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Parenting Skills as Predictors of Child and Adolescent Psychotherapy Outcomes:  
Examining Change in Usual Care Settings

Alicia Ann Henderson

A dissertation submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Doctor of Philosophy

Jared S. Warren, Chair  
Mikle A. South  
Bruce Brown  
Ross Flom  
Sam Hardy

Department of Psychology  
Brigham Young University  
December 2013

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## ABSTRACT

### Parenting Skills as Predictors of Child and Adolescent Psychotherapy Outcomes: Examining Change in Usual Care Settings

Alicia Ann Henderson  
Department of Psychology, BYU  
Doctor of Philosophy

Youth psychotherapy literature is in need of more research related to understanding psychotherapy process and outcome in child psychotherapy in community settings. The purpose of this study was to examine how key parenting skills were associated with child and adolescent symptoms and outcomes over the course of treatment in an outpatient community mental health system. Much of the research on child and adolescent outcomes has been conducted in controlled research settings, which raises the importance of more research needing to be done in representative clinical practice conditions (Weisz & Jensen, 2001). Further, few child and adolescent studies have examined potential mechanisms of change in child and adolescent psychotherapy (Kazdin & Nock, 2003), including moderators and mediators of the relation between parenting skills and child and adolescent outcomes.

Participants included 407 youth, ages 4-17 (mean age = 9.7 years), and their parents or guardians, receiving routine outpatient mental health services in a community mental health setting. The youth sample included 51% males, 49% females. Measures used included the Youth Outcome Questionnaire (Y-OQ; Burlingame, Wells, Lambert, & Cox, 2004; Burlingame et al., 2001), and the Treatment Support Measure (TSM). Data were collected starting at the intake session, each of the first five therapy sessions, then every three weeks thereafter for six months post-intake. Parenting Skills items from the TSM included domains of overreactivity, laxness, verbosity, monitoring, consistency, and positive reinforcement. Hierarchical linear modeling was used to examine changes in parenting behaviors and youth symptoms.

Results indicated that parenting skills significantly improved over the course of treatment ( $p < .001$ ) and best fit a logarithmic (natural log) function, such that most of the reported change in parenting skills occurred during the first few sessions of treatment. Further, there was a significant inverse relationship at intake between parenting skills and Y-OQ scores; specifically, lower parenting skills scores were associated with higher Y-OQ scores for parent and youth report ( $p < .001$ ;  $p = .033$ ). In addition, parenting skills at intake were associated with the subsequent rate of change of youth symptoms for parent report ( $p < .001$ ) and youth report ( $p = .026$ ). Lastly, improvements in parenting scores were associated with improved youth symptoms over the course of treatment for parent and youth report of symptoms ( $p = .021$ ;  $p = .02$ ). These findings can be generalized to other community outpatient settings and highlight the importance of attending to parenting skills as an avenue to improving child psychotherapy outcomes. Specifically, the results of this study emphasize the importance of parents implementing effective parenting skills and its influence on their child's overall symptoms at intake and outcomes in therapy.

Keywords: outcomes, parenting, psychotherapy, child, adolescent, youth, parenting behaviors, parenting skills

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Parenting Skills as Predictors of Child and Adolescent Psychotherapy Outcomes:  
Examining Change in Usual Care Settings

Research on child and adolescent psychotherapy has been a relatively recent endeavor in the field of psychology. As such, there is a great need for child and adolescent psychotherapy research, including research on psychotherapy processes and outcome. The need for more research is also critical due to the prevalence rates of disorders in children and adolescents, including rates of 8.6% for attention-deficit/hyperactivity disorder, 3.7% for mood disorders, 2.1% for conduct disorder, 0.7% for panic disorder or generalized anxiety disorder, specifically for ages 8-15 years of age in a 12-month prevalence study, (Merikangas et al., 2010a). Further, the lifetime prevalence rate of these disorders for adolescents includes: anxiety disorders 31.9%, behavior disorders 19.1%, mood disorders 14.3%, and substance use disorders 11.4% (Merikangas et al., 2010b). This translates to millions of children and adolescents who are in need of psychological services. However, few of the children diagnosed with a mental health disorder receive such services, especially if they come from low income families (Kazak et al., 2010). Further, many more children may develop a need for mental health services since they are increasingly in at-risk environments (Kazak et al., 2010).

Well over 1,500 controlled treatment outcome studies on child and adolescent psychotherapy have been conducted (Kazdin, 2002); however, these studies are not equivalent to real world clinical settings, where millions of children receive services each year. Conditions in real world clinical settings, as well as clients and therapists, vary greatly from those in controlled settings (Weisz, Jensen, & McLeod, 2005). Increased research on child treatment processes and outcomes in community mental health facilities would be particularly helpful to help bridge the gap between treatments examined in lab-based efficacy studies and the types of treatments and



outcomes typical of routine clinical practice (Chorpita, Barlow, Albano, & Daleiden, 1998; Kazdin, 2003; Weisz & Hawley, 1998; Weisz & Jensen, 2001). Consequently, increased study of child psychotherapy processes and outcomes in usual care settings could yield significant benefits for the millions of youth who are served in these settings each year. Further, moderators and mediators which are studied in controlled settings may not apply to real world settings, because of the vast differences in these settings (Weisz et al., 2005). This is particularly important given that clinical trials which have been done in this area have differed significantly from conditions observed in usual care settings, particularly in regards to participants in the study and contexts under which those participants were seen (Weisz & Hawley, 1998). Although considerable research has been done in the area of child and adolescent psychotherapy, two pressing needs include increased research in routine clinical practice settings and increased examination of potential moderators and mediators in child psychotherapy (Weersing & Weisz, 2002; Weisz & Jensen, 2001).

Similarly, relatively little research has examined variables that could explain the specific mechanisms of change involved in child and adolescent psychotherapy (Johansson & Hoglend, 2007; Kazdin, 2002, 2003, 2009). Kazdin (1999) noted that there are over 550 different types of psychotherapies for children, and as a field we do not know which actual mechanisms or processes are working in treatment. Consequently, a strong need remains for research to examine what produces significant outcomes in child psychotherapy and what underlying processes may be responsible for observed change.

Numerous factors have been hypothesized as potentially important predictors of change in child psychotherapy. Given the strong association between parenting skills and child behavior and development, parenting skills may be particularly important to examine in the context of

child treatment processes and outcomes. Several researchers have found strong associations between parenting skills and children's behavior and outcome in treatment (Stormshak, Bierman, McMahon & Lengua, 2000; Thomas & Zimmer-Gembeck, 2007). For example, positive parenting skills are associated with low levels of oppositional behavior and negative parenting skills are associated with poor outcome and oppositional behavior (Stormshak et al., 2000). In addition, negative parenting skills are associated with externalizing behaviors in children (Ang, 2008). Many researchers would argue that a great deal of children's improvement in therapy can be attributed to changes in parenting skills (Kazdin & Nock, 2003; O'Leary & Slep, 1999; Thomas & Zimmer-Gembeck, 2007; Treacy, Tripp, & Baird, 2005; Wells et al., 2006).

Further, past research studies have used ANOVA or ANCOVA as the primary method of analysis for child psychotherapy research (Jones, Daley, Hutchings, Bywater, & Earnes, 2008; O'Leary, 2001; Wells, et al., 2006). ANOVA and ANCOVA not only assume linearity and gradual change, but also compare group means, instead of looking at the individual (Laurenceau, Hayes, & Feldman, 2007). By using ANOVA or ANCOVA, one loses information regarding individual change trajectories and the variability that comes with change across time. Increased research is needed which attends to individual variability in change over the course of treatment.

The purpose of the present study is to examine parenting skills as a predictor of child and adolescent outcomes in routine clinical practice in a community mental health system. Examining the relation between parenting skills and child symptoms over the course of treatment is a critical step toward better understanding key processes of change in child psychotherapy. In addition, examining these issues in the context of routine clinical practice will facilitate the generalizability of findings to the settings in which most children and adolescents receive services.

## **Youth Psychotherapy Research**

In spite of the hundreds of outcome studies already conducted, the state of child and adolescent psychotherapy research is still considered to be in its infancy. Child psychotherapy process research lags significantly behind adult psychotherapy process research (Shirk & Karver, 2003). Kazdin (2003) emphasized that youth psychotherapy research has received far less attention than that of adult psychotherapy literature and asserted that the overall range of questions being studied in youth psychotherapy research is narrow and limited. There is a great need to expand the range of outcome domains studied and monitor progress researchers have made to make sure this area of child and adolescent research is addressed (Kazdin, 2003). In addition, most studies focus on questions about specific techniques of the treatment, like a treatment vs. control study (Kazdin, 2003). This research is often conducted without consideration of many conditions (e.g., child, parent, and family characteristics) which may influence youth outcomes in psychotherapy. Several researchers have suggested that to “advance” knowledge in this area, researchers must understand the mechanisms of change through which change in psychotherapy takes place (Beauchaine, Webster-Stratton, & Reid, 2005; Kazdin, 2003; Weersing & Weisz, 2002) and increase the number of effectiveness studies completed in a typical clinical setting to increase generalizability (Kazdin, 1990).

## **Youth Psychotherapy Outcome Research in Community Mental Health Settings**

Thousands of efficacy studies have been conducted in the area of child and adolescent psychotherapy, but because they were done in controlled settings, they are often limited in their generalizability (Kazdin, 2002, 2003). Weisz et al. (2005) emphasized the need for external validity through a meta-analysis of randomized controlled trials for the treatment of anxiety, depression, ADHD, and/or conduct disorders. After a thorough review of the studies, it was found that less than half of the 236 studies had a representative sample. Weisz and Doss (2005)

also found that only 13% of participants in the studies were actually seeking treatment or were clinically referred youth, and that only 19% of studies used at least one practicing clinician. In addition, only 4% of participants in the studies were provided treatment in a clinical service setting and only 1% of participants in studies, where participants were seeking treatment, received treatment in a clinical setting where they had a practicing clinician. Therapists, participants, and settings are vastly different in controlled settings from those in usual care settings (Weisz, 2004; Weisz & Hawley, 1998).

Kazdin (2003) noted that these issues are understudied in community mental health settings, and emphasized many reasons why research done in controlled lab settings may not be generalizable to routine clinical practice. For example, youth who are recruited for participation in efficacy studies typically have fewer problems and lower rates of comorbidity than youth served in typical community mental health settings. Second, children who are recruited for therapy studies typically have parents with less psychopathology and come from families with more resources and less dysfunction (Kazdin, 2003). Third, the treatments studied in controlled setting research are different from treatments used in clinical practice. For example, psychodynamic or relationship-based treatments are used in clinical work but understudied in research (Kazdin, 2003).

Additionally, the way treatment is administered in controlled studies is not typically the same as it is administered in clinical practice (Kazdin, 2003). In research, often only one treatment type is administered, and it is monitored and supervised closely. However, in real world clinical settings, many therapists practice eclectic forms of treatment, and are not monitored or controlled. Huey and Henggeler (2000) found that the closer one adheres to treatment protocol in therapy and reviews therapy sessions with other therapists, the more a

clinician can increase effectiveness and even predict the outcome of treatment. This type of “quality control” is rarely seen in clinical practice. Similarly, in most research studies, the treatment that is administered includes a set amount of sessions, whereas in clinical practice the individual may have fewer sessions or more sessions than those in a controlled study. Often these sessions are administered in the schools to groups of children without the direct involvement of the parents (Kazdin, 2003).

Last, graduate students often provide the treatment in controlled research settings, whereas in clinical settings the therapists are usually licensed professionals who have practiced therapy for many years, yet they may still have not mastered certain therapeutic skills (Kazdin, 2003). Therapists in routine clinical practice likely see a much larger caseload than the graduate student therapists seen in most research studies. Kazdin (2003) emphasized the difficulty of training, and developing consistent and precise mastery when providing the intervention in clinical settings, compared to the simpler task of providing training in academic settings. Because the great majority of child psychotherapy research has been conducted in the context of highly structured efficacy studies, serious questions remain regarding the applicability of such findings to routine clinical practice settings. Consequently, considerably more research is warranted to understand treatment processes and outcomes of children and adolescents in community-based settings.

### **Mechanisms of Change in Youth Psychotherapy**

Even though this field of research contains many efficacy studies, there is still little understanding of why treatment actually works (Kazdin, 2002, 2008). Kazdin (1999) stated that with over 550 types of therapies for children, researchers in the field do not know which actual mechanisms or processes are working in treatment. There needs to be a better understanding of why certain types of therapies or treatments are working better than others. Child and adolescent

psychotherapy research must broaden the range of questions that are examined, and focus on more than just the reduction of symptoms as so many studies often do (Kazdin, 2003, 2008).

Kazdin (2003) highlighted the importance of understanding the bases of change in therapy and stated the following:

... child therapy research has neglected attempts to understand how treatment works and the processes or characteristics within the child, parent, or family that can be mobilized to foster therapeutic change. If we understood the basis of therapeutic change, we might readily optimize the effectiveness of treatment. Of the hundreds of available treatments, there are likely to be a few common bases or mechanisms of therapeutic change (p. 264).

Kazdin (2009) again emphasized that understanding the key mechanisms which facilitate change in therapy could simplify treatments which are used. Such mechanisms may include the instillation of hope in the client or appropriate validation of one's feelings, and could be key factors that explain how most therapies work. However, more research must be done to understand how change occurs in treatment (Kazdin, 2003).

Several researchers have addressed other reasons for better understanding mechanisms of change (Beauchaine, et al., 2005; Johansson & Hoglend, 2007; Kazdin, 2009, 2010; Weersing & Weisz, 2002). If we understand the processes that affect change in therapy, we can better facilitate change in the therapeutic setting. To better generalize the effects of treatment from controlled research to clinical practice, researchers need to know what makes treatment work, and what should or should not be removed so change can still be achieved (Kazdin, 2009). To increase generalizability and understand the mechanisms of change, more research must be done to understand the mediators and moderators involved in the change that occurs in psychotherapy. Mechanisms of change are more specific than mediators and moderators in that they explain how

an intervention becomes an event that leads to a particular outcome (Kazdin, 2009).

Mechanisms are referring to a step-by-step process; often the study of mediators leads to this understanding (Kazdin, 2009).

A *mediator* is a variable or construct that intervenes in the relationship between the intervention and outcome (Baron & Kenny, 1986; Kazdin, 2009). In contrast, *moderators* influence the direction or strength of the relationship between the intervention and the outcome or between the independent and dependent variable (Baron & Kenny, 1986; Kazdin, 2009). This could be referring to qualitative variables such as sex and ethnicity or quantitative variables such as the amount of treatment (Baron & Kenny, 1986; Kazdin, 2009). Weersing and Weisz (2002) cautioned that many studies actually do collect data on variables that could be used to assess mechanisms of change, but very few run a mediation test, which includes controlling for the relationship between the treatment and process and between process and outcome. Refinement in the study of mediators and moderators may help us understand therapeutic processes.

Such research has been done in a recent study by Alfano et al. (2009), who found that changes in children's social phobia were mediated by children's reported loneliness after 12 weeks of Social Effectiveness Therapy for Children. The child's age and depressive symptoms served as monitors regarding children's outcomes in treatment, but were not found to be significant. In another study, structural equation modeling was used and found that a family environment with little personal control mediated the relationship with anxiety and negative affect (Chorpita, Brown, & Barlow, 1998). Regarding potential moderators in child treatment, Dowell and Ogles (2010) conducted a meta-analysis of 48 child psychotherapy outcome studies and looked at multiple moderators. One moderator of particular interest was that of parent participation in their child's therapy; when parents participated in therapy, children had better

outcomes. This emphasizes the importance of the parent's role in their child's therapy and has been found in other studies (Waugh & Kjos, 1992). The effect of parent characteristics on their child's outcomes in therapy is a topic of increasing interest and importance (Jacobsen, 2003).

Although research examining mechanisms of change in child psychotherapy is somewhat recent, an important first step is to assess hypothesized moderators and mediators on a repeated-measures basis over the course of treatment. This can be done through an initial study of the specific moderators to better understand potential associations between variables for future study on mediators. If that association is found then the degree of relationship between the putative mediator and the outcome of interest can be assessed. By understanding the processes that produce change in psychotherapy, including mediators and moderators, clinicians can better optimize these components in therapy (Kazdin, 2009).

### **General Parenting Skills**

Parenting has been a topic of research for decades. Baumrind (1967, 1968, 1971) began studying various dimensions of parenting and identified three major parenting styles including authoritarian, authoritative, and permissive. Since then the topic has continued to be researched by Maccoby and Martin (1983), Patterson (1986), Baumrind (1991), and many other researchers interested in the effects of parenting on children. Forgatch and Patterson (1997, 2010) have further studied parenting skills and parent management training, especially with regards to their relationship between adolescent behavior. Parenting skills are one putative mediator and/or moderator that may be particularly important in child and adolescent treatment.

Parenting skills have been operationalized by many researchers to include a broad range of parenting domains related to parent-child interaction, discipline, problem-solving, and communication. A wealth of literature has examined the importance of parenting skills with



regard to children's behavior and development (Denham et al., 2000; Fergusson, Stanley, & Horwood, 2009; Jones et al., 2008; Reid, Webster-Stratton, & Baydar, 2004; Snyder, Cramer, Afrank & Patterson, 2005; Stormshak et al., 2000; Thomas & Zimmer-Gembeck, 2007; Webster-Stratton & Herman, 2008; Wells et al., 2006). Parenting skills have a significant impact on a child's behavioral, social, and emotional development and well-being. For example, in examining conduct problems in children, Snyder et al., (2005) found a reciprocal relationship for child misbehavior with parental hostile attributions and ineffective discipline. As such, conduct problems predicted hostile attributions and ineffective discipline; in turn, hostile attributions and ineffective discipline were associated with increased children's conduct problems.

Positive parental support was related to a lack of anger and hostility in children (Denham et al., 2000). Thomas and Zimmer-Gembeck, (2007) found that positive parenting practices were associated with improvements in child behavior. Stormshak et al. (2000) discovered that positive parenting skills, including warmth and involvement were inversely correlated with oppositional behavior. In addition, low levels of parental warmth and involvement were observed in oppositional and aggressive children and differentiated them from children with few problems. Increased internalizing and externalizing disorders have been found in children with mothers who were diagnosed with Borderline Personality Disorders and showed less warmth and consistent monitoring (Stepp, Whalen, Pilkonis, Hipwell, & Levine, 2012).

Last, research indicates that poor parenting skills are correlated with more behavioral problems in children. Bank, Burraston, and Snyder (2004) found that ineffective parenting is predictive of antisocial behavior in boys. Ang (2008) found that dysfunctional parenting skills led to the development and maintenance of youth's aggression and externalizing behaviors. Parenting skills are vital contributors to the social and emotional development of youth.

Beauchaine et al. (2005) stated that parenting skills have consistently accounted for variance in children's behavioral changes following multimodal interventions. Hoza et al. (2000) found that mothers with higher self-esteem and lower levels of dysfunctional discipline were associated with better treatment outcomes for children in psychotherapy. Whereas for fathers, higher parenting efficacy, less dysfunctional discipline, and lower levels of blaming the child for inadequate effort or poor mood as reasons for noncompliance, were associated with better child treatment outcome. Last, positive parent-child interactions predicted change in outcomes on pre/post measures of parent training skills (Hemphill & Littlefield, 2006).

### **Parenting Interventions and Child Outcomes**

The influence of parenting skills on child behavior and development is further underscored by the existing literature on parent-focused interventions for child behavioral problems. Depending on the age of the child and the nature of the child's behavioral issues, many interventions focus on teaching important parenting skills as a means of addressing child behavior problems. Parent Management Training (PMT; Kazdin 1997, 2003), Functional Family Therapy (FFT; Alexander & Parsons, 1982), the Incredible Years Program (Webster-Stratton, 1981), Parent-Child Interaction Therapy (PCIT; Eyberg & Matarazzo, 1980), and the Defiant Children (Barkley, 1997) program are a few examples of well-researched parent training programs that have demonstrated how changes in parenting skills can influence children's behavioral and emotional outcomes.

Webster-Stratton and Herman (2008) studied the effects of conducting a parent behavior-management intervention using the Incredible Years program for children who had depression. The Incredible Years program focuses on positive and negative reinforcement, limit setting, and managing misbehavior. Effect sizes for both parents were much larger when only looking at

children whose baseline depressive symptoms were in the clinical range, instead of using those whose baselines were much lower. Research on the Incredible Years program has shown that improving parenting skills also improved children's behaviors (Fergusson et al., 2009; Jones et al., 2008; Reid, et al., 2004; Webster-Stratton and Herman, 2008).

Kazdin (1991) looked at the emphasis of certain parenting skills within different programs and youths' outcomes in therapy. Within the Functional Family Therapy (FFT) program there was an emphasis on positive reinforcement, problem solving and negotiation skills, and clear communication. In addition, the Parent Management Training (PMT) program is based on maladaptive parent and child interactions, including parents inadvertently reinforcing negative behaviors (Kazdin, 2003). Focus is placed on the contingencies of reinforcement in this program, including positive reinforcement and types of discipline. Children have shown improvement after treatment implementation of this program (Kazdin, 1997). Reyno & McGrath (2006) found that parent training programs are effective in creating positive change in parent and child behaviors. Much of children's improvement in therapy may be attributed to changes in parenting skills (Nock & Kazdin, 2001; O'Leary & Slep, 1999; Thomas & Zimmer-Gembeck, 2007; Treacy et al., 2005; Wells et al., 2006).

### **Parenting Domains Emphasized in Child Treatment**

Further, much of the parenting literature has examined specific domains of parenting skills outside the context of a specific parenting intervention. The domains of overreactivity, laxness, verbosity, monitoring, positive reinforcement, and consistency have been strongly emphasized in the youth mental health literature (O'Leary, 1995; Patterson & Forgatch, 2005; Pfiffner, & O'Leary, 1989; Stormshak et al., 2000). They have also been found to be consistent predictors of child outcomes (Arnold, O'Leary, Wolff, & Acker, 1993; Hoza et al., 2000).

Overreactivity, laxness and monitoring affect children's behaviors and outcomes in treatment. Overreactivity resulted in poorer outcomes in therapy (Edwards, Hornish, Eiden, Grohman, & Leonard, 2009). Children were found to improve in treatment when their parents scored low on overreactivity at baseline or continued to reduce overreactivity throughout treatment (Beauchaine et al., 2005). Overreactivity in mothers also predicted higher rates of noncompliance (Verschueren, Dossche, Marcoen, Mahieu, & Bakermans-Kranenburg, 2006). Parental laxness and overreactivity were associated with relational aggression and externalizing symptoms in children (Brown, Arnold, Dobbs, & Doctoroff, 2007). Reduced overreactivity and laxness decreased antisocial behaviors (Irvine & Biglan, 1999) and decreased behavior problems per parent report (Matsumoto, Sofronoff, & Sanders, 2010; Thomas & Zimmer-Gembeck, 2007). Laxness also predicted antisocial and acting out behaviors (Irvine & Biglan, 1999; Lavoie et al., 2002; O'Leary, 1995). Poor monitoring resulted in increased antisocial and risky behaviors, accidental injury, and early substance abuse (Dishion & McMahon, 1998; Laird, Criss, Pettit, Dodge, & Bates, 2008). In contrast, increased monitoring was associated with reduced adolescent alcohol use, violence, and delinquency (Fulkerson, Pasch, Perry, & Komro, 2008). Monitoring also moderated the levels of substance use (Kiesner, Poulin, & Dishion, 2010).

Positive reinforcement, consistency and verbosity were also found to affect children's behaviors. Positive reinforcement has been associated with positive outcomes in treatment of children and adolescents (Wells et al., 2006). Inconsistency was associated with externalizing behaviors (Barkley, 2005; Barkley & Robin, 2008; Patterson & Forgatch, 2005; Patterson, 1986; Stormshak et al., 2000; Weisz, 2004). Further, Chinese American mothers showed higher levels of verbosity than European American mothers, but there were no differences between the groups in child behavior problems (Hulei, Zevenbergen, & Jacobs, 2006).

One previous study examined these parenting domains in the context of routine clinical services in a community mental health setting. As a preliminary effort to examine the relation between parenting skills and child and adolescent symptoms over the course of treatment, Warren et al. (2008, 2011) found that higher (more effective) parenting behavior scores were associated with lower child symptom scores at intake, and that changes in parenting skills were associated with changes in child symptoms over the course of treatment. More specifically, the domain of overreactivity was the strongest predictor of child outcomes in treatment, which supports the idea that parenting skills are essential to understand in the treatment of children and adolescents (Sorensen, Deverich, & Warren, 2009). Based on those preliminary results, specific parenting items and domains were drawn from the measures of that study to create the measure being used in the present study.

### **Limitations of Previous Research**

Although the parenting domains highlighted above have been the focus of dozens of studies in child psychology, little is known about how these important domains change over the course of treatment with youth in community mental health settings. By using hierarchical linear modeling (HLM) as the method of analysis we are able to study parenting skills and better understand change that occurs over the course of the child's treatment. There has been a lack of longitudinal studies in the literature. Studies with multiple data points over time allow researchers to assess patterns of change over the course of treatment. Hierarchical linear modeling is shown to be a reliable and valid method for measuring change over time (Singer & Willett, 2003). Further, HLM allows the researcher to assess intra-individual change and see the shape of change within individuals and groups (Laurenceau et al., 2007; Singer & Willett, 2003). Laurenceau et al. (2007) discussed the importance of the shape of longitudinal data, in that it is

typically not linear. Laurenceau et al. (2007) furthered this argument by stating that a common assumption in psychotherapy research has been that change is gradual and linear, but it is usually not gradual or linear. Change shown over the course of psychotherapy can be sudden and have sharp increases or decreases in symptoms between data points.

As a field we know certain therapies or treatments work, but we do not know why they work (Kazdin, 1999, 2002, 2003, 2008). Knowing the basic components and themes which make therapy effective would allow the field to consolidate core mechanisms of change and focus on those behaviors which produce change in therapy and research (Kazdin, 2009).

Mediators and moderators are a way to better understand mechanisms of change. Laurenceau et al. (2007) emphasized the need to study mediators and moderators in research. In the future, parenting skills can be studied as both mediators and moderators.

Despite the large number of studies on parenting skills and their effect on children's behaviors, very few are conducted in community mental health settings. For example, many parenting skills have been discussed in the context of specific treatments, with pre/post treatment data, but few have been done in the context of routine services provided in community mental health settings. It is critical that more research is done where the majority of mental health services are actually occurring. Of the many studies of parenting skills discussed above, none of the studies were conducted in a community mental health setting that allowed data to be conducted without controlling for groups, which is atypical of a community mental health experience where patients are not assigned to groups. Two studies were completed in a community mental health facility; however, both studies randomly assigned participants to different groups (Matsumoto, Sofronoff, & Sanders, 2010; Wells et al., 2006). There are significant differences between studies conducted in a controlled setting (efficacy studies), and

those done in a community mental health setting. In controlled settings, therapists, participants, and settings differ greatly from usual care or community settings; in that, controlled settings use fewer practicing therapists, fewer participants are clinically referred, and treatments are more closely monitored (Weisz, 2004; Weisz & Hawley, 1998). More focused research in community mental health settings would allow for improved generalization of findings to the settings in which most youth receive services.

### **Study Aims**

The purpose of this study was to evaluate changes in parenting skills over the course of routine child mental health services and to examine the relation between changes in parenting skills and changes in child and adolescent symptoms over the course of treatment. More specifically, the study's aims were four-fold: 1) to examine the relation between parenting skills scores and child and adolescent symptoms at intake, 2) to determine if parenting skills scores at intake were associated with the rate of change of child and adolescent symptoms over the course of treatment, 3) to examine patterns of change in parenting skills scores, and 4) to determine whether improvements in parenting skills scores over the course of treatment were associated with changes in child and adolescent symptoms.

### **Hypotheses**

The study hypotheses were as follows:

1. Higher parenting skills scores at intake will be associated with lower youth symptoms at intake.
2. Lower parenting skills scores at intake will be associated with the greatest rate of change in child and adolescent symptoms over the course of treatment.

3. Parenting skills scores will improve over the course of treatment while following a logarithmic pattern.
4. Improved parenting skills over the course of treatment will be associated with decreased child and adolescent symptoms over the course of treatment.

### **Method**

This study was part of a larger ongoing research study examining factors which were associated with treatment outcomes in children and adolescents in a community mental health setting.

#### **Participants**

Participants included 407 children ages 4-17 years of age, and their primary caregivers. The mean age of the participants was 9.71. The children and adolescents in the study included 51.2% male and 48.8% female participants. Primary caregivers who completed the forms included 77.1% mothers, 7.1% fathers, 5.2% guardians, 3.3% foster parent, 3.1% grandparents, .9% aunt/uncles, and 2.5% other. Children and adolescents who completed the study were 77.4% Caucasian, 7.4% Hispanic/Latino, 1.8% Asian/Pacific Islander, .9% African American, 2.6% Hispanic/White, 1.6% African American/White, and 6.6% other. Previously referred individuals were recruited at intake from three Wasatch Mental Health locations, all in the Intermountain West region. Wasatch Mental Health is a community mental health system, which serves a community of approximately a half a million people.

#### **Measures**

**Youth treatment outcome.** The Youth Outcome Questionnaire-2.01 (Y-OQ; Burlingame et al., 2001; Burlingame et al., 2004; Dunn, Burlingame, Walbridge, Smith, & Crum, 2005) is a measure designed to sensitively track changes in symptom levels over the course of treatment for



youth ages 4 to 17. The Y-OQ is a 64 item questionnaire, which uses a 5-point Likert-type scale, which is completed by a parent or guardian taking approximately 8-10 minutes. Responses to items were related to symptoms observed over the previous week. Total scores on the Y-OQ may range from -16 to 240. Higher scores indicate greater symptom level and distress, and scores above 46 were considered to be in the clinical range for that patient's level of distress (Dunn et al., 2005).

The Y-OQ has high internal consistency and test-retest reliability of .97 and .83 (Dunn et al., 2005). The Y-OQ also has good concurrent validity with the Child Behavior Checklist (CBCL; Achenbach, 1991) and the Conners' Parent Rating Scale (CPRS; Conners, 1989). The Y-OQ has good discriminant validity in distinguishing between clinical and non-clinical samples. It is commonly used for tracking treatment outcome and assessing child and adolescent psychosocial distress (Burlingame et al., 2004). McClendon, et al., (2010) found that the YOQ was more sensitive to change than the BASC-II and the CBCL and had favorable performance relative to these other measures used for your treatment outcomes.

A Y-OQ self report has also been developed for youth ages 12 and above. Participants in the study who were above the age of 12 completed this self report measure. This measure has been shown to have good test-retest reliability, internal consistency and moderate to good concurrent validity, and appears to be a valid and reliable measure of youth symptoms (Ridge, Warren, Burlingame, & Wells, 2009). Parent and youth Total Y-OQ scores were used in this study's analyses.

**Psychosocial Functioning.** The CBCL is a standardized 113-item questionnaire that uses a 3-point Likert scale to assess various psychosocial behavior problems exhibited by youth 4-18 years old. Scores below 60 are normal, between 60 and 63 are borderline and scores above

63 are in the clinical range. For this study, the parent rating form of the CBCL was used. This measure contains eight domains, including: social withdrawal, somatic complaints, anxiety/depression, social problems, thought problems, attention problems, delinquent behavior, and aggressive behavior (Achenbach & Rescorla, 2007).

Psychometric properties of this test were shown to be reliable and valid. The normative sample for this measure was from a sample of 2,368 youth ages 4-18. Test-retest reliability was .87 for the Social Competence Scale and .89 for the Behavior Problems Scale (Achenbach, 1991). For the eight domains, Cronbach's alpha ranged from .62 to .92 for males and females ages 4-11. The CBCL also has good construct validity when compared to the Conners' scales (Achenbach, 1991). In addition, the Child Behavior Checklist for ages 1.5-5 (CBCL/1.5-5) was used. It has been found to be psychometrically sound (Achenbach, 1991; Rescorla, 2005).

**Parenting Skills.** The Treatment Support Measure (TSM) consists of two questionnaires, including the TSM-P, which is a parent form, and the TSM-Y, which is an adolescent form for ages 12-17. For this study the TSM-P form was used, which is a 40 item questionnaire given to the child's primary caregiver. Responses were based on the week prior to the questionnaire being administered. The primary subdomains of this test include parenting self efficacy, parent social support, parenting skills, parent psychosocial distress, and parent's perception of the therapeutic alliance. This study focused on the parenting skills domain of the measure, which measures broad parenting behaviors or skills, particularly those parenting skills demonstrated in previous research to be associated with symptom change in youth treatment. The 10 parenting skills items of the TSM-P tap into various parenting domains including: *overreactivity*, *verbosity*, *laxness*, *monitoring*, *positive reinforcement*, and *consistency*. The responses were given on a 5-point Likert-type scale which includes the response options of 1) *strongly disagree*, 2) *mildly*

*disagree, 3) neutral, 4) mildly agree, and 5) strongly agree.* Some sample questions from the measure include: *(16) When my child misbehaves I often give him/her a long lecture, (20) If my child talks back or complains when I handle a problem, I ignore the complaining and stick to what I said, (23) When my child is out of sight or away with friends, I always have a good idea what my child is doing, and (24) I often complement my child for his/her good behavior.*

Overall reliability for the TSM-P in a normative community sample of 189 parents of youth ages 4-17 was .92. The internal consistency reliability estimate of the parenting skills domain was .77. Test-retest reliability for the TSM-P was significant at the .01 level for all items. The TSM-P is only available in English at this time and individuals who could not read at a functional level in English were not included in this study.

## **Procedures**

At the initial intake appointment potential participants were presented with an introduction to the study by undergraduate or graduate research assistants as well as a description of what participation in the study would entail. Participation was voluntary, and participants were told that their information would be kept confidential. On average, between 91%-97% of participants chose to participate and were given a battery of measures to complete, which included consent and assent forms. The parent and adolescent, or only the parent if the child was under 12, completed a packet of paper-pencil measures at intake, which included the TSM, Y-OQ, CBCL, and demographic data. Within the demographic data, participants were asked how many times prior they have been in treatment. The TSM and Y-OQ were administered by research assistants at the clinic before follow-up therapy appointments. This occurred for the next four weeks and every three weeks after the first five appointments were completed. This

process continued until six months post-intake, or until the end of treatment, whichever came first.

Compensation at intake included \$10 cash to the participating primary caregiver and \$10 to the participating youth. Youth also received a small prize at intake and at every follow-up appointment. At the fifth appointment an additional \$10 was given to both the parent and youth participants. Participants who participated beyond the first five weeks, and continued to participate for six months were entered into a drawing for a \$100 prize. This drawing occurred on ten separate occasions during data collection.

### **Analysis**

Hierarchical linear modeling (HLM), also known as individual growth curve modeling, multi-level modeling, mixed modeling and/or random effects regression was used to examine changes that occurred in parenting skills and in youth symptoms over the six months in which participants were tracked in the study. This type of analysis showed how individual changes in parenting practices were related to changes in youth symptoms in a longitudinal design.

Hierarchical linear modeling has been shown to be a reliable and valid method for measuring change over time (Singer & Willett, 2003). The statistical analysis software SPSS was used to analyze the data.

Hierarchical linear modeling consists of two levels. The first level includes fitting a linear or nonlinear line of regression to each point of the participant's repeated measures data. By doing this, one can better understand the intra-individual symptom level change that is occurring within each client (Laurenceau et al., 2007). The second level assesses inter-individual variability in context of the estimated average parameters. This type of model allows evaluation of the shape of change occurring in individuals and in groups.

In addition, hierarchical linear modeling has several benefits over other methods, such as ANOVA or ANCOVA, when analyzing longitudinal data. First, hierarchical linear modeling accounts for individual change over time through nested variables, so individuals can be assessed within groups, whereas other methods of analyzing longitudinal data look at average group change. By looking at average group change, important pieces of information about the complexities of individuals' variations in change over time are missed. For example, a nested variable could include the primary caregivers parenting skills and the varied change that occurs between youth responses to various parenting skills. Both parenting skills and youth symptoms vary, which is accounted for by hierarchical linear modeling. In addition to detecting individual change through nested variables, this method also detects rapid nonlinear change over the first period of data collection. This is ideal for our study since data were collected weekly during the first five weeks of therapy.

Second, while using hierarchical linear modeling, subjects who had incomplete data could still be used and were not excluded from the study. Since our population consisted of families from an outpatient usual care setting, at times it was difficult to gather data points at all time intervals. This is in contrast to latent growth curve modeling which is not able to analyze data sets that have missing data.

Therapist effects were included as a random factor, since multiple children were seeing the same therapist. However, since some children and adolescents received treatment from more than one therapist during the study, (i.e. due to changing clinics or therapists within a clinic), a cross-classified model was used to determine the therapist effects. Therapist effects were included in a tier of analysis as a nested variable in HLM. In addition, the youth's diagnosis, length and frequency of treatment were factored into HLM. Medical records were used to obtain

the youth's diagnosis. Service code data was used to determine the length and frequency of treatment.

## Results

Table 1 contains the means and standard deviations of the Y-OQ, TSM, and CBCL scores at intake and the Y-OQ and TSM overall change scores at the end of treatment.

Table 1

*Intake Means, Change Scores and Standard Deviations of Y-OQ, TSM, and CBCL*

	<i>M</i>	<i>SD</i>
Y-OQ-P Intake	70.63	34.27
Y-OQ-P Change	-11.06	29.82
Y-OQ-SR Intake	64.97	36.74
Y-OQ-SR Change	-29.38	29.04
TSM-PS Intake	45.98	6.95
TSM-PS Change	2.04	6.47
CBCL-Internalizing	63.78	9.67
CBCL-Externalizing	64.18	10.46
CBCL-Total	65.16	8.98

The Intraclass Correlation Coefficients (ICC) represent the dependent variables in this study. The ICC describes the proportion of the total variance due to between-person differences and estimates correlations between different variables or groups. Specifically, it measures the total variance due to between-person differences and the resulting variance in within-person differences due to changes over the course of treatment. For example, the ICC for the Y-OQ-P total was .70 meaning that 70% of the total variance was due to between-person differences while the other 30% of the variance can be explained as a result of within-person differences or change over time, which explains how much variance can be attributed to differences between

groups versus differences within individuals. Further the ICC for the Y-OQ-SR was .74 and the ICC for TSMP-PS was .69.

Before examining the results of each hypothesis, the linear, quadratic, and natural log mathematical models were reviewed to determine the best fit for examining change for both parent- and youth-reported youth symptoms and parent-reported parenting skills. It was found that the natural log transformation (LNWKS) provided the best fit to the data according to the Schwarz's Bayesian Criterion (BIC) and the -2 Log Likelihood (N2LL) which included constructing parameters to provide the best model to fit the data. The data fit a natural log model which is particularly sensitive to rapid change which occurred at the beginning of treatment and lessened towards the end of treatment. Other research also supports the logarithmic function as typically being the best fit for assessing longitudinal data (Lambert, Hansen, & Finch, 2001; Spoth, Reyes, Redmond, & Shin, 1999). Using the logarithmic function for this study minimizes the impact of outliers and normalizes the shape of the data.

### **Hypothesis 1: Correlation of PS at Intake and Youth Intake Symptoms**

Parenting skills scores at intake were examined as they related to youth symptoms at intake per parent and youth report. Pearson correlations were used to examine the association between youth symptoms at intake and parents reports of their own parenting skills at intake. There was a significant inverse relationship at intake between parenting skills scores and Y-OQ-P scores ( $r = -.36; p < .01$ ) and parenting skills scores and Y-OQ-SR scores ( $r = -.17; p < .05$ ). Based on Cohen's  $d$  interpretation, the magnitude of the relationship between parenting skills and parent-reported symptoms was medium and parenting skills and youth-reported symptoms small.  $R^2$  was computed to determine the variance of parent-reported and youth-reported intake symptoms that can be accounted for by the variance in parenting skills at intake ( $R^2 = .13; R^2 =$

.03). Results indicated that 13% of the variance in parent-reported youth intake symptoms was accounted for by parenting skills at intake, which is a large amount of variance accounted for, whereas there was 3% of the variance of youth-reported symptoms was accounted for by parenting skills at intake, which is a small amount of variance. Specifically, low parenting skills scores, which were indicative of less effective parenting skills, were associated with high Y-OQ scores, indicating more child or adolescent distress per parent report ( $p < .01$ ) and per youth symptom report ( $p = .03$ ), as shown in Table 3 and 4, variable TSM\_PS, as calculated through HLM. The relationship between parenting skills at intake and youth symptoms confirmed our hypothesis based on both parent and youth report of symptoms.

### **Hypothesis 2: The Association between PS at Intake and the Rate of Youth Symptom Change**

It was predicted that parenting skills scores at intake would be associated with the rate or speed of change of child and adolescent symptoms over the course of treatment. Parenting skills at intake were associated with the subsequent rate of change of youth symptoms for parent-reported youth symptoms ( $p < .01$ ), which is shown below in Table 3 as calculated by HLM. The association between intake parenting skills scores and rate of youth-reported symptom change was also significant ( $p = .03$ ; see Table 4). These scores show that the change slope (LNWKS TSM\_PS) significantly slows over the course of treatment, indicating much more change in the first few weeks of treatment. As such, Hypothesis 2 was confirmed for parent-reported youth symptoms and for youth-report of symptoms.



Table 2

*Parenting Skills (PS) at Intake Associated with Parent-Reported Youth Intake Symptoms and Rate of Change*

Domain	Estimate	Std. Error	<i>p</i>
Parenting Skills			
YOQ-P Intercept	70.01	2.07	<.01
Symptom Change Slope (LNWKS)	-4.85	.78	<.01
PS Increase per YOQ-P Decrease (*TSM-PS)	-1.93	.29	<.01
Adjustment to Slope (LNWKS * TSM_PS)	.42	.11	<.01

\* The TSM\_PS estimate indicates the amount of increase in PS scores at intake per one unit decrease in YOQ-P scores. The LNWKS\*TSM\_PS estimate reflects an adjustment to the YOQ slope (LNWKS) based on intake PS scores.

Table 3

*Parenting Skills (PS) at Intake Associated with Self-Reported Intake Symptoms and Rate of Change*

Domain	Estimate	Std. Error	<i>p</i>
Parenting Skills			
YOQ-SR Intercept	62.75	3.24	<.01
Symptoms Change Slope (LNWKS)	-8.02	1.07	<.01
PS Increase per YOQ-SR (*TSM_PS)	-.96	.44	.03
Adjustment to Slope (LNWKS * TSM_PS)	.35	.15	.03

\*The TSM\_PS estimate indicates the amount of increase in PS scores at intake per one unit decrease in YOQ-SR scores. The LNWKS\*TSM\_PS estimate reflects an adjustment to the YOQ slope (LNWKS) based on intake PS scores.

### **Hypothesis 3: PS Improvements over the Course of Treatment**

Parenting skills scores were predicted to improve over the course of treatment. HLM analysis of random effects indicated that parenting skills significantly improved over the course of treatment ( $p < .01$ ; see Table 5). The greatest proportion of change in parenting skills occurred during the first few sessions of treatment as measured using the natural logarithmic function, which is sensitive to early change in treatment. There was a significant amount of variability in the slopes of parents' reports of parenting skills over the course of treatment. As such, hypothesis 3 was supported in that parenting skills would improve over the course of treatment.

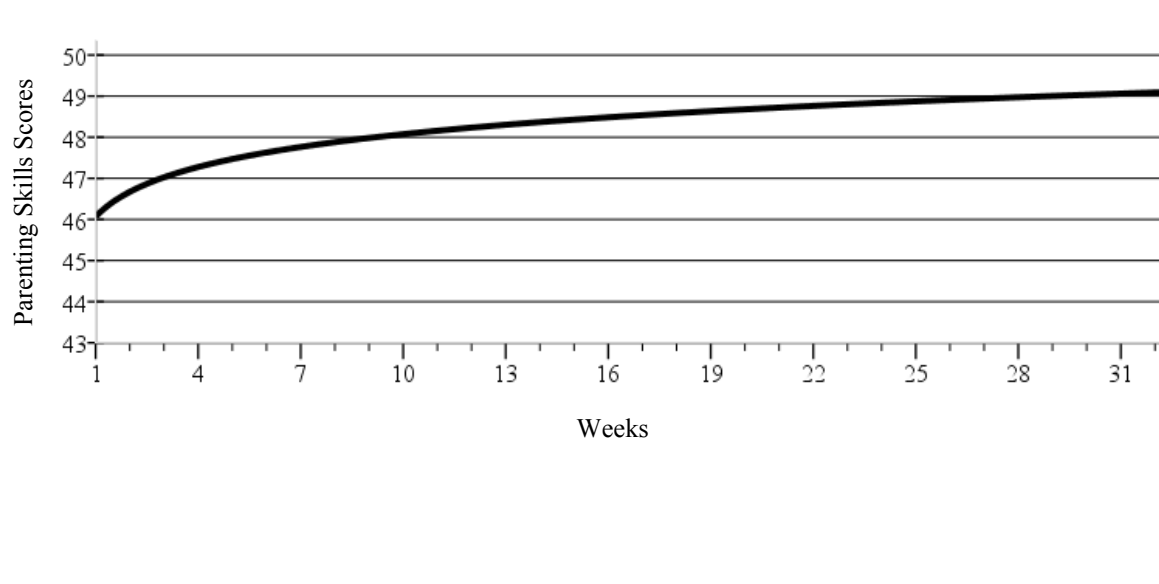
Table 4:

*Changes in Parenting Skills (PS) Over the Course of Treatment*

Domain		Estimate	Std. Error	<i>p</i>
Fixed Effects	Intercept	46.13	.39	<.01
	Change in PS (*LNWKS)	.84	.13	<.01
Random Effects	Intercept	13.40	.64	<.01
	Variability in Change	1.67	.39	<.01

\* The LNWKS effect estimate refers to the amount of increase in Parenting Skills per one unit of the natural log of the number of weeks a person has been in treatment.

Figure 1

*Average Parenting Skills Change Trajectory*

#### **Hypothesis 4: The Association between PS over the Course of Treatment and Overall Symptom Change**

It was predicted that changes in parenting skills scores would be associated with changes in youth symptoms over the course of treatment. Improvements in parenting scores were associated with improved youth symptoms over the course of treatment, for parent reported youth symptoms ( $p = .02$ ) and for youth self-report of symptoms ( $p = .02$ ) when using HLM analysis with a cross-classified model. The correlation of the change scores between parent-report of symptoms and parenting skills scores and youth self-report of symptoms and parenting skills scores over the course of treatment was calculated using Pearson correlations. Parent-reported symptom change over the course of treatment was significantly negatively correlated with parenting skills scores over the course of treatment ( $r = -.16$ ;  $p < .05$ ). Youth self-reported symptom change over the course of treatment was also significantly inversely correlated with

parenting skills change scores over the course of treatment ( $r = -.189$ ;  $p < .05$ ). Based on Cohen's  $d$  interpretation, the magnitude of the relationship between parenting skills and youth-reported symptoms and parenting skills and parent-reported youth symptoms small.  $R^2$  was computed to determine the variance of parent-reported youth symptoms and youth-reported symptoms over the course of treatment that can be accounted for by the variance in parenting skills over the course of treatment ( $R^2 = .03$ ;  $R^2 = .03$ ). Results indicated that 3% of the variance in parent-reported youth symptoms and youth-reported symptoms over the course of treatment was accounted for by variation in parenting skills over the course of treatment. Consequently, Hypothesis 4 was supported for both parent and youth reported symptoms while using HLM and was significant when correlations were calculated for both parent-reported youth symptoms and youth reported symptoms.

### **Discussion**

Effective parenting practices have been shown to be associated with improved child and adolescent behaviors and functioning (Denham et al., 2000; Fulkerson et al., 2008; Kazdin, 1991; Parker & Benson, 2004; Stormshak et al., 2000; Thomas, 2007; Wells et al., 2006). In recent years, there has begun to be increased awareness of the need for research regarding the mechanisms of change in child psychotherapy (Beauchaine et al., 2005; Kazdin, 2003; Weersing & Weisz, 2002). Specifically, there is a need for more research to better understand whether parenting skills are associated with children's outcomes in psychotherapy in routine clinical settings. The purpose of this study was to examine how parenting skills were associated with child and adolescent symptoms and outcomes in a community-based mental health setting.

In studying the relationship between parenting skills and youth symptoms, it was found that at intake there was an inverse relationship between these two variables for both parent and

youth reported symptom change. This means that less effective parenting skills were associated with higher child and adolescent symptoms at intake. This finding is consistent with the existing literature, which indicates that parenting skills do affect children's symptoms and behaviors and have an inversely correlated relationship (Hoza, et al., 2000; Stormshak, et al., 2000). Overall, when parenting skills are more effective, children tend to have fewer symptoms and behavioral challenges.

Further, parenting skills scores at intake were associated with the speed or rate of the child or adolescents change in symptoms over the course of treatment per parent-reported youth symptoms and for youth-reported symptoms. This means that parents who reported low parenting skills scores at intake also observed faster improvement in their children's symptoms over the course of treatment. This result may be partially explained by the fact that these youth had more room for potential reduction of symptoms over the course of treatment and particularly in the early weeks of treatment. This inversely applies to parents who report a higher level of parenting skills and youth with less severe symptoms at intake. These youth may have less expected change over the course of therapy and less change in the initial weeks of therapy than those children who have more severe initial symptoms. It appears that youth also saw rapid changes in their improvement which was inversely correlated with their parents reports of their changes in parenting skills.

Not only has the rate of symptom change been a topic of study, but there has recently been more focus on the shape of change in therapy. Change is often nonlinear and sudden (Hayes, Laurenceau, Feldman, Strauss, & Cardaciotto, 2007). A recent study on treatment for child anxiety found that the children's symptoms rapidly declined in the first half of treatment, which is common in psychotherapy (Chu, Skriner, & Zanberg, 2013). It will be important for

clinicians to pay attention to parenting skills intake scores and target those symptoms, especially in the early weeks of treatment.

Further, parenting skills did improve over the course of psychotherapy. It was anticipated that parenting skills were addressed in the child's psychotherapy sessions and that over the course of treatment parenting skills improved as a result of psychotherapy. This suggests that psychotherapy for children often results in improved parenting skills. Many studies have found that when parenting skills are addressed in their child's therapy those parenting skills improve (Kazdin, 1997; Reid et al., 2004; Shanley & Niec, 2010). In turn, children's outcomes improve as a result of improved parenting skills (O'Leary & Slep, 1999; Thomas & Zimmer-Gembeck, 2007; Treacy et al., 2005; Wells et al., 2006). Parents also had more room to improve early on in treatment. Further, there was found to be a significant amount of variability in parents' reports of parenting skills over the course of treatment meaning that parents reported changes in their parenting skills at various times and amounts throughout therapy.

Last, it was found that changes in parenting skills over the course of treatment were associated with changes in child and adolescent symptoms over the course of treatment, per parent-reported youth symptoms and for youth-reported symptoms. Since the parents reported both the youth symptoms scores and the TSM-P scores it makes sense that the association between the two would be consistently supported. It is interesting to note that the youth-reported symptoms were also significantly associated with their parents report of the changes in their parenting skills over the course of treatment.

Parenting skills associated with changes in their child's symptoms supports the literature which suggests that parenting skills are associated with children's symptoms and outcomes in therapy (Edwards, Hornish, Eiden, Grohman, & Eiden, 2009; Wells et al., 2006). However, the

direction of the relationship cannot be determined in this study. For example, improved parenting skills may have resulted in reduced child or adolescent symptoms, or the child's reduced symptoms may have resulted in reports of improved parenting skills. It cannot be concluded if improved parenting skills or improved child or adolescent symptoms preceded the other. However, there is a strong relationship of both child symptoms and parenting skills improving over the course of treatment. In addition, when parents merely participate in their child's therapy it has been found that their child has improved outcomes (Dowell & Ogles, 2010). Further, parental expectations and involvement in their child's treatment have been found to be of great importance in the success of their child's therapy (Nock & Kazdin, 2001). While the degree of the parents' involvement in their child's therapy for the current study is unknown, all parents or guardians had some involvement and investment in bringing their child to therapy and completing the questionnaires. As such, parental involvement is likely an important component of change in child and adolescent psychotherapy.

### **Limitations**

Limited information was available on the kind of techniques and procedures the therapists used in treatment. As such, this study did not account for individual therapists' psychotherapy approaches, which may have varied widely, and which may have not been evidence based treatment practices. These variables could have been accounted for through using video to code the specific behaviors and treatment techniques observed in the therapy sessions. However, since the study occurred in a community mental health facility, psychotherapists were randomized throughout the subjects, which would have reduced bias of psychotherapy approaches. Further, the amount of parental involvement in the sessions is not



known. It is also unknown if parent management training or family therapy occurred, which places an emphasis on the parents role in the child's therapy.

In addition, the parents' self-reported parenting skills and parents' and adolescents' reports of the adolescent's symptoms were subjective. A more controlled study would be able to more consistently document parenting skills, however, that would reduce the generalizability of the results. There is also question as to the validity of the parent's report of their child's internalizing symptoms and youth's accuracy of their reported externalizing symptoms, which raises the importance of having multiple informants (Penney & Skilling, 2012). Parents tend to underreport internalizing symptoms of their children and adolescents tend to be more accurate reporters of internalizing symptoms, while parents tend to more accurately report externalizing symptoms than adolescents (Jensen, et al., 1999; Loeber, Green, & Lahey, 1990). Overall the results of this study suggest that improved parenting skills are associated with decreases in youth symptoms.

### **Study Applications and Future Directions**

These findings can be generalized to other community-based mental health outpatient settings and highlight the importance of attending to parenting skills as an avenue to improving child psychotherapy outcomes. Results also provide useful clinical information in guiding practitioners to focus their efforts in treatment planning on aspects of parenting skills that are most likely to yield improvements in youth mental health problems. More specifically, the results of this study appear to emphasize the importance of parents implementing effective parenting skills and its influence on their child's overall symptoms at intake and their child's outcomes in therapy. It will also be important for clinicians to target parenting skills and child symptoms in the early weeks of treatment since the most change in therapy was seen during that

time. Last, it may be beneficial for parenting skills to be taught in the community, including at the public school or library, as a preventative focus for parents with children.

Practical applications of these findings in therapy could include a focus on increased positive parental skills, including positive reinforcement, monitoring, reduced verbosity, and immediate, brief consequences. These behaviors are core to several evidence based therapeutic approaches for children and adolescents. Some of these evidence based psychotherapies include Parent Management Training (Kazdin 1991, 2003), Functional Family Therapy (Alexander & Parsons, 1982), the Incredible Years Program (Webster-Stratton, 1981), Parent–Child Interaction Therapy (Eyberg & Matarazzo, 1980), and the Defiant Children (Barkley, 1997). Implementing these parenting skills and programs has been shown to lead to successful outcomes in therapy.

This study also provides the basis for future research regarding the association between parenting skills and child and adolescent outcomes in therapy. Future studies may more specifically address mechanisms of change, including mediators and moderators of parenting skills and their importance in child and adolescent therapy. Future studies may conduct research in a more controlled setting to address predictors of outcomes in child psychotherapy. A control study could predict causal relationships. Such a study may include a waitlist control group to compare results with the treatment group. By having a waitlist group, more confident conclusions could be reached regarding the change processes involved with parenting skills and children's outcomes in therapy.

Future research regarding parenting skills as a preventative focus in the community may also be an area for further exploration. Research to find ways to reduce overall youth symptoms and pathology, with an emphasis on parenting skills could be beneficial for large underserved community populations. Parenting skills could be assessed after completion of a parenting class

teaching evidence based principles. These parents could be followed to assess if their child/children receives future therapy. Then parenting skills could be assessed prior to or at intake post completion of a parenting skills class, possibly in comparison to those who had not received a similar parenting skills class.

Last, future research on youth outcomes in relation to skills and relationships with non-parental caretakers and siblings in the family may be helpful for clinicians as well. For example, better understanding the impact siblings and other family members can have on the child or adolescent could help direct family therapy or the involvement of additional family members in children's individual therapy sessions. For example, family factors were found to predict treatment outcomes for a pediatric population with obsessive-compulsive disorder (Peris, Bergman, Chang, Langley & Piacentini, 2012). As such, there are many possible avenues of future research related to factors which are associated with children and adolescent's outcomes in treatment.

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