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# The Impact of Treatment Beliefs, Caregiver Participation, and Treatment Adherence on Treatment Outcome in Childhood Mental Illness

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Philadelphia College of Osteopathic Medicine

Department of Psychology

The Impact of Treatment Beliefs, Caregiver Participation, and Treatment Adherence on  
Treatment Outcome in Childhood Mental Illness

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Submitted in Partial Fulfillment of the Requirements for the

Degree of Doctor of Psychology

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**PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE**  
**DEPARTMENT OF PSYCHOLOGY**

**Dissertation Approval**

This is to certify that the thesis presented to us by Alexandra Gallagher  
on the 10<sup>th</sup> day of May, 2017, in partial fulfillment of the  
requirements for the degree of Doctor of Psychology, has been examined and is  
acceptable in both scholarship and literary quality.

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### **Abstract**

One in five children in the United States is diagnosed with a mental health disorder; however, not all of them receive the appropriate services (NAMI, 2015). When services are accessible, lack of engagement in treatment can contribute to high dropout and to limited treatment success (Staudt, 2007). In literature on adults, one well studied factor that contributes to participation and engagement in treatment is an individual's treatment beliefs and expectations. In the case of children, however, it is important to consider not only their treatment beliefs and expectations, but also the beliefs and expectations of their primary caregivers, because they play a large role in the children's lives. This study expands on the research that exists regarding both caregiver and children's treatment beliefs and expectations and the impact of these on caregiver participation, adherence, and change in children's mental health symptoms. The present study used archival data collected from a community mental health agency to understand children and caregiver treatment beliefs about outpatient therapy. A total of 85 participants (one participant = a child and primary caregiver) were assessed at time of intake on their initial treatment beliefs and expectations, and on children's initial mental health symptoms. They were then assessed again after 6 months of treatment for their treatment beliefs and expectations and children's mental health symptoms. In addition, the children's clinicians completed a rating scale to determine caregiver treatment participation and adherence. Due to a small sample size and high initial treatment beliefs and expectations from both caregiver and children, there were no significant results found in the study. Future research should use a larger sample size to elucidate the relationship between children and caregiver beliefs and expectations and treatment.

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## **Chapter 1: Introduction**

### **Statement of the Problem**

Psychotherapy treatments have consistently been shown to be effective across various therapeutic approaches (Lambert, 2011). Although each therapeutic approach may employ different techniques to assist patients in reducing symptoms associated with their disorders, there are some factors that universally impact symptom reduction (Chorpita et al., 2011). Therefore, it is essential to identify and understand these factors in order to provide the most effective treatment for clients.

The client-therapist relationship as well as diagnosis, treatment approach, cultural factors, and beliefs about treatment have been found to play an important role in symptom reduction (Karver, Handelsman, Fields, & Bickman, 2005; Lambert, 2011; Ma, 2000; Nock, Phil, & Kazdin, 2001). Therapists' characteristics, such as expression of empathy, have influenced treatment outcome, because these characteristics allow the client to feel more comfortable within the therapeutic relationship, facilitating a willingness to be open and honest with the therapist (Karver, Handlesman, Fields, & Bickman, 2005). Furthermore, the expression of empathy on the part of the therapist can lead to a stronger therapeutic relationship, which is a robust predictor of treatment outcomes (Shirk & Karver, 2003). When a strong client-therapist relationship is present, children and their family members are more likely to engage in treatment and follow through with treatment recommendations outside of the therapy session (Shirk & Karver, 2003).

Along with the therapeutic relationship, another important factor influencing the course of treatment is the client's view of treatment itself. There is an underlying

assumption that treatment is effective when the outcome matches the client's belief and expectancies of treatment (Ma, 2000). This assumption is one component of the Health Belief Model (HBM), which states that if a person believes the use of a particular treatment will be beneficial in reducing one's health problem, one will be more likely to engage in the treatment recommendations (Rosenstock, Strecher, & Becker, 1988).

Although the HBM is typically used to explain compliance with physical health recommendations, it has also been applied to the treatment of mental illness. Clients' beliefs that therapy can help to improve their daily functioning and reduce their symptoms predict greater participation and adherence to treatment (Greenberg, Constantino, & Bruce, 2006; Holtforth, Krieger, Bochsler, & Mauler, 2011).

Furthermore, a greater belief in treatment also predicts improved treatment outcomes and a reduction in reported symptoms by the client (Hansson & Berglund, 1987; Greenberg, Constantino, & Bruce, 2006).

Although the beliefs of children and adolescents regarding their own treatment are important considerations, their beliefs may not be the only factor impacting treatment. An adapted version of the HBM has been developed for children, the Children's Health Belief Model (CHBM) (Bush & Iannotti, 1990). The CHBM suggests that children's beliefs in treatment are largely influenced by others, including family, peers, and society (Bush & Iannotti, 1990). Therefore, it is important to consider the beliefs of important people in children's lives, such as caregivers, because they influence the children's beliefs in treatment. Furthermore, caregivers will also inadvertently impact the level of participation, adherence, and success of the child's treatment, as predicted by the HBM.

Within the field of medicine, caregivers' beliefs in treatment effectiveness have played a significant role in the likelihood of the caregivers seeking out help and complying with treatment directives for their children. Caregivers' beliefs in treatment efficacy for asthma has been found to increase the children's preventative use of medication as well as predict the likelihood of the caregivers to engage in help-seeking behaviors when their children are experiencing asthma attacks (Callery, Milnes, Verduyn, & Couriel, 2003). Similarly, caregivers' beliefs in the effectiveness of nutrition and diet plans for children with obesity predicted the likelihood of caregivers following the assigned diet regiment for their children and children's subsequent weight loss (Gable & Lutz, 2000).

Unlike the treatment of physical illness, there has been limited research in the mental health field investigating the impact of caregivers' beliefs about treatment on symptom reduction in children. Available studies demonstrate that over time within the same subjects, there is an increase in parental participation in treatment, an increase in adherence to treatment by both the child and caregiver, and improvement in symptoms when caregivers have stronger beliefs in the effectiveness of treatment (Nock, Phil, & Kazdin, 2001; Nock, Ferriter, & Holmberg, 2007; Reimers, Wacker, Derby, & Cooper, 1995). However, due to the limited amount of research both on caregivers' and on children's beliefs in treatment, it is unclear how strongly treatment beliefs can impact symptom reduction.

### **Purpose of the Study**

Few studies examine how children's and their caregivers' beliefs about mental health treatment may influence participation in treatment and symptom reduction. The available

research has primarily focused on children and adolescents with externalizing disorders and has demonstrated the impact that caregivers' beliefs in their children's treatment can have on the therapy process, most notably possible symptom reduction (Nock, Ferriter, & Holmberg, 2007; Nock, Phil, & Kazdin, 2001). However, previous research has neglected to address the impact of the child's and the caregiver's beliefs about treatment effectiveness as well as to examine treatment beliefs across all diagnoses. The purpose of this study was to examine if children and caregiver beliefs about treatment may predict symptom reduction for children, regardless of the children's diagnosis.

## Chapter 2: Literature Review

### Mental Illness in Children

The prevalence of mental illness among children in the United States has been continuously rising over the past few decades (Perou et al., 2013). It is estimated that approximately twenty-one percent of children in the United States meet criteria for a mental health disorder (Jonovich & Alpert-Gillis, 2014). The impact of untreated mental illness can be significant. Children who do not receive treatment for symptoms in childhood are significantly more likely to rely on mental health treatment as adults, to drop out of school early, experience unemployment, and abuse drugs and alcohol (de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013). The effects of having a mental illness may span a lifetime and may cause difficulty across environments. Because children are more dependent on others, it is important to understand the different areas and the different people in their lives that can be affected by their mental illnesses. Currently, children with untreated mental health problems experience challenges within their homes, schools, and social environments (O'Driscoll, Heary, Hennessy, & McKeague, 2012; de Haan et al., 2013). Difficulties in childhood also seem to carry over as children age and become adults. Mental illness in children can contribute to poor social interactions, developmental difficulties, and problem behaviors that persist into adulthood (O'Driscoll, Heary, Hennessy, & McKeague, 2012). Childhood difficulties related to untreated mental illness can lead to an increase in severity of symptoms and a poor quality of life in adulthood (de Haan et al., 2013). Mental health symptoms can also be detrimental to a child's ability to cope across different environments.

**Academic Performance**

Mental illness in children and adolescents impacts their daily functioning. One of the biggest areas of difficulty for children with mental illness can be seen within the school environment. Individuals coping with mental illness during their childhood are less likely to graduate from high school or attain a college degree, when compared with individuals without mental illness (Kessler, 1995; Breslau, Miller, Chung, & Schwietzer, 2011). Children who receive mental health diagnoses or display symptoms of mental illness have been found to have more academic difficulties while attending school. These individuals typically have difficulties completing work, which leads to lower grades (DeSocio & Hootman, 2004). There are also a variety of symptoms that can disrupt a child's ability to learn within the classroom environment. Such behaviors including fidgeting and hyperactivity associated with attention deficit disorder or anxiety-related disorders, disruptive or aggressive behaviors related to conduct or mood disorders, or isolative behaviors in the classroom associated with mood and anxiety disorders; all of these may interfere with a child's experience within the school environment (DeSocio & Hootman, 2004; Boyce et al., 2002).

The symptoms of mental illness in children and adolescents may also present themselves in different forms. Children are more likely than adults to report somatic complaints compared with verbal expressions of emotional distress (DeSocio & Hootman, 2004). Somatic symptoms such as headaches, stomach problems, and other unexplained physical complaints may, in fact, be a result of underlying behavioral or emotional problems (DeSocio & Hootman, 2004). As a result of the presence of physical symptoms, children with mental illness are more likely to have inconsistent school

attendance, which can contribute to poor academic success. In an examination of school refusal and truancy, approximately 88.2 % of students studied had a psychiatric diagnosis (Egger, Costello, & Angold, 2003). This suggests that if mental illnesses in children were identified and treated, the rates of truancy may decrease in this population.

### **Social Functioning**

In addition to academic difficulties, mental illness in children is associated with social impairments. Children with mental health diagnoses are more likely to have fewer social supports than their respective peers (Hoza et al., 2005; Meadows, Brown, & Elder, 2006). They also tend to have less well developed social and problem solving skills and therefore tend to stand out from their peers (Moses, 2010). This is an unfortunate finding due to the vast amount of research demonstrating the importance of social support for mental health recovery (Lahey & Orehek, 2011).

Children with mental illness are likely to experience social stigma, which is described as the negative perceptions that peers have of individuals diagnosed with mental illness (Moses, 2010). Studies on social stigma have found that children with mental illness are viewed by their peers as less popular, aggressive, and more socially awkward (Hoza et al., 2005; Walker, Coleman, Lee, Squire, & Friesen, 2008). In a study of adolescents diagnosed with mental illness, peer stigmatization was experienced by 62% of the participants (Moses, 2010). Stigmatization leads to difficulty making and maintaining friendships, resulting in feelings of alienation from peers (Walker et al., 2008).

**Family Functioning**

Mental illness in children can impact relationships within their families.

Caregivers may experience feelings of burden, which is described as perceived stress and emotional well-being related to taking care of an individual who is ill (Kim, Chang, Rose, & Kim, 2012). For caregivers of children with mental illness, this burden may be due to the amount of time, the financial obligations, and the general daily living activities that are required to help their children remain stable (Angold et al., 1998; Perlick et al., 2004). Burden can come in two forms: 1) objective, for example, transportation to treatment and assistance with daily tasks, and 2) subjective, which refers to caregiver worries about their loved one and poorer quality of life as a result of burden (Angold et al., 1998).

Caregivers of children with mental illness have reported higher levels of burden when compared with those without children with mental illness. In particular, caregivers have reported lower levels of well-being and restrictions of personal activities as a result of their children's symptomology (Angold et al., 1998). Mental illness in children impacts the lives of their caregivers and other family members. Not only can mental illness create a burden on the family in the present moment, if left untreated, the burden of caring for an individual with mental illness can continue into adulthood (Angold et al., 1998).

**Mental Health Treatment for Children**

Mental health treatment for children may vary from the standard mental health treatment of adults. In a manner similar to adults, evidenced based practices have been found to be most efficacious in the treatment of mental health problems (Chorpita et al., 2011). However, for children, certain adaptations to these approaches must be made to address their developmental stages (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald,

2001). For example, when conducting cognitive behavior therapy, a certain degree of cognitive functioning is required for the client to understand the interactions between schemas, negative thinking, and behaviors (Choo, 2014). Therefore, adaptations to CBT have been developed to address the developmental limitations of children. These adaptations include the Coping Cat manual for anxiety disorders in childhood, Stop and Think manual for children with impulsive disorders, and Keeping your Cool, to assist children with anger management (Kendall, 2006; Kendall, 1992; Nelson & Finch, 1996). These approaches help clinicians provide children with treatments that are understandable and can help them cope with their difficulties. However, treating the child alone may not be enough to reduce mental health symptoms. Another important consideration in the treatment of childhood mental illness is that of the family.

A child's family plays an important role in his or her life. The majority of a child's time is spent with family and a child's beliefs are typically influenced by caregivers (Bush & Iannotti, 1990). In the treatment of childhood mental illness, the family is central to understanding the child's current problems because family members can contribute to the onset or maintenance of mental health problems (Hoagwood et al., 2014; Stallard, 2005). The majority of treatment approaches with children rely on some information from the family context as a way of understanding a child's current behaviors and symptoms (Haine-Schlagel & Walsh, 2015). Families who are unsupportive of mental health treatment can even serve as a risk factor for ongoing illness (Levant, Tolan, & Dodgen, 2002). However, with the inclusion of family members in treatment, the family can serve as a protective factor by providing support in a healthy and safe environment (Tolan & Dodge, 2005).

Most evidenced based treatment approaches for childhood mental illness include at least some degree of involvement from a caregiver and/or family (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001). The type of involvement from caregivers can range from the inclusion of caregivers in a limited number of sessions to inform them of the type of treatment their child will be receiving, to including the caregivers in the majority of the sessions, acting as co-clinicians (Stallard, 2005; Choo, 2014). Caregivers acting as co-clinicians typically participate in treatment with their children and continue providing interventions demonstrated in therapy while in the home environment (Stallard, 2005). The level of involvement may vary based on clinicians' recommendations; however, some degree of caregiver involvement is important.

Including a primary caregiver in a child's therapy can be helpful in treating mental health symptoms. Parental attendance has been associated with more successful treatment outcomes for childhood mental illness across diagnoses (Becker et al., 2015). By having primary caregivers involved in therapy sessions, children demonstrate higher rates of attendance, participation, and compliance with treatment recommendations (Becker et al., 2015). Treatment attendance and adherence is important to the development and maintenance of coping skills to combat mental health symptoms (Nock & Kazdin, 2005). Caregivers are most commonly responsible for managing their children's attendance to treatment as well as managing adherence in between sessions (Nock & Kazdin, 2005). Therefore, this factor is an important consideration in child mental health treatment.

**Health Belief Model**

The Health Belief Model (HBM) was developed in the early 1950s by social psychologists in order to improve people's acceptance of disease prevention strategies and preventative screenings (Rosenstock, 1974). Psychologists were interested in understanding how to improve the patient's compliance with treatment to prevent the spread of disease (Janz & Becker, 1984). Upon further application of the model, it was soon discovered that in order to understand a patient's acceptance of treatment, other factors such as the belief that one is at risk for disease and the belief that treatment can ameliorate symptoms associated with the disease needed to be considered (Janz & Becker, 1984). The HBM was therefore adapted to understand these variables and explain how a person ultimately comes to the decision of engaging in treatment.

It is hypothesized that there are three factors that influence an individual's decision to engage in health promoting activities. The first factor that influences a person's choice to engage in health related behaviors is the existence of motivation for the person to make a behavior change (Bush & Iannotti, 1990). A person must have the awareness that some type of behavior change needs to be made in order to avoid any risk to one's health (Rosenstock et al., 1988). The second factor that influences a person's action is the belief of some vulnerability or imminent threat to one's health and well-being if one does not engage in behavior changes (Rosenstock et al., 1998). The HBM hypothesizes that the more susceptible a person feels to health problems, the more likely it is that he or she will engage in behavior changes (Rosenstock et al., 1998). The last factor of the HBM is the belief that the health recommendation will actually benefit the person by reducing the potential health threat (Rosenstock et al., 1998). In addition to

evaluating the perceived benefits of engaging in a health related behavior, individuals may also consider the barriers they may face by engaging in the health related behaviors (Bush & Iannotti, 1990). The perceived barriers to health related change can include the physical and psychological consequences of engaging in behavior change, such as side effects or pain; the financial impact of engaging in behavior change; and the level of commitment required to engage in new behaviors (O'Connor, Martin, Weeks, & Ong, 2014). All of the factors combined have been shown to influence the likelihood of engaging in health related behaviors within the medical field.

However, there are some criticisms about how well the Health Belief Model can actually be used to predict engagement in health related behaviors. One of the biggest deficits of the HBM is that the components of the model have been poorly defined (Armitage & Conner, 2000, Taylor et al., 2007). Additionally, the rules of the model are not clearly explained, specifically regarding the rules of combination (Armitage & Conner, 2000). This means that each component of the model is considered an independent predictor of behavior change and does not consider the importance of interaction within the components, i.e. perceived susceptibility and motivation (Taylor et al., 2007). Some studies have shown that the HBM has a weak predictive value of engaging in behavior change, which may be a result of unclearly defined components and rules of combination (Armitage & Conner, 2000, Taylor et al., 2007).

The HBM was developed as a way to explain how help seeking behaviors of individuals pertain to seeking medical treatment (Rosenstock, 1974). Physicians have applied the HBM to patients with chronic illnesses such as HIV and diabetes as a way to improve patients' compliance with treatment (Calloway, Long-White, & Corbin, 2014;

Sharifirad, Entezari, Kamran, & Azadbakht, 2009). Calloway et al. (2014) demonstrated the effectiveness of addressing an individual's motivation to change, perceived susceptibility, and belief in treatment as a way to improve HIV prevention behaviors. By addressing these concerns within peer-led educational programs, the researchers found an increase in prophylactic use among individuals who had previously been unaware of their HIV risks (Calloway et al., 2014). In additional research, an educational program was designed to address compliance with medical treatment for individuals diagnosed with diabetes (Sharifirad et al., 2009). Following the nutritional education program, individuals rated a higher desire to change behaviors due to an increase in perceived susceptibility and perceived benefits in healthier living styles (Sharifirad, Entezari, Kamran, & Azadbakht, 2009). These studies have demonstrated the effectiveness of applying the HBM to improve treatment compliance and behavior change in adults with a medical illness. However, as effective as this model is for adults, it neglects to address factors that might influence children's engagement in health related behaviors.

### **Children's Health Belief Model**

In order to apply the HBM to children, it is important to consider others who may influence their decision-making and behavior change, such as their caregivers (Bush & Iannotti, 1990). Bush & Iannotti (1990) developed the Children's Health Belief Model (CHBM) to understand how children make health related behavior changes and to include the impact of caregiver's views on children. Similar to the HBM, the CHBM identifies the importance of considering the individual's perception of severity to illness and the individual's belief that engaging in a behavior will be beneficial and reduce their symptoms or risk for illness (Bush & Iannotti, 1990). However, due to studies that have

found that children's perceived risk of vulnerability has a weak correlation in engaging in health related behaviors, perceived vulnerability was not included in the CHBM (Gochman & Saucier, 1982; Bush & Iannotti, 1990). The CHBM addresses the developmental perspective of children and incorporates caregivers' health expectations and beliefs because they play a significant role in the development of children's beliefs (Bush & Iannotti, 1990; Davidson & Fristad; 2006). In order to demonstrate the applicability of the CHBM, Bush and Iannotti (1990) conducted a study with 270 children and their primary caregivers to examine their intention to use medicine for common health problems (colds, fever, upset stomach, nervousness, and trouble sleeping). The researchers found that perceived severity, perceived medical benefit, and health locus of control were the greatest factors that influenced expected medication usage (Bush & Iannotti, 1990). Second, they found that primary caregiver variables, particularly perceived child's vulnerability and illness, concern for their child, significantly contributed to the variance found in expectations of medication for children (Bush & Iannotti, 1990). Therefore the CHBM is a more accurate model of how children's beliefs and willingness to engage in health-related behaviors are developed.

### **Beliefs in Treatment**

As proposed by the health belief model, a large factor influencing a person's likelihood to seek and comply with treatment is the person's belief that a particular treatment will be successful (Rosenstock et al., 1988). If a person does not believe in the effectiveness of a particular treatment, he or she is less likely to follow through with recommendations made by professionals or to engage in treatment (Staudt, 2007). This then puts a person at risk for more health-related problems because he or she is not able

to benefit from the full effects of treatment. In order to help motivate a person to participate in life changing treatment, it is important to consider his or her beliefs about treatment.

Beliefs about treatment typically consist of two main ideas, treatment credibility and treatment expectations. Treatment credibility refers to an individual's belief that a certain intervention makes sense or is logical in the treatment of his or her illness (Kazdin, 1979). Treatment expectations include an individual's beliefs that a certain treatment will lead to a reduction in symptoms and in improvements in overall well-being (Kazdin, 1979). Although these are distinct constructs, they are typically studied together, particularly in identifying barriers to successful treatment outcomes (Nock et al., 2007; Devilly & Borkovec, 2000).

### **Adult Beliefs in Treatment**

Among adults, beliefs about treatment have been found to have a significant impact on treatment outcomes. Researchers have examined how the strength of people's beliefs, positive or negative, may influence their participation in treatment and in treatment success. In one particular study focused on treatment credibility and expectancy, researchers examined the association between people's expectations about therapy and their improvement in treatment (Joyce, Ogrodniczuk, Piper, & McCallum, 2003). The patients in the study were responsible for rating their expected improvement on specific goals in treatment prior to their first session. This was then compared with the therapists' and with patients' ratings of improvement after treatment. The study found a positive relationship between each patient's pre-treatment outcome expectancies and improvement on goals, as rated by both the therapist and patient (Joyce et al., 2003). The

research suggests that having a strong, positive belief that treatment will be efficacious in reducing symptoms influences the likelihood of treatment being successful. This may be due to the fact that individuals who believe treatment will help them are more likely to participate in treatment recommendations (Joyce et al., 2003). Similar results have been found in patients who are receiving treatment for anxiety disorders. In two different studies, researchers examined expectations and beliefs of patients involved in cognitive therapy for anxiety disorders (Fromm, 2001; Borkovec, Newman, Pincus, & Lytle, 2002). Fromm (2001) found that patients who had stronger, positive expectations of treatment showed a greater reduction in their mental health symptoms. Borkovec et al. (2002) also found a clinically significant change in mental health symptoms when patients rated greater perceptions of treatment credibility. Similar results have also been found in inpatient treatment settings, where there may be different views about expectations.

Within an inpatient setting, the expectations of patients are more variable, based on the nature of their hospitalization. Individuals may have more negative expectations regarding the outcome of treatment if they have been involuntarily committed, or if they have been in treatment numerous times. In order to determine the different beliefs within an inpatient setting, Holtforth et al. (2011) examined the relationship of positive of negative expectations of treatment and its impact on treatment outcomes. Comparable with other studies, the individuals who had positive expectations about treatment demonstrated greater improvement in symptom reduction on outcome measurements and continued to have positive expectations of treatment (Holtforth et al., 2011). However, some of the individuals with negative treatment expectations prior to the start of treatment rated positive treatment expectations and they had positive treatment outcomes

after completion of treatment (Holtforth et al., 2011). This suggests that treatment expectations are not fixed and may change throughout the therapeutic process (Holtforth, et al., 2011). This study demonstrates the importance of assessing treatment expectations upon intake in order to facilitate change in the therapeutic process.

### **Children Beliefs in Treatment**

There is limited research on how children's beliefs about mental health treatment play a role in the outcomes of treatment. More research, however, has focused on the treatment of chronic physical illnesses in childhood. Among the research on this topic, the main focus is examining how treatment beliefs can motivate behavior changes to reduce the onset of health symptoms later in life. Positive behavior changes in the management of chronic illness have been associated with a better quality of life and a decrease in short and long term complications of illness (Selekman, Scofield, & Swenson-Brousell, 1999; Herrman, 2006). Programs that improve a child's understanding of the benefits of treatments have been helpful to the behavior change process. This is especially important for children because their belief systems are more adaptable to change, which can contribute to a greater likelihood of behavior change when compared with that of adults (Selekman et al., 1999).

Implementing educational programs for children with diseases such as diabetes has been helpful in changing the beliefs about available treatments (Selekman et al., 1999). Researchers who studied children with diabetes found that changing the children's perceptions of the costs and benefits of engaging in treatment leads to a stronger adherence to treatment and to preventative diabetes management behaviors (Selekman et al., 1999; Charron-Prochownik, Becker, Brown, Liang, & Bennett, 1993). Similar

education approaches, such as anti-smoking and anti-drug programs have been used to shape children's beliefs about the risks of particular behaviors. These programs have been successfully used to reduce the number of children who start to smoke or use drugs (Farrelly, Davis, Haviland, Messeri, & Heaton, 2005). From the research available, it does appear that children's beliefs do play a role in their likelihood to engage in treatment.

In terms of mental illness, children's beliefs have been studied even less. Children tend to have fewer experiences with mental illness and psychotherapy treatments and therefore may have fewer expectations about the treatment they are receiving (Day & Reznikoff, 1980). Davidson and Fristad (2006) found that providing psychoeducation to children regarding their treatment for mental health disorders influenced the children's beliefs about treatment. In particular, children who received psychoeducation had more positive beliefs about treatment following a 6 month time period (Davidson & Fristad, 2006). However, because the CHBM suggests that children's beliefs are shaped by their caregivers, it is also important to consider the role of caregiver beliefs on treatment outcomes for their children.

### **Caregiver Beliefs in Treatment**

As previously mentioned, an individual's beliefs about treatment can impact the likelihood that he or she will seek out and participate in services. In the case of children, caregivers play a large role in the engagement of health-seeking behaviors. Caregivers are commonly responsible for initiating treatment for their children, for transporting to appointments, and paying for costs associated with a particular treatment (Nock et al., 2007). Unlike most adult treatments, the majority of children do not seek out treatment on

their own (de Haan et al., 2013). Therefore, the responsibility typically falls on the caregivers to bring their children to treatment. Due to this responsibility, caregivers' particular beliefs about treatment are an important area to understand. Caregiver beliefs in the effectiveness and credibility of treatment may have a strong influence on whether or not children receive treatment for medical or mental health problems. Therefore, it is important to assess how caregivers' beliefs may impact treatment for their children.

Because caregivers have such a powerful role in children's engagement in treatment, it is important to assess their beliefs about treatment for their children. Examining caregivers' beliefs can provide information regarding their intent to participate in treatment as well as their children's participation in treatment. In one particular study, researchers examined how addressing caregivers' beliefs about treatments may lead to greater engagement in treatment (Prinz & Miller, 1994). An enhanced family therapy program was developed, which allowed time for the clinicians to elicit and discuss the caregivers' beliefs about how treatment will help their children, caregivers' beliefs about being in treatment, and any barriers that caregivers were experiencing related to treatment (Prinz & Miller, 1994). By including these areas of exploration, the families in the enhanced family therapy program were significantly more likely to remain in treatment compared with those in the standard family therapy. Caregivers in the standard family therapy, who dropped out of treatment, were also more likely to cite dissatisfaction with treatment as the reason for their dropping out (Prinz & Miller, 1994). Therefore, by understanding caregiver beliefs, clinicians may be able to address any concerns that lead to dissatisfaction in treatment and improve caregivers' participation in treatment.

Overall, research has demonstrated the fact that individuals' beliefs and expectations of treatment influence their participation and adherence to treatment recommendations. However, there is a need to understand more about the beliefs and expectations of children and their caregivers. As the rates of mental illness in children rise, it is important to find ways for children and caregivers to comply and benefit from mental health treatment. The current study will examine how children and caregiver beliefs and expectations of treatment, adherence, and participation affect treatment outcomes.

### Chapter 3: Hypotheses

**Hypothesis 1:** Caregiver treatment beliefs and expectations will become more positive through the course of treatment. There is evidence that treatment beliefs and expectations can change in a positive direction through the course of treatment (Holtforth et al., 2011).

**Hypothesis 2:** Children's treatment beliefs and expectations will become more positive through the course of treatment. As mentioned previously, there is some evidence that treatment beliefs are malleable after the onset of treatment (Holtforth et al., 2011).

**Hypothesis 3:** Caregivers' initial beliefs and expectations of their children's outpatient mental health treatment will predict their participation in treatment. The limited research available indicates that more positive caregiver beliefs regarding treatment expectations and credibility have increased their participation in their children's treatment (Nock et al., 2007; Nock et al., 2001).

**Hypothesis 4:** Caregivers' initial beliefs and expectations of their children's outpatient mental health treatment will predict their adherence to treatment recommendations. Similar to the research mentioned previously, studies have found that stronger beliefs in treatment have led to an increase in adherence to treatment by both the child and caregiver and subsequent improvement in symptoms (Nock et al., 2001; Nock et al., 2007; Reimers et al., 1995). In adults, stronger beliefs and expectations of treatment have contributed to their adherence to treatment recommendations for themselves (Joyce et al., 2003).

**Hypothesis 5:** Higher levels of caregiver treatment adherence, more caregiver participation in treatment, and stronger caregiver beliefs and expectations of a child's outpatient therapy treatment will predict the amount of change in their children's mental health symptomology after 6 months or treatment completion in outpatient therapy. Previous studies in the medical field have demonstrated that caregivers with stronger beliefs about credibility and expectations of treatment comply more fully with medication management and adhere to treatment recommendations by their children's physician (Callery et al., 2003; Gable & Lutz, 2000).

**Hypothesis 6:** Children with stronger initial beliefs and expectations of their own mental health treatment will have a greater amount of change in their mental health symptomology after 6 months or completion of outpatient therapy. There is a small amount of research in the area of children's beliefs and expectations regarding their treatment for mental health symptoms. In one study, children with stronger treatment beliefs and expectations were more likely to participate in treatment and have greater adherence to psychiatric recommendations (Davidson & Fristad, 2006). Medical research has found that more positive beliefs about treatment have led to more positive outcomes in diabetes and asthma management (Selekman et al., 1999; Charron-Prochownik et al., 1993).

## **Chapter 4: Methods**

### **Participants**

The data for this study were part of an archival data set. The participant description is based on the original study from which the archival data were collected. The participants consisted of 85 children (34 boys, 51 girls) and one caregiver participant per child. They were recruited from a suburban community outpatient clinic that specializes in mental health treatment for children and families. Participants were children ages 8-18 and one of their primary caregivers. The mean age of the children participating in the study was 14 years old. Sixty-seven (78.8%) of the participants identified as Caucasian; 10 (11.8%) of the children were African American; 7 (8.2%) identified as Hispanic, and 1 (1.2%) identified as Asian. The demographics on the caregivers were unavailable because the data were derived from an archival data set which did not include information on the caregivers. Due to incomplete assessments and/or drop out during the study, the participant number varied for each hypothesis. Each child had a mental health diagnosis and was receiving outpatient therapy at the clinic. Participants were screened during the intake to determine their eligibility during the study.

### **Inclusion Criteria**

Children and their caregivers were included in the study if the child had a mental health diagnosis and was attending outpatient therapy at the community clinic. The children must have been between the ages of 8 to 18 at the time of the study and had to be able to read the measures provided in the study. Each child had to have one caregiver that was willing to complete measures as part of the study. Caregivers attended sessions as

required by their children's therapists; however, there was no specific attendance requirement for the study.

### **Exclusion Criteria**

Any child who was receiving a higher level of care in addition to receiving outpatient therapy was excluded from the study. In addition, if any of the initial questionnaires at the time of intake were not completed by the child and caregiver, these were excluded from the study.

### **Measures**

#### **Demographic information**

Demographic information was routinely collected during the intake as part of the regular outpatient clinic procedures. The demographic information collected included gender, age, and ethnicity.

#### **Mental illness symptoms- Caregiver report**

The children's symptoms were measured by the Child Behavior Checklist for Ages 6-18 (CBCL Achenbach, 2001). The CBCL is a 113 item self-report measure that assesses multiple problem issues in children and is completed by the primary caregiver. The items are scored from 0 to 2 (0= not true, 1= somewhat or sometimes true, and 2= very true or often true) (Achenbach & Rescorla, 2001). The CBCL has empirically supported symptom scales, which include anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior (Achenbach & Rescorla, 2001). There are also 6 DSM-oriented scales consistent with the DSM-IV, which include depressive problems, anxiety problems, somatic problems, attention deficit/hyperactivity problems, oppositional defiant problems, and conduct problems (Achenbach & Rescorla, 2001). The

CBCL was used to assess the presence and severity of symptoms in children ages 8 to 10. Raw scores on the CBCL are converted to normalized T-scores based on gender and age (Achenbach & Rescorla, 2001). The CBCL was normed on 1,753 children who were receiving mental health, substance abuse, or special education services (Achenbach & Rescorla, 2001). There is a very high inter-interviewer reliability for the CBCL, which has been found to be .96 for the problem items ( $p < .001$ ) (Achenbach & Rescorla, 2001). The test-retest reliability of the CBCL is also very high and ranged from .80 to .90 (Achenbach & Resorla, 2001). The CBCL has shown strong construct validity when correlated with the Behavior Assessment System for Children (BASC), with correlations ranging from .38 to .89 ( $p < .01$ ) (Achenbach & Rescorla, 2001). The highest correlations were found between the DSM-oriented scales and the BASC scales, which ranged from .52 to .89 ( $p < .01$ ) (Achenbach & Rescorla, 2001).

### **Caregiver treatment beliefs and expectations**

Caregiver's beliefs and expectations of their children's mental health outpatient treatment were measured using a modified version of the Credibility/Expectancy Questionnaire (CEQ, Devilly & Borkovec, 2000). The six-item CEQ was adjusted to reflect the view of the caregiver about his or her child's treatment. In addition, the word trauma in the last three items was dropped so that the measure could be used for all mental health disorders. The first set of questions for the CEQ for caregivers, items 1-3 assessed the caregiver's beliefs about the credibility of treatment for his or her child and the last set of items assessed the caregiver's expectations for his or her child's treatment. The scales of the measure were kept the same as the original CEQ version, where items 1, 2, 3, and 5 were scored on a 9 point Likert scale (1 = not at all or not at all logical and 9 =

very much or very much logical). The other two items, 4 and 6 were measured by percentage of improvement that the parent expected to see, ranging from zero to 100%.

The CEQ has been found to have high reliability and construct validity in adult clinical samples (Devilley & Borkovec, 2000). The test-retest reliability of the CEQ was found to be 0.82 for the expectancy section and 0.75 for credibility (Devilley & Borkovec, 2000). The CEQ for caregivers was administered during the intake session and again at six months into the treatment session or at treatment completion. A six month time period was chosen to administer the CEQ in order to align with the administration of the CBCL. The clinic had been administering the CBCL in six month increments, so it was determined to give the CEQ at the same time.

#### **Child treatment beliefs and expectations**

The child's treatment beliefs and expectations were measured using a modified version of the CEQ (Devilley & Borkovec, 2000). The language of the six-item CEQ was changed slightly to a more basic language level that was easier for child comprehension. The word trauma was also removed from items 4 through 6, so that the measurement could be administered to all children with any mental health diagnosis. The CEQ- Child version consisted of six items, with the first set of items (1-3) measuring the child's beliefs about treatment credibility and the last three items (4-6) measuring the child's treatment expectations. The scales of the measurement were kept the same as the original CEQ version and were consistent with the CEQ- Caregiver version. Items 1, 2, 3, and 5 of the measurement were scored on a 9 point Likert scale (1 = not at all or not at all logical and 9 = very much or very much logical), and items 4 and 6 were measured by percentage of improvement that the child expected to see, ranging from zero to 100%.

The psychometric properties of the CEQ have been demonstrated within an adult clinical population (Deville & Borkovec, 2000). The CEQ has demonstrated strong test-retest reliability with a 0.82 reliability for the expectancy section (items 1-3) and 0.75 for credibility (items 4-6) (Deville & Borkovec, 2000). The CEQ-Child was administered to each child during the intake session and at 6 months into treatment or upon treatment completion. Similar to the CEQ, the six month time period between administrations of the CEQ-Child was chosen to match with the administration of the CBCL.

### **Caregiver treatment adherence and treatment participation**

The caregiver's participation in their child's outpatient treatment and their treatment adherence was measured by a questionnaire developed for this study. The questionnaire was completed by the child's outpatient therapist and consisted of three questions. The first question asked "Based on the level of participation you expected, how much did the caregiver participate in your client's treatment during the past 6 months?" The clinician was required to rate participation on a 10 point Likert scale (0=below expectations and 10= meeting expectations). The second question assessed the caregiver's adherence to treatment recommendations by asking "During the past 6 months, how well did the caregiver of your client follow through with strategies you recommended in treatment?" The response was on a 10 point Likert scale (0=did not follow any recommendations and 10=followed all recommendations). Last, the third question asked "During the past 6 months, when given something to work on during the time in between sessions, how often would the caregiver and client complete the work?" This was also rated on a 10 point Likert scale (0=did complete the work at all and

10=fully completed the work). The clinician's rated the caregiver's level of participation and treatment adherence after 6 months of treatment or at treatment completion.

### **Procedure**

A training session was conducted for all clinicians at the clinic involved in conducting intakes and therapy with individuals involved in the study. The training session provided clinicians with information regarding the study methods and purpose, how to distribute and interpret the measures, and the informed consent procedures for the children and caregivers.

Children and caregivers who attended an intake appointment for services and who were recommended for outpatient therapy were asked at the beginning of the appointment if they would be interested in participating in the study. The caregiver and child were given an explanation about the purpose of the study and information regarding the requirements of their participation. After the caregiver and child completed the informed consent, they were provided with a CBCL, CEQ-Caregiver, and CEQ- Child to complete during the intake appointment. Caregivers of children between the ages of 8 and 10 were given the CBCL to complete in order to identify current symptoms. After completion of the intake and measures, and per the established protocol at the clinic, participants were assigned to an outpatient clinician at the facility.

Following the intake session, participants were added to a tracking form that was monitored by a staff member at the agency. The participants attended treatment as required by their assigned clinician. Following a 6 month period of treatment from the initial intake appointment or completion of treatment, the child and caregiver were reassessed. The outpatient clinician was notified that his or her client was due for an

assessment and provided the child and caregiver with a CBCL, CEQ-Caregiver, and CEQ- Child. The participants were required to complete these assessments in person. The outpatient clinician also completed a caregiver participation and treatment adherence questionnaire at the 6 month time period or at treatment completion. After the data were collected, it was entered into an SPSS data set and used for analyses to examine the research questions of the study.

## Chapter 5: Results

The goal of the current study was to examine how both caregivers' and children's beliefs and expectations of outpatient mental health treatment predict participation, treatment adherence, and symptom reduction. In order to evaluate these relationships, six hypotheses were tested using repeated-measures t-tests, simultaneous multiple regression analysis, and simple linear regression. A repeated-measures t-test is used to determine a significant mean difference between two sets of data for the same population (Gravetter & Wallnau, 2009). The repeated-measures t-test examines the same individuals across time or treatment to examine the difference between scores (Sheskin, 2007).

Simultaneous multiple regression is an analysis that increases the accuracy of prediction between a criterion variable and multiple predictor variables (Sheskin, 2007). A simultaneous multiple regression analyzes multiple predictor variables at the same time, in order to predict the criterion or outcome variable (s) (Sheskin, 2007). This form of analysis will allow multiple variables to be examined in order to make a prediction about the dependent variable. In comparison with a multiple regression, simple linear regression uses one predictor variable to predict a criterion variable (Sheskin, 2007).

There are two assumptions that must be met for a repeated-measures t-test to be used. First, within each treatment condition, the scores must be independent of one another (Gravetter & Wallnau, 2009). This means that the scores for each individual are obtained at different times within the study. Second, the population must be normally distributed (Gravetter & Wallnau, 2009). Without a normally distributed population, the results may not be valid. In order to determine if the data were normally distributed, a Shapiro-Wilk test of normality was run. For the first hypothesis, it was found that the

initial treatment beliefs and expectations of the caregivers and the caregiver treatment beliefs and expectations at the end of treatment were not normally distributed. The dependent t-test was still computed, but should be interpreted with caution because it did not meet the assumption of normal distribution. Information about the completed measures is provided in Table 1.

Table 1

*Descriptive Statistics for Measures*


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<u>Measure</u>	<u>N</u>	<u>Range</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Mean</u>	<u>SD</u>
Initial CBCL-Internalizing	50	51	33	84	65.06	10.8
Initial CBCL-Externalizing	50	54	34	85	60.04	11.27
Post Treatment CBCL-Internalizing	20	44	41	85	60.65	11.98
Post Treatment CBCL-Externalizing	20	43	34	77	55.55	9.76
Initial CEQ-Child	85	52	4	56	38.99	12.16
Post Treatment CEQ-Child	28	51	4	55	41.57	10.8
Initial CEQ-Caregiver	84	37	19	56	46.19	7.35
Post Treatment CEQ-Caregiver	23	27	27	54	46.26	7.24
Clinician Rating Scale	44	30	0	30	17.05	8.58

For the first hypothesis, to investigate if caregiver's treatment beliefs and expectations became more positive over the course of treatment, a dependent samples t-test was conducted. There were a total of 23 participants and a post hoc power analysis revealed a power level of .75. No significant differences were found between caregivers'

beliefs and expectations at intake ( $M = 48, SD = 7.45$ ) and caregiver's beliefs and treatment expectations after 6 months of treatment ( $M = 46.26, SD = 7.24$ ),  $t(22) = .935$ ,  $p = .360$ . Therefore, caregivers' beliefs and expectations did not change over the course of treatment.

In the second hypothesis, a dependent samples t-test was also calculated to identify if children's beliefs and expectations would become more positive over the course of treatment. A Shapiro-Wilks test of normality revealed that initial and post-treatment children's beliefs and expectations were not normally distributed. The test should be interpreted with caution because the assumption of normal distribution was not met. For this hypothesis, the total participant number was 28, with a power level of .82. The calculations demonstrated that there was not a significant difference in the children's treatment beliefs and expectations scores at intake ( $M = 40.43, SD = 8.74$ ) and children's treatment beliefs and expectations scores after completing 6 months of treatment ( $M = 41.57, SD = 10.80$ ),  $t(27) = -.446, p = .659$ . These results show that children's beliefs and expectations about treatment did not change over the course of treatment.

In order for both simple linear regression and simultaneous multiple regression to be used, they first require that many assumptions be met. The first assumption is that each score for a subject is independent of the scores of other subjects (Keith, 2014). Second, linear and multiple regression assumes that each of the variables are normally distributed and all of the scores on the criterion variable are normally distributed (Sheskin, 2007). A third assumption of regression is that of linearity. Linearity describes the relationship between the predictor and criterion variables and states that there is a linear relationship between these variables (Sheskin, 2007). Last, in

order for regression to be used, an assumption of homoscedasticity must be met. Therefore, the variances of the criterion variable across all values of the predictor variables will be constant (Sheskin, 2007).

The third hypothesis explored whether or not caregivers' initial beliefs and expectations of their children's mental health treatment predicted their participation in treatment. To understand this hypothesis, a simple linear regression was conducted. The predictor variable was the caregivers' initial beliefs and expectations of treatment as measured by the total score of the CEQ-Caregiver, and the criterion variable was the caregivers' participation in treatment as measured by the Clinician rating scale Item #1, which measured participation. The total participants in this hypothesis were 44, which has a power level of .81 and a medium effect size. A Pearson correlation was conducted to determine if there was a linear relationship between caregiver participation in treatment and initial caregiver treatment beliefs and expectations. A small correlation,  $r(42) = .155$ ,  $p = .158$  between the two variables indicated that the assumption of linearity for a simple regression was met. A simple linear regression was performed for hypothesis three and was found not to be statistically significant,  $F(1,42) = 1.033$ ,  $p < .315$ . The identified equation to understand this relationship was caregivers' initial treatment beliefs and expectations =  $.072 * \text{caregiver participation in treatment} + 3.063$ . The adjusted  $R$  squared value was .001. This indicates that 0.1% of the variance of caregiver participation can be explained by initial caregivers' beliefs and expectations. Therefore, caregivers' beliefs and expectations about their children's treatment cannot predict their participation in the children's treatment.

The fourth hypothesis also used a simple linear regression to analyze the data. This hypothesis used caregivers' beliefs and expectations of the children's treatment to predict their treatment adherence. The predictor variable was caregivers' beliefs and expectations of their children's outpatient treatment, which was used to predict their adherence to treatment recommendations, the criterion variable. Similar to hypothesis three, a total of 44 participants were used, which had a power of .81 and a medium effect size at the .05 level. To test the fourth hypothesis, a simple regression was performed to identify how well caregivers' initial beliefs and expectations of treatment, as measured by total score on the CEQ-Caregiver, can predict caregiver treatment adherence on the Clinician rating scale. A Pearson correlation was conducted to determine if the assumptions of linearity were met and if there was a relationship between caregiver adherence to treatment and initial caregiver treatment beliefs and expectations. The Pearson correlation was not significant,  $r(42) = .017, p = .456$ , which indicated that there is not a linear relationship between caregiver adherence and initial caregiver treatment beliefs and expectations. Therefore, the results should be interpreted with caution. Nevertheless, for educational purposes, a simple linear regression was calculated, revealing nonsignificance,  $F(1, 42) = .012, p < .912$ . The identified equation to understand this relationship was caregivers' beliefs and expectations =  $.014 * \text{score on caregiver treatment adherence} + 9.969$ . The adjusted  $R$  squared values was  $-.024$ . Due to the negative adjusted  $R$  squared, it should be interpreted that 0% of the variance in caregiver treatment adherence can be explained by caregivers' treatment beliefs and expectations. Therefore, caregivers' initial beliefs and expectations cannot predict their adherence to treatment recommendations made by the clinicians.

The fifth hypothesis examines how caregivers' initial beliefs and expectations, caregivers' treatment adherence, and caregivers' treatment participation predict fewer childhood mental health symptoms. For hypothesis five, a multiple regression was considered; the predictor variables consisted of caregivers' beliefs and expectations of their children's outpatient treatment, participation in their children's outpatient treatment, and treatment adherence. The variables were used to predict the criterion variable, symptom reduction in their children's mental health symptoms. Unfortunately for this hypothesis, because of incomplete data collection and drop out, there were only 15 participants that could be considered for this hypothesis, which would have a power of .18. This analysis is so underpowered that the results of the statistical calculations cannot be interpreted. Therefore, this test was not run, but would be important to test in future research. Despite the small number of participants a correlation between each variable was run instead, for the purposes of the dissertation process.

Bivariate correlations were conducted between each of the variables to determine the degree to which the variables were related. More specifically, bivariate correlations were run to determine if caregivers' treatment adherence and participation in treatment, and/or caregivers' beliefs and expectations of the children's treatment would predict symptom reduction, as measured by change scores on the CBCL. Due to the complexity of measuring symptom reduction, separate correlation tests were run to observe the change in caregivers' scores on the CBCL for internalizing and externalizing symptoms.

For internalizing symptoms as reported on the CBCL, two separate Pearson correlation tests were run. The first Pearson correlation was conducted to determine if there is a significant relationship between caregivers' treatment adherence and

participation on symptom reduction of internalizing symptoms, as reported by the caregiver on the CBCL. The Pearson correlation was not significant,  $r(17) = .314, p = .110$ . Overall, change in internalizing symptoms cannot be explained by caregiver treatment adherence and participation.

Another Pearson correlation was conducted to determine if there is a significant relationship between initial caregiver treatment beliefs and expectations and change in internalizing symptoms on the CBCL. The Pearson correlation was not significant,  $r(20) = .270, p = .125$ . The change in internalizing symptoms on the CBCL cannot be explained by initial caregiver treatment beliefs and expectations.

In order to determine correlations with changes in externalizing symptoms as reported on the CBCL and caregiver treatment adherence and participation and initial treatment beliefs and expectations, two different bivariate correlations were run. The first Pearson correlation was conducted to determine if there is a significant relationship between caregiver treatment adherence and participation and change in externalizing symptoms. The Pearson correlation was not significant,  $r(17) = .060, p = .409$ . This indicates that change in children's externalizing symptoms cannot be explained by caregiver treatment adherence and participation.

The last Pearson correlation was conducted to determine if there is a significant relationship between caregiver initial treatment beliefs and expectations and change in externalizing symptoms. The Pearson correlation was found to be statistically significant,  $r(20) = .571, p < .004$ . The squared value indicates that approximately 32.6 % of the variance in externalizing symptoms on the CBCL can be explained by caregiver initial treatment beliefs and expectations. Thus, caregivers' initial beliefs and expectations of

treatment are related to their children's changes in externalizing symptoms over the course of treatment. It is important to remember that these correlations were run for educational purposes despite having a low participant number.

Last, hypothesis six was analyzed using a simple linear regression. The sixth hypothesis examined how children's initial beliefs and expectations predicted mental health symptomology through treatment. The predictor variable consisted of the children's initial beliefs and expectations of treatment, as measured by the CEQ-Child. The initial CEQ-Child scores were used to predict the criterion variable, symptom reduction of the children's mental health symptoms, as measured by the change in symptomology reported on the CBCL from intake to 6 months or to treatment completion. The analysis was run for two separate reports of symptomology, internalizing and externalizing behaviors as reported on the CBCL. A total of 20 participants were used for this hypothesis with a power of .50.

A simple linear regression was used to investigate how well children's initial beliefs and expectations predicted changes in internalizing symptomology, as rated by caregivers on the CBCL. A Pearson correlation was calculated to determine linearity. The Pearson correlation was not significant,  $r(18) = -.003$ ,  $p = .495$ , indicating there is not a linear relationship between children's initial treatment beliefs and expectations and change in internalizing symptoms as measured by the CBCL. The results should therefore be interpreted with caution because the assumption of linearity has not been met. The results of the regression were not statistically significant,  $F(1, 18) = .000$ ,  $p < .989$ . The identified equation to understand the relationship was  $\text{internalizing CBCL score} = -.003 * \text{total CEQ-Child score} - 1.252$ . The adjusted  $R$  squared value was  $-.056$ . This indicates that

0% of the variance in CBCL score of internalizing symptomology can be accounted for by children's treatment beliefs and expectations.

A simple linear regression was also used to measure how well children's beliefs and expectations of treatment can be used to predict changes in externalizing symptoms, as measured by the CBCL. Again a Pearson correlation assessing linearity  $r(18) = .059$ ,  $p = .403$ , indicated no linear relationship between the two variables. For educational purposes, it was decided to run the simple regression anyway. Results were not statistically significant,  $F(1,18) = .062$ ,  $p < .806$ . The identified equation to understand the relationship is externalizing CBCL score =  $.031 * \text{total CEQ-Child initial score} - 3.618$ . The adjusted  $R$  squared value was  $-.052$ . This indicates that 0% of the variance in CBCL scores on externalizing behaviors, as measured on the CBCL can be explained by children's treatment beliefs and expectations score. It also suggests that there is no relationship between scores, treatment beliefs and expectations from children and their change in symptomology over the course of treatment.

## Chapter 6: Discussion

### Overview

The goal of this study was to identify the relationship between caregiver and child treatment beliefs and expectations, caregiver treatment adherence, and caregiver treatment participation. To date, there has been a limited amount of research examining the role of children's and caregivers' beliefs and expectations regarding mental health treatment for children. Therefore, this study aimed to expand upon the research that has already existed in order to gain a greater understanding of the role of treatment beliefs for both caregivers and children.

The first and second hypothesis of the study specifically examined how treatment beliefs and expectations change during the course of treatment for both caregivers and children. Research in the field of medicine has shown that treatment beliefs are an important component to treatment outcomes, which can most commonly be seen in studies using placebo medications (Bingel et al., 2011; Crow et al., 1999). However, there has been much less attention on how treatment beliefs and expectations may change through the course of mental health treatment. The first two hypotheses of this study found that neither caregivers' nor children's beliefs changed during the course of treatment. . These findings of no change in beliefs and expectations across a 6 month time period were also observed in a study of children's belief and expectations (Davidson & Fristad, 2006).

A possible explanation for the reasons why treatment beliefs and expectations did not change during the course of the treatment may be due to the strength of beliefs at the beginning of treatment. This may also explain the reason why the population was not

normally distributed. The participants in this study, who were seeking treatment for themselves and their children, may have had higher than normal treatment beliefs and expectations of treatment, compared with others in the same population. Both caregivers and children began with high treatment beliefs and expectations at their intake appointment, with the average caregiver's treatment beliefs and expectations at 46 out of 56, and children's treatment beliefs and expectations being 38 out of a total of 56. Because of already high beliefs and expectations, particularly for the caregivers, there was little room for their scores to increase. The children's beliefs, despite being nonsignificant, had a slight increase in beliefs and expectations about treatment, from 39 to 41, after 6 months of treatment. It could be that these participants may have been more highly motivated to seek treatment, which had an impact on their treatment beliefs and expectations, as well as treatment adherence and participation. In addition, the fact that treatment beliefs and expectations of caregivers and children did not change during the course of treatment, may mean that beliefs and expectations remain constant. Perhaps when individuals have high beliefs and expectations in treatment, their beliefs do not change during the course of treatment. This can be helpful in retaining patients in treatment and suggests that other factors besides symptom reduction may contribute to individual's beliefs and expectations related to treatment.

An important consideration is that this population was not normally distributed and therefore the results cannot be accurately interpreted. It would be recommended to re-run this test with a larger population because a bigger sampling distribution would be more likely to be normally distributed.

The third and fourth hypotheses in this study examined if caregivers' beliefs and expectations about their children's treatment predicted their participation and adherence in their children's treatment. Previous research has demonstrated that caregivers' beliefs and expectations have been used to predict motivation, adherence, and attendance in treatment (Nock et al., 2007; Davidson & Fristad, 2006). Unfortunately, this study did not find any predictive value in looking at caregiver treatment beliefs and expectations on treatment participation and adherence. Additionally, the assumptions of a linear relationship were not met in the fourth hypothesis and cannot be accurately interpreted. Therefore, the predictability of caregiver treatment beliefs and expectations on treatment adherence should not be interpreted from the present study.

One possible explanation for the lack of predictability of caregiver treatment beliefs and expectations, which has been suggested through other research, is that the relationship between caregiver expectations and beliefs and treatment attendance may have more of a curvilinear shape (Nock et al., 2001; Park & Covi, 1965). This would suggest that caregivers who have either very low or very high expectations or beliefs about their children's treatment would be the population best suited to participate in their children's' treatment, whereas individuals with moderate beliefs and expectations would be less likely to attend treatment. Individuals who have very low expectations about treatment typically do not expect to see change or improvement from therapy. Therefore, when a change does occur, they are more likely to change their beliefs and expectations and attend more therapy sessions (Nock et al., 2001). On the other hand, individuals with very high levels of treatment expectations are more likely to attribute any changes to treatment and continue to attend sessions (Nock et al., 2001). The population from this

study started with moderate to high treatment beliefs and expectations, which remained consistent during the course of treatment. It could be possible that those caregivers who had moderate beliefs about treatment were less likely to attend sessions because they did not feel that their attendance would contribute to any treatment progress (Nock et al., 2001).

Another factor to consider was that caregiver adherence and participation was measured, based on the clinician's self-report. The measurement used to assess adherence and participation was created for this study and was based on a different treatment adherence questionnaire (Nock et al., 2007). The Clinician rating scale that had been developed for this study has not been examined for reliability and validity. Therefore the accuracy of the measures can be questioned and/or may have been inaccurately reported by the clinician's self-report.

As mentioned in the results section, the fifth hypothesis cannot be interpreted due to the small number of participants. It is recommended that a multiple regression that examines hypothesis 5 should be re-run with a sufficient number of participants. Bivariate correlations were run in place of the multiple regression for the purpose of this dissertation; however, they still cannot be accurately interpreted because of the small participant size. The Pearson correlations did show one significant relationship between change in externalizing behaviors and caregiver initial treatment beliefs and expectations, but again this cannot be accurately interpreted. It would be helpful to re-run this correlation, and if a significant relationship is still found, this may suggest that caregiver treatment beliefs and expectations do have a relationship with externalizing children's mental health symptoms. Previously, research has shown that treatment adherence,

participation, and caregiver beliefs and expectations could be used to predict treatment outcomes (Nock et al., 2007; Nock et al., 2001). It would be beneficial for this study to understand those factors that contributed to the drop out and incomplete assessments.

The lack of participants in this study was due to drop out and incomplete assessments at the end of the 6 month treatment. Traditionally, community mental health outpatient facilities have had higher numbers of those who drop out, ranging as high as 38- 45% (Olfson, Mojtabai, Sampson, Hwang, & Kesller, 2009; Staudt, 2007). One factor that had not been considered during this study was the impact of the clinician on participation, adherence, and attendance in treatment. It has been suggested that there are two components to engagement in treatment. One is the behavioral component, which examines the client's actual performance and engagement in tasks associated with participation in treatment (Staudt, 2007). The second is the attitudinal component, which consists of treatment beliefs and expectations as well as emotional attachment and rapport (Staudt, 2007). The therapeutic alliance and/or rapport that had been established with the clinician may have contributed to the high level of drop out that was seen during the 6 month follow up in treatment.

Last, the sixth hypothesis examined how children's treatment beliefs and expectations would predict treatment outcomes. This hypothesis was more exploratory in nature due to the fact that there have been limited studies in this area and those studies have focused more closely on medical and psychiatric services (Davidson & Fristad, 2006; Selekman et al., 1999). The results were not significant for this hypothesis and the children's treatment beliefs and expectations could not be used to predict treatment

outcome. The results may be due to having a low sample size and may not be an accurate interpretation.

Overall, the results of this study did not find any relationships between children and caregiver treatment beliefs and expectations, caregiver participation in treatment, and mental health symptom reduction. Additionally, caregivers' and children's beliefs and expectations did not significantly change through the course of treatment. The lack of change may be a result of the caregivers and children initially having strong positive beliefs and expectations; and these beliefs and expectations did not change during the course of treatment. It is plausible that if individuals have strong beliefs and expectations in treatment from the start, those beliefs may remain strong despite a lack of significant change in mental health symptoms. These individuals may be open to participating in treatment in the future because they continue to have positive beliefs and expectations about therapy.

### **Limitations**

There are several limitations to understand when interpreting the results of this study. The current study was focused on children between the ages of 8-18 in a community outpatient setting, with the majority of the participants (49%) in the age group of 15-17. The results may not be generalizable across other age groups, given the fact that a large percentage of participants were within a three year age span. Additionally, the participants in this study were also from a suburban, homogenous outpatient clinic and may not be representative of all children seeking outpatient therapy. In particular the majority of participants were Caucasian (78%), which could have impacted the results of the study. Different ethnicities may have different beliefs or

expectations regarding treatment and the caregivers may also have different levels of influence on children's beliefs and expectations. Previous research has found that ethnicity is correlated with the level of beliefs and expectations about treatment. In particular, ethnic minorities are significantly more likely to have lower treatment expectations and beliefs (Nock, Phil, and Kazdin, 2001). The majority of participants in this study identified as Caucasian, and this might explain the reason why they had higher beliefs and expectations in treatment. Some research has shown that children of minority populations are less likely to receive mental health treatment (Yeh et al., 2005).

Caregivers' beliefs about the causes of their children's problems play a role in whether or not they accept and participate in treatment for their children (Yeh et al., 2005). The caregivers' beliefs and expectations may therefore be influenced by how they interpret the problems that their children are having. It would be important to consider looking at different ethnicities and populations in order to determine the impact these may have on treatment beliefs, adherence, and participation in treatment.

Another factor that may have limited the results of the study is the treatment that was provided by the clinicians. In this study, clinicians provided treatment as usual, so there was no consistency with regard to the type of treatment provided. The cognitive-behavior therapy model was most commonly followed by the clinicians; however, this may not have been the case for every child in treatment. Due to the inconsistency in treatment, there may have been different expectations from the clinicians about treatment adherence and participation from the caregiver and this may not have been accurately accounted for by the Clinician rating scale that was used to measure caregiver treatment adherence and participation. The different treatment approaches may have also played a

role in whether or not participants choose to remain in treatment as well as their beliefs about treatment.

In addition, the Health Belief Model that was used for this study was developed to predict health related behavior changes among medical conditions and not mental health conditions. It is possible that the Health Belief Model is not a good predictor of people's behavioral change to improve mental health symptoms. Therefore a new model may be more appropriate to explain the reasons why individuals with mental health disorders change their behaviors and engage in treatment.

Last, one of the biggest limitations to this study was the small number of participants that remained in treatment for a total of 6 months and completed all the required assessments. In the area of community mental health, engagement and retention in therapy can be a large challenge. Some studies across the United States have found that dropout rates can be as high as 40-60% after only 3 – 4 sessions (Andrade, Lambert & Bickman, 2000; Burns et al., 1995; Goldston et al., 2003; Kazdin, Mazurick, & Siegel, 1994; Lavigne et al., 1998). Therefore, it can be particularly difficult when conducting treatment outcome research to determine the appropriate amount of time between assessments to measure outcomes. However, according to Achenbach and Rescorla (2001), it is recommended to use 6-month intervals to measure changes on CBCL and/or YSR. Therefore, a 6 month increment was used to assess for changes in mental health symptoms.

In this study, a large number of participants dropped out, but also a large number of assessments were incomplete after the 6 month follow up, which greatly limited the number of participants for certain hypotheses. Despite reminders and face to face

meetings with clinicians regarding follow-up assessments, the majority were not completed. It may have been helpful to have more training with the clinicians regarding the study in order to improve compliance with the follow up assessments. It appeared that some clinicians had forgotten about certain assessments or discharged clients and did not notify the researchers in order to complete the second part of the study.

### **Future Research**

Despite the findings being insignificant for each of the hypotheses of the study, the results offer some areas of research in the future. First of all, it would be helpful to repeat this study with a larger population in order to study each hypothesis accurately. This would allow for more research in the field and a better understanding of the impact of treatment beliefs and expectations for children and adolescents. Additionally, it would be beneficial to replicate the study to address other limitations noted previously. Specifically, this study should be conducted with children in different levels of mental health care to determine the impact that levels of treatment have on motivation, treatment beliefs and expectations, and participation.

Future studies should also control for the type of treatment provided, instead of using treatment as usual. The type of treatment that the children are involved in could have an impact on the caregiver participation and adherence and dropout rates (Yeh et al., 2005). Additionally, using a more manualized treatment might have specific requirements for caregiver participation and allow the clinicians to describe the caregiver's adherence and participation in treatment more accurately instead of the clinician's arbitrarily setting their standards of expectations.

Another recommendation for future research would be to examine how treatment beliefs and expectations of children and caregivers interact with one another. For instance, it would be helpful to know the impact of children and caregivers' beliefs and expectations when they do not match with one another.

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