



2017-05-01

# Parenting Skills as a Predictor of Youth Externalizing Outcomes in Routine Community Mental Health Services

Corinne Elizabeth Ruth  
*Brigham Young University*

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>

 Part of the [Psychology Commons](#)

---

## BYU ScholarsArchive Citation

Ruth, Corinne Elizabeth, "Parenting Skills as a Predictor of Youth Externalizing Outcomes in Routine Community Mental Health Services" (2017). *All Theses and Dissertations*. 6760.  
<https://scholarsarchive.byu.edu/etd/6760>

This Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in All Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact [scholarsarchive@byu.edu](mailto:scholarsarchive@byu.edu), [ellen\\_amatangelo@byu.edu](mailto:ellen_amatangelo@byu.edu).

Parenting Skills as a Predictor of Youth Externalizing Outcomes in  
Routine Community Mental Health Services

Corinne Elizabeth Ruth

A thesis submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Master of Science

Jared S. Warren, Chair  
Gary M. Burlingame  
Kat T. Green

Department of Psychology  
Brigham Young University

Copyright © 2017 Corinne Elizabeth Ruth

All Rights Reserved

## ABSTRACT

### Parenting Skills as a Predictor of Youth Externalizing Outcomes in Routine Community Mental Health Services

Corinne Elizabeth Ruth  
Department of Psychology, BYU  
Master of Science

This study examined the relationship between perceived parenting skills and youth externalizing symptoms throughout the course of routine treatment of youth receiving services in a community mental health setting. Specifically, this study investigated whether changes in parenting skills were associated with changes in three dimensions of youth externalizing behaviors (behavioral dysfunction, interpersonal relations, social problems). Participants were 401 youth (aged 4-17, mean aged 10.7, 48% female) and their parents/guardians. At regular intervals throughout treatment, parents completed the Treatment Support Measure (TSM) to assess perceived parenting skills along with the Youth Outcome Questionnaire (Y-OQ) to assess youth externalizing symptoms. Hierarchical linear modeling analyses revealed that changes in perceived parenting skills were not significantly related to changes youth behavioral dysfunction, interpersonal relations, or social problems. However, parenting skills and all facets of externalizing significantly changed throughout the course of therapy and higher parenting skills were associated with lower levels of youth externalizing throughout therapy. Parenting skill appears to require further study as a key factor involved in youth psychotherapy outcomes in real world settings, especially in relation to youth externalizing symptoms.

Keywords: child psychotherapy, outcome research, parenting skills, youth externalizing

## TABLE OF CONTENTS

List of Tables .....	iv
List of Figures .....	v
Introduction.....	1
Youth Externalizing Problems .....	1
The Role of Parenting Skills in Facilitating Externalizing Outcomes .....	3
Study Aims.....	5
Method .....	6
Participants.....	6
Measurement.....	7
Youth Externalizing .....	7
Parenting Skills .....	8
Procedure .....	9
Analyses .....	10
Results.....	11
Hypothesis 1: Patterns of Change in Parenting Skills and Externalizing Outcomes .....	12
Hypothesis 2: Relationships Between Parenting Skills and Externalizing Outcomes.....	14
Hypothesis 3: Relationships Between Parenting Skills and Externalizing Rates of Change ...	15
Hypothesis 4: Moderation by Age and Gender.....	17
Discussion.....	18
Study Conclusions and Future Directions.....	20
Limitations .....	21
References.....	24

## LIST OF TABLES

Table 1 Estimates of Parenting Skills and Externalizing Outcomes Change Trajectories .....	13
Table 2 Estimates for Association Between Parenting Skills and Externalizing Outcomes .....	15
Table 3 Estimates for Associations Between Change Trajectories for Parenting Skills and Externalizing Outcomes.....	17

## LIST OF FIGURES

Figure 1 Change trajectories of Y-OQ domains of behavioral dysfunction, interpersonal relations, and social problems scores.....	13
Figure 2 Change trajectory of TSM parenting skills domain scores .....	14

## Parenting Skills as a Predictor of Youth Externalizing Outcomes in Routine Community Mental Health Services

There is a pressing need for research examining treatment outcomes and the processes by which youth change in psychotherapy, especially in light of high rates of treatment failure in child and young adult populations (Weisz, Jensen, & McLeod, 2005). Studies of therapy outcomes in children and youth participating in routine treatment in community mental health settings have found that 14% to 24% of clients deteriorate during therapy (Warren, Nelson, Mondragon, Baldwin, & Burlingame, 2010). This rate of treatment failure indicates that there is considerable room for improvement in the administration of youth mental health care, especially within community mental health settings where millions of youth receive psychological services each year (National Advisory Mental Health Council, 2001). As articulated by Kazdin (2007), in examining and responding to instances of treatment failure, it is essential to understand the mechanisms involved in determining psychotherapy outcomes. By delineating the underlying processes inherent to psychotherapeutic change, the field becomes better able to pinpoint elements of treatment that can be targeted and improved to increase the effectiveness of psychotherapy for clinical populations. There is a paucity of research investigating the processes that lead to change in youth psychotherapy, particularly in usual care settings (Weisz et al., 2005). In response to this gap, the present study aims to examine the role of parenting skills in facilitating youth externalizing outcomes in community mental systems.

### **Youth Externalizing Problems**

Over the recent decades, child externalizing behaviors have been increasingly viewed as a pressing public health issue, particularly given the high prevalence of externalizing problems among children and young adults, especially those treated in community settings (Hann & Borek, 2001). In a sample of 876 youth treated in outpatient community mental health clinics,

Garland and colleagues (2001) found that 55.3% met criteria for an externalizing disorder, including Oppositional Defiant Disorder, Conduct Disorder, and Attention-Deficit Hyperactivity Disorder. Children who exhibit externalizing problems, including disruptive, oppositional, inattentive, hyperactive, or aggressive behaviors, often experience difficulties within their family, school, and community environments (Donenberg & Baker, 1993). If left untreated, externalizing behaviors in childhood can increase the risk of later difficulties such as drug abuse, poor work outcomes, low marriage quality, poor interpersonal relationships, and serious mental disorders (Champion, Goodall, & Rutter, 1995).

In examining patterns in these difficult behaviors in youth, researchers have found that specific behaviors evidenced by parents towards their children are associated with the development and maintenance of externalizing problems (Kazdin, 1997; Patterson, 1982). Observational studies show that youth with higher levels of conduct problems and other externalizing difficulties are more likely to have parents that exhibit low levels of positive parenting practices and high levels of harsh, inconsistent parenting behaviors (Farrington, 1995; Gardner, Sonuga-Barke, & Sayal, 1999). In addition, parents' ability to effectively manage coercive behaviors and use positive parenting strategies is associated with decreased severity of externalizing and conduct problems in youth (Shaw, Bell, & Gilliom, 2000; Stormshak, Bierman, McMahon, & Lengua, 2000).

Based on this relationship between parenting and externalizing problems, interventions have emerged that target parenting practices as a way of altering patterns of child misbehavior. In his seminal discussion on problematic child behavior in a family context, Patterson (1982) showed that parents play a key role in maintaining maladaptive behavior patterns by reinforcing negative child behaviors. Accordingly, he suggested that effective treatments focus on altering

patterns of parental response rather than intervening directly on the actual youth behaviors. This work laid the foundation for the development of treatment programs for youth externalizing that focus on changing patterns of parental behavior (Kazdin, 1997). Current interventions for child externalizing problems focus on teaching and coaching parents of disruptive youth to use more effective parenting strategies, such as consistent positive and negative reinforcement, to decrease the frequency and severity of child misbehaviors (Kazdin, 1997).

There is a vast body of research related to the development and implementation of parent-focused interventions for youth externalizing problems (Beauchaine, Webster-Stratton, & Jamila, 2005). A systematic review of these types of behavioral-based parent-training treatments for externalizing disorders demonstrated that these programs are generally effective in reducing child externalizing behaviors (Dretzke et al., 2005). Specifically, programs such as Incredible Years (Reid, Webster-Stratton, & Hammond, 2003), Parent Management Training – Oregon Model (Sigmarsson, Rains, & Forgatch, 2015), and Parent-Child Interaction Therapy (Eyberg, Boggs, & Algina, 1995) that focus on altering parental responses to child behaviors have been shown to lead to reductions in youth externalizing behaviors across age, gender, and cultural variables (Eyberg, Nelson, & Boggs, 2008; Thomas & Zimmer-Gembeck, 2007).

### **The Role of Parenting Skills in Facilitating Externalizing Outcomes**

Within this context, studies have shown that parenting skills likely mediate the relationship between parent-focused interventions for youth externalizing and reductions in youth symptoms (Beauchaine et al., 2005). In a group of 76 children treated for externalizing concerns through the Webster-Stratton Incredible Years program, Gardner, Burton, and Klimes (2006) determined that increases in observed positive parenting behaviors (e.g., praise and positive discipline) mediated the relationship between treatment condition and decreases in

observed child problem behaviors. Hinshaw and colleagues (2000) found that reductions in parental negative/ineffective discipline practices mediated the relationship between combined medication/behavioral treatment and reductions in disruptive child behaviors at school. These types of mediation trials provide preliminary evidence, in the context of youth psychotherapy, that changes in parenting skills are predict changes in youth externalizing symptoms.

At present, studies on the role of parenting skills in facilitating outcomes for youth with externalizing problems have, for the most part, been constrained to randomized controlled trials conducted in highly-regulated university clinics (Scott, Spender, Doolan, Jacobs, & Aspland, 2001). While this type of controlled research is essential to establish foundational knowledge, additional research is needed to extend this research into real-world clinical settings. Recent reviews have demonstrated larger effect sizes for children treated using manualized evidence-based protocols than for children treated in routine care settings (Weisz et al., 2013; Weisz, Jensen-Doss, & Hawley, 2006). This pattern of results suggests that there is a disconnect between the controlled study of treatments in specialized clinics and the implementation of psychotherapy in real-world settings, demonstrating the need for additional research to investigate how findings on youth externalizing outcomes from controlled settings translate to actual care in the community. The present study sought to extend valuable findings in this area to the broad population of youth and families treated in community mental health settings in the context of routine treatment. This study answers the needs expressed in recent research in youth psychotherapy to include populations served in community settings in order to increase the generalizability of findings (Weisz et al., 2005).

In looking to bridge this gap, the design of the present study addressed multiple key methodological distinctions between the delivery of treatments in clinical research and common

practices in real-world clinical settings. As described by Kazdin (2003), in research settings typically only one type of treatment is assessed across participants. In addition, therapists in randomized clinical trials adhere strictly to set protocols. Lastly, controlled studies often involve diagnostically homogenous samples. In contrast, therapists in community settings often practice eclectic forms of treatment, combining elements from different approaches. Community therapists also vary greatly in the degree to which they adhere to manualized protocols. Also, children seen in routine care settings often present with symptoms in multiple diagnostic categories (Weisz et al., 2005). Therefore, in order to know whether the relationship between parenting skills and externalizing outcomes holds for children treated in routine community mental health settings, the present study assessed outcomes in children treated using a variety of therapeutic techniques under the umbrella of usual practice. In addition, this study examined this relationship in children referred for all types of mental health concerns, though analysis focused on the relationship between parenting skills and reported externalizing problems.

### **Study Aims**

The purpose of the present exploratory study was to conceptualize how parenting skills are related to youth externalizing outcomes in routine outpatient therapy conducted in a community mental health setting. Specifically, our primary research question was: Do changes in parenting skills throughout therapy predict changes in externalizing behaviors in youth treated in community health settings? Based on previous research identifying parenting skills as a mediator of change in youth externalizing behavior in treatment, we hypothesized that increases in parenting skills would be associated with decreases in youth externalizing behaviors.

To supplement this aim, we sought to respond to multiple secondary research questions to further describe the relationship between parenting skills and youth externalizing in routine

community mental health care. Additional research questions included: i) Do parenting skills and child externalizing behaviors change throughout therapy?, ii) Is there an association between parenting skills and youth externalizing outcomes across the course of therapy?, and iii) Is the relationship between change in parenting skills and externalizing outcomes throughout therapy moderated by child age and gender? We hypothesized that, based on prior studies examining patterns of parent factors and youth symptoms, parenting skills would increase and youth externalizing behavior would decrease. We also hypothesized that there would be an inverse relationship between parenting skills and externalizing symptoms. Lastly, we anticipated that the relationship between change in parenting skills and change in youth externalizing would be stronger for younger children and for male children. Our prediction regarding age was based on previous literature demonstrating that younger children are more reliant on parents and thus more likely to be influenced by parent variables in treatment (Lundahl, Risser, & Lovejoy, 2006). Regarding gender, externalizing symptoms are typically more common and more severe in male children than in females (Leadbeater, Kuperminc, Blatt, & Hertzog, 1999), suggesting that parenting skills would be a more potent influence in male children. The results of this study will provide important information clarifying the influence of parenting skills on youth externalizing outcomes in routine community mental health care.

## **Method**

### **Participants**

Participants were 401 youth and their parents or guardians. Youth participants ranged from 4 to 17 years of age with a mean age of 10.7 years. Of the youth participants, 48.38% were female and 51.62% were male. The ethnic, racial, and socioeconomic background of the youth participants was representative of children in the geographic area. Specifically, the ethnic

distribution of youth participants was as follows: Caucasian, 87.53%; Black/African American, 2.24%; Pacific Islander, 2.00%; American Indian, 2.00%; Asian, .50%; Two or more races, 2.24%; Other, 0.50%; Unknown, 2.99%. Regarding race, 86.05% of the youth sampled were of non-Hispanic origin, 4.99% were of Mexican origin, .50% were of Puerto Rican origin, 5.49% were of another Hispanic race, and 2.99% were of unknown racial background. Monthly family income of participants ranged from \$0 to \$45,000 with 50% of participants having a monthly income of less than \$1,000. All of the adult respondents identified as a primary caregiver of the child receiving treatment, 77.64% were mothers, 8.29% were fathers, 5.78% were legal guardians, 2.51% were grandparents, 0.75% were aunts/uncles, 3.27% were foster parents, and 1.76% were of unspecified relation. For the purposes of this investigation, all adult guardian respondents will be referred to as “parents”.

## Measurement

**Youth Externalizing.** Three subscales of the Youth Outcome Questionnaire – version 2.0 (Y-OQ; Burlingame, Wells, Lambert, & Cox, 2004) were used to assess youth externalizing symptoms throughout treatment. The Y-OQ is a measure of youth overall distress to be completed by parents or guardians of youth ages 4-17. The Y-OQ consists of 64 items describing child symptoms or behaviors in response to which parents provide frequency ratings on a 5-point Likert scale. The Y-OQ consists of 5 subscales assessing different domains of psychosocial symptomatology. The three subscales used in the present study to quantify externalizing behaviors were: (a) Interpersonal Relations (IR), (b) Social Problems (SP), and (c) Behavioral Dysfunction (BD). These three subscales map onto the three commonly-referenced facets of childhood externalizing problems (e.g. Ge, Brody, Conger, & Simons, 2006). The interpersonal relations subscale assesses problems within youths’ relationships including uncooperativeness,

aggressiveness, arguing, and defiance. These symptoms are typically associated with the diagnosis of Oppositional Defiant Disorder (American Psychiatric Association, 2013). The social problems subscale assesses more serious delinquent or aggressive social behaviors associated with conduct disorder such as truancy, sexual problems, running away, destruction of property, and substance abuse. These behaviors are often indicative of Conduct Disorder (American Psychiatric Association, 2013). The behavioral dysfunction subscale assesses behaviors associated with hyperactivity, impulsivity, and inattention, symptoms typical of Attention-Deficit Hyperactivity Disorder (American Psychiatric Association, 2013). Analyses performed by Burlingame and colleagues (2001) found internal consistency estimates of  $\alpha = .93-.95$  for the Y-OQ total score in samples of youth drawn from nonclinical, outpatient, and inpatient settings. In the same samples, Cronbach's alphas for the IR, SP, and BD subscales were .79-.81, .71-.79, and .85-.86 respectively. Test-retest reliabilities with 2 week delay for the total, IR, SP, and BD scores were .84, .75, .78, and .82 respectively (Q. Atkin et al., 1997). The Y-OQ total and subscale scores show good concurrent validity with total and corresponding subscale scores of both the Child Behavior Checklist (CBCL; Achenbach, 1991) and the Conners' Parent Rating Scale (CPRS; Conners, Sitarenios, Parker, & Epstein, 1998) with correlations ranging from .5 to .78 (Q. G. Atkin, 2000). The Y-OQ has also been shown to have high specificity and sensitivity for differentiating between populations in various levels of clinical care (Burlingame et al., 2004).

**Parenting Skills.** Parenting skills were measured by caregiver self-report on the parenting skills domain of the parent form of the Treatment Support Measure (TSM-P; Warren & Lambert, 2013). The TSM-P is a recently-developed treatment planning and clinical support tool intended to be used to maximize the effectiveness of clinical care and suggest appropriate targets

of intervention in the event of treatment failure. The TSM-P assesses five domains of parental functioning that have been shown to be related to treatment outcomes including parenting skills, parent distress, parent social support, parenting self-efficacy, and parent perception of therapeutic alliance. The parenting skills domain of the TSM-P consists of 12 items rated on a 5-point Likert scale of agreement assessing the extent to which parents utilize positive parenting practices such as positive reinforcement, adaptive consequences, quality time, and supervision.

Preliminary psychometric analyses conducted by Warren and colleagues (2017) showed that, in an outpatient clinical sample, the TSM-P total score and parenting skills domain score have internal consistency estimates of .70 and .80 respectively. The parenting skills domain has a test-retest reliability of .77 with a 1-week delay between administrations. Warren and colleagues (2017) also used confirmatory factor analysis to demonstrate that all 12 items within the domain load onto a latent parenting skills factor with item loadings higher than .50. Fit indices including a Chi-Squared test along with CFI and RLI confirmed that the hypothesized model adequately fit the data.

### **Procedure**

Participants in the present study were part of a broader investigation of the influence of multiple parent and youth factors on youth therapy outcomes in community mental health settings. Youth and parent participants were recruited during routine intake at three large community mental health clinics in the intermountain west region of the United States from 2011-2012. This community mental health system primarily serves low to middle income families with approximately half of clients receiving services under Medicaid. All youth ages 4-17 receiving psychosocial treatment at the participating facilities were invited to participate. Participants were informed that their participation in the study was voluntary and that their

responses would be kept confidential. Parental consent and youth assent was obtained. A longitudinal model for data collection was employed to track participants' trajectory and outcome throughout the course of therapy. Measures were administered at intake, at the participants' next five appointments, and at every third appointment for the next six months for a maximum total of 11 administrations. If a participant terminated therapy prior to 11 administrations, no additional data was collected from the participant.

At all measurement points, caregivers completed the Y-OQ and TSM-P. These measures were both administered in paper-and-pencil form. After completing the measures at intake, participants were compensated \$10. Research assistants periodically called participants to remind them to arrive a few minutes early to their appointments to complete the measures. Consistent with regular procedures at the community mental health clinics, youth participants received outpatient mental health treatment. Typical care at the locations consisted of a mixture of individual child therapy, family therapy, and psychoeducational skills groups.

### **Analyses**

We used hierarchical linear modeling (HLM) to examine the relationship between change in parenting skills and changes in the externalizing outcomes of social problems, behavioral dysfunction, and interpersonal relations (Raudenbush & Bryk, 2002). In the field, HLM is also referred to as mixed modeling, multilevel modeling, individual growth curve modeling, and random effects regression analysis (Raudenbush & Bryk, 2002; Singer & Willet, 2003). HLM is a form of ordinary least squares regression that is often used with longitudinal data and is a valid and reasonable method of analyzing change over time (Singer & Willet, 2003). As explained by Raudenbush and Bryk (2002), HLM analysis can be used to predict participants' levels on an outcome variable as a function of multiple predictor variables, one of which is a time variable.

Given the nature of our study design and data, HLM has several advantages over other common approaches, including repeated measures analysis of variance. Generally, HLM provides a flexible framework for analyzing longitudinal data, which was desirable for the present study in light of the high amount of variability usually present in community samples (Raudenbush & Bryk, 2002). In addition, HLM accounts for and tolerates missing data, which permitted us to include all subjects in analyses regardless of how many sessions of therapy they completed. This allowed us to more fully preserve the diversity and representativeness of our sample than if we had used other approaches that exclude subjects with missing data points. Also, whereas many methods of analysis require data collection to occur at set time intervals, HLM permits data to be gathered with variable spacing, further allowing us to retain a majority of our cases. Lastly, HLM affords researchers with the ability to examine both aggregate patterns of change over time across a sample as well as differences in change trajectories between individuals and groups, encouraging the study of moderators of treatment outcome. All analyses were conducted in Stata 14.0.

## **Results**

Prior to performing HLM analyses to test the hypotheses, the data was cleaned and prepared. The variables of parenting skills, behavioral dysfunction, interpersonal relations, and social problems at each time point were first examined for univariate outliers (defined as values greater than two interquartile ranges above or below the median). Univariate outliers were fenced at these limits. Next, we determined the most appropriate time variable for analyzing outcomes across the course of therapy. We selected a natural log transformation of weeks in treatment ( $\ln wks = \log_e \text{weeks} + 1$ ) consistent with multiple previous longitudinal investigations of therapy outcomes in similar samples (e.g. Warren, Brown, Layne, & Nelson, 2011; Warren et al., 2010).

As explained by Warren et al. (2010), using a natural log transformation models change as curvilinear in which symptom levels initially decrease steeply but progressively flatten with continued time in treatment. To confirm the suitability of this transformation for time in the present sample, we used fit indices including the -2 Log Likelihood (N2LL) and the Bayesian Information Criteria (BIC) to compare the models using the natural log time transformation against models using no transformation and other transformation generated by Tukey's ladder of powers (Tukey, 1977). In all cases, models using the natural log transformation for time provided better fit.

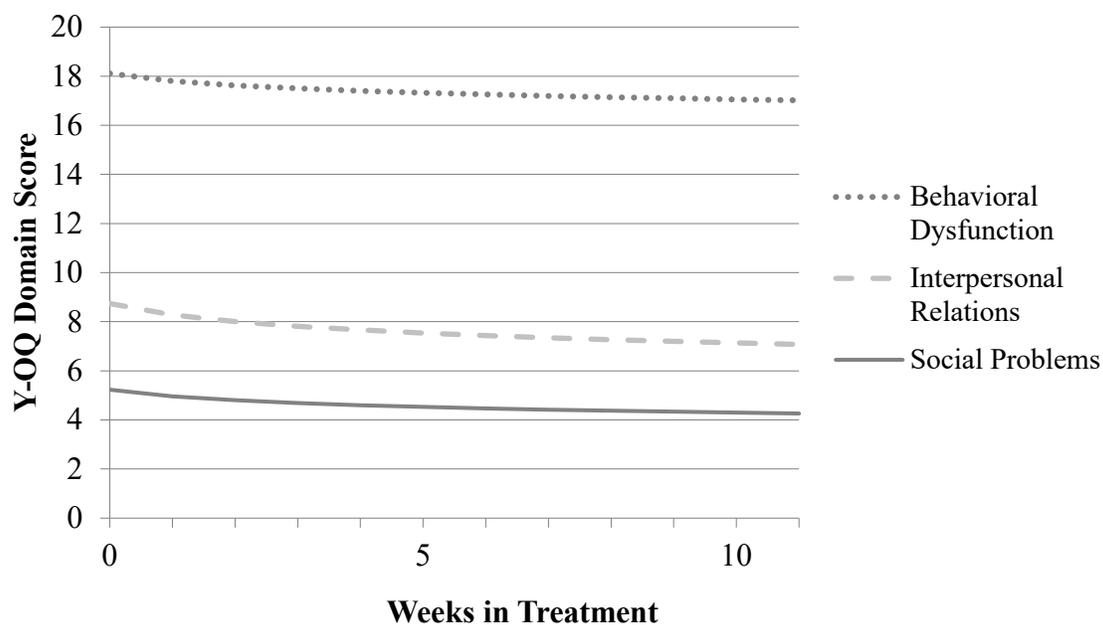
### **Hypothesis 1: Patterns of Change in Parenting Skills and Externalizing Outcomes**

First, we examined change in parenting skills and externalizing outcomes over time using HLM. To do so, we predicted parenting skills, behavioral dysfunction, social problems, and interpersonal relations as a function of the transformed time variable. Analyses showed significant results for the slope and intercept of the time variable for parenting skills, behavioral dysfunction, social problems, and interpersonal relations. Table 1 provides effect estimates on the trajectories of parenting skills and each of the externalizing outcomes. Figure 1 illustrates the magnitude and average rate of change for the three facets of externalizing while Figure 2 shows the same information for parenting skills. Overall, analyses demonstrated that parenting skills significantly increased throughout the course of treatment while behavioral dysfunction, social problems, and interpersonal relations significantly decreased throughout the course of treatment, supporting our hypothesis.

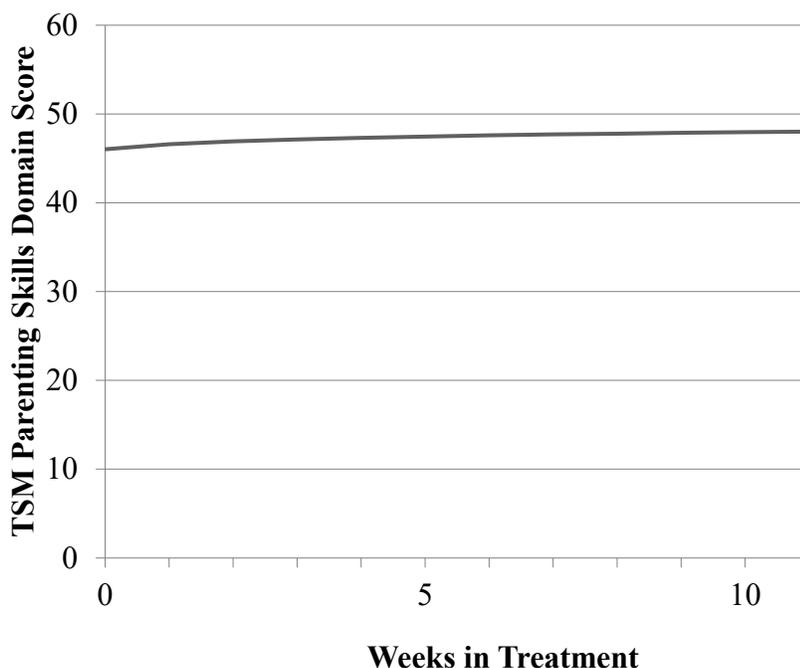
Table 1

*Estimates of Parenting Skills and Externalizing Outcomes Change Trajectories*

Variable		Estimate	SE	<i>p</i>
Parenting Skills	Intercept	46.03	.35	< .001
	LNWKS	.80	.12	< .001
Behavioral Dysfunction	Intercept	18.11	.49	< .001
	LNWKS	-.44	.18	.012
Interpersonal Relations	Intercept	8.74	.37	< .001
	LNWKS	-.67	.14	< .001
Social Problems	Intercept	5.23	.26	< .001
	LNWKS	-.39	.09	< .001



*Figure 1.* Change trajectories of Y-OQ domains of behavioral dysfunction, interpersonal relations, and social problems scores.



*Figure 2.* Change trajectory of TSM parenting skills domain scores.

## **Hypothesis 2: Relationships Between Parenting Skills and Externalizing Outcomes**

To determine whether there was a relationship between parenting skills and externalizing outcomes throughout therapy, we used HLM to examine behavioral dysfunction, interpersonal relations, and social problems as a function of parenting skills across time points. For each model, we also included age and gender as covariates to control for differences in externalizing trajectories across age and gender. For all three outcomes, including age and gender improved model fit according to the -2 Log Likelihood (N2LL) and the Bayesian Information Criteria (BIC) indices.

We then examined parenting skills as predictors of youth behavioral dysfunction, interpersonal relations, and social problems. Estimates for the relationship between intake parenting skills and change in the three domains of externalizing are shown in Table 2. Analyses showed that, across time points, there was a significant inverse relationship between parenting

skills and all three externalizing facets. In other words, throughout therapy, higher levels of reported parenting skills were associated with lower levels of youth behavioral dysfunction, interpersonal relations, and social problems. In addition, age was significantly positively associated with behavioral dysfunction, which indicated that older children had higher levels behavioral dysfunction throughout therapy. Age was not significantly related to interpersonal relations or social problems. Gender was significantly associated with all three facets of externalizing, indicating that male children showed higher levels of externalizing across therapy than female children.

Table 2

*Estimates for Association Between Parenting Skills and Externalizing Outcomes*

Variable		Estimate	SE	<i>p</i>
Behavioral Dysfunction	Intercept	38.41	2.18	< .001
	LNWKS	-.46	.18	.009
	Parenting Skills	-.20	.03	< .001
	Age	-.59	.11	< .001
	Gender	-3.40	.81	< .001
Interpersonal Relations	Intercept	23.82	1.67	< .001
	LNWKS	-.58	.13	< .001
	Parenting Skills	-.26	.03	< .001
	Age	-.09	.08	.26
	Gender	-1.53	.61	.01
Social Problems	Intercept	14.99	1.16	< .001
	LNWKS	-.36	.09	< .001
	Parenting Skills	-.14	.02	< .001
	Age	-.10	.06	.10
	Gender	-1.44	.44	.001

**Hypothesis 3: Relationships Between Parenting Skills and Externalizing Rates of Change**

Next, we examined the relationships between the change trajectories of youth externalizing behaviors and parenting skills. To do so, we created separate models using HLM predicting behavioral dysfunction, social problems, and interpersonal relations scores as

functions of parenting skills and time as main effects along with the interaction of parenting skills with the natural log transformation of time. Including this interaction term allowed us to assess the extent to which changes in parenting skills over time were related to externalizing outcomes. Again, age and gender were included as covariates. Estimates for the relationship between change in behavioral dysfunction, interpersonal relations, and social problems and change in parenting skills throughout therapy are shown in Table 3. Analyses revealed that the interaction between parenting skills and time were not significantly associated with changes in social problems, behavioral dysfunction, and interpersonal relations. These results did not support our hypothesis that increases in parenting skills over the course of therapy would be associated with decreases in youth externalizing behaviors. Consistent with analyses described above, age was significantly associated with behavioral dysfunction and gender was significantly associated with all three externalizing domains.

Table 3

*Estimates for Associations Between Change Trajectories for Parenting Skills and Externalizing Outcomes*

Variable		Estimate	SE	<i>p</i>
Behavioral Dysfunction	Intercept	40.59	2.77	< .001
	LNWKS	-.177	1.05	.09
	Parenting Skills	-.25	.05	< .001
	Parenting Skills x LNWKS	.03	.02	.21
	Age	0.60	.11	< .001
	Gender	-3.39	.81	< .001
Interpersonal Relations	Intercept	24.87	2.11	< .001
	LNWKS	-1.21	.80	.13
	Parenting Skills	-.28	.04	< .001
	Parenting Skills x LNWKS	.01	.02	.43
	Age	-.09	.08	.26
	Gender	-1.53	.60	.01
Social Problems	Intercept	16.73	1.44	< .001
	LNWKS	-1.38	.53	.009
	Parenting Skills	-.18	.03	< .001
	Parenting Skills x LNWKS	.02	.01	.051
	Age	-.10	.06	.08
	Gender	-1.44	.44	.001

#### **Hypothesis 4: Moderation by Age and Gender**

To examine whether these relationships between the three facets of externalizing behaviors (youth behavioral dysfunction, interpersonal relations, and social problems) and parenting skills were moderated by youth age and gender, we added interactions between these demographic variables and parenting skills to the models. For each model, the interaction terms were not significant. Therefore, we concluded that age and gender did not moderate the relationships between change trajectories of youth behavioral dysfunction, interpersonal relations, and social problems and parenting skills.

## Discussion

The purpose of the present study was to examine the relationship between parenting skills and youth externalizing behaviors throughout the course of routine outpatient treatment in a community mental health system. Primarily, we sought to determine whether changes in parenting skills were associated with changes in youth behavioral dysfunction, interpersonal relations, and social problems, three domains of externalizing symptoms. Supplementary aims of the study included investigating change in youth externalizing and parenting skills across therapy, examining the relationship between youth externalizing and parenting skills across therapy, and assessing whether the relationship of parenting skills and youth externalizing throughout therapy was moderated by youth age and gender. In examining these relationships in a community-based routine care system, this study looked to extend existing research findings on the connection between youth externalizing and parenting skills to real-world settings.

The results of the study partially confirmed our initial hypotheses. Analyses showed that parenting skills significantly increased and youth behavioral dysfunction, interpersonal relations, and social problems significantly decreased over the course of treatment. Thus, results showed that, while in treatment, parents reported increases in their ability to effectively manage their children's difficult behaviors and use positive parenting practices, suggesting that therapy may have provided them with useful parenting skills. In addition, parents reported decreases in their children's externalizing behaviors across domains over the course of treatment. This trend provides support for the conclusion that the treatment provided in the particular community mental health system that we sampled from was likely effective in producing improvement in these symptoms. In addition, across time points, higher levels of reported parenting skills were

associated with lower levels of youth behavioral dysfunction, interpersonal relations, and social problems, supporting our hypothesis.

In response to our primary research question regarding the association between change in parenting skills and change in youth externalizing over the course of therapy, results showed that changes in parenting skills were not associated with changes in youth externalizing over the course of therapy. While these results do not mirror findings from previous controlled studies that have shown that increases in parenting skills are linked with improvements in youth externalizing behaviors (e.g., Gardner et al., 2006; Hinshaw et al., 2000), findings from recently research highlights a probable explanation for the present results.

The observed lack of relationship between parenting skills and externalizing outcomes in the present sample may indicate a lack of implementation of parenting-focused aspects of the interventions provided by therapists in the study. Given that parenting skills increased over the course of therapy, it is likely that therapists taught parents of youth clients parent management principles aimed at reducing negative child behaviors, thus increasing parents' reported levels of parenting skills. However, if these techniques were not successfully implemented by the parents in the sample, it would explain why decreases in youth externalizing behaviors were not seen in conjunction with increases in parenting skills. This interpretation aligns with existing research arguing that many interventions conveyed by therapists in real-world community settings are not typically implemented by families in the home (Connor-Smith & Weisz, 2003).

Lastly, we found that the relationships between change trajectories for parenting skills and the three externalizing domains were not moderated by age or by gender. This failed to support our hypothesis that the relationship between parenting skills and externalizing symptoms would be greater for younger children and for male children. However, we did find that age and

gender were related to externalizing behaviors. Specifically, we found that older children exhibited higher levels of inattentive and hyperactive symptoms. In addition, male children showed higher levels of inattentive and hyperactive symptoms, oppositionality, and conduct problems.

### **Study Conclusions and Future Directions**

Overall, the results of the present study show that parenting skills likely play a key role in youth outpatient treatment in real-world settings. The results demonstrate that, for youth treated in community settings, self-reported parenting skills are related to multiple domains of youth externalizing. This finding mirrors studies conducted in controlled clinical settings documenting robust relationships between these constructs (e.g., Farrington, 1995; Gardner, Sonuga-Barke, & Sayal, 1999). As such, this study extends findings demonstrating an important relationship between the level of skill possessed by a parent and their child's level of externalizing symptoms in therapy to real-world clinical settings.

In addition, the present study found that reported increases in parenting skills in therapy were not related to increases in changes in youth externalizing behaviors. Prior research has demonstrated that improving parenting skills is likely an effective means to decrease youth externalizing symptoms, a finding that did not play out in the present study (Hinshaw et al., 2000). This disparity between the results of this study and previous research conducted in controlled university-based clinics highlights the disconnect between clinical research and real-world mental health care settings. While we know that targeting parenting skills is likely an effective intervention for youth externalizing problems, the present study suggests that this proposed mechanism for symptom improvement may not be playing out in some community mental health settings. Although the results of the present study suggest that therapy is providing

parents of disordered youth with important skills about effective parenting, there is the implication that these improvements in parenting abilities are not bringing about positive changes in youth externalizing symptoms. This finding lends support to Weisz and colleagues' (2013) assertion that, at present, clinical research is not being effectively applied to routine practice in real-world settings and that increased efforts are needed to transfer research findings in child psychology to the way that therapy operates in the community.

Thus, future research is needed to determine the nature of the relationships between parenting skills and youth externalizing in community mental health systems. Given that the present study sampled from a particular community mental health system in the Intermountain West, additional research is needed to determine whether these findings generalize to other community settings. If, in fact, it is determined that, across variable community samples, increasing parenting skills is not linked to improvements in youth externalizing behavior, then outreach would be necessitated to extend empirical findings on the utility of parent-focused interventions in treating child behavior difficulties to real-world settings.

### **Limitations**

One of the study's main limitations lies in the characteristics of its sample. The present study utilized participants referred for treatment for many types of clinical concerns carrying a variety of diagnoses whereas most studies examining externalizing in children sample only from children diagnosed with externalizing problems such as Attention-Deficit/Hyperactivity Disorder, Oppositional Defiant Disorder, and Conduct Disorder. While the symptomatic heterogeneity of the sample strengthens the external validity of the study's conclusions, this same diversity likely amplified the variability in the sample and could have clouded analyses.

Although including children with diverse symptom profiles likely allowed us to capture sub-threshold externalizing concerns, the hypothesized relationships may have been stronger in a more diagnostically homogeneous sample. Future studies seeking to examine the relationship between parenting skills and externalizing symptoms in community settings may benefit from constraining their sample to children referred for externalizing concerns.

In addition, all constructs assessed in the study were measured by parent-report. While self-report is an efficient method of measurement, it is also open to response biases. Previous research has found that there is generally low agreement between parent and child reports of child psychiatric symptoms, suggesting that external factors such as culture, age, environment, and parental psychiatric history likely play a role in parental ratings of youth symptoms (De Los Reyes & Kazdin, 2005). Accordingly, researchers often suggest that multi-informants be used to increase the validity of measurement in clinical research with children (Cantwell, Lewinsohn, Rohde, & Seeley, 1997). While the constraints of the present study did not allow for obtaining multiple perspectives on the constructs of interests, future studies in this vein should use additional reporters of child outcomes. The disparity between parent and self-reports of youth symptoms is especially notable for externalizing problems in adolescents. Specifically, parents tend to report lower levels of externalizing problems than adolescents (Verhulst & van der Ende, 1992). Given this finding, it is possible that limiting the present sample to children under 12 may exclude potential noise attributable to error inherent in the parental report of adolescent externalizing behaviors, strengthening the study's findings.

The study also may have been limited by the method used to measure parenting skills. To measure parenting skills in the present study, we used self-report ratings on a short subscale of the TSM. Although we were able to obtain data on parent's own opinions of their parenting

abilities, we have little information on whether these judgments are reliably linked to their actual behaviors when interacting with their child. Many studies examining the role of parenting skills in treatment use and observational assessment (e.g., Beauchaine et al., 2005). For example, the Dyadic Parent-Child Interactive Coding System (DPICS) is a prominent and well-researched observational measure for quantifying behaviors indicative of parenting skills including verbal criticism, supportive parenting (e.g. labeled praise), and ineffective consequences (e.g. lack of follow-through, overly punitive consequences) (Eyberg, Nelson, Duke, & Boggs, 2005).

Generally, observational measures are viewed as more objective than self-report scales as they minimize desirability effects. In the present sample, many parents initially rated themselves as high in parenting skills, ratings remained high throughout treatment, and there was little variability in ratings. This suggests that the TSM, while clinically useful, may not be a very specific measure of variations in parenting skills between and within individuals. In addition, the TSM is an emerging measure and does not have extensive data on its psychometric properties. Therefore, future research should incorporate observational methods of assessing parenting skills in order to more accurately capture levels of parenting skills in parents of clinic-referred children over time. Additional efforts should also be made to accrue more information on the validity and reliability of the TSM so as to provide a stronger foundation for its use in research.

## References

- Achenbach, T. M. (1991). *Manual for the child behavior checklist/4-18 and 1991 profile*. Burlington, VA: University of Vermont Department of Psychiatry.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.
- Atkin, Q. G. (2000). *Concurrent-criterion validity of the Youth Outcome Questionnaire* (Doctoral dissertation, Brigham Young University, 2000). *Dissertation Abstracts International*, 61, 582.
- Atkin, Q., Whoolery, M. L., Peterson, G., Burlingame, G. M., Wells, M. G., & Nebeker, R. S. (1997). *Reliability and validity of the Youth Outcome Questionnaire*. Paper presented at annual meeting of the Western Psychological Association, Seattle, WA.
- Beauchaine, T. P., Webster-Stratton, C., & Jamila, M. (2005). Mediators, moderators, and predictors of 1-year outcomes among children treated for early-onset conduct problems: A latent growth curve analysis. *Journal of Consulting and Clinical Psychology*, 73(3), 371–388.
- Burlingame, G. M., Mosier, J. I., Wells, M. G., Atkin, Q. G., Lambert, M. J., Whoolery, M., & Latkowski, M. (2001). Tracking the influence of mental health treatment: The development of the Youth Outcome Questionnaire. *Clinical Psychology & Psychotherapy*, 8(5), 361–379.
- Burlingame, G. M., Wells, M. G., Lambert, M. J., & Cox, J. C. (2004). Youth Outcome Questionnaire (Y-OQ). In M. E. Maruish (Ed.), *The use of psychological testing for treatment planning and outcomes assessment* (3rd ed.) (Vol. 2). (pp. 235–273). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

- Cantwell, D. P., Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1997). Correspondence between adolescent report and parent report of psychiatric diagnostic data. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(5), 610–619.
- Champion, L. A., Goodall, G., & Rutter, M. (1995). Behaviour problems in childhood and stressors in early adult life: A 20 year follow-up of London school children. *Psychological Medicine, 25*(2), 231–246.
- Conners, C. K., Sitarenios, G., Parker, J. D. A., & Epstein, J. N. (1998). The revised Conners' Parent Rating Scale (CPRS-R): Factor structure, reliability, and criterion validity. *Journal of Abnormal Child Psychology, 26*(4), 257–268.
- Connor-Smith, J. K., & Weisz, J. R. (2003). Applying treatment outcome research in clinical practice: Techniques for adapting interventions to the real world. *Child and Adolescent Mental Health, 8*(1), 3–10.
- De Los Reyes, A., & Kazdin, A. E. (2005). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin, 131*(4), 483.
- Donenberg, G., & Baker, B. L. (1993). The impact of young children with externalizing behaviors on their families. *Journal of Abnormal Child Psychology, 21*(2), 179–198.
- Dretzke, J., Frew, E., Davenport, C., Barlow, J., Stewart-Brown, S. L., Sandercock, J., ... Taylor, R. (2005). The effectiveness and cost-effectiveness of parent training/education programmes for the treatment of conduct disorder, including oppositional defiant disorder, in children. *Health Technology Assessment, 9*(50), 1–250.

- Eyberg, S. M., Boggs, S. R., & Algina, J. (1995). Parent-child interaction therapy: A psychosocial model for the treatment of young children with conduct problem behavior and their families. *Psychopharmacology Bulletin*, 31(1), 83-91.
- Eyberg, S. M., Nelson, M. M., & Boggs, S. R. (2008). Evidence-based psychosocial treatments for children and adolescents with disruptive behavior. *Journal of Clinical Child and Adolescent Psychology*, 37(1), 215–237.
- Eyberg, S. M., Nelson, M. M., Duke, M., & Boggs, S. R. (Eds.). (2005). *Manual for the Parent-Child Interaction Coding System*. Gainesville, FL: University of Florida.
- Farrington, D. P. (1995). The development of offending and antisocial behaviour from childhood: Key findings from the Cambridge study in delinquent development. *Journal of Child Psychology and Psychiatry*, 6(36), 929–964.
- Gardner, F., Burton, J., & Klimes, I. (2006). Randomised controlled trial of a parenting intervention in the voluntary sector for reducing child conduct problems: Outcomes and mechanisms of change. *Journal of Child Psychology and Psychiatry*, 47(11), 1123–1132.
- Gardner, F. E. M., Sonuga-Barke, E. J. S., & Sayal, K. (1999). Parents anticipating misbehaviour: An observational study of strategies parents use to prevent conflict with behaviour problem children. *Journal of Child Psychology and Psychiatry*, 40(08), 1185–1196.
- Garland, A. F., Hough, R. L., McCabe, K. M., Yeh, M., Wood, P. A., & Aarons, G. A. (2001). Prevalence of psychiatric disorders in youths across five sectors of care. *Journal of the American Academy of Child & Adolescent Psychiatry*, 40(4), 409–418.

- Ge, X., Brody, G. H., Conger, R. D., & Simons, R. L. (2006). Pubertal maturation and African American children's internalizing and externalizing symptoms. *Journal of Youth and Adolescence, 35*(4), 528–537.
- Hann, D. M. & Borek, N. (Eds.). (2001). *Taking stock of risk factors for child/youth externalizing behavior problems*. Rockville, MD: Department of Health and Human Services.
- Hinshaw, S. P., Owens, E. B., Wells, K. C., Kraemer, H. C., Abikoff, H. B., Arnold, L. E., ... Wigal, T. (2000). Family processes and treatment outcome in the MTA: Negative/ineffective parenting practices in relation to multimodal treatment. *Journal of Abnormal Child Psychology, 28*(6), 555–568.
- Kazdin, A. E. (1997). Parent Management Training: Evidence, outcomes, and issues. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(10), 1349–1356.
- Kazdin, A. E. (2007). Mediators and mechanisms of change in psychotherapy research. *Annual Review of Clinical Psychology, 3*(1), 1–27.
- Leadbeater, B. J., Kuperminc, G. P., Blatt, S. J., & Hertzog, C. (1999). A multivariate model of gender differences in adolescents' internalizing and externalizing problems. *Developmental Psychology, 35*(5), 1268–1282.
- Lundahl, B., Risser, H. J., & Lovejoy, M. C. (2006). A meta-analysis of parent training: Moderators and follow-up effects. *Clinical Psychology Review, 26*(1), 86–104.
- National Advisory Mental Health Council. (2001). *Blueprint for change: Research on child and adolescent mental health. A report by the National Advisory Mental Health Council's Workgroup on Child and Adolescent Mental Health Intervention Development and Deployment*. Bethesda, MD: National Institute of Mental Health.

- Patterson, G. R. (1982). *Coercive family process*. Eugene, OR: Castalia.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (Vol. 1). Thousand Oaks, CA: Sage.
- Reid, M. J., Webster-Stratton, C., & Hammond, M. (2003). Follow-up of children who received the Incredible Years intervention for oppositional-defiant disorder: Maintenance and prediction of 2-year outcome. *Behavior Therapy*, *34*(4), 471–491.
- Scott, S., Spender, Q., Doolan, M., Jacobs, B., & Aspland, H. (2001). Multicentre controlled trial of parenting groups for childhood antisocial behaviour in clinical practice. *BMJ: British Medical Journal*, *323*(7306), 194–197.
- Shaw, D. S., Bell, R. Q., & Gilliom, M. (2000). A truly early starter model of antisocial behavior revisited. *Clinical Child and Family Psychology Review*, *3*(3), 155–172.
- Sigmarsdóttir, M., Rains, L. A., & Forgatch, M. S. (2015). Parent Management Training--Oregon Model. In J. J. Ponzetti (Ed.), *Evidence-based parenting education: A global perspective* (pp. 192-204). New York, NY: Routledge.
- Singer, J. D., & Willet, J. B. (2003). A framework for investigating change over time. In J. D. Singer & J. B. Willet (Eds.), *Applied longitudinal data analysis: Modeling change and event occurrence* (pp. 3–15). Oxford: Oxford University Press.
- Stormshak, E. A., Bierman, K. L., McMahon, R. J., & Lengua, L. J. (2000). Parenting practices and child disruptive behavior problems in early elementary school. *Journal of Clinical Child Psychology*, *29*(1), 17–29.
- Thomas, R., & Zimmer-Gembeck, M. J. (2007). Behavioral outcomes of parent-child interaction therapy and Triple P—Positive Parenting Program: A review and meta-analysis. *Journal of Abnormal Child Psychology*, *35*(3), 475–495.

- Tukey, J. W. (1977). *Exploratory data analysis*. Reading, MA: Addison-Wesley.
- Verhulst, F. C., & van der Ende, J. (1992). Agreement between parents' reports and adolescents' self-reports of problem behavior. *Journal of Child Psychology and Psychiatry*, 33(6), 1011–1023.
- Warren, J. S., Brown, C. R., Layne, C. M., & Nelson, P. L. (2011). Parenting self-efficacy as a predictor of child psychotherapy outcomes in usual care: A multi-dimensional approach. *Psychotherapy Research*, 21(1), 112–123.
- Warren, J. S., & Lambert, M. J. (2013). *Youth clinical support tools manual. Treatment support measure: Parent and youth forms*. Salt Lake City, UT: OQ Measures LLC.
- Warren, J. S., Nelson, P. L., Mondragon, S. A., Baldwin, S. A., & Burlingame, G. M. (2010). Youth psychotherapy change trajectories and outcomes in usual care: Community mental health versus managed care settings. *Journal of Consulting and Clinical Psychology*, 78(2), 144–155.
- Warren, J. S., Salisbury, T., Garland, A., van Sonsbeek, M., Collett, T., Green, K., ... Herzog, S. (2017). The Treatment Support Measure (TSM): A tool for treatment planning and problem solving in child mental health services. Unpublished manuscript, Department of Clinical Psychology, Brigham Young University, Provo, UT.
- Weisz, J. R., Jensen, A. L., & McLeod, B. D. (2005). Development and dissemination of child and adolescent psychotherapies: Milestones, methods, and a new deployment-focused model. In E. D. Hibbs & P. S. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders: Empirically based strategies for clinical practice* (2nd ed.) (pp. 9–39). Washington, DC: American Psychological Association.

Weisz, J. R., Jensen-Doss, A., & Hawley, K. M. (2006). Evidence-based youth psychotherapies versus usual clinical care: A meta-analysis of direct comparisons. *American Psychologist*, *61*(7), 671–689.

Weisz, J. R., Kuppens, S., Eckshtain, D., Ugueto, A. M., Hawley, K. M., & Jensen-Doss, A. (2013). Performance of evidence-based youth psychotherapies compared with usual clinical care: A multilevel meta-analysis. *JAMA Psychiatry*, *70*(7), 750–761.