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The Relationship Between Adolescent Mental Health, Parental Depression, and Family Environment for Adolescents Accessing Intensive Mental Health Treatment

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THE RELATIONSHIP BETWEEN ADOLESCENT MENTAL HEALTH, PARENTAL
DEPRESSION, AND FAMILY ENVIRONMENT FOR ADOLESCENTS ACCESSING
INTENSIVE MENTAL HEALTH TREATMENT

By

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This dissertation is dedicated to Eric and Hank, the two loves in my life.

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ABSTRACT

This study explored the relationship between adolescent mental health, parental depression, and family environment for children and adolescents accessing intensive mental health treatment. The study had two aims. Aim one was to identify the severity of externalizing behaviors versus internalizing behaviors in children and adolescents accessing intensive mental health treatment and to determine the nature of gender differences in such behaviors. Aim two was to explore the relationship between adolescent mental health, parental depression, and family environment. Results indicated that children and adolescents accessing intensive mental health treatment were more likely to exhibit externalizing behaviors than internalizing behaviors, and female adolescents were more likely to exhibit externalizing behaviors than were male adolescents. In relation to the second aim, there was a significant relationship between parental depression and internalizing behaviors in children and adolescents, such that parents who reported more symptoms of depression were more likely to report that their children and adolescents exhibited internalizing behaviors. Family environment and gender had the greatest influence on externalizing behaviors such that families with female adolescents and who reported lower levels of connection within the family were also more likely to report that their children and adolescents exhibited externalizing behaviors. Lastly, parents who perceived that their children and adolescents were exhibiting externalizing behaviors were more likely to report less access to relationships both internally (i.e. their spouse) and externally (i.e. childcare, friends). Conversely, only one of the internalizing behaviors, depression, was related to access to internal and external family relationships. Parents who perceived that their children and adolescents were displaying more depressive symptoms were also more likely to report less access to relationships. Findings from the current study highlight the need to understand the families of children and adolescents who access intensive mental health treatment to better tailor prevention and intervention efforts.

CHAPTER ONE

INTRODUCTION

Epidemiologists estimate that one out of five children or adolescents globally will meet the diagnostic criteria for a mental health disorder as specified by the Diagnostic and Statistical Manual of Mental Disorders (DSM) (American Psychological Association, 2013; Belfer, 2008; Costello et al., 1996). The United States Department of Health and Human Services (1999) described mental health disorders among children and adolescents as "serious deviations from expected cognitive, social, and emotional development." One in every ten children and adolescents in the United States (U.S.) are expected to experience a mental health disorder impacting their ability to function in family, school, or social settings (Costello et al., 1996; US Department of Health and Human Services, 1999). In recent decades studies have provided evidence for an increase in services for mental health disorders for children and adolescents such as the increased use of prescription medication to manage mental health disorders among children and adolescents (Parens & Johnston, 2008), as well as the increased number of days spent in hospitals to treat such disorders among children and adolescents (Perou et al., 2013).

Children and adolescents who experience severe mental health disorders are referred to intensive mental health treatments such as inpatient psychiatric care, residential treatment centers (RTC*), and/or intensive home or community-based treatments. Evidence from Ontario, Canada, shows that approximately two percent of children and adolescents with moderate to severe mental health disorders access RTC (Children's Mental Health Ontario, 2005). Estimates are higher in the US with about eight percent of children and adolescents expected to access RTC (Burns, Hoagwood, & Mrazek, 1999). Although RTC serve less than 10% of the children and adolescents receiving mental health services, they account for 25% of the mental health care budget for all children (Burns et al., 1999; Shabat, Lyons, & Martinovich, 2008).

An abundance of research has focused on the outcomes of children and adolescents after discharge from RTC (e.g., Preyde et al., 2011; Sunseri, 2004; Thomson, Hirshberg, & Qiao, 2011); however, far less is known about the family characteristics and environments of these vulnerable children and adolescents. Researchers who have explored the family characteristics or environments of these youth have shown that they are likely to have experienced poverty in their

***For the purpose of this dissertation RTC will be used to denote residential treatment center in the singular and plural.**

health disorder (Baker, Wulczyn, & Dale, 2005; Dale, Baker, Anastasio, & Purcell, 2007; Griffith et al., 2009), engaged in alcohol abuse, experienced domestic violence, and/or experienced incarceration (Child Welfare League of America [CWLA], 2005; Connor, Doerfler, Toscano, Volungis, & Steingard, 2004). Other researchers have documented the influence of family characteristics and environments on the development and maintenance of mental health disorders in children and adolescents (Farrell & Barnes, 1993; Hetherington & Martin, 1986; Prange et al., 1992). Similarly, researchers have documented that children or adolescents with mental health disorders influence their families (Goldberg, 1991). Further, researchers have suggested that family functioning can have a significant influence on a family's ability to access treatment (Nickerson, Colby, Brooks, Rickert, & Salamone, 2007) and treatment outcomes for a child or adolescent (Sunseri, 2004).

The Child and Adolescent Service System Program (CASSP) is a US initiative developed to reform the ways in which services are offered to children and adolescents with moderate to severe mental health disorders (Clausen, Dresser, Rosenblatt, & Attkisson, 1998) due to the high cost of residential and inpatient treatment settings and the high level of confinement within such facilities (Pottick, Hansell, Gaboda, & Gutterman, 1993). The goal was to enhance services and improve the implementation of child-centered, family-focused, and community-based care, as well as to provide individualized plans of care that are tailored to the needs and demands of each family. Since the development of CASSP, policy makers and system administrators have been called on to establish more effective and efficient community-based care to serve children and adolescents in the least restrictive level possible (Clausen et al., 1998).

Although efforts to promote community-based care through CASSP are honorable, RTC serve as a valuable and important specialized treatment for children and adolescents who need care in an out-of-home placement setting (Stroul & Friedman, 1996). Residential treatment centers were developed for children and adolescents who experience severe mental health disorders. These disorders include externalizing behaviors and/or internalizing behaviors. Externalizing behaviors include aggression, attention-deficit hyperactivity disorder (ADHD), conduct disorder (CD), oppositional defiant disorder (ODD), and severe school problems; whereas internalizing behaviors include depression, anxiety, somatic complaints, and withdrawal (Achenbach, 1991; Leadbeater, Kupermine, Blatt, & Hertzog, 1999). A common feature among RTC is that they offer 24 hour care and service to children and adolescents in group settings

(Griffith et al., 2009) as home and community-based services may not suffice in meeting their clinical needs. In these instances, children and adolescents are offered care in more restrictive, structured treatment environments such as a RTC.

Several family characteristics may place children and adolescents at greater risk to develop mental health disorders. For example, children with parents who experience severe mental health disorders are at-risk to develop mental health disorders themselves (Beardslee, Versage, & Gladstone, 1998). Parents with mental health disorders may influence their children's access to services due to personal barriers such as lack of awareness of potential treatment options, lack of awareness of symptoms of mental health disorders, and/or contextual variables such as socioeconomic status (Hinshaw, 2005; Logan & King, 2002). In addition, parents may experience stigma regarding their mental health or the mental health of their children (Hinshaw, 2005). Further, parents with mental health disorders are less likely to engage in responsive parenting practices or have difficulty modeling appropriate emotion regulation for their children than parents who do not experience mental health disorders (Goodman & Gotlib, 2002). They may lack the skills or knowledge to discuss their own mental health disorders with their children which is related to children and adolescents in such environments experiencing a lack of support in managing their own mental health disorders (Hinshaw, 2005). Lastly, children and adolescents are not likely to identify a need for mental health treatment (Crider, Milazzo-Sayre, Foley, & Manderscheid, 2006; Raviv, Sills, Raviv, Wilansky, 2000), thus parental mental health can play a significant role not only in the development, but also in the treatment of mental health disorders in children and adolescents.

An additional family characteristic which may affect mental health in children and adolescents is the family environment. The family environment may include factors such as the extent to which family members feel connected, or the extent to which the family is influenced by conflict (Beavers, Hampson, & Hulgus, 1990). Family relationships and family functioning are related to the development of mental health disorders as well as to treatment outcomes. Thompson and colleagues (2007) found that children and adolescents whose parents experience psychopathology, whose families exhibit low levels of functioning, and whose families report a lack of social support are at risk to experience mental health disorders such as externalizing behaviors and internalizing behaviors. Despite the directional relationship proposed by

Thompson and colleagues, it is important to note that mental health disorders in children and adolescents also have the ability to influence the family environment.

The purpose of the study was to contribute to the literature by exploring the proportion of two separate forms of mental health disorders (externalizing behaviors and internalizing behaviors) of children and adolescents accessing intensive mental health treatment through RTC, and to describe the relationship between adolescent mental health, parental depression, and family environment. In a critical review of the literature (Helfrich, 2012), only nine articles were identified between 2000 and 2012 in peer reviewed journals that focused specifically on the family characteristics and environments of adolescents who accessed RTC for adolescents between the ages of 11 and 20. Findings from this critical review highlighted three important issues. First, adolescents in RTC experienced varied and complicated family structures (Wells & Whittington, 1993; Preyde et al, 2011). Secondly, these adolescents were not only managing their own mental health disorders, but also risk factors within their family environments (e.g. substance abuse, domestic violence, incarceration). Lastly, parents of these adolescents lacked skills or knowledge in effective communication (Coll, Powell, Thobro, & Haas, 2010), attachment patterns (Zegers et al., 2008), and normative development during childhood or adolescence (Coll et al., 2010). Werner-Wilson and Morrissey (2005) stated that an important piece of understanding treatment for mental health disorders during adolescence is having awareness about how these disorders develop, which risk factors are associated with these disorders, and what aspects of attachment (such as the quality of the parent-child relationship) influence these disorders. Related to treatment in RTC, Hussey and Guo (2002) recommended that to limit the number of placements and to decrease the time spent in placements, researchers must first understand the profiles of these children and adolescents and their families. A better understanding of the relationship between adolescent mental health, parental depression, and family environment for children and adolescents referred to such placements may redirect current prevention and intervention strategies.

Study Purpose

It is important to understand the interaction between mental health in parents and their children as well as the extent to which family environment is related to adolescent mental health. A primary purpose of this study was to contribute to the research focused on children and adolescents and their families who access intensive mental health treatment such as RTC.

Although adolescents are often admitted to RTC via legal guardians (e.g. caseworkers) this study focused on children and adolescents referred to RTC who resided with a biological parent or a primary caregiver, and this individual completed assessments during the intake phone call or at admission to treatment. Data were obtained regarding severity of symptoms of externalizing behaviors and internalizing behaviors in the child or adolescent, the severity of parental depression, and family environment prior to the admission of the child or adolescent to treatment. This study also explored the nature of gender differences in externalizing behaviors and internalizing behaviors for children and adolescents who access RTC. Lastly, the study explored the relationship between adolescent mental health, parental depression, and family environment. In relation to these goals, three specific questions guided this study:

1. What is the proportion of children and adolescents who experience severe symptoms of externalizing behaviors versus internalizing behaviors within this sample? Externalizing behaviors are defined as regulating attention, impulse and activity level, cooperativeness, and conduct. Internalizing behaviors are defined as separation from parents, managing anxiety, and managing mood. For a further explanation of these behaviors please see Table 1.
2. What is the nature of gender differences in externalizing behaviors and internalizing behaviors for children and adolescents who access RTC? In which behaviors do these differences occur?
3. What is the relationship between adolescent mental health, parental depression, and family environment for children and adolescents accessing intensive mental health treatment?

CHAPTER TWO

REVIEW OF THE LITERATURE

The following review of relevant literature begins with an overview of the theoretical frameworks that guided this dissertation, namely, the family ecology theory, attachment theory, and developmental psychology. Then, the current literature related to adolescent mental health, parental depression, and family environment is presented with special attention to children and adolescents accessing intensive mental health treatment when available. Lastly, the rationale, research questions, and hypothesis of the study are presented.

Theory

Family Ecology Theory

Bronfenbrenner (1988) asserted that “the family is the most humane, the most powerful, and by far the most economical system known for making and keeping human beings human” (p. 262). The first theoretical framework that guided this dissertation was family ecology theory. Family ecology theory integrates human development and family relationships. Ecological systems theorists posit that development during childhood occurs within a system of complex relationships. These complex relationships are influenced by the surrounding environment context in which the child is embedded, the home, childcare setting, school, neighborhood, and the community (Bronfenbrenner, 1988). One of the underlying propositions of this theory is that human development takes place through enduring, reciprocal interactions with other individuals. These interactions should occur regularly over extended periods of time (Bronfenbrenner, 1994).

Bronfenbrenner described the individual’s environment as “..... a set of nested structures each inside the next, like a set of Russian dolls” (Bronfenbrenner, 1979, p. 3). There are four levels of socially organized subsystems; microsystem, mesosystem, exosystem, and macrosystem, with the microsystem having the most immediacy to the developing individual and the macrosystem having the least (Bronfenbrenner, 1989). For the current study, the microsystem, or the immediate environment in which the individual operates, was the family. The other levels, although not a focus of the current study, will be outlined. The mesosystem represents the interaction between two microsystems (e.g. the family and the RTC). The exosystem is the interaction between multiple settings, one of which does not directly include the child (e.g. the parent’s workplace). Although the child does not directly interact with this setting,

the setting still influences development through the parent's behaviors. Lastly, the macrosystem is the larger cultural context and includes values or norms of the society in which the child and the family is embedded (Bronfenbrenner, 1989).

Theoretically, the actions of one family member can influence other members and promote change (Bronfenbrenner, 1979). Family relationships can either promote or hinder child or adolescent development (Bronfenbrenner, 1988). Bronfenbrenner emphasized that parent-child or adult-child relationships are among the most important factors which contribute to child development. Normative child development is dependent upon the degree to which parents are emotionally interested and invested in spending time with their children as well as the extent to which parents are willing to present their children with challenges (Bronfenbrenner, 1998). Further, he asserted that parent-child interactions have implications for the development of child and family functioning. Prior to accessing intensive mental health services, the functioning within the family system is likely to influence the severity of symptoms experienced by these children and adolescents.

Bronfenbrenner suggested that for development to occur "normally" children need "the enduring, irrational, involvement of one or more adults in care of and in joint activity with the child" (p. 262), highlighting the importance of active involvement by an adult with a strong investment in the child. The views proposed by Bronfenbrenner are not models of family process or family development; rather, they offer scholars a framework to understand the ways in which intrafamilial processes are influenced by extrafamilial conditions and environments (Bubloz & Sontag, 1993). In addition, this theory is not based on a particular family type, thus it can be used with diverse family structures. Using family ecology theory allows professionals to see the family system and the context in which the family system is embedded as the identified patient rather than the adolescent. Additionally, using family ecology theory allows researchers to view mental health disorders as associated with or precipitated by dysfunction within the family system rather than associated with or precipitated by dysfunction or pathology within the individual (Whitechurch & Constantine, 1993). Applied to the current study, the inclusion of family environment permitted an exploration of the potential influence of the family system on child or adolescent outcomes.

Attachment Theory

In Volume I of his three volume attachment series, Bowlby (1969) asserted that, “What is believed to be essential for mental health is the infant and young child should experience a warm, intimate and continuous relationship with his mother (or permanent mother substitute) in which both find satisfaction and enjoyment” (p. xi – xii). He proposed that individuals have an internal motivation to create bonds with other individuals, and that such connections are among the most influential experiences throughout the lifespan (Bowlby, 1969). Attachment patterns are typically defined as secure or insecure (Ainsworth, Blehar, Waters, & Wall, 1978). A parent’s sensitivity or ability to respond to or meet the attachment needs of his or her child promptly and appropriately has been deemed critical in the development of secure attachment (Ainsworth et al., 1978). Conversely, insecurely attached infants tend to experience fragile and uncertain relationships with their primary caregivers (Ainsworth et al., 1978), and are characterized by a lack of stable or consistent sensitivity by parents. Children and adolescents who are insecurely attached tend to display anxious behaviors during difficult situations. This display of anxiety is likely related to the child or adolescent having doubts that his or her primary caregiver will be available when needed (Bowlby, 1988). Thus, factors that influence the development of attachment include: availability of a consistent caregiver, quality of the care received, temperament of the infant, and context of the family (e.g. attachment patterns of the caregiver) (Ainsworth et al., 1978).

In relation to the study of mental health disorders (psychopathology), adolescents who report high levels of internalizing behaviors or report experiencing depression are likely to have a preoccupied style of attachment (Allen, Moore, Kuperminc, & Bell, 1998) whereas adolescents who report high levels of externalizing behaviors (e.g. engagement in aggressive or delinquent behaviors) are more likely to have a dismissive style of attachment (Rosenstein & Horowitz, 1996). Preoccupied (resistant) and dismissive (avoidant) attachment are forms of insecure attachment. Preoccupied attachment has been correlated with inconsistent parenting. Individuals with preoccupied attachment often have difficulty separating from their attachment figure; however, these individuals also do not tend to find comfort in their attachment figure during times of distress (Ainsworth et al., 1978). Dismissive attachment has been correlated with parental rejection and hostility, and individuals with dismissive attachment tend to avoid

engaging with others affectively and fail to connect with an attachment figure due to avoidance (Ainsworth et al., 1978).

Cummings and Cicchetti (as cited in Cicchetti, Toth, & Lynch, 1995) proposed that attachment is a transitional process rather than an unchangeable trait. They suggested that although individuals begin to establish working models of attachment in infancy, these models can transform with subsequent experiences over time as the child becomes more autonomous. Working models are “an individual’s conscious and unconscious mental representations ‘of the world and of himself in it, with the aid of which he perceives events, forecasts the future, and constructs his plan’ (Bowlby, 1973, p. 203)” (p. 9). Thus, such models are developed through experiences, although the individual may not be cognizant of them. Also this definition suggests that once established these models are used to interpret life experiences, predict future experiences, and create plans to manage such experiences. Again, the transitional nature of attachment as proposed by Cummings and Cicchetti, suggests that these working models are mutable with new experiences.

Working models. Working models are created based on how an individual organizes his or her interactions and relationships with others. Working models can offer an individual insight into his or her relationship such as clarifying expectations about the availability of the attachment figure, gaining an understanding of how to effectively obtain emotional responses from the attachment figure, clarifying the commitment to the relationship, and setting an emotional tone for the relationship. These insights are then used by the individual to organize the relationship. Further, these insights are carried forward and generalized to other social interactions (Lynch & Cicchetti, 1991). Early working models provide an individual with a framework of how to act and react in future social relationships and settings, and these models inform the individual about his or her ability to be successful in acting and reacting in more general social interactions (Lynch & Cicchetti, 1991).

Attachment theorists suggest that working models carry across the lifespan (Sroufe, 1989) and guide individuals in their personal relationships. This is particularly true for individuals who experience aversive events in their life (e.g. abuse or neglect) but have not processed such events. The influence of aversive experiences is replayed in future relationships (Brandell & Ringel, 2007). Because adolescence is a time of great change physically, cognitively, and psychosocially (Papalia, Olds, & Feldman, 2009), one must consider the

transitions an adolescent will experience. Primarily, adolescents will have different social responsibilities to their peer groups than in prior stages of life (Brandell & Ringel, 2007). Adolescents transition from old attachment bonds with their family system to new attachments with friends, peers, romantic interests, and society at large. It is important to note that this transition does not suggest that the adolescent loses their familial attachments; rather, they begin to integrate new relationships into these models. Individuals who strive for autonomy during this phase of life are likely to have a secure attachment within their family system (Allen, Hauser, Bell, & O'Connor, 1994). Further, an adolescent's ability to form stable peer relationships during adolescence may be heavily rooted in his or her earliest attachment patterns (Gavin & Furman, 1996).

Developmental Psychopathology

Family ecology theory and attachment theory provide frameworks to help scholars understand the influence of the parent-child relationship on development during childhood and adolescence; however, an additional theory, developmental psychopathology, is needed to explain the development of mental health disorders during childhood and adolescence. Sroufe and Rutter (1984) suggested that developmental psychopathology is 1. concerned with development and 2. concerned with developmental deviations. In their seminal publication, Sroufe and Rutter defined developmental psychopathology as the "study of the origins and course of individual patterns of behavioral maladaptation, whatever the age of onset, whatever the causes, whatever the transformations in behavioral manifestation, and however complex the course of the development pattern be" (p. 18). Additionally, they stress the importance of understanding the underlying processes which influence the development and maintenance of mental health disorders across the lifespan. Since the development of the field of developmental psychopathology, the definition of developmental psychopathology has evolved to "the study of adaptive and maladaptive functioning from the perspective of developing systems over the life-span" (Kazdin, Kraemer, Kessler, Kupfer, & Offord 1997, p. 376).

Developmental psychopathology is a convergence of several approaches to better understand normative development, maladaptation, and factors which promote or hinder development (Achenbach, 1990). Developmental psychopathology is an integration of several paradigms and theories including biomedical, behavioral, psychodynamic, sociological, family systems, and cognitive (Achenbach, 1990). Proponents of this model are invested in learning

about the factors that influence human development across the lifespan, the outcomes of the influences of these factors, and the processes that change the influences of these factors over the lifespan (Kazdin et al., 1997). In addition, the developmental psychopathology model is systemic and fluid, and emphasizes that interactions occur within and outside of the individual which contribute to the development of psychopathology (Masten, 2006). Developmental psychopathologists suggest that the development of mental health disorders is the result of a complex interaction among many factors, some genetic and some contextual (George, Herman, & Ostrander, 2006). One factor which has received considerable attention is the family environment. Several scholars have identified a relationship between mental health disorders during childhood and adolescence and family environment (see Emery 1982; Hetherington & Martin, 1986 for reviews). The family environment may be influenced by communication, parent-child conflict, marital discord, parental psychopathology, parenting practices, and financial strain (Gavazzi, 2006; George et al., 2006; Campbell 1990). Specifically, communication in family environments of children and adolescents with mental health disorders is likely to include conflict, and be indirect or unclear (Coll et al., 2010; George et al., 2006). Similarly, parents of these children and adolescents tend to engage in coercive parenting practices and lack knowledge about appropriate discipline or effective ways to control their emotions when parenting (George et al., 2006; Griffith et al., 2009).

The development of externalizing behaviors and internalizing behaviors is initiated by a variety of risk factors. Kazdin and colleagues pulled from the work of scholars and defined risk factors as “a characteristic, experience, or event that, if present, is associated with an increase in the probability (risk) of a particular outcome over the base rate of the outcome in the general (unexposed) population” (p. 377). Risk factors can come from multiple sources including biological factors, psychological factors, and sociological factors. Biological characteristics influence the development of externalizing behaviors and internalizing behaviors during childhood and adolescence. Specifically, genetic risk factors have been identified as playing an important role in the development of psychopathology.

The exact etiology of mental health disorders is not known. Considerable research has been conducted to reveal several contributors including genetic, biological, environmental, and gene-environment interactions (see Costello, Foley, & Angold, 2006; Rutter, 2002 for reviews). Developmental psychopathology provides an integrative, theoretical explanation for normal and

abnormal development (Cicchetti, 1984), and it can be used to understand the factors contributing to the development of externalizing behaviors and internalizing behaviors during adolescence. Cicchetti (1984) stated, “There is, of course, a sense in which any scientist must be a developmentalist: because causes are prior to effects, anyone who would understand or explain a certain organism or state of affairs should be able to describe its causal origins (p. 2).” It is important to note that in this statement, Cicchetti is not suggesting a cause and effect relationship. Instead, Cicchetti is proposing that pathology is a process that must be understood in its temporal aspect. Similar to family ecology theorists, developmental psychopathologists honor that the maturation of development occurs within larger systems including family, peer groups, and schools. To understand the development of psychopathology in adolescence, one must first have an understanding of normative development. In addition, one must understand how the psychopathology developed through the course of development. In a more recent review Cicchetti and Rogosch (2002) examined a developmental psychopathology perspective and noted that in recent decades there has been an increase in the number of studies that have explored normative development in adolescence as well as psychopathology. Despite this increase, evidence from researchers that have explored adolescence, development, and psychopathology is still scant relative to other areas of the lifespan.

Adolescent Mental Health, Parental Depression, and Family Environment

Adolescent Mental Health

The developmental stages of childhood and adolescence are characterized by transition and reorganization (US Department of Health and Human Services, 1999). Mental health disorders often begin in childhood, and if not treated, influence development and functioning during adolescence and adulthood (see Costello, Foley, & Angold, 2006 for a review). It has been estimated that 50% of mental health disorders begin prior to the age of 14 (National Institute of Mental Health, 2006). The majority of adolescents will not experience maladaptation; however, in general, adolescence tends to be a time of increased mood disruptions and engagement in risk behaviors (Arnett, 1999; Hall, 1904; Resnick et al., 1997). This finding is highlighted by the fact that although one of out every five children and adolescents experience mental health disorders, only one of ten will experience disruption in family, school, or social settings (US Department of Health and Human Services, 1999). Additionally, adolescents commonly experience an increase in conflict with parents (Arnett, 1999). Cicchetti and Rogosch

(2002) proposed that the increased mood disruptions and the increased engagement in high risk behaviors is linked to adolescents experiencing externalizing behaviors and internalizing behaviors.

Intensive mental health treatment such as RTC were developed to serve the needs of children and adolescents with moderate to severe mental health disorders (Connor et al., 2004; Dale et al., 2007; Harr, Horn-Johnson, Williams, & DeJager, 2011; Preyde, Adams, Cameron, & Frensch, 2009; Preyde, Frensch, Cameron, Hazineh, & Riosa, 2011). They also tend to engage in aggressive and delinquent behaviors and exhibit depression, anxiety, and withdrawal resulting in common diagnoses of disruptive behavioral disorders, affective and anxiety disorders, and psychotic disorders (Connor et al., 2004; Dale et al., 2007; Jewell & Stark, 2003). Specifically related to externalizing behaviors and internalizing behaviors, children and adolescents who access RTC display clinically significant levels of symptoms of externalizing behaviors (Preyde et al., 2011; Preyde, Adams, Cameron, & Frensch, 2009), and some forms of internalizing behaviors such as depression (Preyde et al., 2011; Preyde et al., 2009). Researchers have shown that for children and adolescents accessing intensive mental health treatment these disorders are not isolated to a specific mental health disorder, but a range of problems that include a multitude of mental health disorders. Connor and colleagues (2004) found that 92% ($n = 397$) of children and adolescents accessing RTC received one mental health diagnosis, 39% received two diagnoses, 32% received three diagnoses, and 20% received four diagnoses. These findings highlight the high levels of comorbidity of mental health disorders in this population.

The data for the current study were initially collected to explore long term outcomes of children and adolescents accessing intensive mental health treatment; thus, the severity of externalizing behaviors and internalizing behaviors in this sample has already been explored. Preyde and colleagues (2009) found that the parents of the children and adolescents reported clinically significant levels of symptom severity on externalizing behaviors; however, parents did not report clinically significant levels of symptom severity on internalizing behaviors. Importantly, these findings included reports from parents as well as report from case managers. Many studies which have explored mental health in children and adolescents accessing intensive mental health treatment have utilized reports from a parent of the child or adolescent *or* a legal guardian such as a caseworker. The current study is focused solely on reports from parents or primary caregivers of children and adolescents accessing RTC.

Mental Health and Attachment

One study focusing on the attachment patterns of children and adolescents who access intensive mental health treatment such as RTC was conducted by Zegers and colleagues (2008). The authors proposed that an individual's history with insecure attachment influences how he or she emotionally, cognitively, and socially interacts with others. They suggested that working models direct children's and adolescents' behaviors in order to maximize attention and minimize neglect. When a child or adolescent experiences distress and his or her attachment figure is not available, he or she will seek out alternative sources. The authors concluded that how children and adolescents perceived their attachments influenced their behavior during these developmental stages; specifically, how they managed their feelings with staff in the RTC and/or peers in the RTC. They suggested that if mental health professionals can understand children's and adolescents' attachment experiences then we can better understand and predict their behaviors while in treatment. Taken together with the transitional nature of attachment presented by Cummings and Cicchetti as well as the potential negative impacts of unprocessed adverse life experiences, RTC could be seen as a time to reestablish working models for these children and adolescents and their families through therapeutic processing of adverse life experiences as well as psychoeducation on the meaning and impact of attachment patterns; however, this would first require an understanding of current working models and the experiences that have shaped these models.

Gender Differences and Mental Health

Researchers have identified that male adolescents are more likely than female adolescents to be diagnosed with autism, hyperactivity, antisocial behavior, language problems, and learning disabilities (Dekovic, Buist, & Reitz, 2004; Leadbeater et al., 1999; Wicks-Nelson & Israel, 2000). Conversely, female adolescents are more likely to receive a diagnosis of anxiety or depression (Gavazzi, Bostic, Lim, & Yarcheck, 2008; Wicks-Nelson & Israel, 2000). During preadolescence, girls and boys are equally likely to experience depression (Angold & Rutter, 1992); however, by age 14, female adolescents become more likely than male adolescents to experience depression and other internalizing behaviors (Angold & Rutter, 1992; Wade, Cairney, & Pevalin, 2002). In addition, researchers have demonstrated that male children and adolescents are more likely to engage in externalizing behaviors than female children and adolescents (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993; Zahn-Waxler, 1993).

Some of the differences referenced above can be attributed to biological differences between male adolescents and female adolescents; however, socialization also may play an important role. A child's gender is influential even prior to birth. After birth, a child's gender directs the activities he or she participates in and what opportunities he or she is introduced to by his or his caregiver, teacher, and other members of the community (Cowan & Hoffman, 1986; Leaper & Friedman, 2007). By early childhood, children are aware of their own gender, appropriate behaviors based on their own gender, appropriate behaviors of the other gender, and have knowledge about gender stereotypes (Papalia et al., 2009). Morris (1964, 1965) suggested that engagement in delinquent acts by women is deeply rooted in socialization. Morris contributed three important ideas related to engagement in delinquent behaviors. First, Morris suggested women have less access to engage in delinquent acts; thus, they do so with less frequency. Second, Morris suggested that women receive greater disapproval from society for engagement in delinquent behavior than their counterparts. Lastly, Morris suggested that moral standards are set higher for women, thus when women engage in delinquent acts they are more likely to experience shame and guilt, which may detour from future engagement. Similarly, Weisner (2003) asserted that females are often more heavily and quickly sanctioned for engaging in activities commonly related to externalizing behaviors (e.g. physical violence, running away, substance abuse). These heavy sanctions lead to the subsequent increase of internalizing behaviors. In Weisner's study (2003) it was found that the trajectory of externalizing behaviors and internalizing behaviors for female adolescents tends to be circular in nature. Female adolescents who reported high levels of delinquency also were likely to report high levels of depressive symptoms; however, over time girls experienced a de-escalation of delinquency which led to lower levels of reported depression.

Wicks-Nelson and Israel (2000) suggested that exploring gender differences is a complex topic due to several issues. Namely, they highlighted that research focused on externalizing behaviors and internalizing behaviors is conducted with clinical populations. Parents will often seek out treatment when the disorder is disruptive to the family, thus children and adolescents exhibiting externalizing behaviors are more commonly brought in for treatment. In addition, because male adolescents access treatment at increased rates, disorders are described according to the behaviors exhibited by male adolescents, thus female adolescents may not meet the diagnostic criteria for such disorders.

Few investigators have explored the differences between male adolescents and female adolescents accessing intensive mental health treatment for mental health disorders. For example, Baker and colleagues (2005) explored covariates of length of stay in RTC, and several variables were considered including age, race, type of abuse experienced, and prior placements experienced; however, the authors did not explore the nature of gender differences. The lack of research that examines the nature of gender differences may be related to male adolescents outnumbering female adolescents in placement settings. The Child Welfare League of America suggested this difference does not implicate that male adolescents are “better suited” for RTC, rather they asserted RTC typically serve one gender, and historically there has been a greater need for centers that serve male adolescents, thus there are currently more facilities which offer services to male adolescents. Findings in the literature are unclear regarding gender differences in mental health disorders between male adolescents and female adolescents accessing intensive mental health treatment such as RTC. Some studies identify that female adolescents are more likely to experience affective or anxiety disorders whereas male adolescents are more likely to experience disruptive behavioral disorders (Connor et al., 2004). Conversely, findings from other studies have failed to identify gender differences in mental health disorders (Harr et al., 2011; Jewell & Stark, 2003). This lack of clarity regarding male adolescents and female adolescents in RTC suggests that further research is needed to explore ways in which they are similar and different. Additionally, past studies conducted by Preyde and colleagues have not explored such differences. Gaining a better understanding of similarities and differences could help tailor prevention and intervention strategies.

Parental Mental Health: Parental Depression

Depression is the most common mental health diagnosis in the US (Kessler et al., 2003). Within clinical samples, researchers have linked parental depression with mood disorders (e.g. bipolar disorder), substance use, and disruptive behavioral disorders during adolescence (Hirshfeld-Becker et al., 2012; Stolberg, Clark, & Bongar 2002). A child or adolescent who lives with a depressed parent is at greater risk to develop depression and other behavior problems (Beardslee, Bemporad, Keller, & Klerman, 1983; Lieb, Isensee, Höfler, Pfister, & Wittchen, 2002). Individuals who experience depression during childhood or adolescence are more likely to have first and second degree relatives who have experienced depression themselves (Harrington, Fudge, Rutter, Pickles, & Hill, 1990; Neuman, Gellar, Rice, & Todd, 1997).

Downey and Coyne (1990) suggested historically, scholars have identified depression as a “single episode that usually resolves without enduring impairment” (p. 51); however, more recent research highlights the variable and recurrent nature of this disorder (Garber, 2005). Further, the development of depression is influenced by biological, cognitive, interpersonal, and contextual factors (Garber, 2005). Individuals who experience clinical depression are likely to experience five to six episodes of depression over the course of the lifetime (Zis & Goodwin, 1979). The highest prevalence depression occurs in women in their child-bearing years (Kessler, 2003), and depression is most prevalent among women in their child-bearing years who are single and experience economic struggles (Lanzi, Pascoe, Keltner, & Ramsey, 1999).

Families contribute to the development of depression through genetics as well as through the environment. Often there is an interaction between the genetic and environmental factors (Garber, 2005). Garber (2005) proposed a framework to describe the relationship between family and depression. Garber proposed that there are primary pathways between family and depression, and these may include parenting practices, temperament, stress and the response to stress. Children with certain types of temperament (i.e. difficult), which develops early in life and tends to have biological bases, are at higher risk to develop depression (Kendler, Neale, Kessler, Heath, & Eaves, 1993). For example, Kendler and colleagues (1993) found a positive correlation between neuroticism and depression. Although aspects of temperament may influence the development of depression, it is most probable that factors within the environment (e.g. parenting practices, stress) combine and interact with the child’s temperament, and increase the likelihood of the development of mental health disorders (Caspi, 1998; Garber, 2005).

In addition, parental depression can influence parenting practices. Through a review of the literature, Blatt and Homann (1992) concluded that individuals who report experiencing depression tend to also report negative experiences with their parents. Puig-Antich and colleagues (1993) found that adolescents with parents who experience depression are more likely to report poorer family relationships than adolescents with parents who do not experience depression. These adolescents reported less communication within their families and high levels of tension within their families. Additionally, depressed parents were more likely to use corporal punishment.

In addition, parents play an important role in teaching their children how to effectively manage and express emotions with other family members and with peers (Schwartz et al., 2012).

Parents serve an important role in psychosocial development during childhood and adolescence. Specifically, children and adolescents learn about emotion through observing their parents behaviors. Through modeling, parents teach their children about the nature of different emotions, the type of stimuli which elicit particular emotions, and the time in which it is appropriate to exhibit specific emotions. Through observation, children and adolescents learn how to effectively manage and express their own emotions (Eisenberg et al., 1998; Morris et al., 2007).

The relationship between parental depression and the development of children and adolescents has been well studied (Beardslee, Gladstone, & O'Connor, 2011; Downey & Coyne, 1990); however, the influence of parental depression on families with children or adolescents with a mental health disorder and that access intensive mental health treatment is understudied. Several investigators have reported the prevalence of mental health disorders in the parents of children and adolescents in RTC (Baker et al., 2005; Dale et al., 2007; Griffith et al., 2009). These researchers identified that the parents of children and adolescents who access RTC are likely to have a history of substance use or have experienced a hospitalization due to their mental health disorders. However, no studies were identified exploring the relationship between parental depression and adolescent mental health for children and adolescents who access intensive mental health treatment, thus the current study will seek to explore the relationship between parental depression and adolescent mental health.

Mental health disorders in parents can influence children's behaviors (Burstein, Ginsburg, Petras, & Ialongo, 2010). Additionally, mental health disorders in parents are correlated with family violence and maltreatment (Dubowitz et al., 2011) and have been identified as a risk factor for children and adolescents entering out-of-home care (Burns et al., 2004). Specific to children and adolescents accessing intensive mental health treatment such as RTC, results from several studies have shown that children and adolescents referred to RTC are likely to have lived with a parent or parents who experienced mental health disorders (Baker et al., 2005; Connor et al., 2004; Hussey & Guo, 2002) so they may be dealing with the consequences of their own mental health disorders and those of their parents' simultaneously. Jewell and Stark (2003) examined aspects of the family environment by differentiating adolescents with conduct disorder from adolescents with depression. They used a sample of 34 adolescents in one RTC that ranged in age from 13 to 16 years. Jewell and Stark found that the two groups did not vary in terms of demographic characteristics such as age, grade level in

school, gender, special education status, primary residence, or ethnicity; however, they did differ in relation to the ways in which family rules were articulated and the ways in which boundaries were established. Adolescents with conduct disorder reported lower levels of enmeshment with their families. Conversely, adolescents with depression were more likely to report higher levels of enmeshment. Jewell and Stark suggested that enmeshed relationships are most influential when a parent has a mood disorder such as depression as these relationships tend to be inappropriately close and do not cultivate independence. Adolescents from these families may feel pressure to conform to the emotional status of the family.

Family Environment and Mental Health

The development of externalizing behaviors and internalizing behaviors in children and adolescents is complex. Many factors interact to contribute to the development of these behaviors. Such factors can be specific to the individual (e.g. biological or genetic factors), whereas other factors are environmental (Fonagy, Target, Cottrell, Phillips, & Kurtz, 2002). Of importance to this study is a focus on environmental factors, acknowledging the interaction between the individual and the environmental factors. Within the environment, there are risk factors associated with the development of externalizing behaviors and internalizing behaviors, including family experiences. Importantly, adverse family experiences do not *cause* psychopathology but these experiences *influence* psychopathology. Adverse family experiences include parental discord, family violence, financial strain, substance abuse, parent psychopathology, large family size, maltreatment, and the quality of the parent-child relationship including parenting practices (Garbarino, 1995; US Department of Health and Human Services, 1999). Problematic family functioning includes, but is not limited to, ineffective or harsh parenting practices, poor parental monitoring, lack of management within a family system, low levels of involvement, or enmeshment (Henderson, Dakof, Shwartz, & Liddle, 2006; Hughes, Hedtke, Kendall, 2008; Meltzer, Gatward, Goodman, & Ford, 2003; Stein et al., 2000). It is important to note that children and adolescents who experience positive family functioning, but have a parent who experiences depression, are still at an increased risk to experience internalizing behaviors (Hughes et al., 2008; Stein et al., 2000). These findings highlight the influential role parental depression can play in the development of mental health disorders.

It is also likely that the children's and adolescents' mental health disorders influence the environment of the family including parents' ability to engage in activities outside the home as

well as have an influence on internal family relationships with spouses, neighbors, or friends. Children and adolescents who experience mental health disorders may impair their parents' ability to maintain meaningful relationships with their spouse (Meltzer et al., 2003), childcare services, neighbors, and/or relatives (Griffith et al., 2009; Preyde et al., 2011; Tahhan et al., 2010). Parents reported that the behaviors of their children and adolescents impacted their relationships within their family and their community (Preyde et al., 2011; Tahhan et al., 2010). Specifically, parents reported that the behaviors displayed by their children and adolescents negatively affected relationships with a spouse, partner, or other children in the household, and that the behaviors created barriers to support from other family members or friends. The behavioral issues prevented family and friends from wanting to come to the house, plan other activities with the family, or created a barrier to accessing a babysitter for childcare (Preyde et al., 2011; Tahhan et al., 2010). These parents reported that spending time with family or friends felt unfeasible. In the scenario described in these narrative and quantitative reports, parents reported that mental health disorders of children and adolescents were influencing their ability to establish and manage relationships.

Previous Studies Completed with this Sample

The data utilized for the current study have also been utilized for several manuscripts, and in some reports children and adolescents accessing intensive treatment through the child welfare system were also included. These prior studies offer insight into this sample of children and adolescents accessing intensive mental health treatment in Southwestern Ontario. In relation to externalizing behaviors, caregivers (e.g. parents of case managers) reported that their children and adolescents exceeded the clinical cut offs for attention deficit hyperactivity, oppositional defiant disorder, and conduct disorder. In relation to internalizing behaviors, caregivers reported that their children and adolescents exceeded the clinical cut offs for depression; however, the children and adolescents did not meet the clinical cut offs for separation anxiety or managing anxiety (Preyde et al., 2011). In each instance, children and adolescents accessing intensive mental health treatment were exhibiting greater problem severity than provincial norms. In addition, these children and adolescents were experiencing impaired functioning across multiple setting (i.e. school, home, community).

In addition, the children and adolescents reported relevant information about their family structures and environments (Preyde et al., 2011). Many children and adolescents accessing

intensive mental health treatment reported that they were living in a single-parent home that was most commonly headed by a mother. In addition, within these family structures, nearly all youth reported family conflict; however, they also noted the importance of family. The children and adolescents also reported a scarcity of financial resource which influenced housing. Lastly, despite reporting conflicted relationships with parents, the children and adolescents shared hope for better relationships. It was reported in these previous manuscripts highlight that mental health disorders, family structures, and family environments for children and adolescents accessing intensive mental health treatment are varied and complicated.

Other Factors which Influence Mental Health

Other factors that are related to mental health disorders are socioeconomic status and family structure. For example, mental health disorders are more common among adolescents from single-parent families, families with a large number of children in the household, and families headed by parents with less education (Meltzer et al., 2003). Related to children and adolescents who access intensive mental health treatment such as RTC, Wells and Whittington (1993) found that adolescents placed in RTC are more likely to have a lower median income as compared to families in the US. Further, 33% of families in the study were employed. Recently, Preyde and colleagues (2011) reported similar factors among children adolescents and families accessing intensive mental health treatment in Canada including a scarcity of financial resources that impacted housing, availability of material goods, and stress within the family. In line with these reports of adolescents, many of the parents of the children and adolescents accessing intensive mental health services reported earning \$29,999 in salary per year or less (Preyde et al., 2009). In Canada, a family of three with a salary of \$29,999 would be considered low income, or “devote a larger share of income to the necessities of food, shelter, and clothing than the average family would” (Statistics Canada, 2012).

Low socioeconomic status is linked with one’s ability to parent well (Leschied, Chiodo, Whitehead, & Hurley, 2006; Lee et al., 2011). Leschied and colleagues (2006) completed a study focused on the influence of poverty on mothers in Canada. Single women in poverty were more likely to come into contact with the child welfare system and also more likely to be involved in violent relationships. However, children who lived in impoverished homes did not have higher rates of psychopathology, but their parents were more likely to experience challenges in parenting such as difficulty managing and coping with stress (Leschied et al., 2006).

Regarding family structure, Wells and Whittington (1993) reported that only 14% of adolescents in their study lived with both biological parents. In fact, the majority had not lived with their biological father, and they had no contact with their father within 12 months of their placement in RTC. Preyde and colleagues (2011) found similar results. Children and adolescents accessing intensive mental health treatment such as RTC were less likely to live with two biological parents and more likely to be living in a single-parent home that was most commonly headed by a mother.

Current Study

Using data that were collected by Dr. Michèle Preyde and colleagues (Preyde et al., 2009), I explored the relationship between adolescent mental health, parental depression, and family environment for families accessing RTC in Ontario, Canada. Specifically, I explored three questions that are grounded in the current literature on children and adolescents referred to and placed in intensive mental health treatment. These include:

1. What is the proportion of children and adolescents who experience severe symptoms related to externalizing behaviors versus internalizing behaviors within this population?
2. What is the nature of gender differences in externalizing behaviors and internalizing behaviors?
3. What is the relationship between adolescent mental health, parental depression, and family environment?

Question One

Because of a dearth of descriptive information on parent or caregiver reports of children and adolescents who access intensive mental health treatment such as RTC, the general purpose of the first question is to describe this sample.

Question Two

The general purpose of the second question is to explore the nature of gender differences in externalizing behaviors and internalizing behaviors. Although research focused on children and adolescents accessing intensive mental health treatment does not offer a specific direction for this hypothesis (for examples see Connor et al., 2004; Harr et al., 2008; Jewel & Stark, 2003), the research presented on externalizing behaviors and internalizing behaviors with clinical samples suggests that male children and adolescents are more likely to exhibit externalizing

behaviors whereas female children and adolescents will be more likely to exhibit internalizing behaviors (Cantwell & Rutter, 1994).

Question Three

The general purpose of the third question is to explore the relationship between adolescent mental health, parental depression, and family environment. I hypothesized that parents who report higher levels of depression and lower levels of positive connection within the family environment are more likely to report more severe symptoms of externalizing behaviors and internalizing behaviors in their children and adolescents. Specifically, an indirect effect of parental depression was hypothesized. Family environment is dependent upon parental depression; thus parents reporting high levels of depression will report poorer connection within the family environment which, in turn, will be linked with increased symptoms of externalizing behaviors and internalizing behaviors (See Figure 1 & 2). This hypothesis was developed from work previously cited by Jewell and Stark (2003). Jewell and Stark (2003) found that adolescents who experienced Major Depressive Disorder (MDD) were more likely to come from homes that had high levels of enmeshment. This finding was particularly meaningful if a parent in the home also suffered from depression. They proposed that adolescents who suffer from MDD will try to conform to the emotional state of the family, making them more likely to experience depression. In addition, family environment shares a role in the development and maintenance of mental health disorders.

The second purpose of the third question is to explore the relationship between symptom severity in children and adolescents and one aspect of family environment described in Chapter Two, parents' ability to access relationships. Such relationships include those of a spouse, neighbors, friends, or other relatives. I hypothesized that parents who perceive that their children or adolescents were exhibiting symptoms related to externalizing behaviors and internalizing behaviors will also report that they have less access to relationships within the family (internally) and outside the family (externally). This hypothesis is grounded in work previously cited (Preyde et al., 2009; Tahhann et al., 2010) indicating that severe mental health disorders serve as a barrier to important social relationships for parents.

CHAPTER THREE

METHOD

In this study, I explored the proportion of externalizing behaviors and internalizing behaviors in adolescents who access intensive mental health services and the influence of parental depression and family environment on adolescent mental health. Data from an observational, longitudinal study conducted by Dr. Michèle Preyde and colleagues between 2004 and 2007 (Preyde et al., 2009) and funded by the Social Sciences and Humanities Research Council of Canada (SSHRC). Ethical clearance for this study was obtained by the Wilfrid Laurier University Research Ethics Board and from the mental health agencies that participated. In addition, the current study was approved by the Institutional Review Board at Florida State University (see Appendix 1).

Current Study

Participants

Participants were recruited from five mental health facilities in Ontario, Canada, that offer residential treatment and intensive home-based treatment programs. Three of the agencies served children and adolescents between the ages of 5 and 12 years old, and two agencies offered services to adolescents between the ages of 12 and 16 years old. Two strategies were used to recruit participants. In one strategy, children, adolescents, and their families who had been discharged from the agencies between January 1, 2004, and July 31, 2005, were invited to participate. This strategy yielded of 112 families. To yield a larger sample, another strategy was used in which all children and adolescents and their families entering the agencies between August 1, 2005, and December 31, 2006, were recruited. This strategy yielded an additional 98 families. In total, this study included data on 210 families. Only children and adolescents whose parents completed the measures relevant to the proposed study were included in the analyses ($n = 150$). Those entering intensive mental health treatment through the child welfare system ($n = 60$) were excluded. Demographic information for the sample is presented in Table 2 and Table 3 and described in Chapter 4

Description of Services

This sample was comprised of youth who accessed intensive mental health treatment, including both RTC and home-based treatment (HBT). Caregivers who were able and willing

accepted HBT. The data for the present study contains children and adolescents who were ultimately placed in a RTC and those who received HBT.

Residential treatment. Residential treatment centers offer care and services to children, adolescents, and their families through the use of cognitive-behavioral, psychoeducational, and brief and solution focused models of therapy. Residential treatment centers tend to use multi-disciplinary teams to develop treatment plans that meet the individual needs of the child or adolescent and his or her family. These treatment plans include individual and, when possible, family therapy. Children and adolescents are offered structured environments in the RTC setting with children and adolescents living at the RTC and attending school five days a week. Children who could, returned to their family homes on the weekend. On average, the child or adolescent was in treatment between three and nine months.

Home-based treatment. The option for HBT was initiated due to the extensive wait-list for placement in RTC; however, HBT is now offered to all children and adolescents accessing services for severe mental health disorders. Home-based treatment offered care and services to children, adolescents, and their families similar to the care and services offered to the families with children in RTC, but the site of treatment was the families' home. Families who used this service received treatment for three to nine months and were eligible to receive five "booster" sessions after discharge.

Measures

The measures utilized for the current study were administered through two methods. One of the measures utilized for the current study, the Brief Child and Family Phone Interview (BCFPI-3), which contains several different scales, was gleaned from agency records. This standardized measure was already in use by the agencies, and were administered at intake and discharge. The second measure, the KINDL: Quality of Life Questionnaire is administered at discharge from treatment. Although this measure is administered at discharge, caregivers were asked to reflect on the family environment prior to admission to treatment (Preyde et al., 2009).

Adolescent mental health. Adolescent mental health was measured using the Brief Child and Family Phone Interview (BCFPI-3; Cunningham, Pettingill, & Boyle, 2006). It is a semi-structured, standardized interview assessing symptom severity and psychosocial functioning. The interview is typically administered by phone with a parent or primary caregiver, but it can also be completed face-to-face. The measure includes seven subscales: regulation of attention,

impulsivity, and activity level (RAIA); cooperation (CO); conduct (CD); separation from parents (SP); managing anxiety (MA); managing mood (MM); and self-harm (SH). Each of the seven subscales corresponds with a DSM Diagnosis (see Table 1).

The BCFPI-3 was developed from assessments created for the Ontario Child Health Study (OCHS), an epidemiological study of children. Based on data from prior studies, such as the revised Ontario Child Health Study (OCHS-R), each of the seven subscales has acceptable reliability (α ranging from .75 to .83) with the exception of the CD subscale ($\alpha = .56$). Table 1 presents the behaviors assessed by each subscale, sample items, and the reliability for the OCHS-R Study and the current study. The 18-item externalizing behavior scale is comprised of the RAIA subscale (6 items), CO subscale (6 items), and CD subscale (6 items). The 18-item internalizing behavior scale is comprised of the SP subscale (6 items), MA subscale (6 items), and MM subscale (6 items) (Cunningham et al., 2006). Cunningham and colleagues (2006) suggested clinical problems associated with each subscale. For example, parents who report that their children or adolescents struggle to regulate their attention, activity, or impulsivity could be diagnosed with ADHD. Similarly, parents who report that their children or adolescents have difficulty managing their anxiety could be diagnosed with Anxiety Disorder.

The BCFPI-3 is administered by an intake worker who has formal training in children's mental health and who has completed an approved Brief Child and Phone Interview training program. First, the interviewer asks about any general concerns. Based on the concerns presented by the caregiver, the intake worker selects the subscale which corresponds to the caregiver's concern. The manual for the BCFPI-3 offers the intake worker suggested starting points based on the presented concerns. The intake worker asks questions from each subscale even if the caregiver does not report concerns related to the subscale. For the current study, two specific measures were used, the externalizing behavior scale and the internalizing behavior scale. The Total Composite Problem Scores (t-scores) were generated for the externalizing behavior scale and the internalizing behavior scale. A t-score greater than 70 on a subscale indicated a significant behavioral problem (Cunningham et al., 2006).

Parental depression. Within the BCFPI-3 are six questions from the 20-item Center for Epidemiologic Studies Depression scale (CES-D) (Radloff, 1977). This six question scale was created with permission from the CES-D. The revised version of the scale was also utilized in the OCHS-R. Within the OCHS-R sample, the revised measure had good internal consistency ($\alpha =$

.79). The questions were utilized to assess the extent to which the parent experienced a lack of appetite, trouble sleeping, and depressed moods during the past week. Sample items include “You felt depressed” and “You did not feel like eating; your appetite was poor.” This version of the CES-D utilized a four point Likert-type scale, ranging from less than one day last week (1), one to two days last week (2), three to four days last week (3), or five or more days last week (4). Higher scores indicate more severe depression. Cronbach’s alpha for the six question scale used with this sample was good ($\alpha = .86$).

Family environment. The family subscale of the KINDL: Quality of Life Questionnaire for Children (Ravens-Sieberer & Bullinger, 2000) was used to assess family environment. This subscale contains four questions assessing the quality of life for children within their family. The psychometric properties were assessed using two samples, and the Cronbach’s alpha was adequate ($\alpha = .76$) for the family subscale (Ravens-Sieberer & Bullinger, 2000). Sample items include “My child got on well with us as parents/me as a parent” and “My child felt fine at home.” This subscale of the KINDL utilized a five point Likert-type scale, ranging from never (1), seldom (2), sometimes (3), often (4), and all the time (5). Responses on questions in the family subscale were summed. Higher scores indicate of a higher quality of life within the family system (minimum score = 4, maximum score = 20). Cronbach’s alpha for the family subscale of the KINDL used with this sample was adequate ($\alpha = .76$).

Family environment: Access to relationships. The BCFPI-3 was used to assess child and family functioning. Access to relationships was assessed through seven questions that explore the influence of the child’s or adolescent’s mental health on family relationships and activities as reported by the parent or primary caregiver. This subscale has acceptable reliability ($\alpha = .69$) (Cunningham et al., 2006). Two subscales focus on this aspect of the family environment: family activity and family comfort. The family activity subscale included four items that assessed the extent to which the severity of symptoms of externalizing behaviors and internalizing behaviors identified by parents influenced access to external family relationships. Sample items include “How frequently has your child’s behavior prevented his/her brothers or sisters from having friends, relatives, or neighbors come to your home?” and “How frequently has your child’s behavior made you decide not to leave him/her with a babysitter?” Similar to the behavior subscales, the t-score is generated from the questions in the subscales. A t-score greater than 70 indicates that the child or adolescent limits his or her parent’s access to relationships by

preventing family and friends from visiting, impacting the ability to use childcare, or limiting the daily tasks the family can complete. For the current study, the family activity subscale had adequate reliability ($\alpha = .82$). The family comfort subscale is a three item measure that assesses the extent to which the severity of symptoms of externalizing behaviors and internalizing behaviors identified by parents influenced access to internal family relationships. Sample items include: “How frequently have you quarreled with your spouse regarding your child’s behavior?” and “How frequently have neighbors, relatives, or friends expressed concern with your child’s behavior?” Similar to the behavior subscales, the t-score was generated from the questions in the subscales. A t-score greater than 70 on this subscale indicates that the externalizing behaviors and internalizing behaviors are causing conflict within the family system. High t-scores are indicative of greater impairment in accessing family relationships. For the current study, the family comfort subscale had low reliability ($\alpha = .49$).

Control Variables

I included several control variables known to be associated with adolescent mental health, parental depression, and family environment as noted in the review of the literature. These variables are described below.

Gender of the child or adolescent. Gender of the child or adolescent was coded as a dichotomous variable (0 = female or 1= male).

Number of children in the household. The number of children in the household was based on the parent’s report of the number of children currently residing in the household.

Relationship status. Parents reported their relationship status during the intake assessment. Parents had seven options (1 = single, 2 = married, 3 = common law, 4 = divorced, 5 = widowed, 6 = separated, and 7 = other). A dichotomous variable was constructed (0 = single or 1 = partnered).

Socioeconomic status. Parents reported their income during the intake assessment. A dichotomous variable was created (0 = earning \$29,999 or less or 1= earning \$30,000 or more). This variable was created based on standards set forth by Statistics Canada (Statistics Canada, 2012). In Canada, a family of three with a salary of \$29,999 would be considered low income, or “devote a larger share of income to the necessities of food, shelter, and clothing than the average family would” (Statistics Canada, 2012).

Analytic Strategy

Question One: Proportion of Mental Health Disorders

The first aim of this study was to determine the extent to which children and adolescents accessing RTC experience clinically significant levels of externalizing behaviors versus internalizing behaviors. The means and standard deviations for the subscales of the BCFPI-3 were calculated.

Question Two: Differences by Gender

The aim of the second question was to explore the nature of gender differences in externalizing behaviors and internalizing behaviors. Multivariate Analysis of Variance (MANOVA) was used to determine differences by gender across the dependent variables (RAIA, CO, CD, SP, MA, and MM). MANOVA was selected as I was interested in multiple, correlated dependent variables. Two independent MANOVA were conducted as the subscale of externalizing behaviors was not highly correlated with the subscale of internalizing behaviors. For the purpose of this dissertation, I explored if there were differences between male adolescents and female adolescents in relation to symptom severity of externalizing behaviors (RAIA, CO, CD) and internalizing behaviors (SP, MA, MM). In addition, MANOVA allowed me to identify differences between male adolescents and females adolescents on any of the subscales of externalizing behaviors (RAIA, CO, CD) and internalizing behaviors (SP, MA, MM) separately. The control variables were also included in these analyses.

Question Three: Adolescent Mental Health, Parental Depression, and Family Environment

The aim of the third question was to explore the relationship between adolescent mental health, parental depression, and family environment. Path analysis was used to determine the relationship among adolescent mental health, parental depression, and family environment for children and adolescents accessing intensive mental health treatment. Path analysis, a variation of multiple regression, is a statistical method for studying a theoretical, causal relationship between several variables. This technique is primarily used to examine direct and indirect relationships among variables (Lleras, 2005). Similar to regression, path analysis allows a researcher to understand the influence of a set of variables on another (Spaeth, 1975). According to Stage, Carter, and Nora (2004), “The aim of path analysis is to provide estimates of the magnitude and significance of hypothesized causal connections among sets of variables displayed through the use of path diagrams” (p. 5). When path analysis is conducted, a regression

is conducted for each dependent (endogenous) variable in relation to all the other variables in the model. Kline (2005) has suggested a ratio of 20 cases per parameter in the model. In this study, six parameters were utilized with a sample size of 150 participants; thus the sample size was large enough to detect relationships should they exist. Importantly, Kline also noted the accuracy and stability of path analysis decreases when testing a model which includes a large number of parameters and a small sample size. In addition, although path analysis is often referred to as causal modeling, this method cannot be utilized to detect causal effects. Thus results from a path analysis should not be interpreted as the endogenous variable causing the exogenous variable (Stage et al., 2004); rather, findings should be interpreted as a correlation among study variables.

Kline's (2005) indices of good model fit were utilized. To determine model fit, several goodness-of-fit indices were applied. Good model fit is indicated when the root mean square error of approximation (RMSEA) values are less than 0.05, comparative fit indices (CFI) are higher than 0.95, and chi-square (χ^2) value is non-significant. Models were estimated using full information maximum likelihood (FIML) to estimate missing data as it is a sophisticated, model-based approach. This method utilizes all information in the observed cases to obtain the most likely values for the missing data (Duncan, Duncan, Strycker, Li, & Alpert, 1997).

Another aim of the third research question was to explore the relationship between adolescent mental health and a specific aspect of the family environment, access to relationships. Given the dearth of literature on the relationship between adolescent mental health and family environment for this specific population, the pattern of this relationship was explored through canonical correlation analysis (CCA) developed by Hotelling (1935). Canonical correlation analysis, an exploratory technique, can be utilized to assess the relationship between two sets of variables (Thompson, 1984), in this case adolescent mental health (externalizing and internalizing behaviors) and access to relationships (family comfort and family activity). One advantage of CCA is that it allows researchers to explore the true nature of social science research, that outcome variables are likely influenced by multiple variables and have multiple effects (Sherry & Henson, 2005). Canonical correlations are utilized when a researcher has two sets of two or more variables and wants to gain a better understanding about how differences in one set of variables relates to differences in the other set of variables (Leech, Barrett, & Morgan, 2008). Canonical correlations can be utilized to assess how the best linear combination of one

set of variables relates to the best linear combination of the other set of variables. In this case, I was interested in exploring how externalizing behaviors and internalizing behaviors relate to access to relationships (see Figure 4). Terms relevant to the interpretation of a CCA are outlined below.

The squared canonical correlation (R^2_c). The squared canonical correlation (R^2_c) represents the proportion of the variance shared by the two sets of variables. This coefficient corresponds to the R^2 effect in multiple regression. Sherry and Henson (2005) suggested that squared canonical correlations with a value less than .10, less than 10% of the shared variance, is sufficiently weak and should not be interpreted.

A canonical function. A canonical function is a set of standardized canonical function coefficients from the observed predictor and criterion variable sets. The canonical functions are produced based on the number of variables in the smaller variable set. Each function corresponds to the set of standardized weights in multiple regression.

Structure coefficient (r_s). The structure coefficient (r_s) is the bivariate correlation between the two sets of variables. It is equivalent to the Pearson r , thus it can range from negative one to positive one. A value closer to negative one or positive one indicates a stronger relationship. This coefficient is used to help define which variables are most useful in the model.

Squared canonical coefficients (r_s^2). Squared canonical coefficients (r_s^2) are the square of the structure coefficients (r_s) and is interpreted as the portion of shared variance between the variable sets.

A canonical communality coefficient (h^2). The canonical communality coefficient (h^2) can be interpreted as the “proportion of the variance in each variable that is explained by the complete canonical solution or at least across all the canonical functions which are interpreted” (Sherry & Henson, 2005, p.41). This statistic is used in order to understand how useful a variable is within an analysis.

CHAPTER FOUR

RESULTS

In this chapter, the results for the research hypotheses presented in Chapter Two is presented.

Preliminary Analysis

Demographic information for the sample is presented in Table 2 and Table 3 for the entire sample ($N= 150$), the residential treatment (RT) sample ($n= 49$), and the HBT sample ($n= 101$). The majority of children and adolescents accessing intensive mental health treatment were male ($n= 110$). The majority of the sample was adolescents. Adolescents included youth between the ages of 11 and 20 (Papalia et al., 2009). Table 4 presents the frequencies for the children's and adolescents' age. The majority of adolescents were in middle or high school. The majority of parents who responded were mothers ($n= 142$). Nearly half of the parents reported that they were single, and would be considered low-income by standards set forth by Statistics Canada. In relation to employment status, the sample was almost divided evenly with 58% percent of parents reported being employed of which 72% had full-time employment.

Group Differences

To verify if the children and adolescents accessing RT differed from the children and adolescents accessing HBT on demographic variables, one-way analysis of variance (ANOVA) and Fisher's Exact Test statistics were utilized. First, differences in demographic variables (salary, relationship status, gender) were assessed through ANOVA (salary) and chi-square (relationship status and source of income) Fisher's Exact Test (gender) (see Table 2). Fisher's Exact Test should be conducted instead of chi-square if there is a small sample size and/or if there is a relatively uneven split of participants among the levels of the nominal variables (Morgan et al., 2007). As mentioned above, a large majority of the children and adolescents were males, and the majority of parents were females, thus Fisher's Exact Test was selected.

Next, differences in independent and dependent variables were assessed through ANOVA (symptom severity of externalizing behaviors and internalizing behaviors, parental depression, and family environment). No differences were found between children and adolescents accessing RT and HBT (see Table 5). In addition, parents of children and adolescents accessing RT and HBT did not vary significantly in relation to the severity of

depression $F(1, 69) = 1.86, p = .17$. Lastly, family environment as reported by parents did not vary significantly between treatment types $F(1,147) = .86, p = .35$.

Externalizing Behaviors and Internalizing Behaviors (Question 1)

The means and standard deviations for the sample on externalizing behaviors and internalizing behaviors are presented in Table 6. For the entire sample in the current study, parents of the children and adolescents reported that their children were exhibiting clinically significant externalizing behaviors. Specifically, parents reported clinically significant symptoms of RAIA, CO, and CD. Parents reported that their children and adolescents experienced the highest level of symptom severity for behaviors which were reflective of a mental health diagnosis of CD. Parents of children and adolescents accessing HBT reported higher symptom severity of CD than parents of children and adolescents accessing RT. Conversely, for the entire sample, parents did not report that their children and adolescents were exhibiting clinically significant levels of internalizing behaviors. Only parents of children and adolescents accessing RT reported clinically significant internalizing behaviors. Parents of children and adolescents accessing RT and HBT reported their children's and adolescents' symptom severity of MM as clinically significant. In order to explore the percentage of children and adolescents who experienced clinically significant behaviors, a new dichotomous variable was created from the externalizing and internalizing scores. In total, 88% of the sample had parents who reported clinically significant (t-score > 70) externalizing behaviors. Conversely, only 46% of the sample had parents who reported clinically significant (t-score > 70) internalizing behaviors.

Gender Differences (Question 2)

To explore gender differences in externalizing behaviors and internalizing behaviors, two independent MANOVA were conducted. Two MANOVA were conducted as the subscale of externalizing behaviors was not correlated with the subscale of internalizing behaviors. Additionally, the subscales within the externalizing behaviors subscale were conceptually related to each other and correlated at a low to moderate level; thus, these subscales were explored in the same model. This information was also true for the subscales of the internalizing behavior subscale. The covariates were included in each MANOVA. Table 6 presents the means and standard deviations for male adolescents and female adolescents on each subscale of the BCFPI-3 for the entire sample. A significant difference was found on externalizing behaviors, $\Lambda = .91, F(3, 104) = 3.36, p = .02, \text{multivariate } \eta^2 = .09$. Examination of the coefficients for the three

subscales of the externalizing behaviors subscale revealed that RAIA and CD contributed most to distinguishing male adolescents from female adolescents. Specifically, RAIA ($\beta = 5.42$, $p = .007$, multivariate $\eta^2 = .07$) and CD ($\beta = 13.08$, $p = .04$, multivariate $\eta^2 = .04$) contributed significantly toward discriminating male adolescents from female adolescents. In both instances, the β coefficients suggest that female adolescents demonstrated more symptom severity than male adolescents. This finding is also reflected in the means. Conversely, a significant difference was not found on internalizing behaviors, $\Lambda = .97$, $F(3, 103) = .99$, $p = .40$, multivariate $\eta^2 = .03$. Examination of the coefficients for the subscales of the internalizing behaviors subscale revealed that none of the subscales contributed to distinguishing the groups

Parental Depression

Parental depression. The mean score on the CES-D revised for the entire sample was 2.13 ($SD = .75$). The minimum score was 1 and the maximum score was 3.83. This mean score indicates that, on average, parents felt or experienced symptoms related to depression 1 to 2 days over the course of the week. Importantly, although the sample included data from 150 parents, only 71 (47% of the sample) provided responses to questions during the semi-structured BCFPI-3 interview. It is unclear if the questions were not asked or if parents did not respond to these questions. Given the large number of missing data for this variable, ANOVA was conducted to determine if depression scores were missing at random for the relevant variables in the study. Namely, relationship status, externalizing behaviors, internalizing behaviors, family environment, family activity, and family comfort were explored. Depression was coded as a dichotomous variable where missing data was represented by a zero, and all scores represented existing data. Results indicated that there was only a significant relationship between relationship status and scores on the depression scale, $F(19, 130) = 1.66$, $p = .05$. Importantly, the p-value for this analysis was $p = .05$, thus this finding is marginally significant. This is further highlighted by the small or smaller than typical effect size, $\eta^2 = .20$ (Cohen, 1988).

Parental depression and adolescent mental health. To explore the relationship between parental depression and adolescent mental health, bivariate correlations were utilized. Parental depression was significantly and positively correlated with internalizing behaviors, $r(69) = .37$, $p = .002$. In order to explore which internalizing behaviors were significantly correlated, additional bivariate correlations were conducted. Separation from parents, $r(69) = .24$, $p = .05$, and MM, $r(69) = .37$, $p = .001$, were both significantly and positively correlated with parental

depression. These findings indicate that parents who reported experiencing more severe symptoms of depression were also more likely to report that their children or adolescents were exhibiting more severe symptoms of internalizing behaviors.

Family Environment

Family environment was explored in two ways. First, family environment was explored as connection within the family home. Second, family environment was explored as access to relationships. The mean on the KINDL, which was used to explore connection within the family home as reported by parents, was 9.32($SD = 3.04$). The minimum and maximum possible scores on this measure are 4 and 20, respectively. This mean score of 9.32 indicates that parents perceived a moderate level of functioning within the home. In relation to access to relationships, the mean on the family activity subscale was 111.99($SD = 39.58$) which indicates that parents perceived that their children or adolescents limited their access to family relationships by preventing family and friends from visiting, impacting the ability to use childcare, or limiting the daily tasks the family can complete. The mean on the family comfort subscale was 85.70($SD = 13.93$) indicating that parents perceived that their children or adolescents limited their access to internal family relationships such as their spouses.

Adolescent Mental Health, Parental Depression, and Family Environment (Question 3)

Table 7 presents the correlations between all variables in the study. The correlations indicated that externalizing behaviors are significantly and positively related to external and internal family functioning (family activity; family comfort). Parents who reported that their children or adolescents were experiencing severe symptoms of externalizing behaviors also perceived limited access to family relationships both internal and external to the family. Similarly, there was a significant, negative relationship between externalizing behaviors and connection within the family environment (KINDL). Parents who reported that their children or adolescents were experiencing severe symptoms related to externalizing behaviors also perceived a lower quality of life within the family system. Lastly, family activity was positively and moderately correlated with family comfort. Path analysis and canonical correlations were utilized to further explore these relationships.

Path Analysis

Externalizing behaviors. A path analysis was conducted to explore the relationship between parental depression, family environment, and the covariates referenced above on

externalizing behaviors. Specifically, it was hypothesized that there would be an indirect relationship of parental depression on externalizing behaviors through family environment. To test this hypothesis, a path analysis which explored the relationship between parental depression, the covariates, and externalizing behaviors was conducted. Results from this path analysis revealed that there was not a significant relationship between parental depression and externalizing behaviors ($b = 1.86, p = .24$). Because there was not a significant relationship between parental depression and externalizing behaviors, the indirect relationship through family environment was not explored. Literature presented in Chapter 2 suggests that family environment may directly influence externalizing behaviors (Garbarino, 1995; US Department of Health and Human Services, 1999); thus, a path analysis exploring the direct relationship between family environment, the covariates, and adolescent mental health was conducted (see Figure 2). This model is saturated, thus model fit is not reported. For children and adolescents accessing intensive mental health treatment, there was a significant relationship between connection within the family environment (KINDL) and parent's report of externalizing behaviors such that for every one point increase in parent's report of connection within the family environment, which would suggest higher levels of quality of life within the family, externalizing behaviors decreased by .83 points ($b = -.83, p = .004$). One of the covariates, gender, was significant. In the current study, male adolescents were coded as 1. This finding can be interpreted as parents of male adolescents were less likely to report severe symptoms of externalizing behaviors ($b = -6.40, p = .001$). Specifically, being a male adolescent was associated with a 6.40 point decrease in symptom severity as reported by parents. No other variables were significantly associated with externalizing behaviors.

Internalizing behaviors. A path analysis was conducted to explore the relationship between parental depression, family environment, and the covariates referenced above on internalizing behaviors. Specifically, it was hypothesized that there would be an indirect relationship of parental depression on internalizing behaviors through family environment. To test this hypothesis, a path analysis which explored the relationship between parental depression and internalizing behaviors was conducted. Results from this path analysis revealed that there was a significant relationship between parental depression and internalizing behaviors ($b = 10.98, p = .00$). Because this path was significant, the indirect relationship between parental depression and internalizing behaviors through family environment was conducted. The

mediated model had moderate fit [$\chi^2(4) = 5.63$ $p = .23$; CFI = .95; RMSEA = 0.05]. The Tucker Lewis Index (TLI) was not reported as this fit index is not recommended for sample sizes less than 150 participants (Hoyle & Patner, 1995). Results indicate that there was not an indirect relationship, as the path from parental depression to family environment was not significant. Thus, there was not an indirect relationship. Substantively, parents who reported higher levels of depression were not more likely to report lower levels of connection within the family environment. No other variables were significantly associated with internalizing behaviors. The unstandardized coefficients, standardized coefficients, and standard errors for all variables in the model are presented in Table 8.

Canonical Correlations

Canonical correlation analysis, an exploratory technique, can be utilized to assess the relationship between two sets of variables (Thompson, 1984). In this case the variables were adolescent mental health (as measured by externalizing behaviors and internalizing behaviors) and access to relationships (as measured by family comfort and family activity). Results of the analysis yielded two functions (roots) with squared canonical correlations (R^2_c) of .2702 (Root 1) and .0744 (Root 2). These findings suggest that the first function explained 27.02% of the variance and the second function explained 7.44% of the variance within their functions. These squared canonical correlations effects for each root indicate that only the first root is considered noteworthy for the purpose of this dissertation. The second function explained less than 10% of the variance in its function. Sherry and Henson (2005) suggested that this value is sufficiently weak, and does not warrant further interpretation. The full model across all functions (roots) was significant Wilk's $\lambda = .68$ criterion $F(12, 180) = 3.25$, $p = .00$. The r^2 type effect size ($\lambda - 1$) was .32, indicating a medium to typical effect size and that the full model accounted for 32% of the variance shared between the variable sets. It is important to note that the sum of the squared canonical correlations ($27.02 + 7.44 = 34.46$) is larger than the overall effect size named above (32%). This is because the second function does not explain the original observed variance; rather it explains what is left over (Sherry & Henson, 2005). The dimension reduction analysis tests the hierarchical arrangements for statistical significance. The full model (Roots 1 to 2) was statistically significant; however, Root 2, which is tested in isolation, is not statistically significant, $F(5, 91) = 1.46$, $p = .21$, which indicates that Root 2 does not explain a significant amount of the variance shared between the variable sets.

Given that the overall model was significant, the outputs were further explored to understand which variables contribute to the relationship between the two sets of variables. Table 9 presents the standardized canonical function coefficients as well as the structure coefficients for Root 1 and Root 2. The table presents information on the structure coefficient (r_s), the squared canonical structure coefficient (r_s^2), and a canonical communality coefficient (h^2). Both family activity and family comfort had a positive structure coefficient which indicates that the subscales were positively related. Structure coefficients can be interpreted in the same manner as Pearson's r ; thus, values can range from positive one to negative one, and a value closer to one indicates a stronger relationship. The positive structure coefficient indicates that as reports of positive family activity increases, family comfort also increases. Additionally, when considering the externalizing behaviors and internalizing behavior subscales, all the subscales, with the exception of MA, had positive structure coefficients which indicates a positive relationship. This finding suggests that as reports by parents of externalizing behaviors increase, reports of internalizing problems also increase. Although there is a negative relationship between MA and family activity and family comfort, MA does not serve as a primary contributor. The canonical communality coefficient can be interpreted as the "proportion of the variance in each variable that is explained by the complete canonical solution or at least across all the canonical functions which are interpreted" (Sherry & Henson, 2005, p.41). This statistic can be utilized in order to understand how useful a variable is within an analysis. Family activity and family comfort are both relevant criterion variables in Root 1. This finding is supported for family comfort by the squared canonical structure coefficient (r_s^2). When considering the predictor variable set for Root 1, the three subscales of externalizing behaviors (RAIA, CO, CD) all served as primary contributors to the family activity and family comfort scales. Only one of the internalizing behaviors subscales (MM) served as a primary contributor to the family activity and family comfort scales. Both SP and MA accounted for less than .10 (10%), these relationships were too weak to interpret. Since Root 1 is the only root being interpreted, we can assume that externalizing behaviors have the strongest relationship with a family's access to relationships. These findings suggest that RAIA, CO, CD, and MM are the most significant predictors of family activity and family comfort for this sample.

CHAPTER FIVE

DISCUSSION

In this chapter, the results from Chapter 4 are discussed. In addition, the limitations from the current study will be presented. Lastly, clinical implications and future directions will be discussed.

Summary of Findings

Findings from this study contribute to the literature in several ways. In relation to the first aim of the study, several studies, including studies which have utilized these data, have identified that children and adolescents who access intensive mental health treatment experience severe emotional and behavioral disorders; however, this study contributed unique information. Specifically, the parents of children and adolescents from Ontario, Canada, were more likely to report that their children or adolescents were exhibiting clinically significant levels of externalizing behaviors (88% of the sample) than clinically significant levels of internalizing behaviors (46% of the sample). In addition, the parents of children and adolescents from Ontario, Canada, perceived that their children were demonstrating behaviors that would align with the diagnostic criteria for ADHD (RAIA), ODD (CO), conduct disorder (CD), and depressive disorder (MM). In addition, children and adolescents who accessed RT and HBT did not differ in relation to their severity of symptoms as reported by parents. This finding highlights that children and adolescents who access RTC, but receive treatment through the HBT, are demonstrating similar problematic behaviors. Further, this finding highlights that RTC is a valuable, necessary treatment option for children and adolescents who have mental health disorders which influence their ability to function and cannot remain in their family home for a myriad of reasons (e.g. the parent is not available to watch the child) (Preyde et al. 2011).

Regarding the second research question, which explored the nature of gender differences in externalizing behaviors and internalizing behaviors, the current study offers additional insight into the nature of this relationship. Although these data has been utilized for previous studies, prior studies have not explored differences between male adolescents and female adolescents. Contrary to the hypothesis, female adolescents in the current sample were more likely to have parents report that they were exhibiting behaviors that would align with the diagnostic criteria for ADHD (RAIA) and conduct disorder (CD). It is important to note that the reliability for the CD

subscale was low, thus this finding should be interpreted with caution. Additionally, there was a significant difference in number of male adolescents and female adolescents in the study, which may influence findings. The literature presented in Chapter 2 offers a possible explanation for this finding. Females are likely to receive more disapproval from society for their engagement in delinquent acts; thus, it is possible that the female adolescents were not exhibiting more externalizing behaviors; however, because the behaviors are not in accordance with behaviors deemed appropriate by society, they were more easily identified and reported by parents (Morris 1964, 1965). Additionally, Eme (1992) suggested that although mental health disorders are more common among boys than girls, when girls do have mental health disorders they have the potential to be more severely affected. As referenced above, intensive mental health treatment such as RTC serve children and adolescents with moderate to severe emotional and behavioral disorders, thus it is possible that the mental health disorders are more severe in this specific population of female adolescents. Interestingly, no significant difference was found for male adolescents and female adolescents in relation to internalizing behaviors. This finding is surprising as researchers have documented adolescence as a developmental period commonly characterized by increased levels of depression in females (Kessler, McGonagle, Zhao, & Nelson, 1994; Measelle, Stice, & Hogansen, 2006). In female adolescents, internalizing behaviors tend to increase over time from infancy to adolescence (Kovacs & Devline, 1988). This increase in internalizing behaviors may be related to the development of cognitive functioning such that as cognitive functioning improves, children and adolescents become more self-aware and become more capable of remembering positive and negative events (Kovacs & Devline, 1998). However, findings from the current study highlight that the parents of these male adolescents and female adolescents were equally likely to report symptoms related to internalizing behaviors. In addition, findings from the current study reflect that female adolescents are more likely than male adolescents to engage in some externalizing behaviors (ADHD, CD); however, male adolescents and female adolescents were equally likely to demonstrate other forms of externalizing behaviors (ODD).

In addition to the contributions highlighted above, the findings also contribute to the literature by enhancing the understanding of the associations between adolescent mental health, parental depression, and family environment for children and adolescents who access intensive mental health treatment. Related to parental depression, parents reported that they were

experiencing symptoms related to depression 1 to 2 days over the course of the week prior to the BCFPI-3 interview. Given that this study utilized a revised version of the scale that was not been utilized in other studies, it is unclear if these parents met the diagnostic criteria for Major Depressive Disorder (MDD); however, it is clear that these parents were managing their own mental health issues. Related to family environment, the parents of children and adolescents accessing intensive mental health treatment perceived that their family was experiencing a moderate level of functioning. In addition, these parents perceived that their children's and adolescents' mental health disorders were preventing the family from accessing external relationships (i.e. friends, extended family, or childcare) as well as negatively influencing familial relationships within the home (i.e. spouses, siblings). Findings from the path analysis partially supported the hypotheses. I hypothesized that parents who reported higher levels of depression would be more likely to report lower levels of connection within the family environment which would be related to more severe symptoms of externalizing behaviors and internalizing behaviors in their children and adolescents. In relation to externalizing behaviors, an indirect relationship was not found; however, parents who perceived higher levels of connection within the family environment were more likely to report lower levels of externalizing behaviors in their children and adolescents. Importantly, one of the control variables, gender, significantly influenced the model. Parents of female adolescents were more likely to report higher symptom severity of externalizing behaviors.

In relation to internalizing behaviors, parental depression significantly influenced parents' reports of internalizing behaviors in their children and adolescents. Parents who reported experiencing higher levels of depression were also more likely to report higher symptom severity of internalizing behaviors in their children and adolescents. The indirect relationship through family environment was not supported. Thus, parental depression did not influence parents' reports of connection within the family environment. Two studies (Hughes et al., 2008; Stein et al., 2000) provide a possible explanation for this finding. They found that children and adolescents who experience a positive family environment, but have a parent who experiences depression, are still at an increased risk to experience internalizing behaviors (Hughes et al., 2008; Stein et al., 2000).

Lastly, in relation to accessing relationships, parents who perceived that their children and adolescents were exhibiting higher levels of externalizing behaviors (RAIA, CO, and CD)

were more likely to report less access to relationships both internally and externally. Conversely, only one of the internalizing behaviors, MM (Depressive Disorder), was related to access to family relationships both internally and externally. Parents who perceived that their children and adolescents were displaying depressive symptoms were more likely to feel as though they had less access to relationships both internally (i.e. their spouse) and externally (i.e. childcare, extended family). Importantly, there was a significant relationship between parental depression and internalizing behaviors in children and adolescents, thus it is unclear if parents experienced barriers due to their children's or adolescents' mental health disorders, or because of their own personal struggles with their own mental health.

Limitations

Although findings from the current study contribute to the literature, the current study also has limitations which warrant review. First, the data used for the current study were collected by Dr. Preyde and her colleagues between 2004 and 2007. The initial purpose for this data collection was to provide understanding of the long-term community adaptation of children and adolescents who access intensive mental health treatment (Preyde et al., 2009); thus, the initial goal for the collection of these data was not to explore individual and family characteristics which may influence placement in treatment, rather, to explore longitudinal outcomes for children, adolescents, and families accessing intensive mental health treatment. Despite this limitation, measures relevant to the current study were collected prior to treatment, and can aid in the understanding of characteristics and family environments of children and adolescents accessing intensive mental health treatment.

Second, the current study focused on a small sample of children and adolescents who accessed intensive mental health treatment in the province of Ontario, Canada; thus, the findings have limited generalizability. The original sample for the study is considerably larger; however, I thought it was important to focus on children and adolescents who access mental health treatment with their parent or primary caregiver as less information is known about this unique population. In addition, as referenced above, it is important to understand the families of these children and adolescents to better tailor prevention and intervention strategies, thus the sample extrapolated was most relevant. Future studies should continue to strive to collect data from parents and primary caregivers prior to admission to treatment even if these individuals are not present at admission. These data could offer valuable and insightful information about the

influence of the child's or adolescent's family of origin on their behaviors prior to, during, or after treatment.

A third limitation of the current study is that the sample of children and adolescents was predominately male, and the sample of parents was overwhelmingly female (mothers). Additional research which includes a larger sample of female adolescents could offer researchers additional information about the differences between male adolescents and female adolescents, as each hypothesis tested in the current study could be explored by gender. For example, is the family environment significantly different in families with male adolescents than female adolescents, and if so, how does this difference influence behaviors of male adolescents or female adolescents. Similarly, the sample of parents only had two male participants (fathers). The lack of representation of fathers is not surprising given the findings regarding the lack of contact with fathers from the study conducted by Wells and Whittington (1999); however, future studies should try to engage fathers to understand their perspectives on the relationship between adolescent mental health, parental depression, and family environment. Given the lack of relationships between children and adolescents who access RTC and their fathers, it would be interesting to see if the promotion of such relationships could serve as a protective factor for these vulnerable children and adolescents.

A fourth limitation of the current study is that the measures utilized to explore adolescent mental health were based on parents' report of their children and adolescents. Researchers have identified children's and adolescents' self-report of problem behaviors (i.e. externalizing behaviors) tend to be higher than caregiver reports (Rosenthal & Curiel, 2006). Using reports by children and adolescents in the current study may have resulted in higher levels of externalizing behaviors than those reported by the caregivers. In addition, symptoms related to internalizing behaviors do not tend to be observable. Thus, parents may not have readily identified symptoms of disorders used in the current study (i.e. depression). This finding may be particularly true for parents who did not report experiencing depression themselves. Parents who reported higher levels of depression may have been able to identify symptoms their children and adolescents were experiencing. Despite this limitation, it remains important to study the caregiver perceptions of externalizing behaviors and internalizing behaviors because, as referenced in the literature review, caregivers are usually more likely to initiate help-seeking behaviors for their adolescents than the adolescents themselves.

A fifth limitation of the current study is that two of the subscales had low reliability. The CD subscale of externalizing behaviors had an alpha of .65 and the family comfort subscale had an alpha of .49. Cronbach's alpha is a measure of the internal consistency of a scale, and ranges between 0 and 1. Tavakol and Dennick (2011) suggest that a low alpha value can occur when the measure items are not related or when measures items are heterogeneous. It is possible that the questions utilized to assess for CD were not related to each other as the diagnostic criteria for CD includes a variety of behaviors across four different domains; aggression towards people and/or animals, destruction of property, deceitfulness or theft, or violation of family or societal rules (APA, 2013). When assessing for CD, clinicians explore these four domains through fifteen potential criteria behaviors. The BCFPI-3 assesses for CD through six items, and these six items attempt to capture behaviors across the various domains (e.g. destruction of property, deceitfulness or theft, aggression toward people); thus, the items were heterogeneous. Tavakol and Dennick (2011) also suggested that alpha can be influenced by the length of the test such that a short test may result in a low alpha. In the current study, the family comfort ($\alpha = .49$) only consisted of three questions, and could have influenced the alpha value. Given the low alpha for each of these measures, findings for analyses which included these measures should be interpreted with caution.

Lastly, a large number of parents did not respond to questions regarding depression symptoms. As referenced above, the measure utilized, the CES-D, was one part of the BCFPI-3, thus it is unclear if parents were not prompted to respond to these questions or if parents opted to not respond. Given that these parents are likely calling due to high levels of stress in their homes related to their children's and adolescents' emotional and behavioral disorders, they may be less willing to discuss their own mental health disorders as they are in need of help and assistance for their children and adolescents. Schlomer, Bauznan, and Card (2010) suggested that the method used in this dissertation, full information maximum likelihood (FIML), "...estimates parameters on the basis of the available complete data as well as the implied values of the missing data given the observed data" (p. 5). Schlomer and colleagues suggested that when 50% of the data are missing the standard error is often over estimated; thus, findings from the path analyses should be interpreted with caution. Schlomer and colleagues suggested that when there are severe amounts of missing data, auxiliary variables should be used; however, the data set used for this dissertation did not assess parental depression through additional measures.

Clinical Implications

Findings from the current study have significant clinical implications for mental health professionals for children, adolescents, and families who access intensive mental health treatment such as RTC. First, findings from the current study highlight that the parents of children and adolescents who access intensive mental health treatment are may be struggling with their own mental health disorders, specifically, depression. As referenced above, individuals with depression may not access mental health treatment for themselves due to lack of awareness of potential treatment options, lack of awareness of symptoms of mental health disorders, and/or lack of access to mental health treatment due to socioeconomic status (Hinshaw, 2005; Logan & King, 2002). Findings from the current study point to the importance of fully assessing for mental health disorders that parents may be experiencing as these parents may also need support and treatment for themselves (Wilkinson, Harris, Kelvin, Dubicka, & Goodyer, 2013). One barrier to treatment for children and adolescents with severe mental health disorders is communication. Adolescents who live in homes with negative communication are less likely to communicate a need for services than those in homes with positive communication; thus, these families may need help establishing positive communication patterns to ensure adolescents feel comfortable sharing their needs (Seiffge-Krenke, 1989). Specifically related to children and adolescents who access intensive mental health treatment, Coll and colleagues (2010) suggested these families may need help in the process of expressing needs or emotions as this task may be foreign to them. Lastly, parents may benefits from education on the symptoms of their own as well as their children's and adolescents' mental health disorders so that they can be easily identified in the future (Logan & King, 2002). Stark and colleagues (1990) found when parents are offered education on the skills their children and adolescents learn during treatment, the children and adolescents are more successful in positively managing their disorders after treatment than children and adolescents whose families were not taught these skills. Specifically related to children and adolescents accessing RTC, Tahhan and colleagues found that parents requested additional services which focused on education to help them manage their children's and adolescents' disorders. Parents of these children and adolescents have voiced a need for advice, feedback, information, and resources to help them manage their children's behaviors through support groups with families with similar experiences (Shattel, Starr, & Thomas, 2007; Tahhan et al., 2010).

During treatment, mental health professionals should help families address issues related to the family environment. This assistance is most important for families with female children or adolescents who meet the diagnostic criteria for ADHD, CD, and ODD, as parents who reported low levels of connection within the family reported the most severe symptoms of externalizing behaviors in their female children. In addition, parents with children and adolescents who meet the diagnostic criteria for ADHD, CD, and ODD may need help establishing social networks with friends, extended family, and childcare settings. These families may need help in effectively communicating about mental health disorders with the external support systems. Parents of children and adolescents who access intensive mental health treatment report experiencing burn out related to their children's and adolescents' behaviors. Parents reported that this burn out negatively influences their familial relationships (Tahhan et al., 2010). Similarly, couples therapy may be a useful resource for those parents who identify as being in a relationship as these parents noted that their children's and adolescents' behaviors were influencing these relationships negatively. Parents of children and adolescents who access intensive mental health treatment have reported that their children's behaviors cause tension between the parents (Tahhan et al., 2010) Couples therapy could be utilized to process issues related to the emotional and behavioral disorders, as well as to help the couple develop skills for maintaining their own relationships.

Future Directions and Conclusions

The secondary data set used for the current study offers an abundance of relevant, pertinent information that has not been collected in prior studies on this vulnerable population. Findings from the current study highlight the complexity of issues faced by children and adolescents who access intensive mental health treatment. In addition, findings offer mental health professionals relevant information which could impact the selection of clinical interventions. Scholars conducting research on children and adolescents accessing intensive mental health treatment should include similar measures in future studies.

In addition to the measures utilized in the study conducted by Dr. Michèle Preyde and her colleagues, scholars should utilize measures which explore additional aspects of family environment. For example, the current study utilized the Family Assessment Device which is based on The McMaster Model of Family Functioning (MMFF) (Epstein, Bishop, & Levin 1978); however, this measure was not completed by parents during the intake assessment or the

assessment during admission. The MMFF is guided by family systems theory and is focused on several dimensions of family environment that could offer a greater insight into the lives of these children and adolescents. In addition, the MMFF is divided into six dimensions of family functioning including problem solving, communication, roles, affective responsiveness, affective involvement, and behavior control; thus, scholars and mental health professionals could identify specific areas of the family environment which need improvement (Epstein et al., 1978). As referenced above, in the future, scholars should strive to collect data from geographically diverse populations, to allow for findings to have more generalizability. Lastly, scholars should strive to collect data that better represents each gender.

The current study contributed to the literature by offering new insights into the complex relationship between adolescent mental health, parental depression, and family environment for children and adolescents accessing intensive mental health treatment. Findings from the current study highlight the complex nature of mental health disorders in these children and adolescents and their family environments. Findings from the current study can serve two purposes. First, the findings offer insight to scholars conducting research on children and adolescents accessing intensive mental health treatment and directions for future studies based on this insight. Second, the findings offer insight to mental health professionals working in intensive mental health treatment about the nature of children, adolescents, and families who may be accessing their facilities. These findings highlight the importance of helping families to gain skills in effective communication as well as to gain knowledge about mental health disorders so they can better discuss issues related to mental health.

Table 1

Subscales of the Brief Child and Family Phone Interview: Behavior Assessed, Sample Items, and Reliability

Subscale (DSM Diagnosis)	Behavior Assessed	Sample Items Do you notice that your child...	Cronbach's Alpha OCHS (<i>Current Study</i>)
Externalizing Behaviors			
Regulating Attention, Impulsivity and Activity Level (Attention Deficient Hyperactivity Disorder)	Ability to maintain attention and avoid distractions while completing tasks. Ability to regulate impulsive behaviors	Fails to finish things he/she starts? Is impulsive or acts without stopping to think? Jumps from one activity to another? Is easily distracted, has trouble sticking to an activity? Fidgets? Has difficulty following directions or instructions?	.83 (.67)
Cooperativeness (Oppositional Defiant Disorder)	Ability to engage in mutual relationships	Is angry or resentful? Is easily annoyed by others? Argues a lot with adults? Is defiant, talks back to people? Is cranky? Blames others for his/her own mistakes?	.82 (.73)

Table 1 Continued

Subscale (DSM Diagnosis)	Behavior Assessed	Sample Items Do you notice that your child...	Cronbach's Alpha OCHS (<i>Current Study</i>)
Externalizing Behaviors			
Conduct (Conduct Disorder)	Engagement in behaviors that violate rules and norms	Steal things at home? Destroy things belonging to others? Physically attacks people? Damage school or other property? Use weapons when fighting? Broken into someone else's house, building or car	.56 (.65)
Internalizing Behaviors			
Separation from Parents (Separation Anxiety Disorder)	Ability to separate from their parent	Worries about being separated from loved ones? Is scared to sleep without parents nearby? Complains of feeling sick before separating? Is overly upset when away from loved ones? Worries bad things will happen to loved ones? Is overly upset when leaving loved ones?	.87 (.87)

Table 1 Continued

Subscale (DSM Diagnosis)	Behavior Assessed	Sample Items Do you notice that your child...	Cronbach's Alpha OCHS (<i>Current Study</i>)
Internalizing Behaviors			
Managing Anxiety (Anxiety Disorder)	Engagement in worrying about the past, present, and future	Worries about doing things better? Worries about past behavior? Is overly anxious to please people? Is afraid of making mistakes? Worries about doing the wrong thing? Worries about the future?	.77 (.81)
Managing Mood (Depressive Disorder)	Engagement in enjoying life and reflection of general mood	Has trouble enjoying him/herself? Feels hopeless? Seems unhappy, sad, or depressed? Gets no pleasure from his/her usual activities? Has no interest in his/her usual activities? Is not as happy as other children?	.78 (.84)

Table 2

Sample Characteristics: Residential Treatment & Home-Based Treatment

	Residential Treatment and Home-Based Treatment (<i>N</i> = 150)	Residential Treatment (<i>n</i> = 49)	Home-Based Treatment (<i>n</i> = 101)	F or χ^2	<i>p</i>
Variable	<i>N</i> (%)	<i>N</i> (%)	<i>N</i> (%)		
Gender of Youth					.42
Male	110 (27)	37 (76)	73 (72)		
Female	40 (73)	12 (24)	28 (28)		
Gender of Parent					.48
Male	8 (5)	2 (4)	6 (6)		
Female	142 (95)	47 (96)	95 (94)		
Marital Status				.00	.96
Single	22 (15)	6 (12)	16 (15)		
Married	60 (40)	20 (41)	40 (39)		
Common Law	17 (11)	5 (10)	12 (12)		
Divorced	22 (15)	8 (16)	14 (14)		
Widowed	1 (< 1)	0 (0)	1 (1)		
Separated	28 (19)	10 (21%)	18 (21)		
Salary				.46	.50
Less than \$29,999*	55 (40)	14 (32)	41 (43)		
\$30, 000- \$59,999	57 (41)	21 (49)	36 (38)		
\$60,000- \$89,999	17 (12)	5 (12)	12 (13)		
\$90,000 or more	9 (7)	3 (7)	6 (6)		

Table 2 Continued

Variable	Residential Treatment and Home-Based Treatment (<i>N</i> = 150) <i>N</i> (%)	Residential Treatment (<i>n</i> = 49) <i>N</i> (%)	Home-Based Treatment (<i>n</i> = 101) <i>N</i> (%)	F or χ^2	<i>p</i>
Source of Income				1.51	.47
Employment	1 (< 1)	1 (2)	0 (0)		
Insurance					
Employment	95 (66)	34 (70)	61 (64)		
Disability	30 (21)	10 (20)	20 (21)		
Social	10 (7)	0 (0)	10 (10)		
Assistance					
Other	9 (6)	4 (8)	5 (5)		

*\$29,999 is the low income cut-off in Canada

Table 3

Sample Characteristics: Residential Treatment & Home-Based Treatment Part II

Variable	Residential Treatment and Home-Based Treatment (<i>N</i> = 150) <i>M</i> (<i>SD</i>)	Residential Treatment (<i>n</i> = 49) <i>M</i> (<i>SD</i>)	Home- Based Treatment (<i>n</i> = 101) <i>M</i> (<i>SD</i>)	F	<i>p</i>
Youth Age (in years)	13.85 (2.86)	14.14 (2.89)	13.7 (2.84)	.21	.65

Table 3 Continued

Variable	Residential Treatment and Home-Based Treatment (<i>N</i> = 150) <i>M</i> (<i>SD</i>)	Residential Treatment (<i>n</i> = 49) <i>M</i> (<i>SD</i>)	Home- Based Treatment (<i>n</i> = 101) <i>M</i> (<i>SD</i>)	F	<i>p</i>
Parent Age (in years)	41.01 (6.90)	41.39 (6.96)	40.83 (6.90)	.78	.38
Number of children in household	2.05 (1.09)	1.94 (1.11)	1.45 (0.50)	.71	.40

Table 4
Frequency Table for Age of the Children and Adolescents

Age	Frequency	Percent	Valid Percent	Cumulative Percent
7	2	1.3	1.3	1.3
8	5	3.3	3.3	4.7
9	5	3.3	3.3	8.0
10	7	4.7	4.7	12.7
11	16	10.7	10.7	23.3
12	17	11.3	11.3	34.7
13	10	6.7	6.7	41.3
14	17	11.3	11.3	52.7
15	17	11.3	11.3	64.0
16	29	19.3	19.3	83.3
17	14	9.3	9.3	92.7
18	7	4.7	4.7	97.3
19	3	2.0	2.0	99.3

Table 4 Continued

Age	Frequency	Percent	Valid Percent	Cumulative Percent
20	1	.7	.7	100.0

Table 5

Proportion of Externalizing Behaviors and Internalizing Behaviors: Residential Treatment & Home-Based Treatment

	Residential Treatment and Home-Based Treatment	Residential Treatment	Home-Based Treatment	<i>F</i>	<i>p</i>
<i>Variable</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>		
Externalizing Behaviors	81.52 (10.09)*	82.30(8.46)*	81.12(10.86)*	.37	.54
RAIA	72.73 (9.69)*	72.73 (9.47)*	72.72 (9.85)*		
CO	77.45 (10.09)*	78.99 (6.27)*	76.67 (9.01)*		
CD	81.52 (8.24)*	86.78 (23.25)*	87.81 (30.33)*		
Internalizing Behaviors	69.09 (18.30)**	72.00 (15.94)*	67.66 (19.29)	1.48	.23
SP	62.12 (17.96)	62.69 (16.90)	61.82 (18.58)		
MA	61.31 (15.90)	63.53 (15.35)	60.17 (16.14)		
MM	74.89 (20.18)*	78.92 (19.92)*	72.86 (20.13)*		

*Clinically significant symptom severity

**Approaching clinically significant symptom severity

Table 6
Externalizing Behaviors and Internalizing Behaviors by Gender

Variable	Male Adolescents	Female Adolescents
	(n= 88) <i>M (SD)</i>	(n= 33) <i>M (SD)</i>
Externalizing Behaviors		
RAIA	71.17 (9.22)*	76.68 (9.97)
CO	76.71 (7.93)*	79.61 (8.86)
CD	84.00 (26.06)*	96.68 (31.32)
Internalizing Behaviors		
SP	63.28 (18.12)	58.94 (17.68)
MA	63.09 (16.16)	56.94 (14.62)
MM	75.03 (19.86)*	74.63 (21.34)*

*Clinically significant symptom severity

Table 7
Correlations between Study Variables

Variables	1	2	3	4	5	6	7	8
1. Number of Children in HH	–							
2. Salary	-.02	–						
3. Family Environment	.01	.00	–					
4. Family Activity	.10	-.01	.13	–				
5. Family Comfort	.01	.05	-.20*	.331**	–			
6. Parental Depression	-.13	-.08	-.10	.09	-.11	–		
7. Externalizing Behaviors	-.07	.04	-.24**	.25**	.46**	.11	–	
8. Internalizing Behaviors	-.05	-.17	-.06	-.07	.06	.13	.37**	–

Table 8

Unstandardized, Standardized, and Significance Levels for Model in Figure 3 (Standard Errors in Parentheses; N = 150)

Parameter Estimate	Unstandardized (SE)	Standardized	<i>p</i>
Measurement Model Estimates			
Parental Depression → Family Environment	-.28 (.42)	-.07	.49
Children in HH → Internalizing Behaviors	.37 (1.49)	.02	.81
Relationship Status → Internalizing Behaviors	-.87 (3.44)	-.02	.80
SES → Internalizing Behaviors	.94 (3.82)	.03	.81
Parental Depression → Internalizing Behaviors	10.85 (2.47)	.47	.00
Sex of the child → Internalizing Behaviors	-4.75 (3.72)	-.11	.20
Family Environment (KINDL) → Internalizing Behaviors	-.24 (.52)	-.04	.65

Note: $\chi^2(4) = 5.62, p = .23$; CFI = .95; RMSEA = .05

Table 9

Canonical Solution for the Relationship between Externalizing Behaviors and Internalizing Behaviors and access to Relationships

Variable	Coef	Function 1		Function 2			$h^2(\%)$
		r_s	$r_s^2(\%)$	Coef	r_s	$r_s^2(\%)$	
Family Activity	.21	<u>.50</u>	25	1.03	<u>.87</u>	75	100
Family Comfort	.92	<u>.98</u>	96	-.52	-.20	4	100
R ² C			27			7	

Table 9 Continued

<i>Variable</i>	<i>Function 1</i>			<i>Function 2</i>			
	<i>Coef</i>	<i>r_s</i>	<i>r_s² (%)</i>	<i>Coef</i>	<i>r_s</i>	<i>r_s² (%)</i>	<i>h² (%)</i>
RAIA	.39	<u>.61</u>	37	.22	.21	4	41
CO	.42	<u>.76</u>	58	-1.10	<u>-.60</u>	36	94
CD	.30	<u>.64</u>	40	.64	.24	6	88
SP	.26	.30	9	.01	.03	.09	9.09
MA	-.25	-.04	.16	-.26	.03	.09	.25
MM	.33	<u>.52</u>	27	.52	.28	8	35

Note. Structure coefficients (r_s) greater than |.45| are underline. Coef = standardized canonical function coefficient; r_s = structure coefficient; r_s^2 = squared structure coefficient; h.

Figure 1

Model 1: Parental Depression, Family Environment, and Externalizing Behaviors

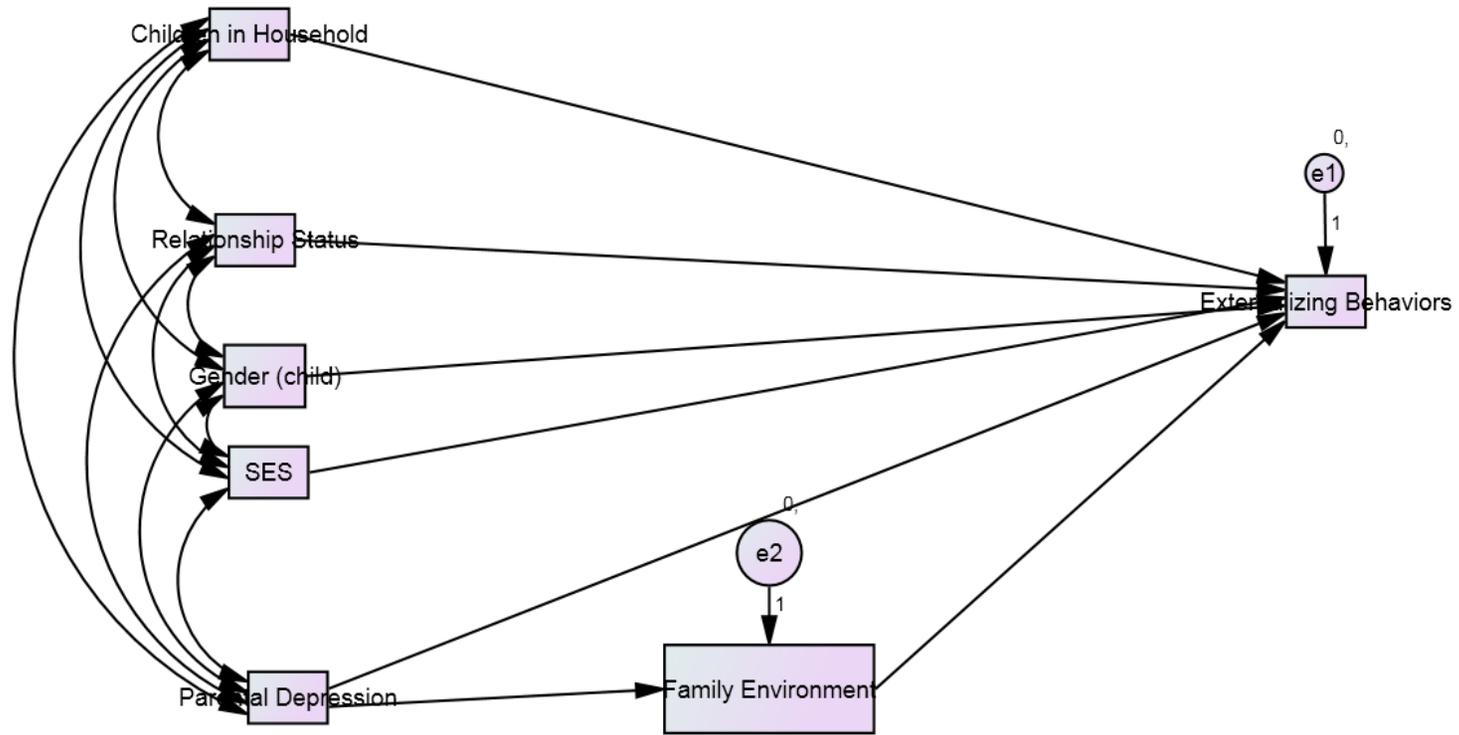


Figure 2

Model 2: Family Environment and Externalizing Behaviors

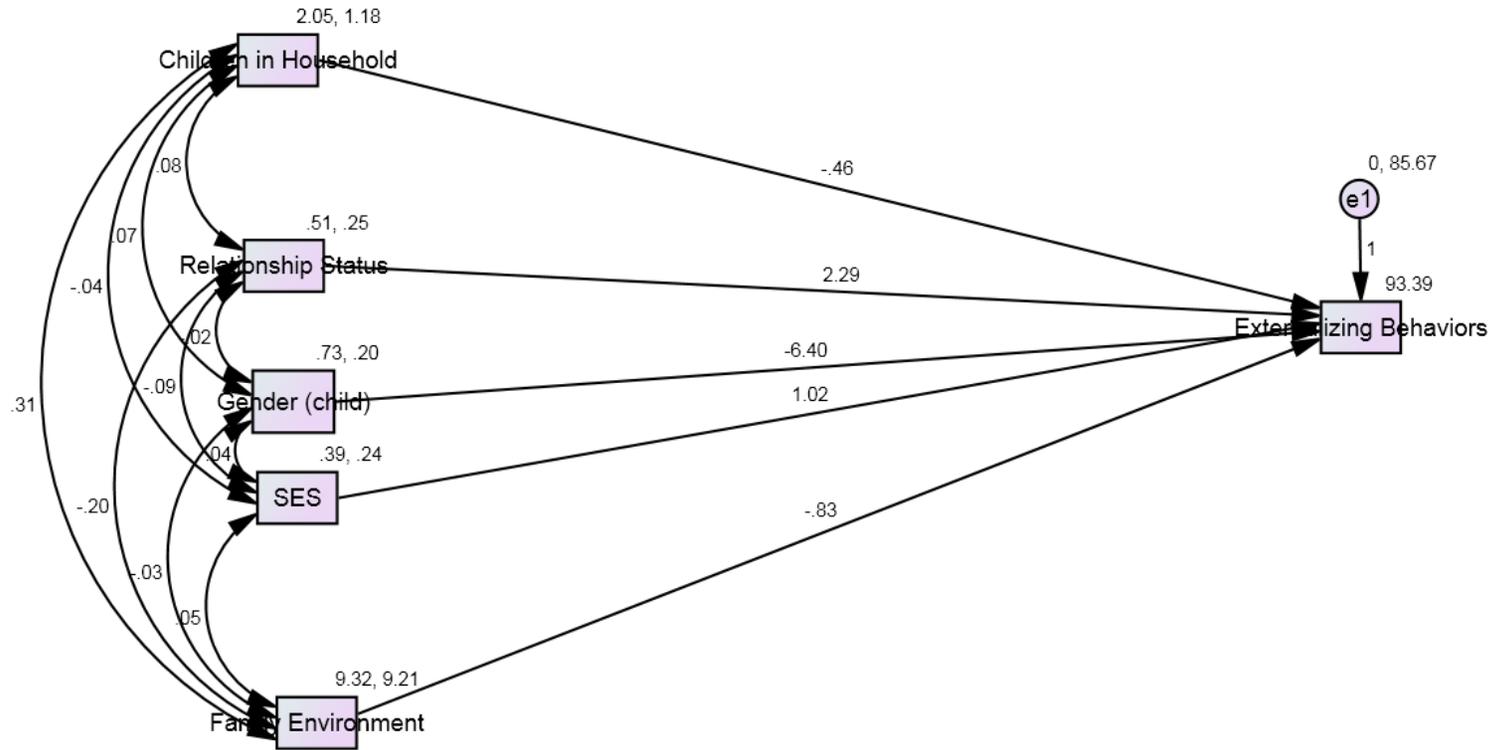


Figure 3

Model 3: Parental Depression, Family Environment, and Internalizing Behaviors

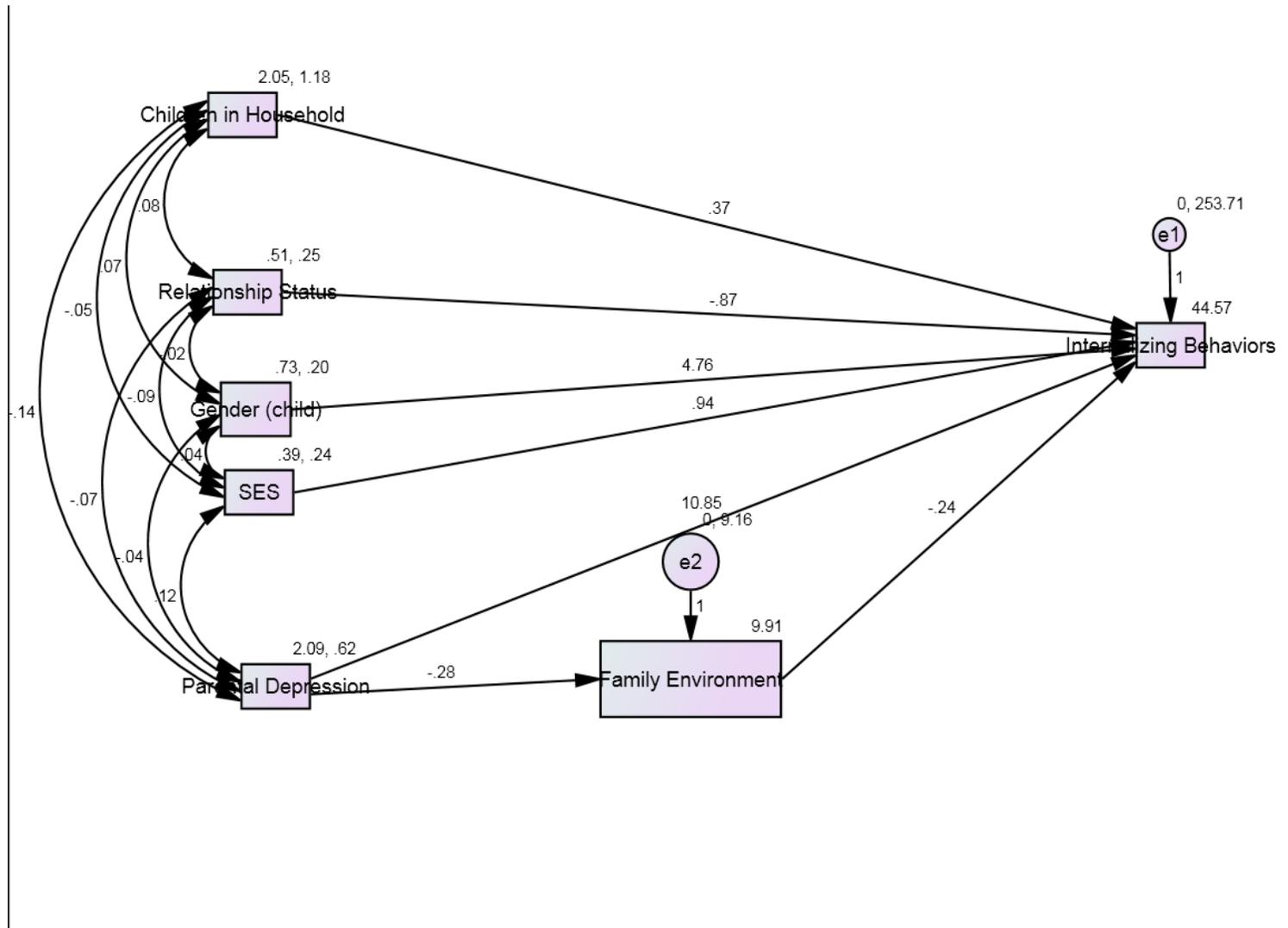
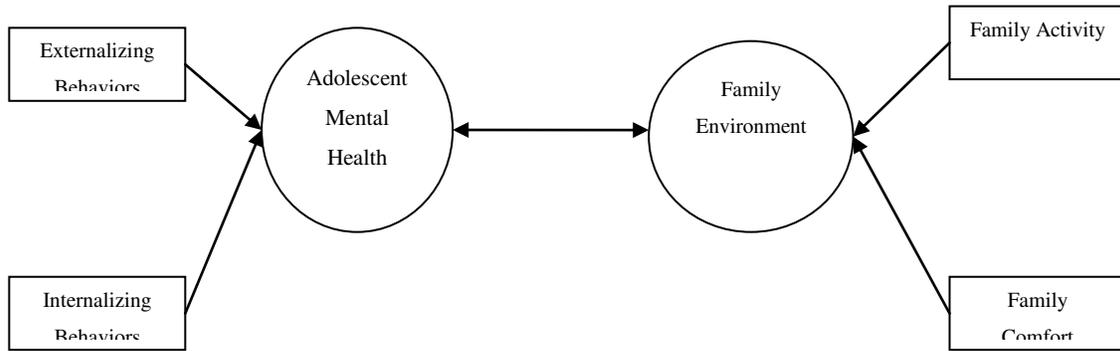


Figure 4

Canonical Correlations Variables: Adolescent Mental Health and Family Environment



APPENDIX A

IRB APPROVAL

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 5/29/2013

To: Christine Helfrich
Address: 225 Sandels Building
Dept.: FAMILY & CHILD SCIENCE

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
THE RELATIONSHIP BETWEEN MENTAL HEALTH AND FAMILY FUNCTIONING FOR
ADOLESCENTS REFERRED TO RESIDENTIAL TREATMENT CENTERS

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 04/10/2013. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 4/9/2014 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Wayne Denton, Advisor

HSC No. 2013.9810

REFERENCES

- Achenbach, T. M. (1991). *Manual for the youth self-report and the 1991 profile*. Burlington, VT: Development of Psychiatry.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Oxford, England: Lawrence Erlbaum.
- Allen, J. P., Hauser, S. T., Bell, K. L., & O'Connor, T. G. (1994). Longitudinal assessment of autonomy and relatedness in adolescent–family interactions as predictors of adolescent ego development and self-esteem. *Child Development, 65*, 179-194.
- Allen, J. P., Moore, C., Kuperminc, G., & Bell, K. (1998). Attachment and adolescent psychosocial functioning. *Child Development, 69*, 1406-1419.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist, 54*, 317–326.
- Baker, A. J. L., Wulczyn, F., & Dale, N. (2005). Covariates of length of stay in residential treatment. *Child Welfare: Journal of Policy, Practice, and Program, 84*, 363-386.
- Beardslee, W. R., & Wheelock, I. (1994). *Children of parents with affective disorders: Empirical findings and clinical implications*. New York, NY: Plenum Press.
- Beardslee, W. R., Versage, E. M., & Gladstone, T. R. G. (1998). Children of affectively ill parents: A review of the last 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*, 1134–1141.
- Beardslee, W. R., Gladstone, T. R. G., & O'Connor, E. E. (2011). Transmission and prevention of mood disorders among children of affectively ill parents: A review. *Journal of the American Academy of Child & Adolescent Psychiatry, 50*, 1098-1109.
- Beavers, W. R., Hampson, R. B., & Hulgus, Y. F. (1990). *Beavers systems model manual: 1990 edition*. Dallas, TX: Southwest Family Institute.
- Belfer, M. L. (2008). Child and adolescent mental disorders: The magnitude of the problem across the globe. *Journal of Child Psychology and Psychiatry, 49*, 226-236.
- Blatt, S. J., & Homann, E. (1992). Parent-child interaction in the etiology of dependent and self critical depression. *Clinical Psychology Review, 12*, 47-91.
- Bowlby, J. (1969). *Attachment and loss, Vol. 1: Attachment*. New York, NY: Basic Books.

- Bowlby, J. (1973). *Attachment and loss, Vol. 2: Separation*. New York, NY: Basic Books.
- Bowlby, J. (1988). *A secure base: Clinical applications of attachment theory*. London, UK: Tavistock-Routledge.
- Brandell, J. R., & Ringel, S. (2007). *Attachment and dynamic practice: An integrative guide for social workers and other clinicians*. New York, NY: Columbia University Press.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (1988). Strengthening family systems. In E.F. Zigler & M. Frank (Eds.), *The parental crisis: Toward a national policy* (pp. 143-160). New Haven, CT: Yale University Press.
- Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), *Annals of child development, Vol. 6* (pp. 187-249). Greenwich, CT: JAI Press.
- Bronfenbrenner, U. (1994). Ecological models of human development (2nd ed.). In *Encyclopedia of Education Vol. 3* (pp. 1643-1647). Oxford, UK: Elsevier Services.
- Bubloz, M. M. & Sontag, S. (1993). Human ecology theory. In P. G. Boss, W. J. Doherty, R. LaRossa, W. R. Schumm, & S. K. Steinmetz (Eds.), *Sourcebook of family theories and methods: A contextual approach* (pp. 419-488). New York, NY: Plenum Press.
- Burns, B. J., Hoagwood, K., & Mrazek, P. J. (1999). Effective treatment for mental disorders in children and adolescents. *Clinical Child and Family Psychology Review, 2*, 199–254. doi: 10.1023/A:1021826216025
- Burns, B. J., Phillips, S. D., Wagner, H. R., Barth, R. P., Kolko, D. J., Campbell, Y., & Landsverk, J. (2004). Mental health need and access to mental health services by youths involved with child welfare: A national survey. *Journal of the American Academy of Child & Adolescent Psychiatry, 43*, 960-970.
- Burstein, M., Ginsburg, G. S., Petras, H., & Ialongo, N. (2010). Parent psychopathology and youth internalizing symptoms in an urban community: A latent growth model analysis. *Child Psychiatry and Human Development, 41*, 61-87.
- Cantwell, D. P., & Rutter, M. (1994). Classification: Conceptual issues and substantive findings. In M. Rutter, E. Taylor, & L. Hersov (Eds). *Child and adolescent psychiatry: Modern Approaches* (pp. 3-21). Boston, MA: Blackwell Scientific.
- Caspi, A., & Damon, W. (1998). *Personality development across the life course*. Hoboken, NJ: John Wiley & Sons.

- Child Welfare League of America (2005). *The odyssey project: A descriptive and prospective study of children and youth in residential group care and therapeutic foster care*. Washington, DC: Author.
- Children's Mental Health Ontario. (2005). Our children's mental health: Worth an extra 4¢ a week? CMHO. Retrieved from www.kidsmentalhealth.ca/documents/Res_pre_budget_jan_05.ppt
- Cicchetti, D. (1984). The emergence of developmental psychopathology. *Child Development, 55*, 1-7.
- Cicchetti, D., & Rogosch, F. A. (2002). A developmental psychopathology perspective on adolescence. *Journal of Consulting and Clinical Psychology, 70*, 6-20.
- Cicchetti, D., Toth, S. L., & Lynch, M. (1995). Bowlby's dream comes full circle: The application of attachment theory to risk and psychopathology. *Advances in Clinical Child Psychology, 17*, 1-75.
- Clausen, J. M., Dresser, K. L., Rosenblatt, A., & Attkisson, C. C. (1998). Impact of the child and adolescent service system program in California: Perceptions of families and service providers. *Journal of Emotional and Behavioral Disorders, 6*, 114-123.
- Cohen, J. (1988). *Statistical power and analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Coll, K. M., Powell, S., Thobro, P., & Haas, R. (2010). Family functioning and the development of trust and intimacy among adolescents in residential treatment. *Family Journal: Counseling and Therapy for Couples and Families, 18*, 255-262.
- Connor, D. F., Doerfler, L. A., Toscano, P. F., Volungis, A. M., & Steingard, R. J. (2004). Characteristics of children and adolescents admitted to a residential treatment center. *Journal of Child and Family Studies, 13*, 497-510.
- Costello, E. J., Angold, A., Burns, B. J., Stangl, D. K., Tweed, D. L., Erkanli, A., & Worthman, C. M. (1996). The Great Smoky Mountains study of youth: Goals, design, methods, and the prevalence of DSM-III-R disorders. *Archives of General Psychiatry, 53*, 1129-1136.
- Costello, E. J., Foley, D. L., & Angold, A. (2006). 10-year research update review: The epidemiology of child and adolescent psychiatric disorders: II. developmental epidemiology. *Journal of the American Academy of Child & Adolescent Psychiatry, 45*, 8-25. doi: <http://dx.doi.org/10.1097/01.chi.0000184929.41423.c0>
- Cunningham, C. E., Pettingill, P., & Boyle, M. (2006). *The brief child and family phone interview a computerized intake and outcome assessment tool: Interviewers manual*. Retrieved from: <http://www.bcfpi.org/bcfpi/downloads/manual/en/ENIntMan.pdf>

- Crider, R. A., Milazzo-Sayre, L. J., Foley, D. J., Manderscheid, R. W. (1997). Sources of referral for persons admitted to specialty mental health organizations, United States, 1997. In R. W. Manderscheid & J. T. Berry (Eds). *Mental Health, United States, 2004* (pp. 237-246). Rockville, MD: U.S. Department of Health and Human Services.
- Dale, N., Baker, A. J. L., Anastasio, E., & Purcell, J. (2007). Characteristics of children in residential treatment in New York state. *Child Welfare, 86*, 5-27.
- Dekovic, M., Buist, K. L., & Reitz, E. (2004). Stability and changes in problem behavior during adolescence: Latent growth analysis. *Journal of Youth and Adolescence, 33*, 1-12.
- Downey, G., & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin, 108*, 50-76.
- Dubowitz, H., Kim, J., Black, M. M., Weisbart, C., Semiatin, J., & Magder, L. S. (2011). Identifying children at high risk for a child maltreatment report. *Child Abuse & Neglect, 35*, 96-104.
- Duncan, T. E., Duncan, S. C., Strycker, L. A., Li, F., & Alpert, A., (1999). *An introduction to latent variable growth curve modeling: Concepts, issues, and applications*. Mahwah NJ: Lawrence Erlbaum Associates.
- Eme, R. F. (1992). Selective female affliction in the developmental disorders of childhood—a literature review. *Journal of Clinical Child Psychology, 21*, 354–364.
- Emery, R. E. (1982). Interparental conflict and the children of discord and divorce. *Psychological Bulletin, 92*, 310-330.
- Epstein, N. B., Bishop, D. S., & Levin, S. (1978). The McMaster model of family functioning. *Journal of Marriage and Family Counseling, 4*, 19-31.
- Farrell, M. P., & Barnes, G. M. (1993). Family systems and social support: A test of the effects of cohesion and adaptability on the functioning of parents and adolescents. *Journal of Marriage & the Family, 55*, 119-132.
- Fonagy, P., Target, M., Cottrell, D., Phillips, J., & Kurtz, Z. (2002). *What works for whom? A critical review of treatments for children and adolescents*. New York, NY: Guilford.
- Garbarino, J. (1995). *Raising Children in a Socially Toxic Environment*. San Francisco, CA: Jossey-Bass Publishers.
- Garber, J. (2005). Depression and the family. In J. L. Hudson & R. M. Rapee (Eds.), *Psychopathology and the family* (pp. 225-280). New York, NY: Elsevier
- Gavin, L. A., & Furman, W. (1996). Adolescent girls' relationships with mothers and best friends. *Child Development, 67*, 375-386.

- Gavazzi, S. M. (2006). Gender, ethnicity, and the family environment: Contributions to assessment efforts within the realm of juvenile justice. *Family Relations*, 55, 190-199.
- Gavazzi, S. M., Bostic, J. M., Lim, J., & Yarcheck, C. M. (2008). Examining the impact of gender, race/ethnicity, and family factors on mental health issues in a sample of court involved youth. *Journal of Marital and Family Therapy*, 34, 353-68.
- George, C., Herman, K. C., & Ostrander, R. (2006). The family environment and developmental psychopathology: The unique and interactive effects of depression, attention, and conduct problems. *Child Psychiatry and Human Development*, 37, 163-77.
- Goldberg, K. (1991). Family experiences of residential treatment. *Journal of Child & Youth Care*, 6, 1-6.
- Goodman, S. H., & Gotlib, I. H. (Eds.). (2002). *Children of depressed parents: Mechanisms of risk and implications for treatment*. Washington, DC: American Psychological Association.
- Griffith, A. K., Ingram, S. D., Barth, R. P., Trout, A. L., Hurley, K. D., Thompson, R. W., & Epstein, M. H. (2009). The family characteristics of youth entering a residential care program. *Residential Treatment for Children & Youth*, 26, 135-150.
- Hall, G. S. (1904). *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion, and education*. Englewood Cliffs, NJ: Prentice Hall.
- Harr, C., Horn-Johnson, T., Williams, N., & DeJager, L., (2011). The impact of family stressors on the social development of adolescents admitted to a residential treatment facility. *Journal of Family Strengths*, 11, 1-20.
- Harrington, R., Fudge, H., Rutter, M., Pickles, A., & Hill, J. (1990). Adult outcomes of childhood and adolescent depression: I. psychiatric status. *Archives of General Psychiatry*, 47, 465-473.
- Helfrich, C. M. (2012). Family variables that impact placement in residential treatment centers: A critical review. Unpublished manuscript.
- Henderson, C. E., Dakof, G. A., Schwartz, S. J., & Liddle, H. A. (2006). Family functioning, self-concept, and severity of adolescent externalizing problems. *Journal of Child and Family Studies*, 15, 721-731. doi: <http://dx.doi.org/10.1007/s10826-006-9045-x>
- Hetherington, E. M., & Martin, B. (1986). Family factors and psychopathology in children. In H. C. Quay & J. S. Werry (Eds.), *Psychopathological disorders of childhood* (pp. 332-390). New York, NY: John Willey & Sons.

- Hinshaw, S. P. (2005). The stigmatization of mental illness in children and parents: Developmental issues, family concerns, and research needs. *Journal of Child Psychology and Psychiatry*, *46*, 714-734. doi: <http://dx.doi.org/10.1111/j.1469-7610.2005.01456.x>
- Hirshfeld-Becker, D. R., Micco, J. A., Henin, J., Petty, C., Faraone, S. V., Mazursky, H . . . Bierdman, J. (2012). Psychopathology in adolescent offspring of parents with panic disorder, major depression, or both: A 10-year follow-up. *The American Journal of Psychiatry*, *169*, 1175-1184.
- Hotelling, H. (1935). The most predictable criterion. *Journal of Experimental Psychology*, *26*, 873-876.
- Hoyle, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 158 -176). Thousand Oaks, CA: Sage Publications.
- Hughes, A. A., Hedtke, K. A., & Kendall, P. C. (2008). Family functioning in families of children with anxiety disorders. *Journal of Family Psychology*, *22*, 325-328.
- Hussey, D. L., & Guo, S. (2002). Profile characteristics and behavioral change trajectories of young residential children. *Journal of Child and Family Studies*, *11*, 401-410.
- Jewell, J. D., & Stark, K. D. (2003). Comparing the family environments of adolescents with conduct disorder or depression. *Journal of Child and Family Studies*, *12*, 77-89.
- Kazdin, A. E., Kraemer, H. C., Kessler, R. C., & Kupfer, D. J. (1997). Contributions of risk-factor research to developmental psychopathology. *Clinical Psychology Review*, *17*, 375-406.
- Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1993). A longitudinal twin study of personality and major depression in women. *Archives of General Psychiatry*, *50*, 853-862.
- Kessler, R. C. (2003). Epidemiology of women and depression. *Journal of Affective Disorders*, *74*, 5-13.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., . . . Wang, P. S. (2003). The epidemiology of major depressive disorder: Results from the national comorbidity survey replication (NCS-R). *JAMA: Journal of the American Medical Association*, *289*, 3095-3105.
- Kessler, R. C., McGonagle, K. A., Zhao, S., & Nelson, C. B. (1994). Lifetime and 12-month prevalence of DSM-III—R psychiatric disorders in the United States. *Archives of General Psychiatry*, *51*, 8-19.

- Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York, NY: The Guilford Press.
- Kovacs, M., & Devline, B. (1998). Internalizing disorders in childhood. *Journal of Child Psychology and Psychiatry, 1*, 47–63.
- Lanzi, R. G., Pascoe, J. M., Keltner, B., & Ramey, S. L. (1999). Correlates of maternal depressive symptoms in a national head start program sample. *Archives of Pediatrics & Adolescent Medicine, 153*, 801-807.
- Leadbeater, B. J., Kuperminc, G. P., Blatt, S. J., & Hertzog, C. (1999). A multivariate model of gender differences in adolescents' internalizing and externalizing problems. *Developmental Psychopathology, 35*, 1268-1282.
- Lee, C. S., Lee, J., & August, G. J. (2011). Financial stress, parental depressive symptoms, parenting practices, and children's externalizing problem behaviors: Underlying processes. *Family Relations, 60*, 476-490.
- Leech, N. L., Barrett, K. C., & Morgan, G. A. (2008). *SPSS for intermediate statistics: Use and interpretation* (3rd ed.). New York, NY: Psychology Press.
- Leschied, A. W., Chiodo, D., Whitehead, P. C., & Hurley, D. (2005). The relationship between maternal depression and child outcomes in a child welfare sample: Implications for treatment and policy. *Child and Family Social Work, 10*, 281-291.
- Lieb, R., Isensee, B., Höfler, M., Pfister, H., & Wittchen, H. (2002). Parental major depression and the risk of depression and other mental disorders in offspring: A prospective-longitudinal community study. *Archives of General Psychiatry, 59*, 365-374.
- Lleras, C. (2005). Path analysis. In K. Kempf-Leonard (Ed.), *Encyclopedia of social measurement* (pp. 25-30). New York, NY: Elsevier.
- Logan, D. E., & King, C. A. (2002). Parental identification of depression and mental health service use among depressed adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*, 296-304. doi:http://dx.doi.org/10.1097/00004583-200203000-00009.
- Lynch, M., & Cicchetti, D. (1991). Patterns of relatedness in maltreated and nonmaltreated children: Connections among multiple representational models. *Development and Psychopathology, 3*, 207-226.
- Masten, A. S. (2006). Developmental psychopathology: Pathways to the future. *International Journal of Behavioral Development, 30*, 47-54.

- Measelle, J. R., Stice, E., & Hogansen, J. M. (2006). Developmental trajectories of co-occurring depressive, eating, and substance abuse problems in female adolescents. *Journal of Abnormal Psychology, 115*, 524-538.
- Meltzer, H., Gatward, R., Goodman, R., & Ford, T. (2003). Mental health of children and adolescents in Great Britain. *International Review of Psychiatry, 15*, 185-187.
- Morgan, G. A., Leech, N. L., Gloeckner, G. W., Barrett, K. C. (2007). *SPSS for introductory statistics: Use and interpretation (3rd ed.)*. New York, NY: Lawrence Erlbaum.
- National Institute of Mental Health. (2006). *Mental illness exacts heavy toll, beginning in youth*. United States Department of Health and Human Services. Retrieved from: <http://www.nih.gov/news/pr/jun2005/nimh-06.htm>.
- Neuman, R. J., Geller, B., Rice, J. P., & Todd, R. D. (1997). Increased prevalence and earlier onset of mood disorders among relatives of prepubertal versus adult probands. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 466-473.
- Nickerson, A. B., Colby, S. A., Brooks, J. L., Rickert, J. M., & Salamone, F. J. (2007). Transitioning youth from residential treatment to the community: A preliminary investigation. *Child and Youth Care Forum, 36*, 73-86.
- Parens, E., & Johnston, J. (2008). Mental health in children and adolescents. In M. Crowley (Ed.), *From birth to death and bench to clinic: The Hastings Center bioethics briefing book for journalists, policymakers, and campaigns* (pp. 101-106). New York, NY: Garrison.
- Papalia, D. E., Olds, S. W., & Feldman, R. D. (2009). *Human development (11th ed.)*. New York, NY: McGraw Hill.
- Perou, R., Bitsko, R. H., Blumberg, S. J, Pastor, P., Ghandour, R. M., Gfroerer, J.C.,... Huang, L.N. (2013). Mental health surveillance among children –United States, 2005-2011. Center for Disease Control. Washington, DC.
- Pottick, K., Hansell, S., Gaboda, D., & Gutterman, E. (1993). Child and adolescent outcomes of inpatient psychiatric services: A research agenda. *Children and Youth Services Review, 15*, 371-384.
- Prange, M. E., Greenbaum, P. E., Silver, S. E., Friedman, R. M., Kutash, K., & Duchnowski, A. J. (1992). Family functioning and psychopathology among adolescents with severe emotional disturbances. *Journal of Abnormal Child Psychology, 20*, 83-102. Retrieved from <http://search.proquest.com/docview/618120374?accountid=4840>
- Preyde, M., Adams, G., Cameron, G., & Frensch, K. (2009). Outcomes of children participating in mental health residential and intensive family services: Preliminary findings. *Residential Treatment for Children & Youth, 26*, 1-20.

- Preyde, M., Cameron, G., Frensch, K., & Adams, G. (2011). Parent-child relationships and family functioning of children and youth discharged from residential mental health treatment or a home-based alternative. *Residential Treatment for Children & Youth, 28*, 55-74.
- Preyde, M., Frensch, K. M., Cameron, G., Hazineh, L. (2009) *Life domain research report series: Youth and parent health and well-being*. Partnerships for Children & Families Project.
- Preyde, M., Frensch, K. M., Cameron, G., White, S., Penny, R., & Lazure, K. (2011). Long term outcomes of children and youth accessing residential or intensive home-based treatment: Three-year follow up. *Journal of Child and Family Studies, 20*, 660-668.
- Puig-Antich, J., Lukens, E., Davies, M., Goetz, D., Brennan-Quattrochio, J., & Todak, G. (1985). Psychosocial functioning in prepubertal major depressive disorders. I. interpersonal relationships during the depressive episode. *Archives of General Psychiatry, 42*, 500-507.
- Radloff, L. S. (1977). The Center for Epidemiological Studies Depression (CES-D) Scale: A self-report depression scale for research in the general population. *Applied Psychological Measures, 1*, 385-401.
- Ravens-Sieberer, U., & Bullinger, M. (2000). KINDL: Questionnaire for measuring health-related quality of life in children and adolescents. Retrieved from: <http://kindl.org/english/manual/>.
- Raviv, A., Sills, R., Raviv, A., & Wilansky, P. (2000). Adolescents' help-seeking behaviour: The difference between self- and other-referral. *Journal of Adolescence, 23*, 721-740.
- Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., & Jones, J. (1997). Protecting adolescents from harm. Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association, 278*, 823- 832.
- Rosenstein, D. S., & Horowitz, H. A. (1996). Adolescent attachment and psychopathology. *Journal of Consulting and Clinical Psychology, 64*, 244-253.
- Rosenthal, J. A., & Curiel, H. F. (2006). Modeling behavioral problems of children in the child welfare system: Caregiver, youth, and teacher perceptions. *Children and Youth Services Review, 28*, 1391-1408.
- Rutter, M. (2002). The interplay of nature, nurture, and developmental influences: The challenge ahead for mental health. *Archives of General Psychiatry, 59*, 996-1000. doi: <http://dx.doi.org/10.1001/archpsyc.59.11.996>
- Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *Journal of Counseling Psychology, 57*, 1-10.

- Schwartz, O. S., Dudgeon, P., Sheeber, L. B., Yap, M. B. H., Simmons, J. G., & Allen, N. B. (2012). Parental behaviors during family interactions predict changes in depression and anxiety symptoms during adolescence. *Journal of Abnormal Child Psychology*, *40*, 59-71.
- Seiffge-Krenke, I. (1989). Problem intensity and the disposition of adolescents to take therapeutic advice. In: M. Brambring, F. Losel, & H. Skowronek, (Eds). *Children at risk: assessment, longitudinal research, and intervention* (pp. 457-477). New York, NY: Walter de Gruyter .
- Shabat, J. C., Lyons, J. S., & Martinovich, Z. (2008). Exploring the relationship between conduct disorder and residential treatment outcomes. *Journal of Child and Family Studies*, *17*, 353-371.
- Shattel, M. M., Starr, S. S., & Thomas, S. P. (2007). ‘Take my hand, help me out’: Mental health service recipients’ experience of the therapeutic relationship. *International Journal of Mental Health Nursing*, *16*, 274–284.
- Sherry, A., & Henson, R.K. (2005). Conducting and interpreting canonical correlation analysis in personality research: A user-friendly primer. *Journal of Personality Assessment*, *84*, 37-48.
- Spaeth, J. L. (1975). Path Analysis. In D. J. Amick & H. J. Waldberg (Eds). *Introductory multivariate analysis* (pp. 53-89). Berkley, CA: McCutchen.
- Sroufe, L. A. (1989). Relationships and relationship disturbance. In A. Sameroff & R. Emde (Eds.), *Relationship disturbance in early childhood* (pp. 97-124). New York, NY: Basic Books.
- Sroufe, L. A., & Rutter, M. (1984). The domain of developmental psychopathology. *Child Development*, *55*, 17-29.
- Stage, F. K., Carter, H. C., & Nora, A. (2004). Path analysis: An introduction and analysis of a decade of research. *The Journal of Educational Research*, *98*, 5-12.
doi:<http://dx.doi.org/10.3200/JOER.98.1.5-13>
- Stark, K. D., Brookman, C. S., & Frazier, R. (1990). A comprehensive school-based treatment program for depressed children. *School Psychology Quarterly*, *5*, 111-140.
- Statistics Canada. (2012). Low income lines, 2010 to 2011. Retrieved from:
<http://www.statcan.gc.ca/pub/75f0002m/75f0002m2012002-eng.htm>.
- Stein, D., Williamson, D. E., Birmaher, B., Brent, D. A., Kaufman, Dahl, R. E., et al. (2000). Parent-child bonding and functioning in depressed children and children at high risk low risk for future depression. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*, 1387–1395.

- Stolberg, R. A., Clark, D. C., & Bongar, B. (2002). Epidemiology, assessment, and management of suicide in depressed patients. In I. H. Gotlib & C. L. Hammen (Eds), *Handbook of depression* (pp. 581-601). New York, NY: Guilford Press.
- Stroul, B. A., & Friedman, R. M. (1996). The system of care concept and philosophy. In B. A. Stroul (Ed.), *Children's mental health: Creating systems of care in a changing society* (pp. 3-21). Baltimore, Maryland: Paul H. Brookes.
- Sunseri, P.A. (2004). Family functioning and residential treatment outcomes. *Residential Treatment for Children & Youth*, 22, 33-53.
- Tahhan, J., St. Pierre, J., Stewart, S. L., Leschied, A. W., & Cook, S. (2010). Families of children with serious emotional disorder: Maternal reports on the decision and impact of their child's placement in residential treatment. *Residential Treatment for Children & Youth*, 27, 191-213.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55.
- Thomson, S., Hirshberg, D., & Qiao, J. (2011). Outcomes for adolescent girls after long-term residential treatment. *Residential Treatment for Children & Youth*, 28, 251-267.
- Thompson, B. (1984). *Canonical correlation analysis*. Beverly Hills, CA: Sage.
- Thompson, R., Lindsey, M. A., English, D. J., Hawley, K. M., Lambert, S., & Browne, D. C. (2007). The influence of family environment on mental health need and service use among vulnerable children. *Child Welfare*, 86, 57-74.
- United States Department of Health and Human Services (1999). *Mental Health: A report of the surgeon general*. Rockville, MD: National Institute of Mental Health.
- Weisner, M. (2003). A longitudinal latent variable analysis of reciprocal relations between depressive symptoms and delinquency during adolescence. *Journal of Abnormal Psychology*, 112, 633-645.
- Wells, K., & Whittington, D. (1993). Characteristics of youths referred to residential treatment: Implications for program design. *Children and Youth Services Review*, 15, 195-217.
- Werner-Wilson, R. J., & Morrissey, K. M. (2005). Understanding treatment: Principles and approaches. In T. P. Gullotta & G. R. Adams (Eds.), *Handbook of adolescent behavioral problems: Evidence-based approaches to prevention and treatment* (pp. 79-100). New York, NY: Springer.

- Whitchurch, G. G. & Constantine, L. L. (1993). Systems theory. In P. G. Boss, W. J. Doherty, R. LaRossa, W. R. Schumm, & S. K. Steinmetz (Eds.), *Sourcebook of family theories and methods: A contextual approach* (pp. 325-352). New York, NY: Plenum Press.
- Wicks-Nelson, R., & Israel, A. C. (2000). *Behavior disorders of childhood* (4th Ed.). Saddle River, NJ: Prentice Hall.
- Wilkinson, P. O., Harris, C., Kelvin, R., Dubicka, B., & Goodyer, I. M. (2013). Associations between adolescent depression and parental mental health, before and after treatment of adolescent depression. *European Child & Adolescent Psychiatry*, 22, 3-11.
- Zegers, M. A. M., Schuengel, C., Van IJzendoorn, M. H., & Janssens, J. M. A. M. (2008). Attachment and problem behavior of adolescents during residential treatment. *Attachment & Human Development*, 10, 91-103.
- Zis, A. P., & Goodwin, F. K. (1979). Major affective disorder as a recurrent illness: A critical review. *Archives of General Psychiatry*, 36, 835-839.

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Education

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|------|-------|---|
| 2014 | Ph.D. | Marriage & Family Therapy
Family & Child Sciences, Florida State University (FSU)
Dissertation: The relationship between adolescent mental health, parental depression, and family environment for adolescents accessing intensive mental health treatment.
Chair: Wayne Denton, Ph.D., M.D. |
| 2010 | M.S. | Human Development & Family Studies (Marriage & Family Therapy Program) Human Development & Family Studies, Colorado State University (CSU)
Thesis: A pilot study to evaluate the FAIR curriculum with at-risk youth
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| 2008 | B. S. | Psychology
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Grants

The Fulbright U.S. Student Program. "Providing a continuum of care for youth placed in residential treatment facilities." (PI; Amount: \$15,000; 09/01/2012 – 05/31/2013).

Publications

Helfrich, C. M., Fetsch, R. J., & Bruce, A. (in press). {Program} Review of home is where the health is. *Journal of Extension*.

- Helfrich, C. M.**, & McWey, L. M. (in press). Substance use and delinquency: High risk behaviors as predictors of teen pregnancy among adolescents involved with the child welfare system. *Journal of Family Issues*. doi: 10.1177/0192513X13478917.
- Helfrich, C. M.**, Wojciak, A. S., & McWey, L. M. (in press). Closeness to caregivers and externalizing and internalizing behaviors of youth in out-of-home placement. *American Journal of Family Therapy*.
- Okafor, E., Wojciak, A. S., & **Helfrich, C. M.** (in press). Unheard voices: The experiences of supervisors in training. *Contemporary Family Therapy*.
- Weiler, L. M., **Helfrich, C. M.**, Palermo, F., & Zimmerman, T. S. (2013). Exploring diversity attitudes of youth placed in residential treatment facilities. *Residential Treatment for Children & Youth*, 30, 23-39.
- Wojciak, A. S., McWey, L. M., & **Helfrich, C. M.** (2013). The role of sibling relationships on internalizing symptoms of youth in foster care. *Children & Youth Services Review*, 35, 1071-1077.
- Helfrich, C. M.**, & Fetsch, R. J. (2011). {Program} review of healthy, happy, families. *Journal of Extension* [On-line], 49(4) Article 4TOT10. Available at: <http://www.joe.org/joe/2011august/tt10.php>
- Helfrich, C. M.**, Fetsch, R. J., & Benavente, J. C. (2011). {Program} review: Raising healthy eaters. *Journal of Extension* [On-line], 49(2) Article 2TOT5. Available at: <http://www.joe.org/joe/2011april/tt5.php>
- Fetsch, R. J., **Helfrich, C. M.**, Field, W. E., & Olson, E. O. (2009). AgrAbility: A program that works. Retrieved from: http://www.agrability.cahs.colostate.edu/stories/documents/AgrAbility_A_Program_That_Works.pdf

Under Review

- Claridge, A. M. Lettenberger-Klein, C. G., & **Helfrich, C. M.** (under review). Pregnancy intention and maternal parenting behavior: importance of sociodemographic characteristics. *Journal of Family Planning*.
- Helfrich, C. M.**, Preyde, M., Carter, J., Lazure-Valconi, K., White, S., Ashbourne, C., Penney, R., Frensch, K., & Camerson, G. (under review). Parents of youth in intensive mental health treatment: Associations of parental sense of competence. *Journal of Child and Family Studies*.

In Progress

Lettenberger-Klein, C. G., **Helfrich, C. M.**, & Claridge, A. M. The impact of maternal self-efficacy and community support on responsivity and involvement of first time mothers.

Invited Presentations

Helfrich, C.M. (2012, October). Providing a continuum of care for youth placed in residential treatment facilities. College of Social and Applied Human Sciences, University of Guelph.

Presentations (National)

Claridge, A. M., Lettenberger-Klein, C. G., & **Helfrich, C. M.** (2013, October). *Pregnancy intention & parenting behavior: The role of context*. Poster presented at the annual conference of the American Association for Marriage and Family Therapy, Portland, OR.

Lettenberger-Klein, C. G., **Helfrich, C. M.**, & Claridge, A. M. (2013). *Impact of maternal self-efficacy and community Support on responsivity and involvement for first-time mothers*. Poster presented at the annual conference of the American Family Therapy Academy, Chicago, IL.

Helfrich, C. M., Wojciack, A. S., & Okafor, E. (2013, June). *The experiences of couple and family therapy supervisors in training*. Brief presentation presented at the annual conference of the American Family Therapy Academy, Chicago, IL.

Wojciack, A. S., **Helfrich, C. M.**, & McWey, L. M. (2012, September). *Foster care and mental health: The importance of siblings*. Poster presented at the annual conference of the American Association for Marriage and Family Therapy, Charlotte, NC.

Helfrich, C. M., Wojciack, A. S., & McWey, L. M. (2012, September). *Mental health outcomes of youth in out-of-home care*. Poster presented at the annual conference of the American Association for Marriage and Family Therapy, Charlotte, NC.

Helfrich, C. M. & Wojciack, A. S. (2011, May). *Romantic relationships in adolescence: Impact and outcomes for families*. Brief Presentation at the annual conference of the American Family Therapy Academy, San Francisco, CA.

Helfrich, C. M., Wojciack, A. S, Durthschi, J., & McWey, L. M. (2011, November). *Future expectations of youth in foster care and the role protective factors play*. Poster presented at the annual conference of the National Council on Family Relations, Orlando, FL.

Helfrich, C. M., & McWey, L. M. (2011, September). *High risk behaviors as predictors of teen pregnancy*. Poster presented at annual conference of the American Association for Marriage and Family Therapy, Fort Worth, TX.

Helfrich, C. M., Weiler, L., Palermo, F., Le, T., & Zimmerman, T. (2010, July). *Evaluation of the FAIR program: Teaching diversity awareness and social justice to at-risk youth*. Poster presented at annual conference of the Society for Prevention Research, Denver, CO.

Benavente, J., Tompkins, S. A., & **Helfrich, C. M.** (2008, November). *Preliminary examination: Healthy marriage grant with diverse populations*. Poster presented at the annual conference of the National Council on Family Relationships, San Francisco, CA.

Professional Experience

- 2013-2014 **Assistant in Teaching**
Department of Family and Child Sciences, FSU
(Supervisor: Dr. Emily Purvis-Montford)
Assist faculty in delivery of two online courses: FAD4932, Pre-professional Development (N=120) and FAD4805, Practicum in FCS. Monitor all online assignments and provide onsite or online supervision for students at placement sites.
- 2013-2014 **Couple and Family Therapist**
Disc Village
(Supervisor: Daniel Lettenberger-Klein, MS)
Assessed client referrals and developed appropriate plans of intervention. Provided individual, couple, and family therapy. Clients included individuals, couples, and families managing substance use issues.
- 2012 –2013 **Fulbright Scholar for Fulbright Canada**
Department of Family Relations and Applied Nutrition, University of Guelph
(Supervisor: Dr. Michèle Preyde)
Analyzed data from secondary dataset focused on youth who access intensive mental health treatment. Prepared manuscripts and presentation proposals for national conferences. Assisted with writing, submitting, and revising of Knowledge Synthesis Grant (Canadian Institutes of Health Research) and Social Science and Humanities Research Council of Canada (SSHRC) Institutional Grant.
- 2012-2013 **Couple and Family Therapist**
Family Counseling and Support Services (Guelph, ON)
(Supervisor: Dr. Kelvin Mutter, ThD)
Assessed client referrals and developed appropriate plans of intervention. Provided individual, couple, and family therapy.

- 2011-2012
Sum 2013
- Graduate Teaching Assistant**
Department of Family and Child Sciences, FSU
Sole responsibility for FAD3220, Individual and Family Lifespan Development (N = 95) and FAD2230, Family Relations (N = 60).
Prepared all course materials, assignments, and examinations; evaluated student progress; mentored students in successful performance.
- 2010-2011
- Assistant in Teaching**
Department of Family and Child Sciences, FSU
Assisted faculty in delivery of online courses (FAD3220, Individual and Family Lifespan Development, CHD4615, Public Policy, Practicum in Family and Child Science, and FAD3432, Stress and Resilience), including preparing quizzes, assignments, and examinations, assessing student performance, maintaining office hours, and monitoring student progress in meeting deadlines.
- 2010 -2012
- Couple and Family Therapy Intern**
Center for Couple and Family Therapy, FSU
(Supervisors: Dr. Wayne Denton, Dr. Larry Barlow, Dr. Lenore McWey)
Provided therapy to individuals, couples, and families. Presented cases during supervision, observed sessions of colleagues, offered feedback to colleagues, and maintained client files.
- 2010 -2011
- Graduate Assistant**
Department of Family and Child Sciences, FSU
(Supervisor: Dr. Lenore McWey)
Analyzed data from longitudinal, nationally representative secondary dataset focused on youth involved with child welfare. Prepared manuscripts and presentation proposals for national conferences.
Developed research protocols and databases for projects. Interviewed parents involved with court mandated parenting program. Collaborated with members of the research team on projects from conceptualization through completion.
- 2009-2010
- Graduate Assistant**
Colorado State University Extension; AgrAbility Project (CAP)
(Supervisor: Dr. Robert Fetsch)
Assisted in writing and submitting grant for federally funded AgrAbility project. Contributed original ideas and collaborated on three manuscripts submitted to the Journal of Extension. Investigated new programs available for the CAP; reviewed nutrition and parenting programs for future projects.
- 2009-2010
- Couple and Family Therapy Intern**
Youth Alternatives (Cheyenne, WY)
(Supervisor: Dr. Dick Berry)

Assisted in outreach program for at-risk youth; organized and implemented psychoeducational programming. Provided therapy to families. Presented cases during supervision and maintained client files.

2008-2010

Couple and Family Therapy Intern

Center for Couple and Family Therapy, CSU

(Supervisors: Dr. Toni Zimmerman, Dr. Jenn Matheson, Dr. Ashley Harvey)

Provided therapy to individuals, couples, and families. Presented cases during supervision, observed sessions of colleagues, offered feedback to colleagues, and maintained client files.

2008-2010

Undergraduate Advisor

Human Development and Family Studies, CSU

(Supervisor: Anne Van Arsdall, MS)

Served as academic advisor to all undergraduate students in the major; advised students on course selection, study abroad, and graduate school; prepared and delivered information sessions on major, creating a 4-year academic plan, and applying to graduate school.

2008-2009

Graduate Assistant

Colorado State Family Education Resources and Training (CFERT)

(Advisor: Dr. Sara Anne Tompkins)

Assisted with study proposals and paperwork for IRB approval.

Developed research protocols and databases for projects requested by the director of CFERT. Entered and analyzed data from over two-hundred participants. Reviewed and synthesized relevant research on parenting programs.

Specialized Statistical Training

- Evidence Based Practice and Knowledge Translation, Dr. Michèle Preyde, University of Guelph.
- Structural Equation Modeling, Dr. Scott Cowell University of Guelph.

Awards & Recognition

Florida State Student Star

Florida State University Fellows Society, 2012

May Watson Connor Endowed Scholarship, 2012

Professional Memberships and Service

American Association for Marriage and Family Therapy (member since 2008)

American Family Therapy Academy (member since 2010)

National Council on Family Relations (member since 2011)

Ad-hoc reviewer: *Population Research and Population Review* (2013); *Child Welfare League of America*

Student Representative, Social Media Committee (member) and Student Advisory Committee (member), Marriage and Family Therapy Program, FSU (2011-2013)