well as the ways intervention may target parental attributions. Parents who do seek professional help for their children tend to have an externally-oriented attributional style (believing child behavior is caused by external/situational factors), which allows them to believe that others will be more likely to create changes in their child's behavior than they would, or that others should "fix" their children (Johnston & Patenaude, 1994; Mah & Johnston, 2008; Morissey-Kane & Prinz, 1999). This stands in contrast to parents with an internally-oriented attribution style who would be likely to believe that their children have control over their own behavior, and as such, these

parents believe that they can alter their parenting practices on their own to help improve their children's behavior (Page & Scalora, 2004). Parental attributions will also affect parents' expectations for, and engagement in, treatment. For example, parents who belief their child's disruptive behaviors are internal to the child may feel that parental management training is irrelevant (Mah & Johnston, 2008).

In addition, some research has shown that parental attributions can be altered when targeted during parent training programs. Studies of these interventions, which teach parents new ways to explain problems and new approaches to solve parenting problems, have found parents were less likely to believe that child misbehavior was caused by factors internal to the child and more likely to believe that change is possible after training (Bugental, Ellerson, Lin, Rainey, Kokotovic, & O'Hara, 2010; Whittingham, Sofronoff, Sheffield, & Sanders, 2009). The social-cognitive model of parent attributions improves upon the SJT and Weiner's attribution theory because it is specific to the parent-child relationship. It identifies parental cognitions that are helpful for predicting parents' emotional and behavioral reactions to children's behaviors. However, in considering parents' judgments about whether a behavior is problematic, there are probably other variables that influence those identified in the social-cognitive model. There is some research specifically examining the effect of moderating variables on parental attributions, and other evidence provides clues as to the impact that other factors have on the relationship between attributions and parents' judgments about child behaviors.

Moderators of Parental Attributions

Research has identified characteristics of the child, children's behavior, and parent that may moderate parents' attribution process and thus their perceptions of children's behavior. For

example, the child's developmental stage can influence parental attributions for the child's behavior, which then also affects parents' reactions. Specifically, parents are more likely to attribute problem behaviors of older children to be intentional, internal, and controllable than the behaviors of younger children (Dix et al., 1986). Mothers have also been shown to report more negative affect in reaction to misconduct from older children (Dix et al., 1989). As for children's behavior, the type of behavior exhibited by a child also appears to have a moderating effect on parents' attribution judgments. Most parents are considered to be "developmental optimists" because they tend to attribute pro-social, positive behaviors to internal, stable, and controllable causes, and to see problem behaviors as due to external and situational causes. This adaptive tendency allows parents to give credit to children for their achievements and positive behaviors and to forgive their misconduct (Coplan, Hastings, Lagace-Seguin, & Moulton, 2002; Johnston & Ohan, 2005; Miller, 1995).

Interestingly, this parental tendency for attributions about child behavior to vary based on the behavior of the child does not appear to hold when child behavior is more extreme. A number of researchers have found evidence that parents with children who have oppositional defiant disorder (ODD) or attention deficit hyperactivity disorder (ADHD) are more likely than parents of children without a diagnosis to make a negative attribution for a child's misbehavior (Jenson, Green, Singh, Best, & Ellis, 1998; Johnston & Ohan, 2005; Williamson & Johnston, 2014). In their work, Johnston and Ohan (2005) discuss the commonly-debated reasons for this finding, which fall into two categories, depending on whether the focus is on the child or the parent's contributions: 1) a child-driven effect may occur as a result of the child's repeated oppositional behavior, which may lead the parent to attribute the misbehavior to the child's intentionality, 2) a parent-driven effect may occur such that parents of children with oppositional behavior had a

more negative or critical attributional style than other parents even before the child began to display oppositional behavior. The parent-driven effect suggests that some characteristics of parents may lead them to interpret their children's behaviors in a different way, and thus may create different judgments about when the behavior is a problem.

As the above findings suggest, there is important variability in the lenses by which parents perceive and interpret their child's behavior. This has also been demonstrated in the consistently modest correlations among informants of the same child, suggesting that parental report measures only provide partial accuracy based on the sampling and perspective of the parent. It is important to investigate how parental characteristics may be influencing parental perspectives and judgments about child problem behaviors so that we may understand the difficulties parents have with problem recognition. In fact, the research literature suggests several parental factors, such as parental psychopathology, parental self-efficacy, perceived parenting stress, and parental tolerance that may moderate the relationship between parental causal attributions and problem determination about child behaviors.

Parental psychopathology and distress. Evidence suggests that parents' mood, especially mothers', is likely to moderate the attributions that parents make (Dix & Meunier, 2009; Miller, 1995). Several different variations of distressed affect, including being angry, depressed, or irritated, may heighten the likelihood that mothers judge a child's behavior to be more intentional and controllable (i.e., negative attributions). For example, Dix, Reinhold, and Zambarano (1990) found that being in an angry mood was associated with more negative attributions for child behavior than were neutral or happy moods. Using a sample of mothers and a complex mood monitoring task paired with watching videos of a mother giving a child a command, they found that mothers offered more negative attributions (rather than positive

attributions, which included unintentional, uncontrollable attributions) for noncompliance when the mothers described their mood as angry. A similar pattern, in which changes in mood affect parents' attributions, has been found with anxiety and depressed mood as well (Mulvaney, Mebert, & Flint, 2007; Stokes, Pooge, Wecksell, & Zaccario, 2011).

There is also evidence to suggest that parental psychopathology affects the perceptions and judgments parents make about their children's behaviors (Connell & Goodman, 2002; Kroes, Veerman, & De Bruyn, 2003; Treutler & Epkins, 2003). Dix and Meunier (2009) reviewed over 150 studies examining the regulatory processes proposed to explain the relationship between depressive symptoms and parenting. The combined evidence suggested that mothers with depressive symptoms attended to less information related to their children, evaluated children more negatively, and made more negative attributions for children's behavior, as contrasted with mothers with little to no depressive symptoms. This finding is consistent with other work (e.g., Fergusson, Lynskey, & Horwood, 1993) which portrays depressive symptoms as a negative lens by which the individual perceives the world. The child's behaviors are some of the many things clouded by this negative lens. Thus, reports of child behavior from a parent who is experiencing depressive symptoms are likely to inflate the parent's perception of a negative level of the behavior.

Beyond depressive symptoms, Kroes and colleagues (2003) examined whether mothers' reports of behavior problems in their sons (age 6-12) might be biased in unique ways by different kinds of maternal psychopathology. The mothers' reports of their child's behavior were compared with the reports of both teachers and group care workers as criterion ratings. A multiple regression analysis revealed that the distorting effect of maternal psychopathology was primarily related to the reporting of internalizing child behavior problems. The authors proposed

that the tendency for internalizing symptoms to be more ambiguous for parents to interpret may make these symptoms more liable to distortion by parents with psychopathology than more obvious or disruptive behaviors (Kroes et al., 2003). Another study examined whether discrepancies between mothers' and fathers' reports of child psychopathology were related to the parents' psychopathology symptoms. Treutler and Epkins, (2003) found that both mothers' and fathers' symptoms significantly predicted discrepancy in reports of children's internalizing and externalizing behaviors. However, after they accounted for aspects of the parent-child relationships (e.g., parental acceptance, time spent together, number of topics discussed), only mothers' symptoms were significantly related to the discrepancies in reports of children's internalizing behavior. Mothers with heightened psychopathology rated their children as having more internalizing symptoms than did the same child's father, which may result from their critical style of interpreting child behavior or, in the case of mothers with internalizing symptoms, could reflect a projection of their symptoms on to their youth.

Parental self-efficacy. Another factor that has been found to moderate the attributions and judgments parents make about their children's behavior is parents' sense of competence as a parent. Mothers who believed that they had little control in their interactions with their children were more likely to provide negative attributions for child misconduct (Bugental et al., 1998). This construct has been termed "parental self-efficacy" and is defined as "one's perceived ability to exercise positive influence on the behavior and development of one's children" (Coleman & Karraker, 1998). Higher parental self-efficacy is associated with more positive parenting behaviors and perception of one's child as less difficult and with lower reports of behavior problems in children. The opposite variables are associated with lower parental self-efficacy, including inconsistent discipline behaviors and less warmth, the perception of one's child as

more difficult, and higher reports of child behavior problems (Jones & Prinz, 2005; Sanders & Woolley, 2005; Sevigny & Loutzenhiser, 2010).

Some studies show that parental self-efficacy may mediate the relationship between maternal depression and reports of higher child behavior problems (Teti & Gelfand, 1991). A characteristic symptom of depression is decreased sense of self-worth, and this may permeate to one's feelings of competence in the role of a parent, which then leads to the perception that one is unable to manage even minor child misbehaviors. This state may then bias the parent's overall perception of the child's behavior or may create an environment for the child to act out to a greater extent. There is also evidence that lower parental self-efficacy is related to ineffective or coercive discipline which could also exacerbate actual or perceived child behavior problems (Coleman & Karraker, 1998). Giallo et al.'s (2013) study suggested another mediational role of parental self-efficacy. They found that low parental self-efficacy mediated the pathway between the perception that one's child has a difficult temperament and disengagement in activities with the child. This pattern of avoidance is likely to reinforce the conception that the child has more behavior problems than the parent can handle or than other children of the child's age.

Perceived parenting stress. Although no empirical investigations have specifically examined the extent to which parenting stress may moderate the relationship between attributions and problem determination, existing evidence provides clues suggesting that perceived parenting stress may alter parents' cognitions about child behavior by magnifying this relationship. For example, Renk and colleagues (2007) examined relationships among parenting stress level, parents' overall perceptions of their children, and parents' ratings of children's emotional and behavioral problems. They found that higher levels of parenting stress was strongly associated with lower scores for positive perceptions and higher scores for negative

perceptions of their child (Renk, Roddenberry, Oliveros, & Sieger, 2007). Further, in comparison to mothers who described more positive perceptions of their children, mothers who reported more negative perceptions rated their children higher for both internalizing and externalizing behavioral problems. This suggests that when parenting burdens outweigh one's resources, parents may begin to interpret all situations related to their child in a more negative light (Abidin, 1992; Ostberg & Hagekull, 2000). In accordance with social-cognitive attribution theory, this means that parents experiencing high parenting stress are more likely to use negative attributions, such that they explain events by causes (i.e., internal to the child's disposition, controllable, stable, intentional) that lead the parent to experience a stronger emotional and disciplinary response (compared to parents using positive attributions). Furthermore, it is likely that parenting stress functions as a moderator, such that when parents attribute misbehavior to stable, child-focused causes (internal, intentional, controllable) and parenting stress is high, parents judge their child's behavior as more problematic than when parents use more negative attributions but parenting stress is low.

Researchers in the youth mental health literature have examined parenting stress as a moderator of the relationship between domestic abuse and child emotional and behavior problems (Levendosky & Graham-Breman, 1998); parents' perceptions of their child and child depressive symptoms (Mullins, et al. 2004); and parental perceptions and parents' behaviors (Paulussen-Hoogeboom, Stams, Hermanns, & Peetsma, 2008).[1] For example, in a study investigating parents' responses to perceived child negative emotionality (i.e., irritability and

[1] The majority of the studies examining parenting stress have utilized a cross-sectional design with caregiver questionnaires that sometimes were supplemented with observational measures of parent-child interactions. However, a few studies have addressed critical research questions about parenting stress with quasi-experimental and longitudinal designs.

high-intensity negative reactions), higher levels of child negative emotionality were generally associated with more maternal sensitive responsiveness, but this relationship was moderated by parenting stress. When parents perceived their child to have a difficult temperament, their responses depended on their level of parenting stress (Paulussen-Hoogeboom et al., 2008). The authors argue that mothers in our society have been taught to respond in a "contingent and positive" manner (Paulussen-Hoogeboom et al., 2008) in an effort to facilitate children's emotional regulation (Leaper, 2002). While mothers in the study were able to implement this learned behavior during times of low parenting stress, mothers experiencing high levels of parenting stress were not able to respond in as sensitive a manner to their child's negative emotionality. These findings suggest that higher levels of parenting stress may act as a stimulus to evoke change in the relationship between parental perceptions and reactions.

Numerous researchers have found that higher ratings of parental stress are related to higher parental ratings of child psychopathology (Calzada et al, 2004; Solem et al., 2011; Walsh, Mulder, & Tuder, 2012). This correlation is often explained by proposing that increased child behavior problems would likely heighten parental demands and reduce enjoyment from the parenting role. In addition, as daily hassles of parenting accumulate, parents' level of patience probably lessens, which may lead to over-reporting of problem behavior. However, it seems that this portrayal is incomplete: rather than parenting stress having a direct impact on the problem determination, it is possible that parenting stress moderates the relationship between parents' casual attributions and problem determination. Krech and Johnston (1992) manipulated mothers' stress levels, then had them read vignettes involving parent-child interactions and rate their perceptions and reactions to the child behavior. They found that mothers perceived the child's behavior to be more intentional and problematic when parents' ratings occurred in stressful

contexts than when ratings occurred in low-stress contexts. These findings are consistent with those of other studies (Calzada et al., 2004; Crnic & Low, 2002) which suggest that high parenting stress may exacerbate how bothered parents feel by child problem behaviors. This relationship between parenting stress and perceptions is likely more complex, such that it affects the way parents interpret child-related events: when parents experience higher stress and attribute responsibility to the child, they may rate problem behaviors at a higher intensity or frequency than the actual levels (as determined by direct observation) or than other parents would perceive in the same child. In fact, Stokes et al. (2011) found that parenting stress was related to parents' response bias (i.e., over-reporting) of their child's level of psychopathology. Although the authors point out the need to consider parenting stress levels as a characteristic that would influence parents' judgments when rating their child's problem behaviors no mention is made regarding the mechanisms by which this may occur. High levels of parenting stress may exacerbate the negative nature of any child-related event in the parents' perception (i.e., high stress may make one vulnerable to negativity), and thus be likely to magnify the relationship between parents' attributions and problem determination of child behaviors.

Parental tolerance. Parental tolerance is a readily observable parental characteristic, referring to the "extent to which a parent tends to be annoyed by child misbehavior" (Brestan, Eyberg, Algina, Johnson, & Boggs, 2003, p. 2). Although this construct is widely acknowledged in family-focused treatment, research evaluating the role of parental tolerance for misbehavior has been limited by the lack of well-validated measures (Ayub, 2008; Brestan et al., 2003; Loper, 2006). Researchers have not examined parental tolerance as a potential moderator of the relationship between parents' attributions and problem determination, but empirical evidence and theoretical understanding of parental tolerance suggest that this characteristic may magnify

certain cognitive biases in regards to child-related situations. In the enuresis treatment literature, parents' tolerance level is discussed in terms of how quickly parents become annoyed by their child's bedwetting and how that relates to parental perceptions of increased demands (e.g., extra washing, financial burdens; Butler, 1998). Morison et al. (2000) found that parents' beliefs about their child's control over bedwetting behavior was related to treatment retention, such that believing one's child does not have any/much control over this problem predicted dropping out of treatment prematurely. The authors mentioned the need for future studies to incorporate a measure of parents' tolerance, as they observed that the avoidance of intervention activities appeared to stem from various cognitions in the parents who presented for treatment (Morison, Tappin, & Staines, 2000). Tolerance could play a moderating role in the relationship between perceived (un)controllability and the decision of whether to continue with an intervention. Parents with low tolerance have a tendency to end or avoid activities that are perceived to be too difficult, demanding, or frustrating. This parental characteristic would probably magnify the relationship between perceived child uncontrollability and treatment dropout (Morison et al., 2000).

Up to this point, the literature on parental tolerance has been aimed at tolerance of specific symptoms (e.g., bedwetting). Empirical work on parental tolerance of child misbehavior is lacking, especially regarding the extent to which it may affect other parental variables or relationships among these variables. Although the research on parental tolerance is limited, evidence from the distress tolerance literature suggests possible mechanisms by which parental tolerance may operate as a moderator. Distress tolerance refers to the ability to withstand emotional discomfort and the threshold at which distress is perceived as "unbearable" (O'Cleirigh, Ironson, & Smits, 2007; Simons & Gaher, 2005). Distress tolerance thus appears to

be a more general construct than parental tolerance, which specifically refers to child-related situations. Several researchers have demonstrated distress tolerance as a moderator of the relationship between emotional experiences and maladaptive responses. For example, O'Cleirigh et al. (2007) found that the occurrence of stressful life events predicted depressive symptoms and the endorsement of substance use coping in patients diagnosed as HIV-positive. These relationships were both moderated by distress tolerance. In other words, the combination of low distress tolerance with a high frequency of stressful events predicted significantly higher depressive symptoms than did high frequency of stressful events combined with high distress tolerance (O'Cleirigh et al., 2007). Low distress tolerance may increase the vulnerability of individuals to resorting to more maladaptive coping responses (e.g., depressive symptoms, substance use) when confronting major life stressors. Other work has shown a similar role of distress tolerance, such that it moderates the relationship between affect intensity and impulsive, reckless behavior (Bornovalova, Matusiewicz, & Rojas, 2011). Specifically, the relationship between affect intensity and engagement in impulsive and reckless behavior, was strengthened by low distress tolerance, such that the combination of low distress tolerance and high affect intensity indicated someone at high risk for dysfunctional behavior. Both of the studies described here provide support for the idea/proposal that low distress tolerance changes the nature of a relationship by setting the stage for impulsive reactions (i.e., to reduce the discomfort) rather than thoughtful responses (McElroy & Rodriguez, 2008; Simons & Gaher, 2005). It is reasonable to infer that parental tolerance functions in a similar way in the context of parenting and youth psychopathology.

Additional support for the moderating role of parental tolerance comes from the literature on abusive parents. Research has supported several cognitive factors as predicting parental risk

for acting aggressively toward children (Francis & Wolfe, 2008; McCarroll, 2010; McElroy & Rodriguez, 2008). For example, lower levels of parental empathy have consistently been associated with higher abuse potential (Francis & Wolfe, 2008; McElroy & Rodriguez, 2008). When children misbehave, parents with low empathy have a difficult time understanding their child's behaviors and why they would not behave as parents desire, and thus these parents would be at risk for abusing their child (Francis & Wolfe, 2008; McCarroll, 2010; McElroy & Rodriguez, 2008). Additionally, fathers who endorsed more frequent, intense angry feelings were demonstrated to be at greater risk for abuse than fathers who endorsed less frequent anger (Francis & Wolfe, 2008). It has been suggested that high anger and low empathy may be related in that frequent and/or intense anger may interfere with flexible information processing and the ability to generate alternate explanations for child behavior, which are critical components of parental empathy for their children (Francis & Wolfe, 2008). Thus, angry and/or low empathy parents may act aggressively toward their children partially due to not taking the time to understand child behavior and thus they react too quickly (and aggressively) to child behavior. Although not empirically examined in this context, it seems likely that parental tolerance could moderate this relationship between parental empathy and risk for abuse if there is evidence that low parental tolerance is related to less patience in trying to understand child behavior and high parental tolerance is related to more patience in trying to understand child behavior. Indirectly, evidence for this relationship does exist in that low distress tolerance of daily life stressors has been found to be highly and uniquely associated with anger problems (Hawkins, Macatee, Guthrie, & Cougle, 2013) and the expression of reactive anger and impulsivity has been associated with low parental tolerance (Arens, Gaher, Simons & Dvorak, 2014). In other words, a parent with low tolerance of stressors, such as child misbehavior, would be even more

vulnerable to low empathy/compromised information processing and thus increased problems with anger/abuse than a parent with higher levels of tolerance. In contrast, higher tolerance would be likely to weaken the relationship between low empathy and parental risk for abuse since higher tolerance would essentially provide parents more patience in trying to understand the reasons behind child behavior. Thus, it is reasonable to propose that poor tolerance would moderate the relationship between empathy and risk for abuse.

An Integrated Model of Parent Problem Determination

The research discussed above provides an overview of factors shown to predict how parents perceive their children's behavior. Parents see their children through a particular lens. The theoretical and empirical work reviewed here provides insight as to constructs which may impact parents' judgment process when determining whether child behaviors are problematic. However, thus far, these constructs have largely been explored in isolation and have not been investigated in an integrated, theory-driven manner. The framework of the social-cognitive model of parental attributions can be built upon by integrating empirical findings from several literatures to gain a better understanding of parents' judgments about the extent to which a behavior is problematic. When faced with information of a child's behavior, parents will make attributions about the cause of the behavior. The integrated model of parental problem determination (see Figure 1) proposes that parents' causal attributions about a behavior will predict the problem determination. Problem determination refers to a judgment of the extent to

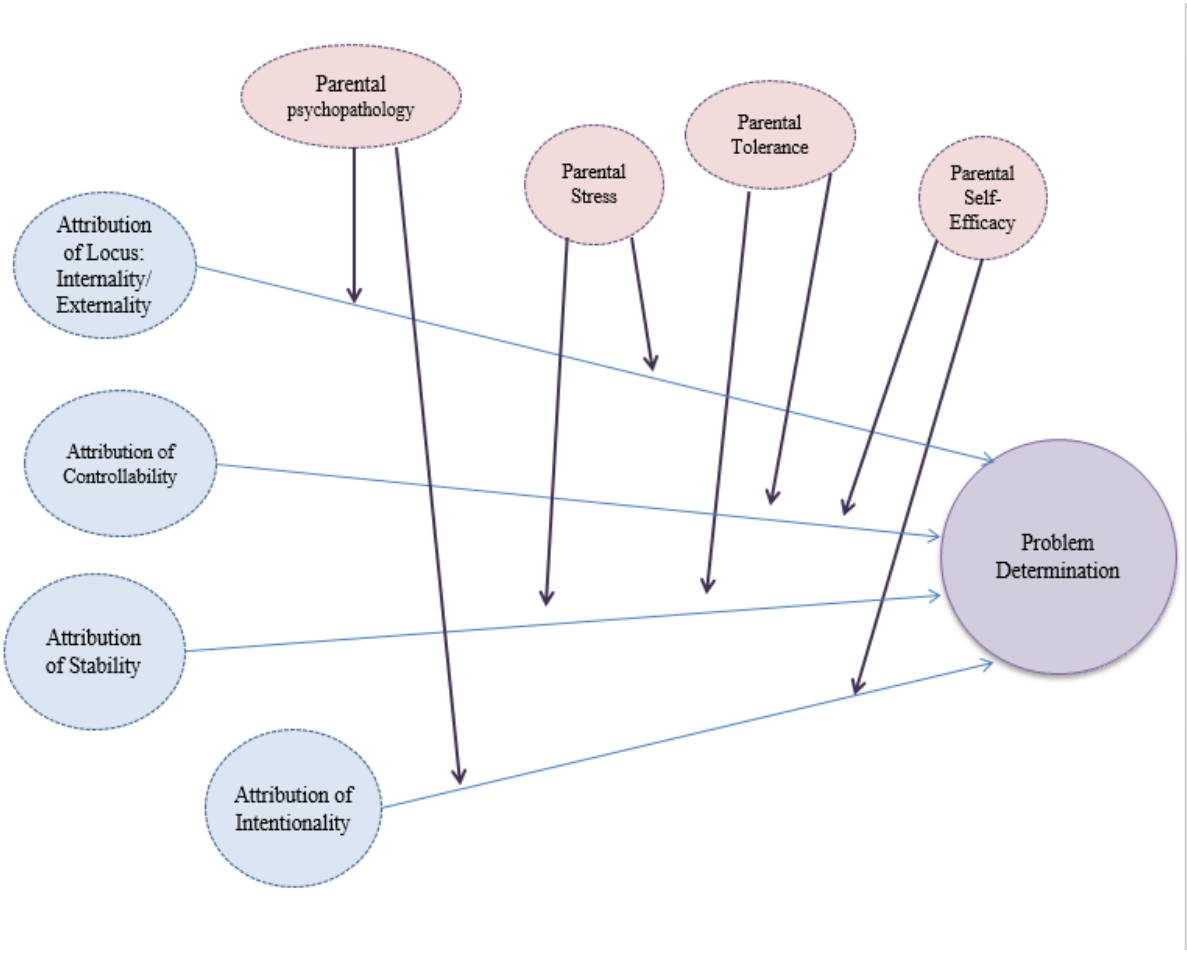

Figure 1. Hypothesized Model of Relationships among Causal Attributions (predictors), Problem Determination (outcome), and Parental Characteristics (moderators).

which a behavior is acceptable or problematic. This problem determination occurs before any emotional reaction occurs and before disciplinary action (if any) takes place. This proposition is a major change to the existing social cognitive model in which parental attributions simply mediate the relationship between child behavior and parent reaction. However, there is ample evidence in the judgment and decision making literature (e.g., Brunswik, 1952; Hastie & Dawes, 2010) as well as the problem recognition literature (e.g., Shanley, Reid, & Evans, 2008; Teagle,

2002) that this type of judgment is prerequisite to a behavioral reaction. The dimensions of causal attributions will also predict parental problem determination. However, the literature on parenting and parental reporting of child behaviors suggests that a complex of factors makes up the lens through which parents view child behavior. Thus, in the model, certain parental characteristics, including parental psychopathology, parenting stress, parental tolerance for misbehavior, and parental self-efficacy, are proposed to moderate the relationship between attributions and parental problem determination.

Objectives of the Present Study

The primary goal of this dissertation was to investigate the relationship between parents' attributions and parents' problem determination and to examine the influence that parental characteristics have on this judgment process. This work extends existing theories of judgments and attributions and integrates findings from the empirical literature on parenting and parent reporting of child behavior to inform our understanding of parental problem recognition. To date, research on parental problem recognition has been largely focused on parents who are already seeking services for their children rather than including parents of children whose behavior may range across levels of severity. Thus the findings may not be representative of all parents (Moreno et al., 2008; Roberts et al., 2005; Schroeder et al., 2010). It is particularly important to understand the early stages of problem recognition in which parents may be trying to determine whether their child's concerning behaviors may represent a behavioral/mental health problem(s). It is important to explore the cognitions underlying parents' judgments about their children's behaviors in a community sample.

In addition, the work that has been conducted on parental problem recognition has been conducted separately from the research on parental attributions. In the present study parental

causal attributions are examined as predictors of problem recognition, given the theoretical and empirical work demonstrating the influence of causal attributions on parents' reactions to child behavior. Although researchers have examined some predictors of parental problem recognition, these efforts have been limited by the lack of theory-driven investigations that focus on the early phases of the help-seeking process, as most have measured problem recognition in relation to parental help-seeking. Given the extensive literature supporting the impact of parental characteristics on parenting behaviors and cognitions, it is important to account for the parental factors that may affect the lens by which they interpret and judge their child's behavior. As such, the present study is an investigation of parental characteristics that may moderate the association between attributions of child behavior and parental problem determination.

The present study builds upon previous theories and integrates the findings from investigations of separate bodies of literature to understand parental problem determination. As such, it has significant implications for assessment and intervention related to child psychopathology and parental problem recognition. Clinical assessment of and research about children's problem behaviors often rely on parental report, which reflects parents' perceptions. The consistent finding that there is significant discrepancy among informants' reports of child behaviors suggests that the lens of the informant should be considered. Including an evaluation of parental factors with parental reports of child behavior may be meaningful for informing what clinicians learn from parents when conducting assessments and interventions. Currently, it is not clear how parental characteristics are related to parental reports of youth behavior. The current study contributes to the literature and potentially to clinical practice by investigating the nature and influence of parental factors on judgment of child behaviors. Findings have the potential to

help mental health professionals facilitate more targeted awareness efforts of when parents should seek help for child emotional or behavior problems. Specific aims and hypotheses of the current study include:

Aim 1) To characterize the relationship between parental causal attributions and parent's problem determination of child behavior. It was expected that parents' problem determination ratings, or the extent to which parents judge child behavior to be problematic, would be predicted by examining parents' causal attributions for given child behaviors along attributional dimensions.

Hypothesis 1. It was hypothesized that when parents attribute the behavior/event to more internal, controllable, stable, or intentional causes, they would perceive the behavior as more problematic than when they attribute the behavior to more external, controllable, temporary, or unintentional causes.

Aim 2) To investigate parental characteristics that moderate the association between attributions of child behavior and parental problem determination.

Hypothesis 2. Parents' psychopathology, defined by the parents' overall level of psychological distress, was hypothesized to moderate the relationship between causal attributions of the child's behavior and parents' judgment about the extent to which the behavior is a problem.

A. Considering the evidence that parents with psychopathology tend to be more critical and less nurturing than parents without psychopathology (Dix et al., 1990; Dix & Meunier, 2009; Gravener et al., 2011), it was predicted that when parents endorsed higher psychopathology and attribute the behavior to

more internal causes, they would be more likely to judge the behavior to be a problem than when parents endorsed lower psychopathology.

B. However, the literature on parents with psychopathology also suggests that these parents tend to be self-focused and defensive which may inhibit their awareness of problem behaviors (Dix & Meunier, 2009; Leung & Slep, 2006; Salmela-Aro, Nurmi, Saisto, & Halmesmaki, 2001; Schechter & Willheim, 2009). It was predicted that when behavior was attributed to external causes, parents would be more likely to "explain away" the child's behavior to protect themselves from noticing and having to deal with problem behaviors. Thus, it was predicted that parents who reported higher psychopathology and attributed the behavior to more external causes would be less likely to judge the behavior to be a problem than parents who reported lower psychopathology.

C. Several studies examining the effects of parental psychopathology have found that parents rate their children as more temperamentally difficult (Bolton et al., 2003; Gravener et al., 2011; Mulvaney et al., 2007). Parents with psychopathology also tend to be more likely to endorse hostile attributions for their children's misbehaviors. In combination, this evidence suggests that these parents tend to have a more negative attitude towards their child. Therefore, when parents reported higher symptoms of psychopathology**,** it was expected that they would be more likely (relative to parents who reported low levels of psychopathology) to deem the

behavior to be a problem when they attribute the behavior to intentional causes.

D. However, parents with psychopathology are likely to behave in ways to minimize their parenting efforts, often by avoiding child interactions. Evidence suggests that parents with psychopathology have more self-oriented goals than child socialization goals, and thus these parents may avoid or ignore child problems until they impose a burden on the parent (Dix & Meunier, 2009; Leung & Slep, 2006). Consequently, it was expected that parents who reported higher levels of psychopathology and attributed the behavior to more unintentional causes would be less likely to judge the behavior to be a problem than parents who reported lower levels of psychopathology.

Hypothesis 3. Perceived parental stress was expected to moderate the pathway between attributions and problem determination.

A. Increased perceived parenting stress is associated with a negative perception of one's child (Renk et al., 2007), and any additional child problems would likely be seen as contributing to an overwhelmed parent's duties, especially if it is considered to be caused by internal factors, which would be seen as requiring additional socialization and disciplinary actions (Ostberg & Hagekull, 2000; Pinderhughes, Dodge, Bates, Petit, Zelli, 2000). Considering these findings, it was predicted that parents who endorsed higher perceived parenting stress would rate the behavior as more problematic when they attributed the child's behavior to internal causes, and this relationship between

causal attribution and problem determination was expected to be stronger than for those who endorsed low perceived parenting stress.

B. Evidence suggests that parents who endorse high levels of parenting stress tend to also be more negative in their attitudes and expectations for child behavior (i.e., hopeless or unrealistic; Anthony et al., 2005; Costa, Weems, Pellerin, & Dalton, 2006; Francis & Wolfe, 2008), so if they have observed a behavior in their child multiple times, they may be more likely to perceive it as a problem as a result of viewing the behavior as part of an enduring trait. Therefore, when parents endorsed higher parenting stress**,** it was expected that they would be more likely (than when parents have low levels of parenting stress) to deem the behavior to be a problem when they attribute the behavior to stable causes.

C. However, considering that parents with high parenting stress have enough responsibilities or parenting concerns to lead them to feel overwhelmed or burdened, it makes sense that there may be some child-related situations that they choose not to or are unable to attend to, given limits to the capacity of attention (Abidin, 1992; Crnic & Booth, 1991; Ostberg & Hagekull, 2000). These parents would likely ignore or excuse behaviors that are attributed to temporary causes. Thus, it was expected that when parents endorsed higher parenting stress and attributed the behavior to more temporary causes, they would be less likely to judge the behavior to be a problem than when parents endorsed lower perceived parenting stress.

Hypothesis 4. Parental tolerance for child misbehavior was expected to moderate the pathway between attribution and problem determination.

A. It was predicted that when parents endorsed lower parental tolerance they would rate the behavior as more problematic when they attributed the child's behavior to stable causes, and this relationship was expected to be stronger than for those who endorsed high parental tolerance.
B. When parents reported lower parental tolerance**,** it was expected that they would be more likely (than when parents have high tolerance) to deem the behavior to be a problem when they attributed the behavior to controllable causes, and this relationship was expected to be stronger than for those who endorsed high parental tolerance.

Hypothesis 5. Parental self-efficacy was expected to moderate the relationship between parental attributions and problem determination.

A. It was predicted that parents who have lower parental self-efficacy would rate the behavior as more problematic when they attributed the child's behavior to stable causes, and this relationship was expected to be stronger than for those who endorsed high parental self-efficacy.
B. It was predicted that those parents who have lower parental self-efficacy would rate the behavior as more problematic when they attributed the child's behavior to intentional causes, and this relationship was expected to be stronger than for those who endorse high parental self-efficacy.

Exploratory hypotheses: Additional exploratory analyses examined the relationship between parental psychopathology and other parental characteristics (i.e., parental stress, parental tolerance, parental self-efficacy). Based on the literature regarding parental psychopathology and its effect on the manner in which parents relate to their children and their role as a parent, it was predicted that parental psychopathology would also affect how other parental characteristics moderate the relationship between parental attributions and problem determination. It was hypothesized that the most powerful moderators of the association between attributions and problem determination would be the interaction between parental psychopathology and the other parental characteristics (i.e., high parental stress, low parental tolerance, low parental self-efficacy). Thus, it was predicted that there would be a three-way interaction between parental psychopathology, parental stress, and causal attribution (e.g., controllability) in predicting problem determination. In other words, it was expected that high parental psychopathology would result in a stronger moderating effect of high parental stress (stronger relationship between attribution and problem rating) than low parental psychopathology. When parental psychopathology is high and tolerance is low, the relationship between negative casual attributions (e.g., controllability) was expected to be stronger than when parental psychopathology is low. Lastly, parental psychopathology was predicted to serve as a moderator of the relationship between parental self-efficacy and the relationship between causal attribution and problem determination. Specifically, it was predicted that when parental psychopathology is high and parental self-efficacy is low, the relationship between negative casual attributions (e.g., intentionality) would be stronger than when parental psychopathology is low.

Method

Participants

One hundred seventy-five participants were recruited. Power analyses revealed that for multiple regression analysis, a sample of at least 150 parents would allow a medium effect size ($r^2 = 0.10$) to be detected with a .80 power and α=.05. Purposive sampling was used to recruit mothers and fathers from both lower and higher SES communities within the Tampa Bay area in Florida, and across the United States through online recruitment. Recruitment took place via flyers posted at strategic locations where families are likely to attend (Little League fields, grocery stores, book stores, venues for after-school programs), via face-to-face announcements at local community venues (e.g., public library, YMCA, community parks), via online reminders on social media pages (i.e., FaceBook, Twitter) that interested individuals could view, and via e-mail using participant nomination. Permission from these community organizations and the management of these venues was obtained prior to posting fliers or attempting to recruit participants in person.

To qualify for the study, participants had to be the biological, adoptive, or step-parent of at least one child aged 6 to 11 years. Additional inclusion criteria included reporting at least six hours/week face-to-face contact with the child, being able to read English fluently, and being able to provide informed consent. Interested individuals who identified as being a foster parent, as being under the age of 18 years old were excluded from the study.

Ten participants' data were not used in the analyses because they left the web-page with the survey prior to beginning the second study measure (i.e., completed less than 30% of the

entire study protocol). One additional participant was dropped from the analyses during data cleaning because the participant's data was determined to be a multivariate outlier. The final sample included 164 parents (131 mothers and 33 fathers). See Table 1 for participant demographics. Of note, 76 participants did not complete the PSOC, so they were dropped from analyses involving the parental self-efficacy variable. Demographic data presented represent the 89% of the sample who provided this information. Of the final sample of mothers, 125 (95.4%) reported being the biological mother to the target child (closest to 8 years old), 5 were adoptive mothers (3.8%), and 1 was a step-mother (0.7%). Of the final sample of fathers, 29 reported being the biological father to the target child (87.9%), 3 were step-fathers (9.1%), and 1 was an adoptive father (3.8%).

Parents ranged in age between 22 years old and 54 years old (M = 39.60, SD = 6.15). The sample was primarily Caucasian (77.4%), with some Hispanic/Latino (6.7%), Black/African American (3.0%), and Asian (2.4%) ethnicities represented. Some participants (10.4%) chose not to share their race/ethnicity. The majority of the sample was married (73.8%), while the remainder were divorced and not remarried (5.5%), single and living with a partner (4.2%), single with no partner (3.6%), and separated (1.8%). More than half of the participants had completed a college (38.4%) or graduate degree (31.7%). Some participants indicated that they had completed college coursework without attaining the degree (15.8%), that they completed a vocational/technical school (2.4%), or that their highest degree was a high school diploma/GED (1.2%). The majority of the sample was employed (67.7%), while the remainder of parents were unemployed/stay-at-home-parents (18.29%), retired (1.2%), students (1.2%), or other (1.2%).

On average, participants indicated being a parent to a mean of 2.36 children (*SD* = 0.96) and having a mean of 2.14 children (*SD* = 0.93) currently residing in their homes. In addition, only 15% of the parents indicated that they had only one child, whereas the vast majority of the participants were parents to (84.9%) and living with (77.7%) multiple children. A total of 28.3% of the parents reported that either they or the child's other parent had ever received mental health services, while 57.8% said they had not. Regarding youth services, 16.3% of the parents reported that at least one of their children had received mental health services, while 73.2% stated that their children had not. These proportions of parents and children utilizing mental health care are slightly higher than national estimates, which may be related to self-selection bias in terms of those who volunteered to participate in the study (Substance Abuse and Mental Health Services Administration, 2015; National Center for Health Statistics, 2014; Thurston, 2014). Parents spent a mean number of 39.57 hours (*SD* = 30.79) each week at a paid job. The weekly average for mothers (*M* = 38.20, *SD* = 33.29) and fathers (*M* = 45.39, *SD* = 15.56) was not significantly different (t = 1.69, p =0.93). Parents overall spent an average of 6.77 hours (*SD*=5.49) during weekdays with their children. The mean number of hours that mothers spent with children during the week (*M*=7.34, SD = 5.76) was significantly higher than the mean number of hours than fathers' reported spending (*M*=4.57, *SD*=3.58) during the week with their children (t = 3.162, p<.05). On weekends, average time spent with children was reportedly 12.32 hours (*SD* = 5.08) overall, thus indicating that most participants were with the child for all of their waking hours. The mean amount of time that mothers reported spending with their child on the weekend days (*M* = 12.69, *SD* = 5.01) was not significantly different from the time reported by fathers (M = 10.78, SD = 5.17; t = 1.77, p =0.079). Parents indicated the gender of their child

closest in age to 8 years old, since this child was selected as the target child throughout the protocol; parents reported on 84 sons (50.6%) and 82 daughters (49.4%).

Measures

Demographic questionnaire. Parents were asked to report information about themselves and their children on a demographic questionnaire (see Appendix A). Items included basic

Table 1. *Participant Demographic Characteristics.*

	Mothers	Fathers	Total Sample
Mean Parent Age (In Years)	38.98 (5.87)	42.21 (6.71)	39.60 (6.15)
Race/Ethnicity			
Caucasian	102 (77.9%)	25 (75.8%)	127 (77.4%)
Black/African American	4 (3.1%)	1 (3.0%)	5 (3.0%)
Hispanic/Latino	9 (6.9%)	2 (6.0%)	11 (6.7%)
Asian	4 (3.1%)	0 (0.0%)	4 (2.4%)
Biracial	0 (0.0%)	0 (0.0%)	0 (0.0%)
Missing	12 (9.2%)	5 (15.2%)	17 (10.4%)
Marital Status			
Married	98 (74.8%)	23 (69.7%)	121 (73.8%)
Divorced and Not Remarried	9 (6.9%)	0 (0.0%)	9 (5.5%)
Divorced and Remarried	1 (0.8%)	0 (0.0%)	1 (0.6%)
Separated	1 (0.8%)	2 (6.0%)	3 (1.8%)
Single	5 (3.8%)	1 (3.0%)	6 (3.6%)
Single, Living with Partner	5 (3.8%)	2 (6.0%)	7 (4.2%)
Missing	12 (9.2%)	5 (15.2%)	17 (10.4%)
Highest Educational Attainment			
High School Diploma/GED	1 (0.8%)	1 (3.0%)	2 (1.2%)
Vocational/ Technical School	4 (3.1%)	0 (0.0%)	4 (2.4%)
Some College	18 (13.7%)	8 (24.2%)	26 (15.8%)
College Degree	51 (38.9%)	12 (36.4%)	63 (38.4%)
Graduate Degree	45 (34.4%)	7 (21.2%)	52 (31.7%)
Missing	12 (9.2%)	5 (15.2%)	17 (10.4%)
Employment Status			
Employed	84 (65.6%)	27 (81.2%)	111 (67.7%)
Unemployed/Stay-at-home parent	29 (22.1%)	1 (3.0%)	30 (18.29%)
Student	2 (1.5%)	0 (0.0%)	2 (1.2%)
Retired	2 (1.5%)	0 (0.0%)	2 (1.2%)
Other (work PT from home)	2 (1.5%)	0 (0.0%)	2 (1.2%)
Missing	12 (9.2%)	5 (15.2%)	17 (10.4%)

Note: Standard deviations and percentages are in parentheses. (N=164)

demographics, such as the participant's age, gender, race/ethnicity, marital status, employment status, and highest education achieved. In addition, participants were asked to indicate how many children they had, as well as the gender and age of each child. To gather additional information about the participants' parental experience, they were asked to estimate the amount of time they spent with their own child(ren) (weekday and weekend day). Parents were also asked to indicate the approximate number of hours per week they spent at work (i.e., a paid job). Lastly, parents were asked about mental health services for their family, specifically, whether any of the target child's parents had received services, as well as whether any of the participant's children had received mental health services.

Depression, Anxiety, Stress Scales (DASS-21). The DASS-21 (see Appendix B; Henry & Crawford, 2005) is a psychometrically sound 21-item self-report measure of overall psychological distress. Respondents indicated the degree of applicability with each listed statement on a 4-point Likert scale (0 = did not apply to me at all; 3 = applied to me very much or most of the time). The statements fall within 3 subscales of psychological problems: depression, anxiety, and stress. For this study, parents' scores were used towards indicating the degree of overall parental psychopathology. Studies investigating parental psychopathology often utilize the DASS-21 (Cheron, Ehrenreich, & Pincus, 2009; Francazio, Fahrenkamp, D'Auria, Sato, & Flessner, 2015; Tschan, Schmid, & In-Albon, 2015). Further, in previous studies the DASS-21 has demonstrated a range of good to excellent internal consistencies (alphas ranging from 0.80 to 0.97) and excellent test-retest reliability ($r = 0.90$; Sanders, Pidgeon, Gravestock, Connors, Brown, & Young, 2004; Francazio, et al., 2015). Good convergent and discriminant validity of the DASS-21 has been demonstrated with other measures of depressive and anxiety symptoms (Oei, Sawang, Wah Goh, & Mukhtar, 2013). In the present study,

Cronbach's alpha was 0.90, demonstrating an excellent level of internal consistency among the items that contribute to the total score.

Parenting Stress Index-Short Form (PSI-SF). The Parenting Stress Index-Short Form (PSI-SF; Appendix C) is a well-validated measure of perceived stress in the parent–child relationship and is appropriate for use in the context of parenting children up to 12 years of age (Abidin, 1995; Anthony et al., 2005; Goldstein, Harvey, & Friedman-Weieneth, 2007). The PSI-SF includes 36 items, which are rated on a 5-point Likert scale (5 = strongly agree; 1 = strongly disagree). Responses were used to produce a Total Stress score and three subscale scores: parental distress, difficult child, and parent-child dysfunctional interactions. Given the high correlation between the PSI-SF and the full length PSI (r = 0.94; Abidin, 1995), the PSI-SF is commonly used to measure parenting stress in both the child psychopathology and parenting literature (Anthony et al., 2005; Goldstein et al., 2007; Costa et al. 2006). Previous studies of the psychometric properties have demonstrated good internal consistency (alphas ranging from 0.80 to 0.92) and test-retest estimates (r = 0.84; Abidin, 1995; Anthony et al., 2005; Goldstein et al., 2007). The present data revealed excellent internal consistency (alpha = 0.95).

Child Rearing Inventory (CRI). The CRI is an 11-item self-report measure in which parents indicate their tolerance level for an individual child's misbehavior (see Appendix D; Brestan et al., 2003). Each item provides two statements and parents are instructed to choose which one is most true for them (e.g., "When my child does something annoying, it bothers me *more* than it would bother other parents" or "When my child does something annoying it bothers me *less* than it would bother other parents"). Then parents were asked to rate whether the statement is "Sort of True" or "Really True" for them. Responses were scored on a 4- point Likert scale (1 = Really true, high tolerance statement; 4 =Really true, low tolerance statement),

and summed to produce a Total Tolerance score ranging from 11 to 44, where higher score indicate lower tolerance for misbehavior. Studies using the CRI demonstrate acceptable internal consistency (alpha = 0.72; Brestan et al., 2003; Sowers, 2006). This measure of parental tolerance has demonstrated convergent validity with two other measures of tolerance: the Eyberg Child Behavior Inventory (ECBI) and the Annoying Behavior Inventory (ABI; Butler, Brestan, & Eyberg, 2008). In another study, construct validity was demonstrated in that CRI scores correlated with observed frequency of inappropriate behaviors by parents (Loper, 2006). In the present study, internal consistency was at a poor level (alpha = 0.53), but was raised to a questionable level (alpha = 0.60) after removing one item that parents may have felt reluctant to answer honestly or that may have utilized terms that were too vague ("Which of the statements is most true of you: 'I punish or reprimand my child less than I need to,' or 'I punish or reprimand my child more than I need to.'")

Parenting Sense of Competence (PSOC). The PSOC is a 17-item self-report measure of perceived parental self-efficacy (see Appendix E; Johnston & Mash, 1989). Many studies have used the PSOC to measure parents' views of their competence as parents (Bor, Sanders, Markie-Dadds, 2002; Coleman & Karraker, 2003; Giallo et al., 2013; Sanders & Woolley, 2005). The PSOC includes 16 items, and for each item parents will rate their agreement with the statements on a six-point scale (1= Strongly Agree, 6= Strongly Disagree). Respondents provided scores on two subscales (satisfaction and efficacy), which can be combined to form a total score scale, with higher scores indicating a greater sense of competency about parenting. The total score was used in the current study, since most other studies have also used the total score as a measure of parental self-efficacy. The total score has demonstrated a satisfactory level of internal consistency in numerous studies (α = 0.79-0.86; Giallo et al., 2013; Johnston & Mash,

1989). Evidence for convergent validity was described in Ohan et al. (2000) in terms of relationships between PSOC score and aspects of family life that are theoretically related to parental efficacy (i.e., parenting style, marital relationship). In the current study, Cronbach's alpha was 0.88, indicating high internal consistency among items.

Written Analogue Questionnaire (WAQ). Parents' causal attributions for child behavior was assessed with a version of the Written Analogue Questionnaire (WAQ; see Appendix F; Johnston & Freeman, 1997). This version included four follow-up questions for each of 10 vignettes (described below), yielding a total of 40 items. For each vignette, parents rated the cause of the child's behavior and the events that followed along four dimensions of causal attributions (locus, controllability, stability, intentionality) on a 9-point scale from 1 (not at all) to 9 (completely). For the locus dimension, high scores indicated the tendency to attribute the child's behavior (and subsequent events) to factors within the child (e.g., traits, abilities), whereas low scores reflected the tendency to attribute the child's behavior to causes external of the child (i.e., characteristics of the situation). High scores on the controllability dimension suggested the tendency to attribute the child's behavior to causes within the child's control, whereas low scores signify the tendency to attribute the child's behavior to causes not within the child's control. For the stability dimension, high scores indicated the tendency to attribute the child's behavior to enduring causes that are not likely to change, whereas low scores reflected the tendency to attribute the child's behavior to temporary causes that are likely to change. High scores on the intentionality dimension reflected the tendency to attribute the child's behavior to the child's intention, suggesting that the child meant to bring about the behavior, whereas low scores signified the tendency to attribute the child's behavior to unintentional causes. Similar versions of the WAQ have demonstrated good internal consistency, test–retest reliability, and

validity (e.g., Johnston & Ohan, 2005; Williamson & Johnston, 2014). With the present data, a Cronbach's alpha of 0.80 indicated good internal consistency among these items.

Problem determination. To assess problem determination, an item was created for use in the proposed study (see Appendix F). For each child vignette, parents were asked to rate, "How much do you perceive your child's behavior in this scenario to be an emotional or behavior problem" on a 7-point scale from 1 (not at all) to 7 (very serious). This methodology has been used in other studies with similar research designs examining child behavior and has effectively assessed parents' varying perceptions regarding the seriousness or problematic nature of behaviors provided in vignettes (Hankinson, 2009; Weisz et al., 1988).

Materials

Child behavior vignettes. Ten vignettes were created for use in the proposed study (see Appendix F). The vignettes are short descriptions of a child behavior without many details. The vignettes were carefully constructed to reflect realistic child behaviors while providing few interpretive cues, so that parents would rely upon their general attributional style (Bugental, Johnston, New, Silvester, 1998). Each brief vignette describes a situation in which the parents were supposed to imagine that they were observing their child engaged in a behavior (e.g., crying, taking a notebook from another child) or the aftermath or a behavior (e.g., holding a broken toy), without antecedent clues to describe what caused the scenario. Two versions of the vignettes were created: a male child version and a female child version, and participants were given the version that fit the gender of their target child. In an effort to provide parents with vignette stimuli that could trigger parental attributions without introducing elements that pulled for certain responses, the vignettes were designed based on the Attributional Style Questionnaire (ASQ; Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982) and a later

revision of this measure (EASQ-S; Whitley, 1991). The ASQ includes vignette-based items that have been found to reliably and validly stimulate adult responses about their attributions (Peterson et al., 1982; Whitley, 1991). Given that the adults in the current study were asked to make attributions about child behavior rather than adult behavior, the items were modified to be applicable to common child behaviors. The behaviors were derived from the literature on child internalizing and externalizing problem behaviors (Lansford, Malone, Stevens, Dodge, Bates, & Petit, 2006; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999; Prinstein, Cheah, Guyer, 2005), DSM-V criteria for symptoms within internalizing (e.g., Major Depressive Disorder, Generalized Anxiety Disorder) and externalizing disorders (i.e., Oppositional Defiant Disorder), as well as scenarios applicable to typically developing youth (Dodge, McClaskey, & Feldman, 1985; Dodge & Price, 1994). Other studies have tended to focus on parental attributions in response to stimuli that reflect oppositional, disruptive/misbehavior, or prosocial behavior (Johnston & Freeman, 1997; Williamson & Johnston, 2014), and some have examined attributions of specific disorders, such as Attention Deficit/Hyperactivity Disorder (ADHD; Johnston & Ohan, 2005) or Autism Spectrum Disorders (ASD; Whittingham et al., 2006).

Although the use of vignettes is an indirect method of assessing parental cognitions about child behavior, this method is more feasible, systematic, and controlled than collecting in vivo responses, and therefore it was appropriate for the research questions posed in the present study (Bugental et al., 1998). Vignette methodology is common practice for the assessment of parental cognitions (e.g., Coplan et al., 2002; Snyder et al., 2005; Thurston et al., 2014), since all participants are exposed to the same stimuli, rather than reporting on their reactions to their own children, in which case the children's behavioral stimuli would differ in both quantitative (i.e., severity) and qualitative ways. In addition, training child actors to be judged would probably be

difficult (Bugental, 1998; Miller, 1995).

Procedure

During in-person recruitment, potential participants were approached and the principal investigator and/or trained research assistant(s) presented an overview of the study, explained what participation would entail, and inquired about individuals' interest in participating. Individuals who were interested were asked whether they would like to complete the study immediately on an iPad or be contacted via e-mail with a link to the online study. Flyers posted in community locations that are visited by families included a contact email address and phone number for potential participants to gather more information about the study. Eligibility was determined prior to individuals completing the survey either in person or online by inquiring about eligibility criteria as discussed above (e.g., English reading ability, child's age, weekly contact with child). Interested individuals who met eligibility criteria were provided a link to complete the study online (either immediately on the secured iPad or via e-mail). Participants read an IRB-approved script about the study, provided informed electronic consent, and then completed the measures of parental characteristics and the study protocol. Online methods of recruiting and completing research are frequently utilized, given the ever increasing access to computers and high-speed Internet connections among U.S. households (U.S. Census, 2013). While there is still some concern that individuals in lower income groups and some cultural groups may have limited access to, or knowledge of, these electronic resources (Suarez-Balcazar, Balcazar, & Taylor-Ritzler, 2009), census data from 2013 found that 74% of all U.S. households reported having access to an internet connection and 48% of those with an income of $25,000 or less reported internet access (U.S. Census Bureau, 2013).

After completing a demographic form and self-report measures, parents completed the vignette protocol.[2] An explanation and example of each causal attribution dimensions was provided to participants so they could understand the rating task. Parents then read 10 different vignettes that described the child's behavior and/or subsequent events in either the home or school setting.

In sum, the entire protocol took approximately 25-30 minutes to complete. After completing the study measures, participants were thanked for their time and asked whether they would like to provide their email address so they could enter a raffle to win a $25 Target gift card or tickets to an event in the Tampa Bay area (e.g., sporting event, museum, aquarium). These e-mail addresses were entered on a different webpage and stored securely and separately from the participants' anonymous responses. Participants were also asked to provide the e-mail address for up to 5 friends who have a child between the ages of 6-11 years, and may be willing to participate. Participants were told that their e-mail address was going to be given to any individual they nominate so their friends know why they were being contacted.

[2] Researchers identified a technical error in the set-up of the online survey program after the survey had been open to participants for approximately three months. There was an error in the display logic for the PSOC; rather than a male version being displayed for fathers (biological fathers, step-fathers, or adoptive fathers), and a female version being displayed for mothers (biological mothers, step-mothers, or adoptive mothers), the measure was not presented for many participants. An IRB amendment was approved to send an e-mail to those participants who did not have data for the PSOC and who provided an e-mail address to request that they complete this measure. A total of 47 participants were e-mailed and asked to complete the measure online, and 18 of those participants completed the measure upon prompting (38% response rate). A total of 48 participants did not provide an e-mail address and did not have data for the PSOC.

Results

Preliminary analyses included all variables tested in the regression models to gather descriptive information and evaluate whether analysis assumptions were met. The data was first screened for missing values. In two cases where only one item was missing (PSI-4-SF, n=2), a decision was made to replace these missing data with mean values for the item across participants. In cases when more than half of the items were missing for a participant (CRI, n=1; PSOC, n = 77; WAQ, n=1), participants' scores for that specific measure were omitted from analysis. As a result of omitting participants' scores on incomplete measures, sample sizes in some analyses differed when there were fewer participants with data for all variables in a particular analysis; the sample size for each analysis is specified in Tables 5-12. The reduced sample size for the PSOC was caused by a technical error identified in the online software hosting the survey, as discussed above; data checking procedures for all other variables revealed typical patterns and no problems with data entry were detected. Most variables were normally distributed; however, the DASS-21 and the PSI-4, displayed problems with leptokurtic kurtosis (see Table 2). Scores on the DASS-21 were similar to those of other nonclinical samples (e.g., Henry & Crawford, 2005). There was some evidence of range restriction since 75% of the participants scored 10 or less out of a possible total score of 61, but other studies with non-clinical samples have also observed similar patterns (Sinclair et al., 2012). For the PSI-4-SF, the scores were similar to those found in other research with parents from community settings (i.e., non-clinical samples), and there was no evidence of range restriction (Phillips, 2014). Considering the positive nature and moderate degree of the kurtosis, a decision was made to use

a square root transformation on the DASS-21 and PSI-4. Square root transformation is often recommended in similar situations, especially when data are positive and do not include values between 0.00 and 1.00 (Pedhazur, 1997; Tabachnick & Fidell, 2013). The transformations resulted in normal distributions (see Table 3). Since multiple regression can be sensitive to outlier effects, the data were screened for both univariate and multivariate outliers. No univariate outliers were identified. By using Mahalanobis distance with $p<.001$ derived from leverage scores, one case was identified as a multivariate outlier (i.e., extremely high z score on several variables), and the decision was thus made to remove this case (Osborne & Overbay, 2004). No problems with multicollinearity among predictor variables were detected using the recommendation that the variance inflation factor (VIF) be less than 10 (O'Brien, 2007).

Table 4 displays the correlations among the predictors (including two transformed predictor variables) and criterion variables. As expected based on the Social Cognitive Model of parent's attributions, the four causal attributions were all positively and significantly correlated with each other. The strength of the relationship between controllability and stability fell in the weak to moderate range; the strength of the other bivariate correlations among causal attributions was strong. In addition, the four causal attributions were also positively and significantly related to the dependent variable (problem rating) to a moderate-to-strong degree.

Next, relationships among attributions (as predictor variables) and the parenting characteristics (proposed as moderators) were examined. Scores on the DASS-21 showed a positive and moderate relationship with ratings on the stability attribution dimension and weak, but significant relationships with the locus and intentionality dimensions. In terms of parenting stress, scores on the PSI-4-SF demonstrated a significant and positive correlation with all four attributions; these scores were correlated with the stability dimension to a moderate-to-strong

degree, they correlated with the locus dimension to a moderate degree, they were related to the intentionality dimension to a small to moderate degree, and they were related to the controllability dimension to a small degree. Scores on the PSOC exhibited significant and negative correlations with all four dimensions of parental causal attributions; these scores were correlated with the stability dimension to a moderate degree, they correlated with the intentionality and locus dimensions to a weak-to-moderate degree, and they were related to the controllability dimension to a weak degree. CRI scores were not related to attribution ratings.

Next correlations between moderators and the dependent variable were examined. Scores on the PSI-4-SF were positively related to problem rating, and the correlation was of a moderate-to-large strength. Both the DASS-21 and the PSOC scores demonstrated weak-to-moderate correlations with problem ratings; however, scores on the DASS-21 were positively related to problem ratings, while scores on the PSOC were negatively related to problem rating. Participants' scores on the CRI were not related to problem rating.

In terms of correlations among the parenting factors, scores on the DASS-21 showed a moderate-to-strong positive relationship with PSI-4-SF scores. In addition, scores on the DASS-21 were negatively correlated to a small-to-moderate degree with PSOC scores. Scores on the PSI-4-SF showed a moderate-to strong negative relationship with PSOC.

Evaluating Parental Causal Attributions as Predictors of Problem Determination

The first hypothesis (H1) of the study was that problem determination of child behavior would be predicted by parental casual attributions. Specifically, parents who attributed behavior to more internal, controllable, intentional, and stable causes were expected to be more likely to

Table 2. *Descriptive statistics of Parental Causal Attributions, Measures of Parental Characteristics, and Parents' Problem Rating.*

Study Variables	Mean	(SD)	Minimum	Maximum	Kurtosis	Skewness	Alpha
Locus Attribution	3.43	(1.45)	1.00	8.00	-0.44	0.34	0.73- 0.80
Stability Attribution	2.21	(1.13)	1.00	6.60	1.67	1.27	0.77-0.79
Controllability Attribution	4.64	(1.34)	1.00	8.00	-0.40	-0.23	0.80-0.89
Intentionality Attribution	2.97	(1.17)	1.00	6.38	-0.44	0.20	0.64-0.73
DASS-21	8.01	(7.29)	0.00	40.00	4.15	1.85	0.90
PSI-4-SF	70.14	(22.48)	39.00	175.00	2.85	1.36	0.94
CRI	30.13	(4.96)	8.00	39.00	1.67	-0.80	0.58
PSOC	70.99	(12.49)	43.00	94.00	-0.76	-0.36	0.88
Problem Rating	2.78	(1.43)	1.00	7.00	-0.26	0.70	--

Note: N=165; DASS-21=Depression, Anxiety, and Stress Scales, 21 item version; PSI-4-SF = Parenting Stress Index- Fourth Edition, Short Form; CRI = Child Rearing Inventory; PSOC = Parenting Sense of Competence

Table 3. *Descriptive statistics of Parental Causal Attributions, Measures of Parental Characteristics, and Parents' Problem Rating, after transformation and removal of outlier.*

Study Variables	Mean	(SD)	Minimum	Maximum	Kurtosis	Skewness	Alpha
Locus Attribution	3.41	(1.41)	1.00	6.90	-0.44	0.34	0.73- 0.80
Stability Attribution	2.21	(1.13)	1.00	6.60	1.67	1.27	0.77-0.79
Controllability Attribution	4.65	(1.34)	1.00	8.00	-0.40	-0.23	0.80-0.89
Intentionality Attribution	2.98	(1.16)	1.00	6.38	-0.44	0.20	0.64-0.73
DASS-21 (transformed)	2.54	(1.25)	0.00	6.32	0.53	0.37	0.90
PSI-4-SF (transformed)	8.27	(1.28)	6.24	13.23	0.90	0.88	0.94
CRI	31.40	(4.16)	16.00	39.00	0.51	-0.59	0.58
PSOC	71.12	(12.50)	43.00	94.00	-0.73	-0.38	0.88
Problem Rating	2.78	(1.43)	1.00	7.00	-0.26	0.70	--

Note: N= 164; DASS-21=Depression, Anxiety, and Stress Scales, 21 item version; PSI-4-SF = Parenting Stress Index- Fourth Edition, Short Form; CRI = Child Rearing Inventory; PSOC = Parenting Sense of Competence

Table 4. *Correlations among independent variables (locus attributions, controllability attributions, stability attributions, intentionality attributions; Depression, Anxiety, and Stress, Scales, 21-items; Parenting Stress Index-4th edition; Child Rearing Index; Parenting Sense of Competence Scale) and the dependent variable (problem rating).*

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Locus		.53**	.61**	.60**	.28**	.44**	.06	-.30**	.60**
2. Controllability			.29**	.63**	.10	.19*	.01	-.23*	.50**
3. Stability				.49**	.34**	.60**	.04	-.34**	.74**
4. Intentionality					.21**	.28**	.03	-.28**	.57**
5. DASS-21						.51**	.17*	-.37**	.31**
6. PSI-4							.10	-.53**	.52**
7. CRI								-.19	.06
8. PSOC									-.29**
9. Problem									

Note. * $p<.05$ ** $p<.01$

rate child behavior as a greater problem. A standard multiple regression analysis (see Table 5) was conducted with SPSS 23.0 (IBM Corp., 2015) in order to examine the ability of the four casual attribution ratings to predict the problem determination rating. The results of the regression analysis were statistically significant ($F_{4,158}=71.03$, $p<0.001$), and indicated that 64% of the variance in problem determination was accounted for by the four attributions ($R^2 = 64.3\%$ of the variance). As individual predictors, the controllability attribution ($\beta =0.24$, $t= 3.74$, $p < 0.001$, CI=0.12 to 0.40) and the stability attribution ($\beta =0.58$, $t= 9.32$, $p < 0.001$, CI=0.57 to 0.88) made unique and significant contributions to the model. Stability uniquely predicted 20% of problem determination, controllability uniquely predicted 3.2%, and in combination the four

attributions contributed another 41% of shared variability. The size and direction of the relationships, as shown in the correlation matrix in Table 4, suggests that attributing child behavior to more internal, stable, controllable and intentional causes predicted higher ratings in terms of problem determination. In sum, hypothesis 1 was partially supported by the present results.

Table 5. *Multiple Regression Analyses: Parental Causal Attributions as Predictors of Problem Determination Ratings*

Predictors	*B*	SE	β	sr^2	*t*	*p*
Stability Attribution	0.73	0.08	0.58	0.196	9.32	$p< 0.000$
Controllability Attribution	0.26	0.07	0.24	0.032	3.74	$p< 0.000$
Intentional Attribution	0.12	0.08	0.10	0.004	1.44	$p=0.153$
Locus Attribution	0.08	0.07	0.07	0.003	1.07	$p=0.286$

Note. N = 163

Testing Parental Characteristics as Moderators

Hypotheses 2-5 proposed that parental characteristics—parenting stress, psychopathology, parental tolerance, and self-efficacy—would have a moderating effect upon the relationship between causal attributions and problem determination. The hypotheses were specifically addressing whether the moderating variables would strengthen the relationship between specific attributions and problem determination. Hierarchical regression analyses were used to examine interaction effects as described by Baron and Kenny (1986) and Holmbeck (1997). For the purpose of examining interactions, predictors were mean-centered, and interaction terms were calculated from centered values (Aiken & West, 1991). Parental causal attributions (e.g., stability) and the proposed moderating parental characteristic (i.e., PSI-SF-4, DASS-21, CRI) were entered in the first stage of the regression equation, and the interaction effect was entered in the second stage of each equation.

To address Hypothesis 2, a hierarchical multiple regression was conducted to examine the extent to which parents' level of psychopathology moderated the relation between causal attributions—specifically the locus and intentionality attributions—and determination of child problems. The final equation for the locus attribution was significant, $F(3,159) = 34.15$, $p < .001$, $R^2 = .392$; and similarly, the final equation for the intentionality attribution was significant, $F(3,159) = 29.83$, $p < .001$, $R^2 = .360$. Table 6 shows the results of the analysis. Although the results indicated significant main effects, neither of the proposed interactions was statistically significant. These findings indicate that parental psychopathology did not significantly moderate the relationships between parental attributions and problem ratings, and thus Hypothesis 2 was not supported.

For Hypothesis 3, a hierarchical multiple regression was conducted to test whether parenting stress moderated the relation between causal attributions—specifically the locus and stability attributions—and determination of child problems. The final equation for the locus attribution was significant, $F(3,159) = 43.21$, $p < .001$, $R^2 = .449$, and similarly, the final equation for the stability attribution was significant, $F(3,159) = 65.36$, $p < .001$, $R^2 = .552$. Table 7 shows the results of the analysis. Although the results indicated significant main effects, neither of the proposed interactions was statistically significant. These findings indicate that parental stress did not significantly moderate the relationships between parental attributions and problem ratings, and thus, Hypothesis 3 was not supported.

To address Hypothesis 4, a hierarchical multiple regression tested whether parental tolerance moderated the relation between causal attributions—specifically, the stability and controllability attributions—and determination of child problems. The final equation for the stability attribution was significant, $F(3,159) = 59.79$, $p < .001$, $R^2 = .541$, and similarly, the final

Table 6. *Hierarchical Regression Analysis for Hypothesis 2: Testing moderation effects of parental psychopathology on the relationship between causal attributions and parental problem determination*

Locus Attribution	**B**	***SE***	**B**	***t***	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.39	0.39
Intercept	2.77	0.09		31.48	*p*<.001		
Attribution	0.57	0.06	0.56	8.81	*p*<.001		
DASS-21	0.18	0.07	0.16	2.46	*p*<.05		
Model 2						.392	.002
Intercept	2.78	0.09		30.60	*p*<.001		
Attribution	0.57	0.07	0.56	8.64	*p*<.001		
DASS-21	0.20	0.08	0.17	2.53	*p*<.05		
Attribution X DASS-21	-0.03	0.05	-0.04	-0.66	*p=.51*		
Intentionality Attribution	**B**	***SE***	**β**	**t**	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.36	0.36
Intercept	2.77	0.09		30.70	*p*<.001		
Attribution	0.65	0.08	0.53	8.15	*p*<.001		
DASS-21	0.24	0.08	0.20	3.14	*p*<.001		
Model 2						0.36	0.00
Intercept	2.77	0.09		30.15	*p*<.001		
Attribution	0.65	0.08	0.53	8.11	*p*<.001		
DASS-21	0.23	0.08	0.20	3.03	*p*<.01		
Attribution X DASS-21	0.01	0.06	0.01	0.08	*p=.94*		

Note. N = 163

equation for the controllability attribution was also significant, $F(3,159) = 18.21$, $p < .001$, R^2=.256 (see Table 8). However, the proposed interactions were not statistically significant. Because there was not a significant change in R^2 produced by the interaction terms, there is no evidence in the present data to suggest that parental tolerance influenced the association between the predictor and criterion variables, and thus Hypothesis 4 was not supported.

Table 7. *Hierarchical Regression Analysis for Hypothesis 3: Testing moderation effects of Parenting Stress on the relationship between Causal Attributions and Parental Problem Determination*

Locus Attribution	**B**	***SE***	**β**	***t***	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.446	0.446
Intercept	2.78	0.08		33.12	$p<.001$		
Attribution	0.47	0.07	0.47	7.08	$p<.001$		
PSI-4-SF	0.35	0.07	0.31	4.78	$p<.001$		
Model 2						0.449	0.003
Intercept	2.74	0.09		29.50	$p<.001$		
Attribution	0.47	0.07	0.47	7.09	$p<.001$		
PSI-4-SF	0.33	0.08	0.29	4.23	$p<.001$		
Attribution X PSI-4-SF	0.05	0.05	0.06	0.89	$p=.373$		
Stability Attribution	**B**	***SE***	**β**	**t**	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.550	0.550
Intercept	2.77	0.08		36.68	$p<.001$		
Attribution	0.83	0.08	0.66	9.93	$p<.001$		
PSI-4-SF	0.14	0.08	0.12	1.83	$p=.069$		
Model 2						0.552	0.552
Intercept	2.74	0.09		32.10	$p<.001$		
Attribution	0.82	0.09	0.65	9.53	$p<.001$		
PSI-4-SF	0.12	0.08	0.10	1.45	$p=.148$		
Attribution X PSI-4-SF	0.04	0.05	0.06	0.90	$p=.369$		

Note. N = 163

To address Hypothesis 5, two hierarchical multiple regression analyses were conducted to test whether parental self-efficacy moderated the relation between causal attributions—specifically the stability and intentionality attributions—and determination of child problems

(see Table 9). The final equation for the stability attribution was significant, $F(3,83) = 47.10$, $p < .001$, $R^2 = .630$. Results indicated a significant main effect for attribution, but no main effect for parental self-efficacy was found and the interaction was not statistically significant. For the intentionality attribution, the final equation was also significant, $F(3,83) = 19.88$, $p < .001$, $R^2 = .418$. A significant main effect was shown for attribution, but no main effect for parental self-efficacy was found and the interaction was not statistically significant. Since the changes in R^2 produced by the interaction terms were not statistically significant, there is no evidence in the present data to suggest that parental self-efficacy influenced the association between the parental attributions and problem determination. Thus, Hypothesis 5 was not supported.

Exploratory Hypotheses

The planned moderation hypotheses all focused on the interaction of specific parental characteristics and specific parental causal attributions in predicting parental problem determination. A priori exploratory hypotheses were also established regarding the influence of parental psychopathology on other parental factors. A series of hierarchical regression analyses was conducted to investigate the presence of three-way interactions among parental psychopathology, other parental characteristics (i.e., parenting stress, parental tolerance, parental self-efficacy), and causal attributions in predicting problem determination. The first exploratory hypothesis included parenting stress; two hierarchical multiple regression analyses were conducted to test whether parental psychopathology influenced the relationships between parenting stress, causal attributions—specifically the locus and stability attributions—and parental problem rating. The final equation for the locus attribution was significant, $F(5, 157) = 25.99$, $p < .001$, $R^2 = .453$; and similarly, the final equation for the stability attribution was significant, $F(5, 157) = 39.22$, $p < .001$, $R^2 = .555$. Table 10 shows the results of the analysis.

Table 8. *Hierarchical Regression Analysis for Hypothesis 4: Testing moderation effects of Parental Tolerance on the relationship between Causal Attributions and Parental Problem Determination*

Stability Attribution						**Model**	
	B	***SE***	**β**	***t***	**Sig.**	**R^2**	**ΔR^2**
Model 1						0.541	0.541
Intercept	2.77	0.08		36.31	*p*<.001		
Attribution	0.93	0.07	0.73	13.69	*p*<.001		
CRI	0.01	0.02	0.02	0.39	*p=.392*		
Model 2						0.541	0.000
Intercept	2.77	0.08		36.15	*p*<.001		
Attribution	0.93	0.07	0.73	13.61	*p*<.001		
CRI	0.01	0.02	0.02	0.40	*p*=.690		
Attribution X CRI	0.00	0.02	0.02	0.27	*p=.785*		
Controllability Attribution						**Model**	
	B	***SE***	**β**	**t**	**Sig.**	**R^2**	**ΔR^2**
Model 1						0.252	0.252
Intercept	2.77	0.10		28.43	*p*<.001		
Attribution	0.55	0.08	0.50	7.29	*p*<.001		
CRI	0.02	0.02	0.05	0.68	*p*=.499		
Model 2						0.256	0.004
Intercept	2.77	0.10		28.39	*p*<.001		
Attribution	0.55	0.08	0.50	7.32	*p*<.001		
CRI	0.01	0.02	0.04	0.58	*p*=.560		
Attribution X CRI	0.02	0.02	0.06	0.92	*p*=.358		

Note. N = 163

Table 9. *Hierarchical Regression Analysis for Hypothesis 5: Testing moderation effects of Parental Self-efficacy on the Relationship between Causal Attributions and Parental Problem Determination*

Stability Attribution	**B**	***SE***	**β**	***t***	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.628	0.628
Intercept	2.71	0.10		28.55	*p*<.001		
Attribution	1.05	0.10	0.79	11.08	*p*<.001		
PSOC	0.00	0.01	-0.02	-0.22	*p=.829*		
Model 2						0.630	0.002
Intercept	2.70	0.10		26.41	*p*<.001		
Attribution	1.03	0.10	0.78	10.55	*p*<.001		
PSOC	0.00	0.01	-0.02	-0.28	*p*=.781		
Attribution X PSOC	0.00	0.01	-0.04	-0.63	*p*=.528		
Intentionality Attribution	**B**	***SE***	**β**	**t**	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.398	0.398
Intercept	2.68	0.12		22.18	*p*<.001		
Attribution	0.55	0.08	0.50	6.61	*p*<.001		
PSOC	0.02	0.02	0.05	-1.38	*p*=.171		
Model 2						0.418	0.020
Intercept	2.62	0.13		20.96	*p*<.001		
Attribution	0.55	0.08	0.50	6.63	*p*<.001		
PSOC	0.01	0.02	0.04	-1.51	*p*=.13		
Attribution X PSOC	0.02	0.02	0.06	-1.70	*p=.093*		

Note. N = 87

The main effect of psychopathology was significant in the first model, but this effect did not remain in the second and third models when the attribution and parenting stress variables were included. The results indicated significant main effects of parents' attributions, and the equation with the locus dimension equation also indicated a main effect of parenting stress; however, the

proposed interactions were not statistically significant. These findings indicate that parental psychopathology did not significantly moderate the relationships among parenting stress, parental attributions, and problem ratings, and thus, Exploratory Hypothesis 1 was not supported. The next exploratory hypothesis included parental tolerance; two hierarchical multiple regression analyses were conducted to test whether parental psychopathology influenced the relationships between parental tolerance, causal attributions—specifically the stability and controllability attributions—and parental problem rating. The final equation for the stability attribution was significant, $F(5,157) = 38.94$, $p < .001$, $R^2 = .554$; and similarly, the final equation for the controllability attribution was also significant, $F(5, 157) = 15.22$, $p < .001$, $R^2 = .326$. Table 11 displays the results of the analysis, and shows that the proposed interactions were not statistically significant. These findings indicate that parental psychopathology did not significantly moderate the relationships among parental tolerance, parental attributions, and problem ratings. Thus, Exploratory Hypothesis 2 was not supported.

The third exploratory hypothesis featured parental self-efficacy, and hierarchical multiple regression analyses were conducted to examine whether parental psychopathology influenced the relationships between parental self-efficacy, causal attributions—specifically the stability and intentionality attributions—and parental problem rating. The final equation for the stability attribution was significant, $F(5,81) = 28.72$, $p < .001$, $R^2 = .639$; and similarly, the final equation for the intentionality attribution dimension was also significant, $F(5,81) = 12.65$, $p < .001$, $R^2 = .438$. The results of these analyses are shown in Table 12, and as seen in the table, the proposed interactions were not statistically significant. These findings indicate that parental psychopathology did not significantly moderate the relationships between parental self-efficacy, parental attributions, and problem ratings. Thus, Exploratory Hypothesis 3 was not supported.

Table 10. *Hierarchical Regression Analysis for Exploratory Hypothesis 1: Examining Interactions between Parental Psychopathology, Parenting Stress, and Attributions in Predicting Parental Problem Determination*

Locus Attribution	**B**	***SE***	**β**	***t***	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.094	0.094
Intercept	1.87	0.25		7.52	*p*<.001		
DASS-21	0.36	0.08	0.31	4.10	*p*<.001		
Model 2						0.449	0.355
Intercept	0.04	0.65		0.06	*p*=.954		
DASS-21	0.03	0.08	0.02	0.33	*p*=.742		
Attribution	0.47	0.07	0.47	7.04	*p*<.001		
Parenting Stress	0.32	0.08	0.28	3.71	*p*<.001		
Attribution X PSI-4-SF	0.04	0.05	0.05	0.85	*p*=.*397*		
Model 3						0.453	0.03
Intercept	-0.15	0.67		-0.22	*p*=.829		
DASS-21	0.05	0.08	0.04	0.60	*p*=.547		
Attribution	0.49	0.07	0.48	7.06	*p*<.001		
Parenting Stress	0.33	0.08	0.30	3.82	*p*<.001		
Attribution X PSI-4-SF	0.06	0.05	0.08	1.13	*p*=.261		
Attribution X PSI-4-SF X DASS-21	-0.03	0.03	-0.08	-0.99	*p*=.325		
Stability Attribution	**B**	***SE***	**β**	**t**	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.094	0.094
Intercept	1.87	0.25		7.52	*p*<.001		
DASS-21	0.36	0.09	0.31	4.10	*p*<.001		
Model 2						0.553	0.458
Intercept	1.83	0.65		2.80	*p*<.05		
DASS-21	0.03	0.07	0.03	0.45	*p*=.652		
Attribution	0.82	0.09	0.65	9.50	*p*<.001		
PSI-4-SF	0.10	0.09	0.09	1.17	*p*=.243		
Attribution X PSI-4-SF	0.04	0.05	0.05	0.85	*p*=.399		
Model 3						0.555	0.003
Intercept	1.70	0.67		2.55	*p<.05*		
DASS-21	0.05	0.08	0.05	0.70	*p*=.488		
Attribution	0.84	0.09	0.67	9.37	*p*<.001		
Parenting Stress	0.11	0.09	0.10	1.27	*p*=.206		
Attribution X PSI-4-SF	0.08	0.06	0.10	1.26	*p*=.210		
Attribution X PSI-4-SF X DASS-21	-0.03	0.03	-0.09	-0.96	*p*=.341		

Note. N = 163

Table 11. *Hierarchical Regression Analysis for Exploratory Hypothesis 2: Examining Interactions between Parental Psychopathology, Parental Tolerance, and Attributions in Predicting Parental Problem Determination*

Stability Attribution	**B**	***SE***	**β**	***t***	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.094	0.094
Intercept	1.87	0.25		7.52	*p*<.001		
DASS-21	0.36	0.08	0.31	4.10	*p*<.001		
Model 2						0.545	0.451
Intercept	2.57	0.19		13.61	*p*<.001		
DASS-21	0.08	0.07	0.07	1.21	*p*=.229		
Attribution	0.90	0.07	0.71	12.46	*p*<.001		
CRI	0.00	0.02	0.01	0.19	*p*=.849		
Attribution X CRI	0.00	0.02	0.02	0.31	*p*=.759		
Model 3						0.554	0.08
Intercept	2.58	0.19		13.75	*p*<.001		
DASS-21	0.08	0.07	0.07	1.15	*p*=.252		
Attribution	0.89	0.07	0.71	12.42	*p*<.001		
CRI	-0.01	0.02	-0.02	-0.26	*P*=.794		
Attribution X CRI	0.00	0.02	0.00	-0.02	*p*=.978		
Attribution X CRI X DASS-21	0.02	0.01	0.10	1.70	*p*=.090		

Controllability Attribution	**B**	***SE***	**β**	**t**	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.094	0.094
Intercept	1.87	0.25		7.52	*p*<.001		
DASS-21	0.36	0.09	0.31	4.10	*p*<.001		
Model 2						0.326	0.232
Intercept	1.96	0.22		8.95	*p*<.001		
DASS-21	0.32	0.08	0.27	4.07	*p*<.001		
Attribution	0.53	0.07	0.48	7.34	*p*<.001		
CRI	0.00	0.02	-0.01	-.12	*p*=.905		
Attribution X CRI	0.02	0.02	0.07	1.06	*p*=.290		
Model 3						0.326	0.000
Intercept	1.96	0.22		8.83	*p*<.001		
DASS-21	0.32	0.08	0.27	4.04	*p*<.001		
Attribution	0.52	0.07	0.48	7.12	*p*<.001		
CRI	0.00	0.02	0.01	-0.16	*p*=.875		
Attribution X CRI	0.02	0.02	0.07	1.05	*p*=.295		
Attribution X CRI X DASS-21	0.00	0.02	0.01	0.18	*p*=.860		

Note. N = 163

Table 12. *Hierarchical Regression Analysis for Exploratory Hypothesis 3: Examining Interactions between Parental Psychopathology, Parental Self-efficacy, and Attributions in Predicting Parental Problem Determination*

Stability Attribution	**B**	***SE***	**β**	***t***	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.079	0.079
Intercept	1.75	0.36		4.88	$p<.001$		
DASS-21	0.36	0.14	0.28	2.70	$p<.05$		
Model 2						0.638	0.560
Intercept	2.38	0.25		9.60	$p<.001$		
DASS-21	0.13	0.10	0.10	1.38	$p=.170$		
Attribution	1.02	0.10	0.77	10.47	$p<.001$		
PSOC	0.00	0.01	0.02	0.23	$p=.816$		
Attribution X PSOC	0.0	0.01	-0.03	-0.43	$p=.668$		
Model 3						0.639	0.001
Intercept	2.41	0.26		9.37	$p<.001$		
DASS-21	0.12	0.10	0.10	1.18	$p=.240$		
Attribution	1.00	0.11	0.75	9.44	$p<.001$		
PSOC	0.00	0.01	0.02	0.25	$p=.803$		
Attribution X PSOC	0.00	0.01	-0.02	-0.35	$p=.730$		
Attribution X PSOC X DASS-21	0.00	0.01	-0.04	-0.45	$p=.646$		

Intentionality Attribution	**B**	***SE***	**β**	**t**	**Sig.**	**Model R^2**	**ΔR^2**
Model 1						0.079	0.079
Intercept	1.74	0.36		4.88	$p<.001$		
DASS-21	0.36	0.14	0.28	2.70	$p<.05$		
Model 2						0.438	0.359
Intercept	2.13	0.31		6.92	$p<.001$		
DASS-21	.20	0.12	0.16	1.71	$p=.091$		
Attribution	0.73	0.11	0.57	6.60	$p<.001$		
PSOC	-0.01	0.01	-0.07	-0.79	$p=.432$		
Attribution X PSOC	-0.02	0.01	-0.14	-1.66	$p=.100$		
Model 3						0.438	0.000
Intercept	2.14	0.31		6.87	$p<.001$		
DASS-21	0.20	0.12	0.15	1.69	$p=.095$		
Attribution	0.72	0.12	0.56	5.92	$p<.001$		
PSOC	-0.01	0.01	-0.07	-0.79	$p=.432$		
Attribution X PSOC	-0.02	0.01	-0.13	-1.52	$p=.132$		
Attribution X PSOC X DASS-21	0.00	0.01	-0.02	-0.19	$p=.850$		

Note. N = 163

Discussion

The primary goal of this study was to examine the relationship between parental causal attributions and parental problem determination and to assess whether parental characteristics moderate this relationship. The present study extends the ideas of several existing models of parental judgment to begin to deepen our understanding of how parents' perceptions and characteristics may impact decisions about whether child behavior is abnormal or problematic. This is important because a significant number of youth experiencing mental health disorders do not receive treatment, and continue to suffer negative consequences. Further, the existing social cognitive model of parental attributions jumps from attributions to parental reaction without accounting for parent problem recognition. Previous studies have demonstrated that parental attributions are predictive of parental discipline strategies (Dix et al., 1989; Montemayor & Ranganathan, 2012; Smith & O'Leary, 1995; Sheeber et al., 2009) and whether parents would be willing to seek treatment for their child (Morissey-Kane & Prinz, 1999) but no studies to date have looked directly at problem recognition and the impact of parental attributions. Additionally, existing research on parental problem recognition has focused on parents who are already seeking services for their children rather than including parents of children whose behavior spans a continuum of severity (Moreno et al., 2008; Schroeder et al., 2010). It is particularly important to understand the early stages of problem recognition in which parents may be trying to determine whether their child's concerning behaviors may represent a behavioral/mental health problem(s). Thus, the present study fills an important gap in the literature by investigating cognitions underlying parents' judgments about their children's

behaviors in a community sample, and by bringing together multiple literatures to present a theory-driven examination of parental factors that may influence parental attributions and how well they predict problem determination. Based on previous research, it was expected that when parents attributed the behavior/event to more internal, controllable, stable, or intentional causes, they would perceive the behavior as more problematic than when they attribute the behavior to more external, controllable, temporary, or unintentional causes. In addition, four parental factors, including parenting stress, psychopathology, parental tolerance, and parental self-efficacy, were each expected to moderate and strengthen the relationship between causal attributions and problem determination. Further, since parental psychopathology has been shown to impact parenting behavior and perceptions of child behavior, exploratory hypotheses proposed that there would be three way interactions between parental psychopathology, the other parental characteristics (i.e., high parental stress, low parental tolerance, low parental self-efficacy), and causal attributions (e.g., controllability) in predicting problem determination.

Parental Attributions

The primary aim of the study was to predict the extent to which parents judge child behavior to be problematic by examining parents' causal attributions. Altogether, 64% of the variability in problem determination ratings was predicted by scores on the four parental causal attribution variables, and the overall model was statistically significant with a large effect size. This finding is highly notable and suggests that attributions play an important role for parents in deciding whether a child behavior is problematic or abnormal. The attribution of stability and the attribution of controllability each made unique and significant contributions to the model. The attribution dimensions of intentionality and locus were not significant as individual predictors. Since hypothesis 1 predicted that all four attributions would be unique predictors,

this hypothesis was partially supported. It is important to note that all four attributions were positively and significantly related to problem determination, and the strength of these correlations was in the moderate-to-strong range. Thus, to the extent that parents rated the child behavior in the vignettes as due to more internal, controllable, stable, or intentional causes, they also rated the behavior as more serious.

Existing studies looking at causal attributions have typically grouped these attributions together (Johnston & Ohan, 2005; Williamson & Johnson, 2014). Statistically, in the present results, these attributions were all positively and significantly related to one another. Conceptually, however, the attributions relate to different thoughts about the child in a particular situation, and the proposed model predicted that each attribution may provide unique predictive information about problem determination. This study was unique in its approach to empirically evaluating causal attributions as it was found that there were some distinct predictors.

Stability dimension. Parents' responses regarding their attribution of stability, or the persisting nature of the child's behavior, were the most predictive of parental problem determination ratings. This may suggest that thinking about the behavior in the vignette and similar behaviors that were likely to occur in the future made the parent realize that the child was recurrently making poor behavioral choices or not learning from his/her mistakes, which in turn led to a judgment of the behavior as a more serious problem. This sequence suggests that attributions occur prior to judgements about problem determination, as hypothesized. Alternatively, parents may have a strong emotional reaction to a particular type of behavior, like threatening a friend or breaking a toy, and immediately think about another time when the child exhibited a similar behavior, and then attribute the behavior to stable causes as a result of thinking that the child "always" acts this way, and that this is problematic. It is also interesting

that in the present sample the mean rating for the stability dimension (2.1 on a 9 point Likert scale) was the lowest among the attributions by nearly an entire point on the rating scale (i.e., next lowest was locus at a mean rating of 3.4). On the whole, parents did not perceive the behaviors in the vignettes to be enduring. However, when parents did rate behaviors to be ongoing or persistent, these were the behaviors that parents believed to be indicative of an emotional or behavioral problem. This potentially bears great clinical significance, as it may suggest why so many parents hold off on seeking help for their children. It may be that when parents believe that behavior is not enduring, but instead is caused by a more transient developmental stage (i.e., "she's going through a phase"), they minimize the extent to which they believe the behavior is a problem and thus do not seek help. This is consistent with findings from other studies evaluating parents' perceived barriers to care, which show that often parents are not worried about problem behavior because they attribute it to temporary causes and believe the behaviors will resolve with maturity (Horowitz et al., 2003; Ohan, Seward, Stallman, Bayliss, & Sanders, 2015).

Psychoeducational messaging could encourage parents to consider that warning signs for mental health problems can include ongoing, persistent behaviors, and/or changes in child behavior/emotional disposition, especially if the child's functioning has been impaired. In addition, it can be emphasized to parents that early intervention services can often be provided at low cost and in a number of settings when parents do have initial concerns about child behavior (Ellingson et al., 2004; Pavuluri et al., 1996; Zubrick et al., 2005). From a public health perspective, providing education about typical child development to parents—whether through parenting classes, workshops, or brochures during well child visits—may be valuable in assisting parents differentiate atypical child behavior, and recognize the behaviors that should warrant a

conversation with a health care provider (e.g., pediatrician, psychologist, psychiatrist). Marketing messages could emphasize that intervening early can prevent child emotional/behavioral issues from becoming long standing/stable and thus more serious. This type of social marketing would match well with how parents think about problematic child behavior. For example, if a youth stops playing with his friends every day after school to be by himself in his room and appears to be especially irritable toward family members, this may indicate that he is experiencing depressive symptoms, which can be effectively addressed with evidence-based treatment. Given that most children and parents are likely to come into regular contact with pediatricians, nurse practitioners, teachers, and other school staff, these professionals are well-suited to provide important messages to families about help-seeking and intervening early in atypical or dysfunctional child behavior. Marketing that normalizes concerns about seeking help and provides research regarding the efficacy of early intervention for this type of change in behavior may help encourage parents to seek help earlier.

Additional research is needed to understand parents' actions after determining the existence of problem behavior, particularly in relation to the stability attribution dimension. In the present study, parents were not asked to articulate their next course of action; in other words, once a problem is identified, they may make the decision to seek professional help for their child, they may decide to take a different parental approach to help the child, or they may not change anything. Attributing behavior to stable causes suggests that the parent believes behaviors or symptoms are unlikely to change, which can make it difficult to seek and engage in treatment focused on changing the behaviors (Mah & Johnston, 2008; Mattek et al., 2016; Morrissey-Kane & Prinz, 1999). However, research has also found high parental ratings of child problems to be a potent predictor of treatment retention (Mah & Johnston, 2008; Mattek et al., 2016). This

suggests that when youth and families present to treatment, it may be important to address these parental cognitions to determine the best way to engage families. For example, if a parent believes that child behavior is caused by stable factors that are unlikely to change, this may impact the parent's willingness to alter their own behaviors to create change in the child's behavior. It may also be valuable within the early phases of treatment for clinicians to acknowledge that behavioral problems from more stable causes are not likely to resolve on their own; however through implementing specific strategies, these behaviors can actually be altered over time. This work is foundational to building hopefulness for parents, which would be needed to get parents to engage and stay in treatment. In addition, clinicians would likely need to encourage realistic goals depending on the type of presenting concern, helping families to realize that some behaviors, like those that make up ADHD, are likely to have a more chronic course, but can still be managed with behavioral interventions (Lahey et al., 2004; Riddle et al., 2013, Spencer, Biederman, & Mick, 2007), whereas other behavioral concerns like phobias and social anxiety, can typically be extinguished with an empirically-supported, cognitive-behavioral treatment (Barrett, Duffy, Dadds, & Rapee, 2001; Spence, Donovan, & Brechman-Toussaint, 2000).

Given the low ratings of stability and problem determination provided overall by the present sample, it would be beneficial to collect similar data from a treatment-seeking sample of parents. As mentioned above, on the whole the present sample did not perceive the behaviors described in the vignettes to represent persisting problems for their children. Data from a clinical sample would be valuable in understanding whether the stability attribution functions in a similar or contrasting manner for parents who seek out professional assistance for their child.

Controllability dimension. Parents' responses regarding the attribution of controllability, or whether the cause of the behavior was within the child's control, were uniquely and moderately predictive of parental problem determination ratings as hypothesized. This may suggest that when parents picture the scenario and the "non-preferable" behavior that the child exhibited, if they attribute the behavior to controllable causes, then they may also visualize their child having the ability to exhibit preferable behavior (e.g., sitting with other children rather than sitting alone at lunch; asking politely for an item from a peer rather than grabbing it), and thus they call the behavior a problem because the child did not "have to" make the behavioral choice that was made. In fact, this is in line with research demonstrating that parents tended to provide higher controllability attributions for older children, suggesting that as children mature they are more responsible for their actions (Dix et al., 1986). Behaviors that were deemed controllable may also have been rated higher on the problem scale than behaviors that were deemed uncontrollable because this attribute may have sparked a sense of responsibility for parents. Controllable behaviors could be viewed as problem behaviors that parents can correct, perhaps through some form of discipline or intervention. Further, research has also shown that when parents attribute behaviors to more controllable factors, they reported harsher punishment intentions (Dix et al., 1989; Johnston & Freeman, 1997; Montemayor & Ranganathan, 2012; Sheeber et al., 2009). As an alternative to the above explanations, which suggest that the controllability attribution leads to the higher problem rating, it may be that when the nature of a child behavior is perceived as egregious or in direct contradiction with a parent's values (e.g., profanity), the parent may assume that their child was able to control the behavior, and find it upsetting that the problem behavior occurred. This line of reasoning supposes that certain behaviors evoke an emotional reaction, and in turn the parent believes the behavior was

preventable and controllable and thus considers the behavior a problem. If parents feel badly about the behavior they may adjust how they judge the behavior to match that emotion, and then feel the need to do something to help the child change that behavior, which aligns with social cognitive theories about parent discipline (Dix et al., 1989; Nelson et al., 2013; Sheeber et al., 2009; Slep & O'Leary, 1998).

Research examining ways to include parental attributions within family therapy has shown that parental attributions can be modified over the course of therapy (Bugental et al., 2010; Mah & Johnston, 2008; Whittingham et al., 2009). This finding may be especially hopeful for the dimension of controllability, which likely taps into parents' beliefs about child responsibility about behaviors. While children in the elementary school age range typically develop increasing amounts of cognitive control over their behavioral responses, it is important for parents to hold developmentally appropriate expectations. In addition, for children with emotional/behavioral disorders, problem behavior is complex and maintained by several factors (e.g. neurobiology, environmental reinforcement), some of which children may not actually have under their control. For example, a characteristic symptom of ADHD is impulsivity, and so for a child with ADHD, blurting out an answer in class (rather than the child raising his/her hand first) may not be completely volitional. This behavior may be maintained by both biological tendencies toward impulsivity/disinhibition, as well as the function of accessing attention (e.g., a reprimand from the teacher, looks from other students) whenever the child blurts out a response (Aylward et al., 1996; DuPaul & Ervin, 1996; Thapar, Langley, Owen, & O'Donovan, 2007). When parents bring a child to treatment, it would be helpful to gather information about parental attributions as a way to understand the extent to which they believe their child can control the problem behaviors exhibited. Most empirically supported treatment for children in elementary

school will involve parents/caregivers, and parents who believe that their child's behavior is primarily within child control may believe that a treatment approach that addresses parental behavior is irrelevant or unhelpful (Mah & Johnston, 2008; Mattek et al, 2016). Under these circumstances, clinicians should initially emphasize providing parents with psychoeducation regarding the nature of problem behaviors and the biopsychosocial contributors to child dysfunctional behavior. It may also be valuable to address parental beliefs directly while implementing preparatory enhancement strategies (e.g., providing psychoeducation about services, expectation setting) at the beginning of treatment. Studies examining the use of brief pre-treatment techniques, such as holding an informational parent meeting, sending families a letter/brochure describing what to expect from treatment sessions, or showing orientation videos depicting treatment activities, suggest that these are valuable opportunities to address discrepancies in expectancies about causes and solutions for problematic child behavior and can enhance parental acceptability of treatment (Lindsey et al., 2014; Mah & Johnston, 2008; Nock & Ferriter, 2005; Nock & Kazdin, 2005; Shuman & Shapiro, 2002; Wenning & King, 1995). More studies with longitudinal designs are needed to assess how parents' appraisals of child behavior may change at different points in time when contemplating, seeking, or receiving treatment, and whether pre-treatment techniques have any effect on these appraisals. During the early phases of treatment, it will also be important for clinicians to be attuned to parents' beliefs about the influence of their actions on their child's behavior. Mattek et al. (2016) examined these parent-referent attributions for families in an evidence-based caregiver training program and found that parents who rated themselves as the stronger cause of their child's problem behaviors (as opposed to the cause being more controlled by the child) were more likely to have early treatment success. More research is needed to investigate these different types of attributions,

their overlapping or disparate correlates, and how they may differentially predict patterns of service use.

Locus and intentionality dimensions. Previous research has demonstrated considerable support for the locus and intentionality dimensions in terms of predicting parents' emotional and behavioral responses to child behavior (Dix et al., 1989; Joiner & Wagner, 1996; Nelson et al., 2013; Montemayor & Ranganathan, 2012). Thus, it was surprising that the attribution dimensions of locus (internal/external) and intentionality were not significant unique predictors of problem determination as hypothesized. This may suggest that there is a different pathway potentially explaining how parents make a judgment about problem existence than the pathways that have previously been found to explain decisions regarding discipline for that behavior. Some theory and evidence in the judgment and decision making literature (e.g., Brunswik, 1952; Hastie & Dawes, 2010) would suggest that the judgment about whether a behavior is problematic would come before a parental decision on how to respond to that behavior. Thus, it is possible that these different judgments and decisions made at different times, would utilize different pieces of information (including prior judgments as information) and thus also influence the use of different sets of cognitions. In addition, as many authors have suggested, many decisions made in daily life are not completely rational, and when it comes to immediate parental responses, these may be impacted particularly by affective reactions to the behavior and situation. In fact, there is evidence that parents' intense negative emotions (i.e., anger, shock, sadness) increase the likelihood of overreactive and harsh discipline practices (Baydar, Reid, Webster-Stratton, 2003; Dix & Lochman, 1990; Leung & Slep, 2006). So this may mean that in response to an unfavorable child behavior, both emotional reactions and causal attributions contribute to determining the course of discipline. When making a judgment about whether a

behavior is problematic, a judgment that does not require an immediate response from the parent, it is reasonable to assume that there are other constructs that contribute, which were not measured in the present study, especially since 36% of the variability of problem determination was not explained. For example, parents may utilize their perceived developmental norms to also help distinguish whether the behavior exhibited by their child was atypical for the child's age, and one they should be concerned about. In combination with their causal attributions, this may lead to the problem determination. This problem judgment pathway would be distinctly different from that of the discipline decision pathway, as it is likely that problem determination is less affected by intense emotional reactions and emotional states, and parents may make this determination over time from multiple observations of a behavior (Costello, Pescosolido, Angold, & Burns, 1998; Shanley et al., 2008; Teagle, 2002). In contrast, parents' overreactive discipline practices often occur after a single behavior in isolation (Chang, Schwartz, Dodge, & McBride-Chang, 2003; Leung & Slep, 2006; Patterson, 1982; Pinderhughes, Dodge, Bates, Petit, & Zelli, 2000); in these instances, whether the behavior is judged to be problematic may not contribute to the decision about how to discipline the child. Since many evidence-based treatment protocols include psychoeducation about adjusting expectations *and* discipline strategies based on the child's diagnosis, or the extent to which behaviors are causing functional impairment, clinicians may want to examine whether parents make a link between problem ratings and discipline strategies. Specific interventions have been developed to help parents learn to adjust their management of behavior depending on whether the behavior is a serious behavioral/emotional problem or typical child behavior by providing psychoeducation and targeting parental emotion regulation and problem solving (Chronis, Chacko, Fabiano, Wymbs, & Pelham 2004; Dumas, 2005; Pinderhughes et al., 2000). Future research should directly

examine the links between parental attributions, problem judgments, and parenting discipline decisions to better understand how these constructs may be related, especially over time. We still have much to learn about how parents' thoughts and emotions affect their behaviors and the extent to which these change with different behaviors and across childhood. To increase external validity, it would also be helpful gather this type of problem determination information in regards to the behavior exhibited by parents' own children since parents may be more likely to report upon their thoughts accurately if the stimuli used behaviors that were more salient in their memories. This may be done by asking for various behaviors that their child exhibited which were annoying or undesirable, and then having parents rate the level of seriousness of the behavior. It would also be informative to inquire why parents did not rate the behavior to be more or less of a concern, as a way to understand factors that contribute to this decision-making process.

It is also important to consider that the sample in the present study is purposely different from many of the existing studies (e.g., Slep & O'Leary, 1998; Whittingham et al., 2009; Williamson & Johnston, 2014) examining parental attributions in that the participants included a non-clinical community sample rather than parents seeking or receiving services for their children. This difference is critically important to consider, since this study sought to examine parents' cognitions in the earlier stages of problem recognition, and previous research has shown differences in parents with and without behavior problems in terms of their general attributional tendencies for prosocial and negative behaviors. Specifically, parents of children with more problematic behaviors tend to have more negative and hostile attributions about their children (Johnston & Ohan, 2005). In contrast, parents of more typically developing children tend to have more positive outlooks; their tendency is to attribute prosocial behaviors to internal, stable,

controllable factors, whereas they tend to brush off negative behaviors as caused by more external, transient, uncontrollable, and unintentional factors (Coplan et al. 2002; Dix et al., 1986). This natural tendency has been explained as a positive attribution bias and demonstrated in numerous studies with non-problem children (Coplan, et al., 2002; Dix et al., 1986; Goodnow, Knight, & Cashmore, 1986; Gretarsson & Gelfand, 1988; Johnston & Ohan, 2005).

In the present study, although there was a strong positive correlation between the locus dimension and problem rating, this dimension was not a unique predictor of the problem determination rating. It is interesting to consider that parents' attributions of internality, or physical causes, have been uniquely associated with a greater likelihood of accessing specialty treatment for their child's presenting behavioral or emotional concerns (Yeh et al., 2005). It seems logical that the decision to access mental health treatment would be a related construct to determining the problematic nature of behavior. However, research has been accumulating that shows that problem appraisal and treatment seeking are related but distinct judgments for parents and may have distinctly different influences (Godoy et al., 2013; Horowitz et al., 2003). Perhaps it is not surprising that in the present results, internality was not uniquely predictive of problem determination since it is a different type of judgment than the decision to seek treatment. Since internality showed a moderate-to-strong correlation with problem judgment but was not a unique predictor of this judgment, this may suggest that internality shares variance with another predictor that is uniquely predictive. In fact, parents' ratings of the internality dimension were significantly and moderately-to-strongly related to ratings of the stability dimension which was a unique predictor of the problem judgment. It is likely that when parents determine that a child's behavior is internally caused, they also judge that behavior to have stable causes. This is consistent with other literature which suggests that individuals judge behaviors deemed to be

caused by personality traits as internally-based and stable in contrast with behaviors judged to be more temporary and externally caused *states* (John & Srivastava, 1999). The present results suggest that the locus dimension is not seen as uniquely different from the stability dimension. In other words, if a parent attributes behavior to something within the child – their biology, their personality, their skills—they tend to think that this will be a stable problem that will not change with time, and thus the parent judges the behavior as a problem. It may also be important to consider the generally low ratings that participants provided in terms of internality. The parents in the present study appeared to demonstrate a "positive attribution bias," which is consistent with findings from other research with parents of typically developing children; this bias is an adaptive tendency to attribute prosocial behaviors to factors within the child rather than the situation, and to attribute negative behaviors to characteristics of the situation rather than the child (Coplan et al., 2002; Dix et al., 1986; Goodnow, Knight, & Cashmore, 1986; Gretarsson & Gelfand, 1988; Johnston & Ohan, 2005). However, this likely does not explain why unique variance was not found for internality because the strong correlation between internality and problem ratings suggests adequate variability among parents' attributions. In other words, parents with less of this positive attribution bias were judging the behavior as more problematic, but potentially not as problematic as parents would who had children with problems at a clinical level. When parents in the sample attributed the behaviors in the vignettes to dispositional characteristics, they typically did not rate they behavior as a "severe" issue, but these ratings were slightly elevated, and higher than when parents attributed behaviors to external factors. Ratings of problem determination from parents in this normative sample may have been relatively low because of the positive attribution bias, beliefs that the behavior is normative for the child's developmental stage or gender, or perceptions that the behavior is not appearing to

create any impairment in the child's life. It is clear that there is more research needed in gaining a deeper understanding as to how parents make decisions about which behaviors are problematic, when, and why. Qualitative research that would allow more room for parents to share their attributional thoughts and beliefs more openly would be helpful to this end.

Although there is a sizable body of research suggesting that intentionality attributions are important predictors of parents' emotional reactions and punishment approach (e.g., Chavira, Lopez, Blacher, & Shapiro, 2000; Dix et al., 1989; Weiner, 1995; Slep & O'Leary, 1998), the present findings did not show intentionality attributions to be a uniquely significant predictor of problem ratings. As mentioned above with the locus dimension, this may suggest that there is a unique set of cognitions that help parents decide how to respond to behaviors and these same cognitions may not all be involved in the judgment of whether or not a behavior is problematic. Since intentionality shows a moderate-to-strong correlation with problem determination, but was not a unique predictor of this judgment, this likely suggests internality shares variance with another predictor that is uniquely predictive. In fact, parents' ratings of the intentionality dimension showed a significant, moderate-to-strong correlation with their ratings of the controllability dimension, which was a unique predictor of problem determination. It is likely that when a parent attributes behavior to intentional factors, they also judge that behavior to have controllable causes. This is consistent with other literature indicating that intentionality co-varies highly with controllability when individuals make judgments, and some authors have suggested that conceptually, intentionality assumes controllability, and thus to make a judgement that a behavior was intentionally caused, or brought about by purposeful, conscious factors, the individual also must judge the behavior to be controllable (Epps & Kendall, 1995; Miller, 1995; Weiner, 1985). This explanation aligns with the present results, and may suggest that the

intention dimension is not seen as uniquely different from the controllability dimension when determining whether behavior is problematic.

In response to child behavior, parents likely have multiple thoughts and emotions, and it may be difficult for researchers to find order to these reactions. However, previous research has shown that attributing behavior to child's intentionality is related to overreactive discipline and anger (Dix et al., 1986; Leung & Slep, 2006; Slep & O'Leary, 1998). Chavira et al. (2000) showed that even when caregivers were well aware of a child's developmental disability, and attributional framework was still appropriate in explaining reactions to the child's negative behaviors. More specifically, caregivers' attributions regarding child responsibility for behavior were significantly predictive of negative emotional reactions and aggressive behavioral responses. While intentionality is an important contributor to parents' anger and discipline decisions, other thoughts and beliefs may go into appraisals of whether behavior is normal/problematic. In contrast, it may be that there are only certain negative/annoying behaviors that are deemed problems if parents done intentionally. Perhaps the behaviors in the vignettes were not emotionally provocative enough for parents to be willing to call them an emotional/behavioral problem in their own child. Future research could improve upon the methodology of this study by incorporating behaviors of the participant's own child through time sampling or have participants' write down examples throughout their daily life. Having parents provide observations of behavior exhibited by their own children may allow for more personally evocative examples as they would be the behaviors that stood out in the parents' memories. Assessment of parents' emotional, cognitive, and behavioral reactions to these child behaviors could increase the external validity of parents' responses since they would be describing reactions to example behavior that they could visualize their child displaying. Of course, it

should continue to be noted that the community parents who constituted the present sample were not seeking treatment and may have perceived minimal emotional/behavioral problems with their children. However, it is important to investigate this group of parents whose children are not in treatment, as among this group may be parents trying to determine whether their child is experiencing an emotional or behavioral problem.

Moderators

Parental psychopathology. It was hypothesized that parental psychopathology would moderate the relationship between causal attributions and problem determination. Several specific hypotheses were made suggesting that higher levels of psychopathology or distress symptoms would make the relationship between the attribution dimensions of intentionality and internality and the problem determination ratings stronger. These moderation hypotheses were not supported, and there are a number of possible reasons for these findings.

First of all, the present findings may demonstrate that parental psychopathology does not interact with parental causal attributions to predict problem determination. The relationship between parental attributions and problem determination may be a uniform relationship that may exist for all parents regardless of the presence of psychopathology. This finding is surprising since there is some research to suggest that the presence of parental mental health concerns is associated with increased problem recognition (Zwaanswijk, Verhaak, Bensing, van der Ende, & Verhulst, 2003; Briggs-Gowan et al., 2000; Verhulst & van der Ende, 1997).

Alternatively, it may be that parents' psychopathology symptoms affect attributions of themselves rather than directly affecting attributions of their children, which other researchers have termed parent-referent attributions (Bugental et al., 1998; Mattek et al., 2016; Snarr, Slep, & Grande, 2009). These include beliefs regarding the degree to which parents hold themselves

responsible for their children's behaviors (e.g., "I'm not patient," "I'm not structured enough"). These parent-referent attributions have been found related to parental satisfaction and treatment receipt (Bugental, 1998; Leung & Slep; Mattek et al. 2016; Morrissey-Kane et al., 1999; Slep & O'Leary, 1998). Perhaps parental psychopathology moderates the relationship between parent-referent attributions and problem determination, or even moderates the potential relationship between parent-referent attributions and child behavior attributions. It could be expected that when parents attribute child behavior to parent actions, they would rate the child behavior as less of a problem. Interestingly, some research has shown that parents with depression tend to behave in ways to minimize their parenting efforts, often by avoiding child interactions (Dix & Meunier, 2009; Leung & Slep, 2006). These parents, perhaps feeling responsible for child behavior, may avoid or ignore child problems and thus also rate a behavior as even less of a problem as a means of minimizing what they presume to be a negative impact on their child. In fact, Leung and Slep (2006) found that depressed parents were more likely to rate child behavior as caused by parent characteristics, and these parents were also more likely to endorse lax parenting methods. This approach to responding to problem behavior may be similar to how these parents with psychopathology may address ratings of whether a behavior is considered problematic. Research has also shown that parents with psychopathology tend to be more critical and less nurturing than parents without psychopathology (Bolton et al., 2003; Dix et al., 1990; Dix & Meunier, 2009, Gravener et al., 2011), and this may suggest that when these parents do not attribute child behavior to their own parenting actions, they may rate child behavior as a higher problem than parents without psychopathology.

Another thing to consider about this finding is that the present sample, as a community sample, showed generally low scores and some evidence of range restriction, on the parental

psychopathology scale (i.e., DASS-21). This has been found in other community samples (e.g., Sinclair et al., 2012). It is likely that targeted recruiting would need to be utilized to find more parents in the community with psychopathology. As noted by other researchers writing about the challenges of recruitment, participants with psychopathology are less likely than those without such difficulties to volunteer for research (Hogue, Johnson-Leckrone, & Liddle, 1999; Prinz et al., 2001). Given the limited range of scores on the DASS-21, there was little variability in parental psychopathology in the present sample, and thus, even if there is a moderating role of parental psychopathology in the general population, it could not be detected (Holmbeck, 1997). Future studies should evaluate psychopathology as a moderator by utilizing a targeted approach to recruitment or from collecting a mixed community/clinical sample in order to achieve greater variability in psychopathology symptoms. Future studies would also benefit from examining specific forms of psychopathology, such as depressive symptoms, as it may also be important to elucidate whether interactions with any specific mental health problems could be concealed by investigating broad psychopathology. This type of focused examination could be more likely to lead to more specific clinical implications as well. For example, if depressive symptoms were found to strengthen the relationship between attributions and problem determination, then this would suggest the importance of measuring depressive symptoms at the outset of treatment to understand how those parental mental health concerns may affect parental perceptions. As another example, depressive symptoms might be found to interact with different attributions than intense anger symptoms (e.g., intermittent explosive disorder) to predict problem determination. Depression may heighten the tendency to perceive child behaviors problematic when parents attribute behavior to stable child and parent factors, whereas frequent anger outbursts may heighten problem determination when parents attribute behavior to controllable child causes.

Such findings would suggest that providing parental psychopathology measures at the outset of treatment could help clinicians gather insight about parents' cognitions and attributions. Such information could help the clinician modify the treatment plan to effectively engage the family in treatment.

Parenting stress. It was hypothesized that higher levels of parenting stress would strengthen the relationship between causal attributions—specifically the locus and stability dimensions—and problem determination. This hypothesis was not supported, and there are several rationales to consider regarding this finding. The present findings may suggest that parenting stress is not a significant moderator of the relationship between attributions and problem determination, and this process in which parents make problem appraisals is the same regardless of the parents' level of parenting stress. This would be consistent with research that has demonstrated similarities among parents with differing levels of parenting stress; although parents may differ in the amount of parenting stress they tend to have, stress will similarly be heightened after negative life events (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Nair, Schuler, Black, Kettinger, & Harrington, 2003; Quittner, Glueckauf, & Jackson, 1990). Given these similarities, it makes sense that differences in parenting stress would not change, or moderate, the relationship between attributions and problem recognition.

Although parenting stress was not found to be a moderator in the present study, parenting stress was significantly and moderately related to parents' ratings of problem determination. This relationship has been shown in other studies, and is often discussed as a bidirectional relationship since child's problem behavior can lead to parenting stress, and parenting stress can also exacerbate conflictual interactions between parents and their children. In addition, some research suggests that parents who are more stressed may rate children higher in terms of

problem behavior than other raters (Anthony et al., 2005; Renk et al., 2007). Perhaps parental stress is not a moderator of the relationship between parental attributions and problem determination, but instead plays a mediating role in this relationship. In other words, when parents are feeling overwhelmed with caregiving responsibilities, parenting stress may result in certain general cognitions which may then lead to a tendency to attribute unfavorable/ annoying behaviors to certain causes (i.e., controllable, stable) and then to a judgment that a behavior is a more serious problem. Future research should investigate this relationship longitudinally to determine whether parenting stress is predictive of problem determination at different points in time and whether that relationship is independent of the relationship between causal attributions and problem determination.

It is also important to consider that in the present "normative" sample, ratings of parenting stress were relatively low, and in fact resulted in the need to transform the data prior to analysis. Low levels of parenting stress have also been found in other studies with non-clinical samples as well, and suggests that the PSI-4 may not be the most appropriate for this purpose as it does not allow as much differentiation at the lower end of the scale. Future researchers may want to include measures that are able to differentiate among lower levels of stress, such as the Parenting Daily Hassles scale (Crnic & Greenberg, 1990) or the more general Daily Hassles Scale-Revised (Dohrenwend & Shrout, 1985).

Further, considering the low levels of stress in the present sample, it may be that these parents' stress was too low to impact the relationship between attribution and problem determination. As mentioned previously, this "normative" sample was recruited through convenience sampling in a variety of community and online locations, and self-selection bias is something to consider in relation to parenting stress. When approached to volunteer their time to

participate in the study, parents who were already feeling too overwhelmed and stressed likely did not volunteer to complete the study. Future research should utilize targeted recruitment methods to recruit a community sample that includes more parents with high parenting stress levels. Some ways to do this may include mentioning parenting stress in the recruitment materials (i.e., recruiting for parents with high levels of parenting stress), providing incentives for study participation that may be especially valuable for parents experiencing high levels of stress (e.g., free stress-management workshops, restaurant gift card) or offering child-care while parents complete the study.

Parental tolerance. Parental tolerance was another hypothesized moderator of the relationship between parental causal attributions and problem determination. Specifically, it was predicted that when parents have lower parental tolerance they will rate the behavior as more problematic when they provide higher ratings for the stability attribution dimension and/or the controllability dimension. These hypotheses regarding parental tolerance as a moderator were not supported. This may mean that parental tolerance may not have a moderating role upon the relationship between parental attributions and problem determination. It may be that parents' problem determination process is the same regardless of the parent's level of parental tolerance. This finding would be in line with the evidence that parents with varying degrees of tolerance are found to access treatment with their children, which would suggest that at some point they recognized a problem (Forehand et al., 2011; Harrison & Sofronoff, 2002; Wright et al., 2012). Instead parents with different degrees of tolerance may uniformly utilize attributional dimensions to make their problem determinations. As described in other sections, identifying the attributions by which parents make important decisions such as whether behaviors are problems may help with developing appropriate social marketing that aligns with how parents think about

problematic child behavior. Thus, some marketing may need to highlight both attributional dimensions of stability and controllability pointing out to parents across a continuum of tolerance levels what warning signs for behavioral/emotional problems in youth may look like.

In the present study, the measure of tolerance, the Child Rearing Inventory (CRI), had an internal consistency that was at a questionable level. This is important to consider since an unreliable measure may not be able to adequately capture the construct of interest. The CRI was selected due to its lack of dependence on child problems and its exclusive focus on parent cognitions related to their tolerance of child behaviors. This measure has been used in a handful of identifiable studies, and demonstrated construct validity and acceptable internal consistency (Brestan et al., 2003; Sowers, 2006). However, it is important to mention that in these other studies, parents were rating children who tended to be younger. In Brestan et al. (2003), participants were using the measure about their children who were a mean age of 5. Sowers' (2006) participants' ratings involved interactions with their children who ranged between 1 and 5 years old. In the present study, parents had children between 6 and 11 years old and were instructed to report on their child closest in age to 8 years old, and this difference in target child age may be one important reason why the present findings for the tolerance measure may differ from prior studies. As children mature from the preschool stage to 8 years old, parents' thoughts and feelings about child behavior may evolve such that different types of behaviors are bothersome. Also, the current study's inclusion criteria of 6 to 11 years old includes a wide range of development for children, and parents' ratings of tolerance may vary across this span of ages. In the present study, the overall means on the CRI were similar to those in the other studies, suggesting moderate levels of tolerance, but the range of ages included in the current study and the generally older age group referenced by parents may have affected internal consistency, as

the items may not have held together as a unitary concept of tolerance in the same way that they did for parents of younger children.

Unfortunately, research evaluating the role of parental tolerance for misbehavior has been limited by the lack of well-validated measures to study this concept. Besides the CRI, which needs to be validated with parents who have older children, other studies have utilized the Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999; Wright et al., 2012). Still other studies have utilized measures of distress tolerance, and discussed their findings in light of their implications for parental tolerance (e.g., McElroy & Rodriguez, 2008). Given the lack of consistency in measurement and the clinical implications of this construct, future studies should focus on developing a reliable measure for parental tolerance with cross-age applicability. This would allow us to better understand the different thresholds at which parents begin to anger or get annoyed with behavioral difficulties of children of different ages. Other authors have mentioned the clinical implications of parental tolerance, so it is surprising that the research evaluating this construct is limited (Gavita, Joyce, & David, 2011; Lau et al., 2006; Weisz et al., 1988). Utilizing reliable measures of parental tolerance, future studies should continue to examine whether parental tolerance may impact the relationship between parental attributions and problem determination because it could suggest a critical variable to include during the assessment phase of working with a family. For example, if a moderating effect were found, it would suggest that two parents observing the same child's behavior would rate the behavior differently due to an interaction of their attributions about controllability and their parental tolerance. If both parents attributed the behavior to controllable causes, they would both likely rate that behavior as a greater problem than other behaviors that they did not perceive to be controllable. However, if the father had lower tolerance and the mother had higher tolerance for

child misbehavior, then the father would likely rate the behavior as a more serious concern than the mother. As this example demonstrates, it may be helpful to evaluate parental tolerance during the assessment phase of treatment to better understand parental perceptions of child behavior.

Parental self-efficacy. Parental self-efficacy was another hypothesized moderator of the relationship between parental causal attributions—specifically the dimensions of locus and stability—and problem determination. The present findings suggest that the relationship between parental causal attributions and problem determination was not influenced by parents' self-efficacy scores. There are a few possibilities for why this may be the case. First, it may be that parents' problem determination process is the same regardless of the level of parental self-efficacy. This would be somewhat surprising since a substantial amount of research has found differences among parents with low and high self-efficacy (Coleman & Karraker, 1998; de Haan et al., 2009; Jones & Prinz, 2005). However, some literature suggests that parents self-efficacy does not reliably alter the existence of parents' positive socialization intentions and aspirations for their children (Ardelt & Eccles, 2001; Forehand et al., 2011; Johnston & Mash, 1989) and in the same regard the process of problem determination may be another domain of cognitive similarity among parents with differing levels of parental self-efficacy. In other words, self-efficacy may not moderate the relationship between attributions and problem determination, but may instead be a more universal process for parents.

Alternatively, it may be that parental self-efficacy directly influences parental causal attributions about child behavior. In other words, if parents feel they do not know how to handle a behavior effectively, this may increase their ratings of controllability and stability, for example. Evidence suggests that parents with low self-efficacy do not feel able to control child misbehavior (Coleman & Karraker, 1998; Johnston & Mash, 1989; Jones & Prinz, 2005;

Meunier et al., 2011) and as a result they are likely to believe the behavior is more within the child's control and that it will continue occurring. Parent ratings on the PSOC showed small-to-moderate, negative, significant correlations with all of the attributions dimensions. Similarly, parental self-efficacy may affect parental ratings of problem determination directly; behavior issues may seem more serious to parents when they do not feel equipped to handle them. Ratings on the PSOC showed a small-to-moderate, negative, significant correlation with the problem determination ratings. Other research has also shown that ratings of lower efficacy tend to be associated with higher ratings of child behavior problems (Jones & Prinz, 2005; Meunier & Roskam, 2009; Murdock, 2012). Some authors have suggested that some parents experience a negative interactive cycle among child problem behaviors, dysfunctional parenting behavior, and parenting self-efficacy, such that ineffective management of child behavior contributes to negative thoughts and feelings about the parent's inability to handle the behavior (Giallo et al., 2013; Murdock, 2012; Sanders & Woolley, 2004). In other words, if parents do not feel equipped to deal with a child problem behavior or situation, then they may rate it as a greater concern than a parent who feels confident in dealing with the event.

Another possibility to consider is that the behaviors portrayed in the vignettes were not problematic or overwhelming enough to activate parental self-efficacy, especially since participants were not asked anything about their behavioral responses to their behavior. Perhaps only in certain situations, due to the intensity of child behavior, or when the parent may be expected to respond to child behavior, does parental-efficacy begin to effect parental perceptions and behavior. Sanders and Woolley (2005) also noted that it is difficult to pinpoint the situations in parents' everyday life that they find difficult to assess and manage in regards to child behavior. Others have suggested that not all situations present an opportunity to assess parents'

confidence in dealing with child behavior problems, but rather the setting and behavior which may evoke parental self-efficacy beliefs may need to be more intense situations, and these may depend on the parent and child (Coleman & Karraker, 2003; Sanders & Woolley, 2005). Clearly additional research is needed to better delineate this area and the manner in which parental self-efficacy relates to parents' perception about child problem recognition.

An important consideration in regards to this variable is the technical error that occurred in the set-up of the online survey program which reduced the total number of participants who completed the parental self-efficacy measure. With this reduced sample size it is likely that the analysis did not have adequate power to find an effect. Statistical simulations have found that samples under 120 are unlikely to detect a moderation effect of any effect size (Aguinis, 2001; Stone-Romero & Anderson, 1994), emphasizing the need for replication studies with larger samples. It is important to further examine whether parental self-efficacy impacts the relationship between parental attributions and problem determination because it could suggest a critical variable to include when initially assessing child behavior, particularly if multiple informants were included. Generally, research has shown that lower parental self-efficacy is associated with inconsistent discipline behaviors and less warmth, whereas higher parental self-efficacy is associated with more positive parenting behaviors and positive child perceptions (Jones & Prinz, 2005; Sanders & Woolley, 2005; Sevigny & Loutzenhiser, 2010). Fortunately, parental-self efficacy is a fundamental construct that should improve through behavioral therapy, so assessing this variable over time, and in relation to problem ratings, would provide valuable information about the impact of treatment on parents' perceptions and beliefs (Jones & Prinz, 2005; Sanders & Woolley, 2005; Thomas & Zimmer-Gembeck, 2007).

Exploratory Analyses

Parental psychopathology can greatly impact the way parents perceive child behavior and interact with their children. Evidence suggests that parents with psychopathology tend to provide more hostile attributions about child behavior, and tend to respond to child behavior in a more critical and less nurturing ways than parents without psychopathology (Dix & Meunier, 2009, Gravener et al., 2011; Kroes et al., 2003; Treutler & Epkins, 2003). Based on this literature, it was hypothesized that this way of approaching the role of parenting (for parents with psychopathology) would affect the experience of parenting stress, tolerance level for child misbehavior, and parental self-efficacy for managing child behavior. The goal of the exploratory moderation analyses was to determine whether there were complex relationships that may be revealed by examining different levels of the moderators. However, these exploratory hypotheses also were not supported in the present study. A key consideration for these findings is the relatively small sample utilized and the possibility of limited power of finding effects. Studies that have found three-way interactions in multiple regression analyses typically require much larger samples to reveal such effects (Appel, Stiglbauer, Batinic, & Holtz, 2014; Dawson & Richter, 2006; Fairchild & MacKinnon, 2009)

Conceptually, one interesting finding to consider is that parental psychopathology scores were significantly related to the other parenting characteristics. Parental psychopathology scores showed a moderate-to-strong relation to parenting stress scores and they showed a moderate negative relation to the parenting self-efficacy scores. Parental psychopathology scores showed a weak relationship with the parental tolerance scores. These relationships are particularly interesting to reveal in a community sample of parents not currently seeking treatment. Since parental psychopathology, parenting stress, and parental efficacy have all been shown to affect

parents' causal attributions (Bugental et al., 1998; Calzada et al., 2004; Mulvaney et al., 2007) as well as overall parental perceptions of their child (Fergusson, Lynskey, & Horwood, 1993; Jones & Prinz, 2005; Renk et al., 2007), it would make sense that these parenting factors would play a role in problem determination. These parental factors are important to continue examining in terms of the child behaviors, parent beliefs, and parental cognitions that lead parents to make a judgment regarding child behavior problems, as existing literature is only beginning to understand the cues that contribute to this judgment. Future studies utilizing larger and diverse samples should examine the complex manner in which these parenting factors may impact problem determination differences among groups of parents (e.g., mothers with high parenting stress, fathers with low tolerance) may have particular clinical relevance.

Limitations and Future Directions

When interpreting the findings of this study, there are some potential limitations that need to be considered. One of these limitations is the reliance on participants to accurately reflect their experiences. The use of self-report scales to assess parents' attributions, ratings of problem determination, and parent characteristics may have allowed for response bias. It is possible that parents may have reported on their thoughts and perceptions in ways that they believed were most socially desirable. As discussed earlier, the parents in the present study generally showed very low ratings of parenting stress, parental psychopathology, and problem determination. While some of the lower ratings of problem determination may have been associated with a positive attribution bias and/or having generally well-behaved children, future research would benefit from including interviewing or survey methods to reduce response bias.

Similar concerns were present with regards to the vignettes, which were used as the framework to gather parents' attribution ratings and problem determination ratings. With the

goal of increasing ecological validity, participants were instructed to think about their own child when reading and rating the behaviors in the vignettes. The vignettes also were carefully developed as brief descriptions about children in particular situations and parents were expected to utilize their experiences with their child and their attribution styles rather than rely on information in the vignette to make judgements. However, others have criticized vignettes for their lack of ecological validity, and it is possible that the behaviors in the vignettes did not resonate with these parents as observations they may make of their child. Future studies could utilize different methods to depict more personalized examples of child behavior, by gathering parents own examples or using videos of actual child behavior. In addition, studies allowing for more qualitative responses through interviews or surveys could allow for a greater understanding of the participant's thought process in answering questions about their parenting appraisals, beliefs, and emotions.

Another concern was the variability in the environmental conditions in which participants completed the study protocol. The measures were presented in an online format, thus allowing parents to complete the measures at their convenience. This means that parents were not completing the survey in exactly the same conditions because they were able to access the web-based survey at any time. For example, if participants completed the measures at home versus in a public setting (e.g., baseball practice), they may have differed in the degree of their undivided attention given to the task at hand, and thus may have experienced different amounts of distractions to which they were exposed.

While these limitations should be considered, the numerous benefits of online survey methods outweighed these limitations for the present study. First, having the study available online and promoting the link through announcements on social media pages (i.e., FaceBook,

Twitter) provided access to a larger range of the community than would be accessed through fliers alone or than would have been able to complete paper-and-pencil measures. During in-person recruitment events, only a handful of parents were willing to complete the study immediately; the remainder of parents preferred to take a flier with the online link and complete the study online at a more convenient time. Other authors have expressed similar sentiments about the benefits of utilizing online survey software as a way to allow parents more privacy to respond and decrease the response effort for parents (Johnson, Frenn, Feetham, & Simpson, 2011; Kreuter, Presser, & Tourangeau, 2008; Ohan et al., 2015; Sadeh, Mindell, Luedtke, & Wiegand, 2009).

There were also a few limitations related to the measures used in the current study. The kurtosis found in the parenting stress and psychopathology variables highlights the limited variability present within this particular sample in terms of these constructs. Statistically, these issues were addressed through the use of square root transformations. However, this limited variability may still have decreased the ability of examining different levels of these characteristics in terms of the way they may moderate the relationship between attributions and problem determination. From another perspective, it is important to consider that the DASS-21 and the PSI-4-SF are well validated measures, and with these reliable and valid measures, parents reported low levels of parenting stress and psychopathology, which may be informative data about the parents in the community who are not seeking treatment for their children. In future studies with community samples it may be helpful to keep this limited variability in mind, and to use measures that are better able to differentiate among the lower levels of parenting stress as well as among varying degrees of sub-clinical psychopathology symptoms.

The participants' scores on the CRI showed questionable reliability, which likely weakened our ability to distinguish among parents' tolerance levels and evaluate this variable as a moderator. As discussed above, the present findings regarding the tolerance measure may speak to a larger issue with regards to a lack of a consistent way to measure tolerance and the need for additional research to determine the most appropriate ways to operationalize and measure parental tolerance of child behavior across youth age groups. Another issue related to measures that imposed limitations upon the analyses conducted was the technical error on the online survey software that was encountered for the PSOC measure. This resulted in a considerable reduction of participants for that measure. As a result, the power for finding an effect was reduced. This issue may have been prevented with pilot testing of the online survey software. Future researchers are encouraged to utilize online surveys to reach parent samples, but it is highly recommended that survey protocols be pilot tested (e.g. testing out various response options that may reveal problems that are not be revealed when utilizing common responses) prior to use to avoid issues such as loss of data or incomplete data. In the present study, a pilot test with parents was not conducted in order to maximize the potential sample size for the actual study and to not, in essence, "use up" eligible participants from a difficult to reach population.

As with all correlational studies, conclusions of causality cannot be inferred from the present study. Thus, prior to assuming that parental causal attributions cause, or play a major role in causing, parents to judge a behavior problematic, more research is needed. Specifically, it will be important for future research to utilize experimental (e.g., intervention studies) and longitudinal designs to support our understanding in these regards. Using longitudinal research on community samples, research may examine parents' attributions of child behavior over time and whether predictive attributions occur before higher problem determination. This type of

research would also reveal patterns of parents' judgments of problem determination and whether they tend to be generally stable for long periods of time or more transient. Experimental studies and randomized controlled trials could be helpful in solidifying the direction of the relationship found between attributions and problem determination. For example, a randomized controlled trial with parents seeking behavioral therapy could examine whether interventions directly targeting parental attributions do in fact alter these attributions and, in turn, whether those changes affect problem ratings of child behavior to a greater extent than for parents in a comparison group who do not receive interventions targeting attributions.

A unique aspect of this study was the recruitment of parents from the general community who were not seeking treatment for their child. This was accomplished through in-person techniques (direct contact with parents at places such as soccer fields, karate lessons, and libraries) as well as indirect methods of recruitment, including fliers and online messaging to explain the goals and internet/social media postings that described the requirements of the study. Recruitment methods were designed to reach both mothers and fathers in the local community and to access parents from a wide range of backgrounds and interests. However, it is possible that the current study was impacted by a selection bias. More specifically, those parents who volunteered and participated in the study were likely different than those parents who did not participate in the study. As other authors have mentioned, those who participate in research may experience less stress, or may be more willing to share about their parenting experiences, or they may value research more highly than those who do not agree to participate (Blair & Zinkhan, 2006; Grady, 2005; Lönnqvist et al., 2007). Unfortunately, these differences could not be precisely assessed. However, one obvious way that the sample differed from those who did not participate is gender—more women were willing to participate in the present study than were

men, despite persistent recruitment activities at parenting events and locations where fathers were present (e.g., baseball fields, hockey games, after school child care program). This discrepancy between mother and father participants in parenting research has been highlighted and lamented by numerous other researchers (Costigan & Cox, 2001; Mitchell et al., 2007; Phares & Compas, 1992; Phares, Lopez, Field, Kamboukos, & Duhig, 2005). Ways to increase father participation in future research may include more targeted messaging on fliers/announcements, indicating more specifically the need to hear from both mothers and fathers, or use of workplaces to help access fathers more directly. Also, some researchers have suggested that framing the explanation of the study in ways that emphasize how the study will help their child and that their experiences as a father are significant pieces of information that the researcher is interested in can be helpful in increasing numbers of father participants (Mitchell et al., 2007; Phares et al., 2005).

The present sample differed from the population of U.S. parents in a few specific ways that are important to consider for reasons of generalizability. The majority of the present sample identified as non-Hispanic white, and this proportion was slightly higher than we would expect given census data for the U.S. (U.S. Census Bureau, 2014). Further, only 6% and 3% of the sample represented Hispanic and African-American persons, respectively, numbers that are considerably lower than the general U.S. population. The present sample also tended to be highly educated (with 30% having attained a graduate degree) in comparison to the general population. These descriptive suggests that the findings of the present finding may not generalize to all families in the community, and are most applicable to mothers who identify as non-Hispanic, white, and who have achieved at least a college education. It will be critical for future research to aim for more diverse samples that better represent the state and U.S. demographics.

Conclusions

The present study represents a preliminary step in understanding parents' problem determination process. Overall, the results indicated that community parents' causal attributions were highly associated with parents' problem ratings, and the attributions of stability and controllability were particularly robust predictors of problem determination. Previous studies have demonstrated that parental attributions are predictive of parental discipline strategies (Dix et al., 1989; Montemayor & Ranganathan, 2012; Smith & O'Leary, 1995; Sheeber et al., 2009) and whether parents would be willing to seek treatment for their child (Morissey-Kane & Prinz, 1999) but no studies to date have looked directly at problem recognition and the impact of parental attributions. Thus, the present study made an important unique contribution to the literature in this respect. The findings generally supported the study hypotheses, which were based on the social cognitive model of parents' attributions (e.g., Dix et al., 1989). However, only two attribution dimensions—stability and controllability—were found to be unique predictors. This does not suggest that the other two dimensions should be eliminated from a theory focused on problem determination, as replication studies should be conducted first. However, it does highlight the idea that there may be different cognitive-affective pathways which parents use to guide discipline efforts as compared to problem determination. More broadly, it is interesting to note that problem recognition is noticeably left out of research on parents' attributions, and parents attributions are often left out of research about problem recognition. More integration of these variables in future research would better help to increase understanding of how these constructs may fit into a larger theoretical perspective, including help-seeking and discipline. The present study also contributed to the field by focusing on a community sample of parents rather than a sample of parents currently seeking services for their

children. It is particularly important to understand the early stages of problem recognition in which parents may be trying to determine whether their child's concerning behaviors may represent a behavioral/mental health problem (Moreno et al., 2008; Schroeder et al., 2010).

Hypotheses regarding parental characteristics as moderators of the relationship between attributions and problem determination were not supported in the present study. These findings suggest that the problem determination process is similar for all parents rather than being dependent on the level of particular parenting factors. Given the limited variability in scores on the parental psychopathology and parental stress measures, as well as the low reliability on the parental tolerance measure, it is possible that even if these constructs play a moderating role in the general population, this effect may not have been detected in the present sample. However, alternative relationships should also be considered, such as the possibility that parenting stress may instead play a mediating role in the relationship between attributions and problem determination, or that parental self-efficacy may impact attributions and problem determination directly rather than through moderation. Future researchers should continue to evaluate these variables with larger and more diverse samples to determine the manner in which they may influence the problem determination process for particular sub-groups of parents.

The present findings offer both clinical and public health implications. It will be important to consider the influence of parental beliefs and attributions to increase the efficacy of outreach efforts for early intervention and help seeking for parental concerns. For example, marketing messages should emphasize that intervening early can prevent child emotional/behavioral issues from becoming long standing/stable and thus more serious. Clinically, parental attributions may affect parents' expectations for and engagement in treatment. Thus, clinicians may find it valuable to address parental beliefs directly while

implementing pre-treatment orientation strategies. Studies with longitudinal designs are needed to assess how parents' appraisals of child behavior may change at different points in time when contemplating, seeking, or receiving treatment, and whether pre-treatment techniques have any effect on these appraisals.

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Appendices

Appendix A: Demographic Information

Please complete the following:

1. In all, how many children (biological, stepchildren, and others) do you have? _____

2. How many children (biological, stepchildren, and other children) are presently living in your home? ___

3. Do you have a child between the ages of 6-11 years old?

___ Yes ____ No

4. List the ages and gender of the children who are presently living in your home

Child 1: age ____ sex ____

Child 2: age ____ sex ____

Child 3: age ____ sex ____

Child 4: age ____ sex ____

Child 5: age ____ sex ____

5. What is the gender of your child closest in age to 8 years old?

____ Male ____ Female

6. Thinking of my child who is closest in age to 8 years old, I am a:

___ Biological mother ___ Biological father ____ Stepmother

___ Stepfather ___ Adoptive mother ___ Adoptive father

7. I am ____ years old.

8. **What is your race/ethnicity?**

___American Indian or Alaskan Native ___Asian

___Black or African American ___Hispanic or Latino

___Native Hawaiian or Other Pacific Islander ___White

___Other; please specify:_____

3. **What is your marital status?**

___Married ___Single, living with partner ___Single, no partner

___Separated ___Divorced and remarried ___Divorced and not remarried

___Widowed ___Other (please specify:_____)

4. **I am:**

____ Employed ____ Unemployed

____ Retired ____ Student

____ Other

5. **If you are employed, please state your occupation**:_____

6. **My spouse or significant other/partner is:**

____ Employed ____ Unemployed

____ Retired ____ Student

____ Other

7. **If you have a spouse or live with a significant other/partner and he/she is employed, please state his/her occupation**: _____

8. **What is the highest degree or level of school you have completed?**

___Some high school ___College degree (A.A., B.A., B.S.)

___High school or GED ___Graduate degree (M.A., M.S., Ph.D.)

___Vocational, technical, trade

9. **If you have a spouse or live with a significant other/partner, please identify his/her years of education**:

___Some high school ___College degree (A.A., B.A., B.S.)

___High school or GED ___Graduate degree (M.A., M.S., Ph.D.)

___Vocational, technical, trade

10. There are a total of 168 hours in a week. What is the average number of **hours per week you spend at work**, including commuting time? _____

11. In an average **weekday**, how much time do you spend with your child(ren) during waking hours? _____

12. In an average **weekend day**, how much time do you spend with your child(ren) during waking hours? _____

13. **Have you or your child's other parent received mental health services (such as therapy, counseling, or medication) to deal with something that was psychologically distressing?**

____ Yes ____ No _____ Don't Know

14. **Have any of your children received mental health services in order to deal with something that was psychologically distressing for the child**?

____ Yes ____ No

Appendix B: Depression, Anxiety, Stress Scales

Please read each statement and circle a number 0, 1, 2, or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 – Did not apply to me at all (NEVER)
1 – Applied to me to some degree, or some of the time (SOMETIMES)
2 – Applied to me to a considerable degree, or a good part of the time (OFTEN)
3 – Applied to me very much, or most of the time (ALMOST ALWAYS)

		N	S	O	AA
1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness in my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (e.g., in the hands)	0	1	2	3
8	I felt that I had nothing to look forward to	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Appendix C: Sample Items from Parenting Stress Index-Short Form

	Strongly Agree	**Agree**	**Not Sure**	**Disagree**	**Strongly Disagree**
I often feel guilty about the way I feel toward my child.	5	4	3	2	1
There are quite a few things that bother me about my life.	5	4	3	2	1
Sometimes I feel my child doesn't like me and doesn't want to be close to me.	5	4	3	2	1
My child gets upset easily over the smallest thing.	5	4	3	2	1
My child makes more demands on me than most children.					

Appendix D: Child Rearing Inventory

Read both parts of each item and decide which statement is true for you. Once you decide which side is most true for you, circle whether this is **Sort of True (S)** or **Really True (R)** for you. *Only circle **S** or **R** for the one side that is most true for you.*

	Really True	Sort of True				Sort of True	Really True
1.	**R**	**S**	When my child does something annoying, it bothers me **more** than it would bother other parents	**or**	When my child does something annoying, it bothers me **less** than it would bother other parents	**S**	**R**
2.	**R**	**S**	It really bothers me when my child won't do what I ask, even after reminders	**or**	It does not bother me much when my child won't do what I ask, even after reminders	**S**	**R**
3.	**R**	**S**	It really bothers me much when my child interrupts me while I'm talking	**or**	It does not bother me much when my child interrupts me while I'm talking	**S**	**R**
4.	**R**	**S**	People tell me I'm too easy on my child when he or she misbehaves	**or**	People tell me I'm too hard on my child when he or she misbehaves	**S**	**R**
5.	**R**	**S**	It really bothers me when my child talks back	**or**	It does not bother me much when my child talks back	**S**	**R**
6.	**R**	**S**	It does not bother me much when my child yells or talks loud	**or**	It really bothers me when my child yells or talks loud	**S**	**R**
7.	**R**	**S**	I punish or reprimand my child less than I need to	**or**	I punish or reprimand my child more than I need to	**S**	**R**
8.	**R**	**S**	It does not bother me when my child interrupts me while I'm talking on the phone	**or**	It really bothers me when my child interrupts me while I'm talking on the phone	**S**	**R**

9.	**R**	**S**	It really bothers me when my child bothers other people by yelling	**or**	It does not bother me much when my child bothers other people by yelling	**S**	**R**
10.	**R**	**S**	It does not bother me much when my child whines because he or she wants something	**or**	It really bothers me when my child whines because he or she wants something	**S**	**R**
11.	**R**	**S**	I let my child get away with more than most parents would let their children get away with	**or**	I am more strict with my child than most parents are with their children	**S**	**R**

Appendix E: Parental Sense of Competence Scale: Mother's Version

Listed below are a number of statements. Please respond to each item, indicating your agreement or disagreement with each statement in the following manner:

If you strongly agree, circle the letters **SA**
If you agree, circle the letter **A**
If you mildly agree, circle the letters **MA**
If you mildly disagree, circle the letter **MD**
If you disagree, circle the letter **D**
If you strongly disagree, circle the letter **SD**

1.	The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.	SA	A	MA	MD	D	SD
2.	Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age	SA	A	MA	MD	D	SD
3.	I go to bed the same way I wake up in the morning – feeling I have not accomplished a whole lot.	SA	A	MA	MD	D	SD
4.	I do not know what it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	SA	A	MA	MD	D	SD
5.	My mother was better prepared to be a good mother than I am.	SA	A	MA	MD	D	SD
6.	I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent.	SA	A	MA	MD	D	SD
7.	Being a parent is manageable, and any problems are easily solved.	SA	A	MA	MD	D	SD
8.	A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.	SA	A	MA	MD	D	SD
9.	Sometimes I feel like I'm not getting anything done.	SA	A	MA	MD	D	SD
10.	I meet my own personal expectations for expertise in caring for my child.	SA	A	MA	MD	D	SD
11.	If anyone can find the answer to what is troubling my child, I am the one.	SA	A	MA	MD	D	SD
12.	My talents and interests are in other areas, not in being a parent.	SA	A	MA	MD	D	SD
13.	Considering how long I've been a mother, I feel thoroughly familiar with this role.	SA	A	MA	MD	D	SD

14.	If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent.	SA	A	MA	MD	D	SD
15.	I honestly believe I have all the skills necessary to be a good mother to my child	SA	A	MA	MD	D	SD
16.	Being a parent makes me tense and anxious.	SA	A	MA	MD	D	SD

Appendix F: Parental Sense of Competence Scale: **Father's Version**

Listed below are a number of statements. Please respond to each item, indicating your agreement or disagreement with each statement in the following manner:

If you strongly agree, circle the letters **SA**
If you agree, circle the letter **A**
If you mildly agree, circle the letters **MA**
If you mildly disagree, circle the letter **MD**
If you disagree, circle the letter **D**
If you strongly disagree, circle the letter **SD**

1.	The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.	SA	A	MA	MD	D	SD
2.	Even though being a parent could be rewarding, I am frustrated now while my child is at his/her present age.	SA	A	MA	MD	D	SD
3.	I go to bed the same way I wake up in the morning – feeling I have not accomplished a whole lot.	SA	A	MA	MD	D	SD
4.	I do not know what it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	SA	A	MA	MD	D	SD
5.	My father was better prepared to be a good father than I am.	SA	A	MA	MD	D	SD
6.	I would make a fine model for a new father to follow in order to learn what he would need to know in order to be a good parent.	SA	A	MA	MD	D	SD
7.	Being a parent is manageable, and any problems are easily solved.	SA	A	MA	MD	D	SD
8.	A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.	SA	A	MA	MD	D	SD
9.	Sometimes I feel like I'm not getting anything done.	SA	A	MA	MD	D	SD
10.	I meet my own personal expectations for expertise in caring for my child.	SA	A	MA	MD	D	SD
11.	If anyone can find the answer to what is troubling my child, I am the one.	SA	A	MA	MD	D	SD
12.	My talents and interests are in other areas, not in being a parent.	SA	A	MA	MD	D	SD
13.	Considering how long I've been a father, I feel thoroughly familiar with this role.	SA	A	MA	MD	D	SD

14.	If being a father of a child were only more interesting, I would be motivated to do a better job as a parent.	SA	A	MA	MD	D	SD
15.	I honestly believe I have all the skills necessary to be a good father to my child	SA	A	MA	MD	D	SD
16.	Being a parent makes me tense and anxious.	SA	A	MA	MD	D	SD

Appendix G: Child Behavior Vignettes with Written Analogue Questionnaire and Problem Determination

For the following scenarios please keep in mind your child who is closest in age to 8 years old. You will be asked to imagine that the scenarios describe your child behaving in particular ways.

The questions reflect judgments people often make when looking for an explanation about why a child behaved as he/she did. For example, suppose you are walking down the street one day and see a child fall down. You could judge whether the child is at fault for falling (responsible), or whether the fall was due to causes beyond the child's responsibility. You might wonder if the child could help falling or not, for example, was he goofing around (because it was within the child's control) or was the fall caused by something outside of the child's control?

Did he/she fall because he/she wanted to (intentionally), or was it due to an accident, perhaps there was a crack in the sidewalk (unintentionally)? You could also make the judgment as to whether the child should be held responsible for the fall or not. Similarly, should you, as the parent, be held responsible for the fall?

There can be many things that influence behavior at the same time, and we acknowledge that it can be difficult to make these types of judgments. There are no right or wrong answers, and if you have difficulty judging, just go with your first impression.

Read each scenario as if it were a new behavior on a new day, and try to vividly imagine your child exhibiting the behavior in the scene described. After each scenario, answer the following questions and circle the number that best reflects your thoughts. There are no right or wrong answers, we are just looking for your beliefs and thoughts.

1. ***You pick your child up from the car line at school, and see he is crying.***

a. Do you think this behavior was caused more by characteristics of your child (ability, intelligence, personality etc.) or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

2. You drive up your neighbor's driveway to pick up your child, and your child is arguing with his friend.

a. Do you think this behavior was caused more by characteristics of your child (ability, intelligence, personality etc.) or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

3. When you open your child's backpack, you see a test with a low score.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

4. Your child sits by himself at lunch.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

5. Your child doesn't eat his favorite meal.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

6. You look out the window and see your child fall down.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

7. You walk in the room and your child has an ice pack on his head.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

8. You hear your child threaten to "tell his parents" unless another child does what he says.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

9. You walk into the room and your child is holding his new toy and it is broken.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

10. You open the door to your child's classroom and see him take a notebook out of the hands of another child.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

<u>FEMALE CHILD VERSION</u>

1. You pick your child up from the car line at school, and see she is crying.

a. Do you think this behavior was caused more by characteristics of your child (ability, intelligence, personality etc.) or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

2. You drive up your neighbor's driveway to pick up your child, and your child is arguing with her friend.

a. Do you think this behavior was caused more by characteristics of your child (ability, intelligence, personality etc.) or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

3. When you open your child's backpack, you see a test with a low score.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

4. Your child sits by herself at lunch.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

5. Your child doesn't eat her favorite meal.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior is mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

6. You look out the window and see your child fall down.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

7. You walk in the room and your child has an ice pack on her head.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

8. You hear your child threaten to "tell her parents" unless another child does what she says.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

Do you think this behavior was mostly permanent/persisting or mostly temporary?

c.

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

9. You walk into the room and your child is holding her new toy and it is broken.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

10. You open the door to your child's classroom and see her take a notebook out of the hands of another child.

a. Do you think this behavior was caused more by characteristics of your child or characteristics of the situation?

1	2	3	4	5	6	7	8	9
Something about the situation								Something about the child

b. Was this behavior and the events that followed something that was more within the child's control or something not within the child's control?

1	2	3	4	5	6	7	8	9
Not at all within child's control								Completely within the child's control

c. Do you think this behavior was mostly permanent/persisting or mostly temporary?

1	2	3	4	5	6	7	8	9
Very likely to change								Not at all likely to change

d. How much do you think your child intended/meant to bring about this behavior and the events that followed?

1	2	3	4	5	6	7	8	9
Not at all intentional								Completely intentional

e. How much do you perceive your child's behavior in this scenario to be an emotional or behavioral problem?

1	2	3	4	5	6	7
Not at all a problem						Very serious

Appendix H: Institutional Review Board Approval Letter

USF
UNIVERSITY OF SOUTH FLORIDA

RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

12/17/2014

Lindsey Steding
USF Department of Psychology
4202 E Fowler Ave 4118G
Tampa, FL 33620

RE: **Expedited Approval for Initial Review**
IRB#: Pro00020049
Title: The Relationship between Parental Attributions and Perceptions of Child Behaviors

Study Approval Period: 12/17/2014 to 12/17/2015

Dear Ms. Steding:

On 12/17/2014, the Institutional Review Board (IRB) reviewed and **APPROVED** the above application and all documents outlined below.

Approved Item(s):
Protocol Document(s):
Steding Parenting Study Protocol

Consent/Assent Document(s)*:
Steding parenting study consent form **granted a waiver

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent document(s) are only valid during the approval period indicated at the top of the form(s). **Waivers are not stamped.

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110 and 21 CFR 56.110. The research proposed in this study is categorized under the following expedited review category:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your study qualifies for a waiver of the requirements for the documentation of informed consent as outlined in the federal regulations at 45CFR46.117(c) which states that an IRB may waive the requirement for the investigator to obtain a signed consent form for some or all subjects if it finds either: (1) That the only record linking the subject and the research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern; or (2) That the research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval by an amendment.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John A Schinka, Ph.D.

John Schinka, Ph.D., Chairperson
USF Institutional Review Board

Appendix I: License Agreement for the Parenting Stress Index-Short Form

PAR
Creating Connections. Changing Lives.

16204 N. FLORIDA AVENUE • LUTZ, FLORIDA 33549
Telephone: 813.968.3003 • Fax: 813.968.2598 • Web: www.parinc.com

LICENSE AGREEMENT

THIS AGREEMENT, made this November 13, 2014, by and between Psychological Assessment Resources, Inc., a Florida Corporation, with its principal offices located at 16204 North Florida Avenue, Lutz, Florida 33549, hereinafter referred to as PAR, and Lindsey H. Steding, M.S., with her principal offices located at the University of South Florida, Psychology Department, 4202 E. Fowler Ave., PCD 4118G, Tampa, FL 33620, hereinafter referred to as Licensee.

1) RECITALS

PAR has developed and holds all copyrights and distribution rights to certain psychological tests and related materials as listed in Schedule A, hereinafter called "Test". The Test consists of PAR's items, scoring keys, scales, profiles, standard-score conversion tables, norms tables, interpretive information, and related materials created, prepared, devised, and combined by PAR for the administration, scoring, reporting, and analysis of the Test, and includes the words, symbols, numbers, and letters used to represent the Test. Licensee desires to develop automated procedures for the secure and encrypted administration of the Test through Licensee's secure internet assessment website. The access to Licensee's website will be by invitation only in connection with Licensee's research titled, *The Relationship between Attributions, Parental Characteristics, and Problem Recognition* and to subjects for this research purpose only (the "Limited Purpose(s)"). Unless permitted to do so by a separate license agreement, Licensee only has the right to use the Test for the Limited Purpose described above.

In consideration of the mutual covenants and promises expressed herein and other good and valuable considerations, it is agreed as follows:

2) LICENSE

PAR hereby grants to Licensee, subject to the terms of this Agreement, a non-transferable, non-exclusive license to place the Test on Licensee's Website for the Limited Purpose described in Section 1 above. Licensee agrees to hold secure and treat as proprietary all information transferred to it from PAR. Licensee shall carefully control the use of the Test for the

Limited Purpose described in this Agreement. Licensee's use of the Test will be under the supervision or in consultation with a qualified psychologist or other qualified individual and consistent with the then current edition of the Standards for Educational and Psychological Testing published by the American Psychological Association.

3) TERMS AND TERMINATION

The initial term of this Agreement shall extend from November 24, 2014, through July 15, 2015, and may be extended only by mutual agreement of the parties. Not withstanding any other provision of this Agreement, this Agreement may be terminated if any of the following events occur:

(a) Termination is mutually agreed to by the parties.

(b) Licensee defaults in the performance of any of its duties hereunder.

On the effective date of expiration or termination of this Agreement pursuant to subsections (a) and (b) above, all rights in this Agreement revert to PAR. Computer software programs written by or for Licensee remain the property of Licensee. Licensee warrants that upon expiration or termination of this Agreement under subsections (a) and (b) above, and except as set forth in any separate license agreement relating thereto, all portions of the Test licensed hereunder shall be removed from Licensee's Website. Failure to cease all uses of the Test shall constitute copyright infringement.

4) TERMINATION RIGHTS

In the event of termination pursuant to paragraph 3 above for any reason, PAR shall not be liable to Licensee for compensation, reimbursement or damages for any purpose, on account of any expenditures, investments, leases or commitments made or for any other reason whatsoever based upon or growing out of this Agreement.

5) CONDITIONS OF USE

PAR shall have the right to review, test, and approve that portion of Licensee's Website which includes the Test. Following PAR's approval of

that portion of Licensee's Website containing the Test, the manner in which the Test appears on such Website shall not be changed in any material way without prior approval of PAR.

The computer programs developed by Licensee and used in any phase of administration and scoring of the Test shall be fully tested by Licensee and shall be encrypted and reasonably protected from access, intrusion and changes by persons who are not authorized agents of Licensee. In addition to the foregoing, Licensee shall exert all reasonable commercial efforts to prevent the Programs, and any accompanying code for the administration of the Test from being accessed, viewed or copied by others. Licensee warrants the accuracy of such scoring and reporting.

6) PROPRIETARY RIGHTS

PAR is the owner of all right, title and interest in the Test. Licensee shall acquire no right or interest in the Test, by virtue of this Agreement or by virtue of the use of the Test, except the right to use the Test in accordance with the provisions of this Agreement. Licensee shall not modify or revise the Test in any manner without written approval by PAR. All uses of the Test by Licensee shall inure to the benefit of PAR. Licensee agrees not to challenge or otherwise interfere with the validity of the Test or PAR's ownership of them.

7) ROYALTIES

Licensee agrees to pay PAR a royalty fee for use of the Test and copyrighted materials contained therein, at the rate of $1.95 per each test administration of the Test. Licensee will also provide PAR with an itemized accounting of all administrations of each Test administered by Licensee during the term of this agreement. Licensee shall pay to PAR Two Hundred Ninety-Two US Dollars and Fifty Cents ($292.50) as an initial license fee ($1.95 per administration for 150 administrations), which is due and payable upon the signing of this License Agreement. Licensee shall also pay PAR $1.95 per each test administered for any tests administered above 150 by July 30, 2015.

8) ACCOUNTING

Licensee shall develop secure computerized accounting methods acceptable to PAR. Such accounting methods must include an electronic counting mechanism which will accurately record the number of administrations of each Test used. Licensee will keep accurate financial records of all transactions relating to the use of the Test, and PAR shall have the right to examine the software and records of Licensee pertaining to the use of the Test. Licensee will make such software and records accessible to PAR or its nominee during normal working hours upon not less than five (5) business days' prior written notice. Licensee shall retain such software and records for at least one year from the date this Agreement expires or the effective termination date.

The Website shall contain the following copyright notice:

> "Adapted and reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the Parenting Stress Index Fourth Edition Short Form (PSI-4-SF) by Richard R. Abidin, Ed.D., Copyright 1990, 1995, 2012 by PAR, Inc. Further reproduction is prohibited without permission of PAR, Inc."

9) INDEMNITY

Licensee agrees to indemnify PAR and hold PAR harmless against any claim or demand or against any recovery in any suit (including taxes of any kind, reasonable attorney's fees, litigation costs, and other related expenses) that may be:

(a) brought by or against PAR, arising or alleged to have arisen out of the use of the Test by Licensee;

(b) sustained or incurred by PAR, arising or alleged to have arisen in any way from the breach of any of Licensee's obligations hereunder; or

(c) incurred by PAR in any litigation to enforce this Agreement, including litigation against Licensee.

10) ASSIGNMENT

Licensee shall not assign this Agreement or any license, power, privilege, right, or immunity, or delegate any duty, responsibility, or obligation hereunder, without the prior written consent of PAR. Any assignment by PAR of its rights in the Test shall be made subject to this Agreement.

11) GOVERNING LAW

This Agreement shall be construed according to the laws of the State of Florida of the United States of America. Venue for any legal action relative to this Agreement shall be in the appropriate state court in Hillsborough County, Florida, or in the United States District Court for the Middle District of Florida, Tampa division. Licensee agrees that, in any action relating to this Agreement, the Circuit Court in Hillsborough County, Florida or the United States District Court for the Middle District of Florida, Tampa Division, has personal jurisdiction over Licensee, and that Licensee waives any argument it may otherwise have against the exercise of those courts' personal jurisdiction over Licensee.

12) SEVERABILITY

If any provision of this Agreement shall, to any extent, be invalid and unenforceable such provision shall be deemed not to be part of this Agreement, and the parties agree to remain bound by all remaining provisions.

13) EQUITABLE RELIEF

Licensee acknowledges that irreparable damage would result from unauthorized use of the Test and further agrees that PAR would have no adequate remedy at law to redress such a breach. Therefore, Licensee agrees that, in the event of such a breach, specific performance and/or injunctive relief, without the necessity of a bond, shall be awarded by a Court of competent jurisdiction.

14) ENTIRE AGREEMENT OF THE PARTIES

This instrument embodies the whole Agreement of the parties. There are no promises, terms, conditions, or obligations for the Test licensed hereunder other than those contained herein; and this Agreement shall supersede all previous communications, representations, or agreements, either written or verbal, between the parties hereto, with the exception of any prior agreements that have not previously been terminated by written consent of both parties or by one party if the terms of the agreement allow. This Agreement may be changed only by an agreement in writing signed by both parties.

15) NOTICES AND MODIFICATIONS

Any notice required or permitted to be given under this Agreement shall be sufficient if in writing and if sent by certified or registered mail postage prepaid to the addresses first herein above written or to such addresses as either party may from time to time amend in writing. No letter, telegram, or communication passing between the parties hereto covering any matter during this contract, or periods thereafter, shall be deemed a part of this Agreement unless it is distinctly stated in such letter, telegram, or communication that it is to constitute a part of this Agreement and is to be attached as a right to this Agreement and is signed by both parties hereto.

16) SUCCESSORS AND ASSIGNS

Subject to the limitations on assignments as provided in Section 10, this Agreement shall be binding on the successors and assigns of the parties hereto.

17) PARAGRAPH HEADINGS

The paragraph headings contained in this Agreement are inserted only for convenience and they are not to be construed as part of this Agreement.

18) AUTHORIZATION AND REPRESENTATION

Each party represents to the others that it has been authorized to execute and deliver this Agreement through the persons signing on its behalf.

IN WITNESS WHEREOF, the parties have executed this Agreement in duplicate on the date first herein above written.

ACCEPTED AND AGREED:

BY: Lindsey H Steeding

LINDSEY H. STEDING, M.S.

Title: Psychology Doctoral Student & Principal Investigator

DATE: 11/16/14

ACCEPTED AND AGREED:

BY:

R. BOB SMITH III, PH.D.

Title: CHAIRMAN AND CEO

DATE: 11-21-2014

PAYMENT RECEIVED: VISA

PAR CUSTOMER No.: 30777

SIGNATURE OF PROFESSOR REQUIRED:

I hereby agree to supervise this student's use of these materials. I also certify that I am qualified to use and interpret the results of these tests as recommended in the *Standards for Educational and Psychological Testing*, and I assume full responsibility for the proper use of all materials used per this Agreement.

BY:

Printed Name: Marc S Karver, PhD

SCHEDULE A

The Test licensed to Licensee pursuant to the above license consist of PAR's items, scoring keys, scales, profiles, standard-score conversion tables, norms tables, and related materials created, prepared, devised, and combined by PAR for the administration, scoring, reporting, and analysis of the Test, and include the words, symbols, numbers, and letters used to represent the Test. However, PAR and Licensee acknowledge and agree that Licensee may use only the PAR items and scoring information for the Test as appropriate for the Limited Purpose. The Test referred to in the body of this Agreement is defined as follows:

1) Parenting Stress Index, Fourth Edition Short Form (PSI-4-SF)
Record/Profile Form

Permission is also granted for you to include up to a total of three (3) sample items from the PSI-4-SF in the appendix of your dissertation.