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Delivering on the Promise of Evidence-Based Therapy for Youth:  
The Importance of Treatment Engagement

A dissertation submitted in partial satisfaction of the  
requirements for the degree Doctor of Philosophy in Psychology

by

Rachel Eunheh Kim

2017

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## ABSTRACT OF DISSERTATION

### Delivering on the Promise of Evidence-Based Therapy for Youth: The Importance of Treatment Engagement

by

Rachel Eunheh Kim

Doctor of Philosophy in Psychology

University of California, Los Angeles, 2017

Professor Bruce Frederick Chorpita, Chair

Despite high mental health need among youth, a majority do not receive any mental health services (MHS), which suggests a disconnect between identification of need and connection to services. Equally troubling, among those who do enroll in MHS, engagement in those services is low, as reflected, in part, by poor attendance and high rates of dropout. Problems in either “initial” engagement, or the identification of need and connection to services, and “ongoing” engagement, such as completion of treatment once the presenting problem is resolved and positive attitudes towards treatment, may negatively impact improvement in youths’ mental health.

The goal of this dissertation was to examine treatment engagement in order to have the knowledge to strategically increase the impact of evidence-based treatments (EBTs). In light of noted discrepancy between mental health need and uptake into services, the first study examined the feasibility, acceptability, and preliminary efficacy of an engagement protocol (EP) designed

to enhance school nurses' utilization of evidence-based engagement practice elements when referring youth to MHS. School nurses reported positive attitudes towards the EP. There were also small increases in their use of engagement practices and adolescents' readiness for services following training in the EP. The purpose of the second study was to examine the relationship between non-routine termination from services and long-term outcome trajectories in the context of a mental health system implementing EBTs. The impact of routine termination was most substantial for those receiving a modular treatment, though not for those receiving usual care or a standard EBT. The primary aim of the third study was to explore the impact of life stressors on ongoing engagement issues, such as poor attendance, low treatment satisfaction, and non-routine termination, by highly impoverished youth seeking treatment in community mental health clinics. Though certain demographic factors (e.g., youth age) and clinical factors (e.g., initial severity) affected engagement, the presence of life stressors did not. In sum, these dissertation findings suggest that both initial and ongoing treatment engagement are valuable quality improvement targets to raise enrollment in MHS and increase the impact of evidence-based practice for youth mental health conditions.

The dissertation of Rachel Eunheh Kim is approved.

Kimberly D. Becker

Anna S. Chung

Annette Stanton

Bruce Frederick Chorpita, Committee Chair

University of California, Los Angeles

2017

## TABLE OF CONTENTS

### Chapter 1: Connecting Students to Mental Health Care: Pilot Findings from an Engagement

Program for School Nurses .....	1
Abstract.....	2
Introduction .....	3
The current study.....	6
Method.....	7
Participants.....	8
Measures.....	9
Procedure.....	10
Results .....	11
Discussion.....	16
Figure 1 .....	24
Table 1 .....	25
Table 2 .....	26
Table 3 .....	27
Table 4 .....	28
References .....	29

### Chapter 2: Exploring the Impact of Non-Routine Termination on Long-Term Clinical Outcomes

in the Context of Evidence-Based Practice Implementation .....	35
Abstract.....	36
Introduction .....	37
The current study.....	40

Method.....	42
Participants.....	42
Measures.....	43
Results .....	48
Discussion.....	52
Table 1 .....	59
Table 2 .....	60
Table 3 .....	61
Table 4.....	62
Table 5 .....	63
References .....	64

### Chapter 3: Disentangling the Impact of Life Stressors on Treatment Engagement in Children’s

Community Mental Health Care.....	72
Abstract.....	73
Introduction .....	74
The current study.....	80
Method.....	81
Participants.....	81
Measures.....	82
Procedure.....	87
Results .....	89
Discussion.....	92
Table 1 .....	97



Table 2 .....	98
Table 3 .....	100
Table 4 .....	101
Table 5 .....	102
Table 6 .....	103
References .....	104

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National Institute of Mental Health (P20 MH 086048, Principal Investigator: Lawrence Wissow, Ph.D.) at the Johns Hopkins Bloomberg School of Public Health.

## VITA

- 2009 Bachelor of Arts in Clinical Psychology and Spanish, *magna cum laude*  
Tufts University  
Medford, Massachusetts
- 2009-2011 Research Assistant  
New York University Child Study Center  
Anita Saltz Institute for Anxiety and Mood Disorders  
New York, New York
- 2012 Master of Arts in Psychology  
Psychology Department  
University of California, Los Angeles  
Los Angeles, California
- 2011-2017 Graduate Student, Clinical Psychology Ph.D. Program  
Psychology Department  
University of California, Los Angeles  
Los Angeles, California
- 2012-2016 Graduate Teaching Assistant (2012-2013), Teaching Associate (2013-2015),  
and Teaching Fellow (2015-2016)  
Psychology Department  
University of California, Los Angeles  
Los Angeles, California
- 2016-2017 Clinical Psychology Intern  
Pacific Clinics  
Monrovia, California

## GRANT

- 2012-2015 Center for Mental Health Services in Pediatric Primary Care, Johns Hopkins  
Bloomberg School of Public Health  
*Engaging Youth and Their Families in Mental Health Services: School  
Nurses as the First Point of Contact*  
Rachel E. Kim, Kimberly D. Becker, and Bruce F. Chorpita, Co-Principal  
Investigators

## SELECTED PUBLICATIONS

Guan, K., Levy, M.C., Kim, R.E., Brown, T.E., Reding, M.E.J., Rith-Najarian, L., Sun, M., Lau, A.S., & Chorpita, B.F. (2017). Managing in-session “surprises:” Identifying provider responses to emergent life events during evidence-based treatment implementation. *Administration and Policy in Mental Health and Mental Health Services Research*, 44, 164-176.

Kim, R. E., Lau, A. S., & Chorpita, B. F. (2016). Cultural effects and treatment type on on-going treatment engagement in Latino families: An examination of within-group variability. *Journal of Child and Family Studies*, 25, 891-901.

Kim, R. E., Becker, K. D., Stephan, S. H., Hakimian, S., Apodaca, D., Escudero, P. V., & Chorpita, B. F. (2015). Connecting students to mental health care: Pilot findings from an engagement program for school nurses. *Advances in School Mental Health Promotion*, 8, 87-103.

Stanick, C., Yoman, J., Gallo, K., Trent, L., Reding, M., Kim, R., Guan, K., & Steinfeld, B. (2015). Dancing with ourselves? Reflections on increasing stakeholder involvement in ABCT. *The Behavior Therapist*, 38, 38-42.

#### SELECTED PRESENTATIONS

Kim, R. E., Chorpita, B. F., Becker, K. D., & Park, A. L. (2015). Differences in treatment engagement between modular and standard interventions: Findings from the Child STEPs Multisite Effectiveness Trial. Symposium presented at the annual Association for Behavioral and Cognitive Therapist convention, Chicago, IL.

Becker, K. D., Kim, R., Martinez, J., & Chorpita, B. F. (2015). What strategies do providers use to engage youth and families in mental health services? Symposium presented at the annual Association for Behavioral and Cognitive Therapist convention, Chicago, IL.

Guan, K., Kim, R., Brown, T., Reding, M., Sun, M., Rith-Najarian, L., Levy, M., & Chorpita, B.F. (2014). The impact of emergent life events on treatment integrity in EBT implementation. Symposium presented at the annual Association for Behavioral and Cognitive Therapist convention, Philadelphia, PA.

Kim, R. E., Letamendi, A. M., Lau, A. S., & Chorpita, B. L. (2013). Acculturation, use of evidence based practices, and treatment engagement among Latino families in children's mental health services. Symposium presented at the annual Association for Behavioral and Cognitive Therapist convention, Nashville, TN.

Kim, R. E., Becker, K. D., Stephan, S. S., Escudero, P. V., Apocada, D., & Chorpita, B. F. (2013). Increasing the impact of evidence-based practice: An engagement-based program for school nurses. Symposium presented at the Center for School Mental Health annual conference, Arlington, VA.

**CHAPTER I:**

Connecting Students to Mental Health Care: Pilot Findings from an Engagement Program for School Nurses\*

## ABSTRACT

Schools function as the major provider of mental health services (MHS) for youth, but can struggle with engaging them in services. School nurses are well-positioned to facilitate referrals for MHS. This pilot study examined the feasibility, acceptability, and preliminary efficacy of an engagement protocol (EP) designed to enhance school nurses' utilization of evidence-based engagement practices when referring youth to MHS. Participants were six school nurses and twenty-five adolescents in a large, urban school district. School nurses reported positive attitudes towards the EP, suggesting that they found it feasible and acceptable. Though there were small increases in school nurses' use of engagement practices and in adolescents' readiness for services following training, due to limited sample size, differences were not statistically significant. Still, pilot results suggest preliminary efficacy of training school nurses to strategically implement evidence-based engagement practices to increase adolescents' engagement in MHS.

*Keywords:* treatment engagement, school nurse, school mental health

Approximately 20 to 40% of youths have a psychiatric disorder or mental health need (Costello, Copeland, & Angold, 2011). Schools serve as a major point of entry into the system of mental health care with approximately 60% of youths who receive mental health services (MHS) entering through schools, compared with 27% who initiate care in specialty mental health settings (Farmer, Burns, Phillips, Angold, & Costello, 2003). In addition to functioning as a major point of entry, schools are also the major site for the provision of MHS (Burns et al., 1995).

As a gateway to and setting for MHS, schools offer many advantages over specialty mental health clinics. One significant advantage is their unparalleled access to youth that promotes early identification and treatment (Adelman & Taylor, 1999; President's New Freedom Commission, 2003; Weist, 1997). School personnel can be trained to effectively identify the signs and symptoms of mental health concerns, particularly those that manifest as poor or declining academic performance or problems with peer interactions, which may facilitate the referral process to MHS (Adelman & Taylor, 1991; Masia-Warner et al., 2005; Severson & Walker, 2002). Furthermore, mandatory school attendance may mitigate practical barriers to services, such as transportation and scheduling burdens, and the naturalistic setting of school-based MHS may lessen psychological barriers, such as mental health stigma (Catron, Harris, & Weiss, 1998; Catron & Weiss, 1994; Stephan, Weist, Kataoka, Adelsheim, & Mills, 2007; Weist, 1999). Beyond the advantage of access, providers in schools have the opportunity to work with students in their natural, social environment, and therefore may be more able to intervene when problems arise and to teach skills in a more generalizable manner than their community-based counterparts (Masia, Klein, Storch, & Corda, 2001). In sum, the unique features of schools offer an unmatched opportunity to provide accessible and effective MHS to students.



Despite the prominent role of schools as both a point of entry and a site of service, youth mental health needs remain largely unmet (Merikangas et al., 2011). Rates of school MHS utilization, particularly for adolescents, are relatively low compared to need. A recent study found that of 142 adolescents referred to school MHS, only 85 adolescents (59.8%) attended their first appointment (Guo, Kataoka, Bear, & Lau, 2014). This rate is comparable to adolescents' service utilization in specialty mental health settings, where one would expect rates to be lower due to geographic, transportation, and scheduling barriers. In studies of adolescents' help-seeking behaviors and attitudes toward MHS, adolescents identified stigma of mental health and privacy concerns (e.g., fear of being teased or gossiped about by peers) as major barriers to seeking MHS (Lindsey, Chambers, Pohle, Beall, & Lucksted, 2013; Thompson et al., 2013). Adolescents also expressed some hesitation about whether MHS would be useful and were generally uncertain of what to expect from services (Thompson et al., 2013). Additionally, adolescents noted difficulty verbalizing emotions and a reliance on others (e.g., caregivers, school personnel) to identify mental health issues (Lindsey et al., 2013). These challenges highlight the need for strategies to effectively engage adolescents in MHS.

School nurses are well-positioned to address difficulties engaging adolescents in school- and community-based MHS, and to serve as a liaison between youth with mental health concerns and specialty mental health providers. Notably, youths report school nurses being more approachable than other school personnel (Davis, 2008). Students who visit school nurses often report psychosocial reasons for their visits, such as stress and depression (Schneider, Friedman, & Fisher, 1995). Relatedly, students with disproportionately more frequent visits than their peers are more likely to experience mental health problems, including depression and anxiety (Campo et al., 2004; Shannon, Bergren, & Matthews, 2010). School nurses often become familiar with

students' pattern of health office visits (Puskar & Bernardo, 2007), and can serve as a liaison between students, teachers, parents, and mental health providers (Stevenson, 2010). Despite their potential to facilitate MHS for students, nurses report limited self-efficacy and competence in effectively identifying and addressing mental health problems among students (Stephan & Connors, 2013).

A growing body of literature has identified a number of effective strategies used by mental health providers to engage youth in services. A recent quantitative review of the children's mental health literature by Becker et al. (2015) identified practices that were associated with enhanced treatment engagement (i.e., treatment attitudes, attendance, and participation). Specifically, *assessment* (e.g., information gathering about youth's strengths and needs), *psychoeducation about services* (e.g., reviewing information about MHS service delivery such as session frequency), *modeling* (e.g., demonstrating a desired behavior to youth), and *setting positive expectations* (e.g., instilling hope) were frequently used in interventions that improved early attitudes about participating in treatment. Practices such as *assessment*, *accessibility promotion* (e.g., making services more convenient and accessible), *psychoeducation about services*, and *asking about barriers to treatment* (e.g., discussing what factors may prohibit youth from engaging in MHS) were the most common engagement practices in engagement interventions with significantly higher attendance outcomes. *Assessment*, *accessibility promotion*, and *homework assignment* were most common to interventions that demonstrated increased treatment adherence and in-session participation. Taken together, these findings suggest that a selection of such practices has the potential to improve early attitudes towards MHS, as well as attendance at and participation in services over time.

To date, little research has been done to provide school nurses with effective treatment engagement tools that can facilitate their roles as ambassadors to MHS. A notable exception is a 2010 survey of school nurses which found that despite school nurses' comfort identifying mental health problems areas, they reported limited comfort in providing mental health intervention and pre-service training to identify, assess, make referrals and provide intervention for mental health concerns (Stephan & Connors, 2013). Thus, the purpose of the current study was to examine the 1) feasibility and acceptability, and 2) preliminary efficacy of a pilot program increasing school nurses' utilization of evidence-based engagement practice elements developed from the Becker et al. (2015) review in referring youth to school- and community-based MHS, specifically psychoeducation about the problem and services, assessment of barriers to services, problem solving those barrier, setting positive expectations for services, eliciting change talk to address problem, planning for referral, and following up with the student. Some practice elements (e.g., psychoeducation about services, assessment of barriers, setting positive expectations) were chosen because of their demonstrated effectiveness on various engagement outcomes (e.g., early attitudes towards participating in treatment, attendance) in the Becker et al. (2015) review. Psychoeducation about the problem was added to help youth understand the connection between their symptoms with potential mental health concerns. Psychoeducation about the problem is a standard practice in many evidence-based interventions for a variety of mental health concerns (e.g., Coping Cat; PASCET; Trauma-Focused CBT). Eliciting change talk, or inquiring about the advantages and disadvantages about the status quo and change in order to increase motivation, has demonstrated effectiveness in increasing engagement (e.g., Snell-Johns, Mendez, & Smith, 2004). Problem solving barriers is to be used in conjunction with assessment of barriers in order to aid youth in finding solutions to overcome barriers. Planning for referral and following up

with the youth were included to provide youth with logistical support to the youth and assess need for additional support with referral process after plan had been made. School nurses were trained in these eight engagement practices in order to facilitate referral to MHS when youth presenting with mental health concerns to their offices. Feasibility and acceptability were conceptualized as school nurses' intent to utilize practices taught in the training, perceived benefit of practices taught in training, overall satisfaction with training, and perceived barriers to implementing practices taught in training, measured quantitatively in the form of a training evaluation and qualitatively through a focus group. Preliminary efficacy was measured through changes in school nurses' and youths' reports of the school nurses' utilization of the engagement practices in addition to their perceptions of the youths' readiness for services from baseline to post-training. Given the pilot nature of this study, we did not propose a priori hypotheses. In implementing this pilot program consisting of evidence-based engagement practice elements, we hoped to address the gap in the literature as to how the integral role of school nurses in schools might be capitalized upon to increase youth engagement in MHS.

### **Method**

All study procedures were approved by the IRB at the University of California, Los Angeles, and the Committee of External Research Review in the Office of Data and Accountability of the Los Angeles Unified School District (LAUSD). School nurses and youth participants gave consent/assent to participate in the study.

### **Setting**

This study was conducted in 6 high schools in LAUSD with collaboration from the Nursing and School Mental Health Divisions. The school district serves approximately 664,000 youth from kindergarten to twelfth grade. Approximately 152,500 students attend grades 9 through 12

in 94 senior high schools. LAUSD students are primarily racial/ethnic minorities (90.94%) and majority Latino (73.4%) (Los Angeles Unified School District, 2012). An estimated 70% of LAUSD students are enrolled in the voluntary free lunch program, an indicator of household income, which necessitates an annual household income below 133% of the federal poverty level (Los Angeles Unified School District Strategic Plan, 2009). LAUSD provides a unique opportunity to reach a large, traditionally underserved, and highly impoverished population. The six high schools were selected on the basis of having nursing staff available on-site at least one day per week and for having dedicated school mental health personnel on campus.

### **Participants**

**School nurses.** Six school nurses working in the selected high schools were recruited for the study. All school nurses (one male, five female) were of Filipino descent ( $M_{age} = 55.67$  years,  $SD = 5.13$  years). School nurses were registered nurses licensed in the state of California. All had obtained at least a Bachelor of Science degree in nursing and specializations in school nursing. School nurses averaged 12.67 years of professional experience ( $SD = 7.00$ ).

**Youth participants.** Youth ( $N = 25$ ) were high school students who were identified by school nurses for suspected mental health need and lack of current service utilization. They had not been previously referred to MHS by the school nurse. Due to possible concerns related to pregnancy, substance abuse, or other sensitive issues that youth might not wish to disclose to their parents, we received a waiver of parental permission in order to maintain their privacy. Therefore, no other demographic information was obtained. As school personnel, school nurses were instructed to comply with mandatory reporting laws should instances of reportable safety concerns occur. No safety concerns were reported during the study.

## Measures

Given the absence of established instruments designed to measure the constructs of interest in this study, all measures used were developed by the study team for the purpose of the current study.

**School nurse background questionnaire.** The school nurse background questionnaire inquires about basic demographic information, training background, and experience with students presenting with mental health concerns. Additionally, school nurses reported their baseline level of comfort identifying mental health needs, discussing mental health concerns, and making mental health referrals. The three items referring to level of comfort are measured on a five-point Likert-type scale ranging from 1 (*not at all comfortable*) to 5 (*very comfortable*).

**Knowledge of evidence-based engagement practices.** The engagement practice knowledge test was designed to measure school nurses' knowledge of the purpose of eight evidence-based strategies for engaging youth in MHS. Using a bank of 16 practices, school nurses matched the appropriate engagement practice to eight brief hypothetical vignettes of students presenting with various engagement issues.

**Feasibility and acceptability of training and EP.** The training evaluation consists of 23 items: 14 measuring utility and acceptability of training, intent to utilize practices taught in the training, perceived benefit of practices taught in training, and overall satisfaction with training, as well as eight items assessing barriers to implementing practices taught in training. Items are measured on a five-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores on the satisfaction domain range from 14 (*low satisfaction*) to 70 (*high satisfaction*) and those on the barriers domain range from 8 (*few barriers*) to 40 (*many barriers*).

**Utilization of engagement practices.** School nurses and youths responded to nine items in a yes/no format related to school nurses' use of specific engagement practices (e.g., assessing barriers to services) when referring youth to MHS; Table 1).

**Youth readiness for services.** School nurses and youths responded to four items regarding the youth's readiness for services (e.g., perceived need for MHS, intent to enroll in MHS, treatment expectations, and therapeutic alliance). These items are measured on a five-point Likert-type scale ranging from 1 (*not at all*) to 5 (*very*).

**School nurse focus group.** School nurses participated in a one-hour, audio- and video-recorded focus group to assess their impressions of the 1) challenges they face in referring youths to MHS, 2) feasibility, acceptability, and utility of the EP and training, 3) suggestions for strategies to better connect with youths regarding mental health concerns, 4) suggestions for improving the EP and training. The focus group transcription was analyzed for themes relating to topics stated above.

### **Engagement Protocol (EP)**

The EP consists of seven engagement practices associated with improved treatment engagement (Becker et al., 2013). Table 2 details practices, lay names used in the EP, and definitions. Practices are organized into a flowchart that guides school nurses' decision-making to coordinate utilization of the practices at appropriate times (Figure 1; cf. Chorpita, Daleiden, & Weisz, 2005). School nurses were also provided with a two-page guide for each practice that included the goal of each practice, step-by-step instructions for use, and sample scripts.

### **Procedures**

**Wave I.** Wave I of the study assessed each nurse's baseline utilization of each engagement practice when referring two youths to either school- or community-based MHS. After

recommending MHS to each youth and obtaining his or her assent to participate in the study, both the school nurse and youth completed the Engagement Checklist. A total of 12 youths participated in Wave I data collection.

**Training in EP.** Upon completion of Wave I baseline data collection, school nurses participated in a four-hour training in the EP led by two clinical psychologists and a doctoral student in clinical psychology. Training consisted of didactic and skill-building components. Didactics were employed to review the importance of engaging youth in MHS, the connection between mental health and physical health, and school nurses' role in increasing youths' engagement in MHS. The skill-building component consisted of introduction to the purpose of each engagement practice, activities, and role-play opportunities to allow school nurses to practice utilizing the engagement practices. Trainers also encouraged school nurses to discuss skills they already use to discuss mental health concerns with and make mental health referrals for students. School nurses completed the engagement practice knowledge test before and after the training. School nurses also completed the training evaluation following the training.

**Wave II.** Follow training in the EP, the majority of school nurses referred two youths to school MHS and one nurse recruited three youths ( $n = 13$  youths in Wave II). School nurses and youth completed the engagement checklist to report school nurses' utilization of engagement practices following the training.

**Focus group.** School nurses participated in the focus group after data collection ended.

## **Results**

Independent samples *t*-tests were conducted to examine effects of training on knowledge of evidence-based engagement practices and youths' readiness for services. Correlations were done to assess reliability between school nurses' and youths' perception of youths' readiness for



services. Chi-square tests were used to examine change in utilization of engagement practices following the training.

### **School Nurse Background Questionnaire**

School nurses reported visits with between 25 and 200 students per week ( $M = 86.67$ ,  $SD = 65.70$ ). School nurses with lower caseloads spent approximately 21 to 30 minutes with each student, whereas school nurses with higher caseloads spent about 5 to 10 minutes with each. On average, school nurses reported making two to three mental health referrals per week. However, school nurses also indicated being aware of relatively low follow-through by students with regard to mental health referrals. School nurses expressed feeling fairly comfortable identifying mental health issues in students ( $M = 4.00$ ,  $SD = 1.00$ ), talking about mental health issues with students ( $M = 4.00$ ,  $SD = 1.00$ ), and referring students for MHS ( $M = 4.00$ ,  $SD = 1.00$ ).

### **Knowledge of Evidence-Based Engagement Practices**

Following training, school nurses correctly identified an average of 4 out of 8 practices correctly ( $SD = 2.12$ ), compared with approximately 2.17 practices ( $SD = 1.17$ ) at pre-training, however, these changes were not statistically significant. Four of six school nurses' scores improved from pre- to post-training and two remained the same.

### **Feasibility and Acceptability of Training**

School nurses reported high satisfaction overall with the training format, training materials, and engagement practices presented ( $M = 65.71$ ,  $SD = 4.79$ , range: 56 – 70). School nurses also endorsed few anticipated barriers to implementing the engagement practices following the training ( $M = 19$ ,  $SD = 9.53$ , range: 10 – 30). The greatest perceived barrier was the potential lack of time to utilize practices.

## **Utilization of Engagement Practices by School Nurses**

School nurses' utilization of engagement practices per school nurse self-report and corresponding youth report is shown in Table 4. At baseline, school nurses reported most frequently providing psychoeducation about the problem (100%), psychoeducation about services (93.75%), and instilled optimism in helpfulness of services (92%). School nurses also frequently asked if youths thought school MHS might be helpful (92%), but did not assess specific barriers to following through with referral as frequently (67%). School nurses even less frequently engaged youths in developing solutions for potential barriers (33%). Youths generally provided a more conservative report of school nurses' utilization of engagement practices. However, youths reported that school nurses did help develop solutions for potential barriers (75%), despite asking about barriers only about half the time.

When school nurses and youths indicated that utilization of an engagement practice was indicated to be high at baseline, use of that practice continued to remain high following training. However, with regard to finding solutions for potential barriers to seeking MHS, the practice that was reported by school nurses to occur most infrequently at Wave I, school nurses reported an increase in usage, 33% at Wave I versus 92% at Wave II ( $X^2(1) = 9.42, p = .002$ ) (Table 4).

## **Youth Readiness for Services**

Table 3 presents youths' and corresponding school nurses' reports of the youth's readiness for MHS, organized relative to the nurses' participation in the engagement training (i.e., Wave I: before training; Wave II: after training). At baseline, youths reported generally liking the school nurse and feeling moderately hopeful that school MHS could be helpful. However, their beliefs that presenting problems were linked to mental health and the likelihood of talking with a mental health provider were low. School nurses shared similar views on youths' readiness for services in

regards to the youths' 1) affinity for the nurse, 2) belief that school MHS would be helpful, and 3) intention to speak with a mental health professional. However, compared to youths themselves, school nurses perceived that youths believed more strongly that presenting concerns needed MHS ( $t(11) = -2.69, p = 0.21$ ). Still, school nurses' endorsement of youths' perceived need was moderate.

Youths who completed the survey as part of Wave II following the engagement training had higher mean ratings than youths in Wave I across for three readiness for services items: how much they liked the school nurse, degree of hope about the helpfulness of services, and their perceived need for MHS (Table 3). However, ratings between Wave I and Wave II reports were not significantly different. Moreover, despite moderate perception of need of and hopefulness in MHS, youths' intention to seek MHS was similarly low as reported by youths in Wave I. As at Wave I, youths had a strong affinity for school nurses. School nurses held similar perceptions of youths' belief in need for MHS, though were slightly less positive about youths' hopefulness about utility of services than the youths themselves and their own report at Wave I. At Wave II, school nurses held more positive, though moderate, attitudes about youths' likelihood to seek MHS than at Wave I. They were also more positive than youths' at Wave II. However, these differences were also not statistically significant.

There was insufficient power to detect significant correlations between school nurses' report and youths' report of readiness for services across waves, but we are presenting the three largest correlations for descriptive purposes. Correlations were variable across the four items and between the two waves. School nurses' and youths' were most strongly positively correlated on perception of need for MHS for presenting concern ( $r = .37, p = .083$ ), followed by affinity for the school nurse ( $r = .36, p = .14$ ). There were minimal correlations between school nurses' and

youths' perception of likelihood to seek MHS ( $r = .12, p = .58$ ) and hopefulness in helpfulness of school MHS ( $r = .05, p = .83$ ).

## **Focus Group**

**Challenges to referring youths to MHS.** The school nurses noted logistical barriers as the greatest challenge to referring youths to MHS. Logistical barriers included a lack of time to thoroughly discuss mental health issues with students, interruptions during office visits with students, lack of knowledge about school MHS (e.g., location, poor visibility of school mental health staff), lack of school staff to address mental health issues, and difficulty identifying youths in need of MHS. Additional barriers faced by youths, as reported by school nurses, included poor insight from youths regarding their mental health issue, stigma around mental health and its services, lack of knowledge about mental health and related services, negative prior experiences with MHS, and low rapport with mental health staff when referred.

**Feasibility, acceptability, and utility of the EP and training.** Overall, school nurses held positive views regarding the EP itself. Particularly, they reported that the practices, such as providing psychoeducation about the mental health problem, assessing and addressing barriers to referral, and encouraging youths to take small steps towards a desired goal, were helpful. Moreover, the school nurses liked the two-page handouts explaining how to do each engagement practice (i.e., engagement guides) and the flowchart to guide decision-making. However, school nurses reported challenges to implementing the engagement practices, including lack of time, a lack of information about whether or not youths followed through with referrals, and a lack of familiarity and trust with a particular mental health agency to which to refer youths. One school nurse also indicated that there was some resistance from a youth's parent regarding school nurses' involvement in mental health.

In terms of the training, school nurses expressed feeling more confident in discussing mental health concerns with youths following the training. However, all school nurses felt that a four-hour training was insufficient to fully develop mastery of the engagement practices. The school nurses provided suggestions for improving the training, including expanding it to a full-day training, including more role-plays and practice scenarios, and consultation opportunities over time. One final recommendation for the training was to include other school staff to increase collaboration in identifying and attending to youths' mental health needs.

**Strategies to better connect with youths regarding mental health concerns.** In addition to evaluating the EP and training, the school nurses proposed additional strategies to address mental health needs of youths. School nurses noted a need to increase overall mental health awareness in schools, such as by posting posters of common mental health issues in schools. The school nurses also recommended tools to facilitate the referral process (e.g., measure to identify mental health concerns, information sheet about what to expect from MHS). Moreover, school nurses again stressed the importance of collaboration between various school personnel, including mental health staff, beyond participating in the training together.

### **Discussion**

The goal of this study was to evaluate the feasibility, acceptability, and preliminary efficacy of a training to enhance the strategies used by school nurses to engage youth in MHS. Overall, school nurses held positive attitudes towards the EP and the training, suggesting that training school nurses in engagement strategies is a feasible and acceptable approach to enhancing the treatment engagement of high school students.

The effectiveness of the training and EP cannot be definitively evaluated, due to the small sample size. However, these preliminary findings point to important patterns and offer

hypotheses for future research. For example, knowledge of engagement practices using a paper and pencil vignette questionnaire suggested that knowledge increased for most school nurses, suggesting that the training format was appropriate. However, school nurses only correctly identified an average of 50% of the practices following the training. This relatively low identification post-training converges with data collected from the focus group about the importance of a longer and more thorough training that includes more opportunities for rehearsal in future studies. It might also be important to examine the responses to individual items on the knowledge test to determine the difficulty of the items and ultimately improve the test's ability to measure knowledge. Additionally, there were small increases in school nurses' utilization of evidence-based engagement practices, both as reported by school nurses and youth. The increase was most pronounced for one practice, attempting to aid the youth in finding a solution to barriers to treatment, which occurred at a low frequency initially, implying that the training filled some gap in knowledge. The minimal increases in other practices may be due to a ceiling effect (such that nurses maintained already high levels of practice) or possible over-reporting practice use at baseline. The minimal increase might also reflect difficulties to implement engagement practices. As suggested in the focus group, future studies might include ongoing consultation to support nurse implementation of the EP.

Similarly, youths' self-reported readiness for services was generally higher for Wave II youth than Wave I youth, hinting at the utility of the EP. One goal of the EP is to help nurses improve their assessment of a youth's readiness for services. Three out of four of the school nurses' ratings of youth readiness showed slight decreases from Wave I to Wave II; thus, the rating decreases may have been in line with this goal if nurses were overly optimistic about readiness at Wave I and then adjusted their ratings downward during Wave II to make a more critical and

informed assessment of true readiness resulting from education provided during the training. However, given the small sample size, differences in reports on all measures across Waves I and II generally were not statistically significant. Future studies could enhance the measurement approach by collecting data about the frequency with which youth actually followed through with the school nurse's referral for mental health services. These data were not able to be collected during the present study. School nurses also noted the potential utility of referral follow-through data as an indicator of the effectiveness of their implementation of the EP and so that they could continue to follow up with students who did not follow through with the referral. Despite the lack of statistically significant findings, these pilot results provide preliminary support that training school nurses to strategically implement evidence-based engagement practices has the potential to increase youths' engagement in school MHS.

Given the central role of school nurses as health service providers and ambassadors to MHS, continued pursuit of ways to enhance their use of engagement practices has the potential to increase mental health service utilization by youth. Related, an engagement program focused on school nurses also has the potential to reduce racial/ethnic and socioeconomic disparities in mental health service receipt. As noted above, the Los Angeles Unified School District is composed of a predominantly Latino/Hispanic and highly impoverished community. A review of data from several national services on service utilization found that Latino children had higher rates of unmet mental health need than non-Hispanic White counterparts. That study also demonstrated high rates of unmet mental health need regardless of insurance status (Kataoka, Zhang, & Wells, 2002). Given high access to Latino/Hispanic youth within the school district, this type of school-based engagement program may increase service utilization, thereby reducing unmet mental health need. Future implementation of such a program may also include cultural

considerations specific for Latino youths, such as emphasizing the important role of family engagement in MHS to build on cultural values like *familismo*, the emphasis on the family unit. This might also address school nurses' noted concern about resistance from youths' families about school nurses' involvement in MHS. With greater awareness of community resources, school nurses may also be able to enhance engagement in community MHS, in addition to school-based MHS.

Despite promising results, there were several significant challenges to implementation of the program. The school nurses participants' prior knowledge of signs and symptoms of mental health concerns and methods for assessing such symptoms appeared to vary widely. Some nurses reported making referral decisions based on their subjective gut feelings, whereas others indicated seeking additional information on functional impairment from other school personnel, such as teachers, who come in contact with the adolescents. The inconsistency in knowledge and assessment of symptoms may be related to differences in pre-service and in-service training, as well as differences in comfort in identifying and addressing student mental health problems. School nurses report that student mental health is an 'ignored area of nursing' (Hootman, Houck, & King, 2002, p. 193) in which they receive limited training (Stephan & Connors, 2013). On the other hand, mental health professionals receive specialized training in identification of mental health concerns. School nurses may benefit from additional training specific to identification of mental health concerns. This type of training may be especially important to increasing school nurses' competence in making appropriate mental health referrals (Stephan & Connors, 2013).

School nurses' busy schedules posed another challenge. The majority of school nurse participants did not work full-time in a single school. Instead, school nurses served several schools on a rotating basis, sometimes visiting multiple schools in one day. Being stationed at



several schools may limit the amount of time school nurses have to meet with students and talk to other school personnel, thereby impacting their ability to assess for mental health concerns. Qualitatively, school nurse participants serving several schools took longer to complete study referrals. Busy schedules and a broad range of responsibility may also limit school nurses' time to participate in training, such as staff development and continuing education. For participating in our four-hour training, school administration arranged to have school nurses receive continuing education credits, which may have reduced the burden of attending.

Previous research points to several barriers to engaging adolescents in MHS, including fear of stigma regarding mental health, as well as uncertainty around what to expect from MHS and if such services would be helpful (e.g., Lindsey et al., 2013; Thompson, 2013). Consistent with these findings, during the focus group, school nurses who participated in the current study reported these to be challenges that they faced when discussing mental health issues with youths. Specifically, school nurses expressed that youths had poor insight about their mental health issues, felt stigma about and limited knowledge of mental health issues and related services. School nurses also indicated that youth noted negative prior experiences with MHS and low rapport with mental health staff when referred. However, school nurses provided several suggestions to address these barriers, such as posting posters of common mental health issues in schools to increase overall mental health awareness and providing tools to facilitate the referral process (e.g., information sheet on what to expect from MHS). In addition to youth-related barriers, school nurses themselves expressed a lack of knowledge about school mental health (e.g., poor visibility of school mental health staff). To address this concern, school mental health staff could be included in the training to facilitate collaboration to identify and address youths'

mental health concerns. Alternatively, school nurses may be encouraged to seek out information on school mental health services to report on at the training.

Despite the challenges, we are encouraged by the results of this pilot trial and the possibility of improving this program for future use. Given school nurses' different training backgrounds and varying levels of familiarity with mental health, additional training specifically in assessment of mental health symptoms may be warranted. Such training may include case vignettes or role-plays of students presenting with various mental health concerns that allow school nurses' opportunities to practice assessing for symptoms and functional impairment. To strengthen school nurses' understanding and confidence to implement the EP and increase utilization of the EP, future training may also include more modeling of skills by trainers and expanded opportunities for in-depth role-playing with detailed feedback from a trainer. Other program enhancements may include a consultation period with trainers to have increased support during the implementation period (e.g., Hershell, Kolko, Baumann, & Davis, 2010; Southam-Gerow et al., 2014). During the focus group, the school nurses indicated that they felt such a time would allow them to bring real-life case examples to the EP developers and brainstorm ways to handle them with the developers and each other.

Future research may also examine implementation of this engagement program with other school staff, such as teachers or counselors. During the focus group, the school nurses in our study indicated that they already function as part of multidisciplinary teams, so inclusion of other personnel may facilitate improved identification and referral of youth with mental health needs. Wellness centers provide another potential area for implementation of the EP. Wellness centers are federally qualified health centers, often strategically located in medically underserved areas with the purpose of increasing access to medical, mental health, dental, and youth development

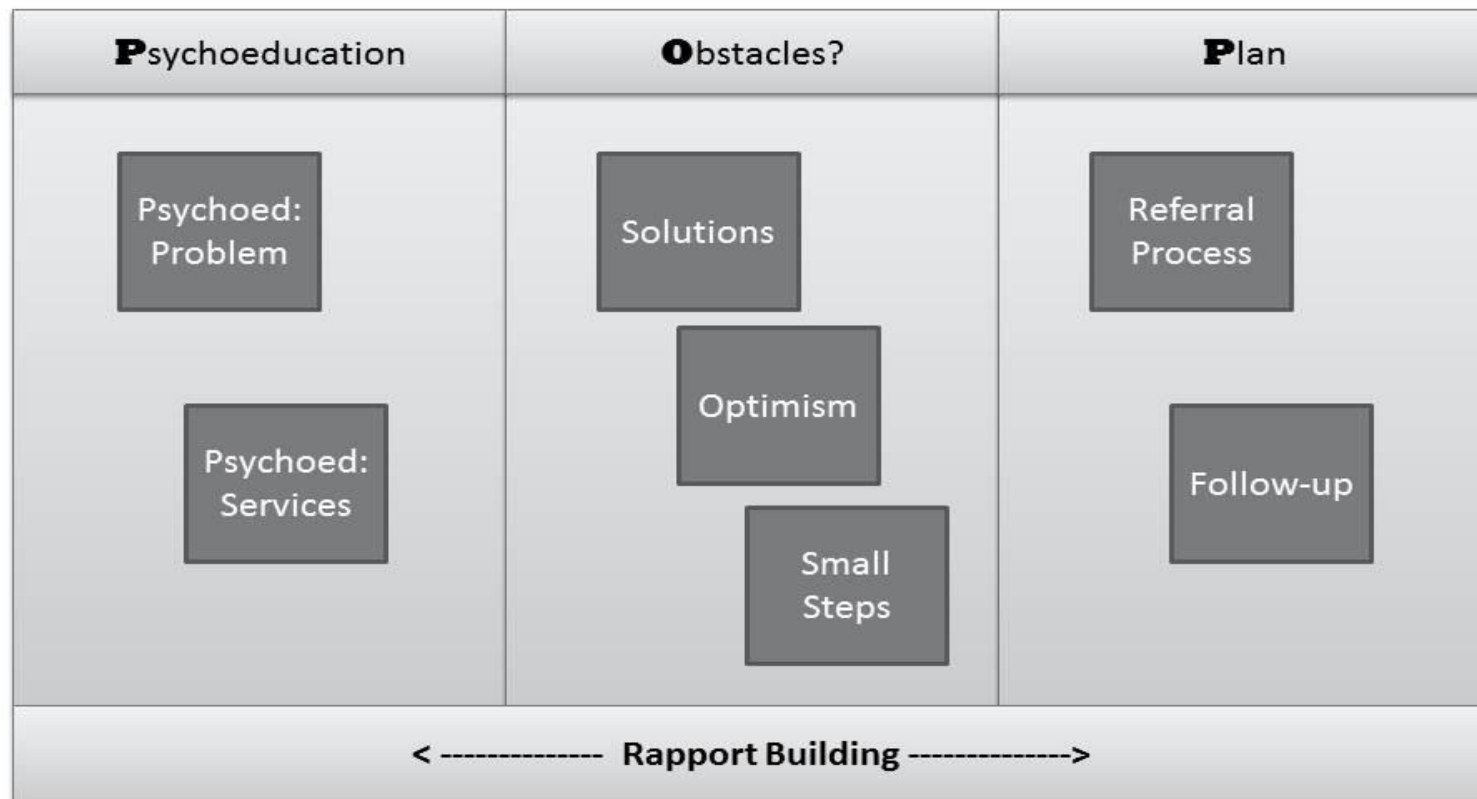
services. Within the Los Angeles Unified School District, wellness centers were created as part of a strategic plan initiated by the Los Angeles Trust for Children's Health, a district-affiliated non-profit organization to improve students' health outcomes. These centers have co-located health and MHS. Training wellness center staff, both medical and mental health, may be especially impactful in connecting traditionally underserved students to MHS due to access to co-located services and ease of coordination between staff within a single location. Additionally, wellness centers, despite having locations on school campuses, may be seen more as medical centers and help reduce youths' concerns of stigma in receiving MHS directly through regular school channels in the school building.

This study had several limitations. Specifically, due to confidentiality and parental consent complications discussed above, we were unable to gather behavioral data on adolescents' actual enrollment in MHS. However, we were able to obtain information on youths' readiness to enroll in MHS. Such cognitive engagement is associated with behavioral engagement, such as attendance and adherence (McKay, Pennington, Lynn, & McCadam, 2001; Nock, Ferriter, & Holmberg, 2007; Staudt, 2007). Measurement of study constructs was also a limitation of the study. In particular, this study also relied on school nurse and youths' report of the school nurses' utilization of the EP as well as other measures developed specifically for the study. Due to the small sample size, the psychometric properties of these measures cannot be determined. Future studies may include an independent evaluation of EP utilization to determine quality of school nurses' implementation of the protocol in actual interactions with youth as well as a larger sample with which to determine the reliability and validity of our measurement approach. This study also lacked an adequate control group with which to evaluate the effects of training against the passage of time.

To our knowledge, this pilot trial is the first to train school nurses to strategically utilize evidence-based engagement practices to prepare youth to enroll in MHS. Despite challenges and study limitations, we believe this a promising step towards better understanding strategies for effective practices for school nurses as a gateway into MHS. With continued progress, we believe that this expanded role of school nurses will be a powerful tool in increasing youths' engagement in MHS.

**Figure 1**

*The POP model: A pathway for student engagement*



**Table 1***Engagement Checklist Items*

Practice	Item
Psychoeducation: Problem	Did you tell the student about a mental health problem that might be related to the concerns that brought the student to your office today? (e.g., “Depression is when someone feels sad or blue for a while, for more days than not, and can’t seem to shake the feeling or figure out why they are blue.”)
Psychoeducation: Services 1	Did you tell how to get the student connected to school mental health services?
Psychoeducation: Services 2	Did you tell what might take place at the first meeting with the school therapist?
Psychoeducation: Services 3	Did you tell what school mental health services might look like (for example: who the student will meet with, what will happen in session, how often the student will meet with the therapist)?
Psychoeducation: Services 4	Did you discuss confidentiality in school mental health services?
Obstacles 1	Did you ask if the student thinks school mental health services might be helpful?
Obstacles 2	Did you ask what things might get in the way of the student following through with the referral (for example: not enough time, not wanting parent to know, feeling that other students might find out)?
Solutions	Did you find ways to get around possible challenges that might interfere with the student meeting with the school therapist?
Optimism	Did you give hope that services might help the problem improve (for example: tell a success story)?
Plan 1	Did you make a plan of next steps for connecting the student to school mental health services?
Plan 2	Did you set a timeline for you to follow through with the referral by checking up on the student?

**Table 2***Engagement Practices*

<b>Engagement Practice</b>	<b>Protocol Name</b>	<b>Definition</b>
Psychoeducation: Problem	Psychoeducation: Problem	Providing information to increase a youth's basic understanding about how his/her presenting concerns might be related to mental health concerns
Psychoeducation: Services	Psychoeducation: Services	Providing information about mental health services and procedures
Assessment of Barriers to Services	Barriers	Having an open discussion about obstacles that might get in the way of following through with a referral to the SMH provider
Problem Solving Barriers to Services	Solutions	Collaboratively developing a plan to help the youth overcome barriers to service
Expectation Setting	Optimism	Instilling hope in the youth that mental health services will bring about positive change
Eliciting Change Talk	Small Steps	Increasing youth's motivation and developing a set of small steps towards enrolling in mental health services
Planning for Referral	Plan	Discussing a realistic, achievable set of steps towards the referral and contact with a school mental health provider
Follow-Up	Follow-Up	Following up regarding progress towards goals (i.e., following through with referral or small steps)

**Table 3***Readiness for Services*

Expectations	Wave I				Wave II				Youth		School Nurse	
	School Nurse (n = 6)		Youth (n = 12)		School Nurse (n = 6)		Youth (n = 13)		t(df)*	p	t(df)	p
	n	M(SD)	n	M(SD)	n	M(SD)	n	M(SD)				
How much do you think the student likes you?	12	3.75 (0.62)	12	4.25 (1.22)	13	3.62 (0.65)	10	4.60 (0.70)	-.80(20)	.43	.53(23)	.60
How hopeful do you think the student is that school mental health services will be helpful?	12	3.67 (0.78)	12	3.45 (1.59)	13	3.23 (0.60)	11	3.63 (1.36)	-.48(21)	.64	1.58(23)	.13
How much does the student believe that his or her presenting concerns need mental health services?	12	3.17 (1.11)	12	2.42 (1.08)	13	3.08 (0.28)	11	3.09 (1.22)	-1.40(21)	.175	.28(23)	.78
How likely is it that the student will talk with the school therapist about mental health services?	12	2.42 (1.08)	12	2.73 (1.62)	13	3.15 (1.07)	11	2.73 (1.56)	.10(21)	.92	.46(23)	.65

*Note.* Degrees of freedom vary due to a small amount of missing data at Wave I and Wave II.



**Table 4***Engagement Practice Utilization*

Practice	<i>Wave I</i>				<i>Wave II</i>				<i>School Nurse</i>		<i>Adolescent</i>	
	School Nurse ( <i>n</i> = 6)		Adolescent ( <i>n</i> = 12)		School Nurse ( <i>n</i> = 6)		Adolescent ( <i>n</i> = 13)		<i>X</i> <sup>2</sup> (df)	<i>p</i>	<i>X</i> <sup>2</sup> (df)	<i>p</i>
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%				
Psychoeducation: Problem	12	1.00	8	0.67	12	0.92	11	0.85	.96(1)	.33	1.1(1)	.29
Psychoeducation: Services 1	12	1.00	9	0.75	13	1.00	12	0.92	N/A		1.39(1)	.24
Psychoeducation: Services 2	9	0.75	8	0.67	11	0.85	10	0.77	.36(1)	.55	.33(1)	.57
Psychoeducation: Services 3	12	1.00	10	0.83	12	0.92	10	0.77	.96(1)	.33	.16(1)	.69
Psychoeducation: Services 4	12	1.00	11	0.92	13	1.00	13	1.00	N/A		1.13(1)	.29
Obstacles 1	11	0.92	11	0.92	13	1.00	11	0.85	1.13(1)	.29	.29(1)	.59
Obstacles 2	8	0.67	7	0.58	11	0.85	8	0.62	1.1(1)	.29	.03(1)	.87
Solutions	4	0.33	9	0.75	12	0.92	11	0.85	9.42(1)	.002	.36(1)	.55
Optimism	11	0.92	10	0.83	12	1.00	12	0.92	1.13(1)	.29	.48(1)	.49
Plan 1	11	0.92	9	0.75	12	0.92	11	0.85	.00(1)	.95	.36(1)	.55
Plan 2	9	0.75	10	0.83	10	0.77	12	0.92	.01(1)	.91	.48(1)	.49

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## **CHAPTER II:**

Exploring the Impact of Non-Routine Termination on Long-Term Clinical Outcomes in the  
Context of Evidence-Based Practice Implementation



## ABSTRACT

The limited effectiveness of evidence-based treatments (EBTs) in “real-world” community-based settings may be due to low rates of completion of treatment. In an effort to extend the findings of Weisz et al. (2012) and Chorpita et al. (2013), this study examined the potential relationship between non-routine termination and long-term clinical and functional outcome trajectories in the context of a system implementing EBTs for a variety of childhood mental health conditions. As in Weisz et al. (2012), participants were youth ( $N = 174$ ) who were randomly assigned to usual care, standard manualized EBTS, or modular treatment for anxiety, depression, conduct, or trauma-related problems in community- and school-based mental health settings. Clinical outcomes, as measured using the Child Behavior Checklist and Youth Self Report, were obtained at seven intervals across a two year span. Functional impairment was measured on the Brief Impairment Scale at one year intervals over the same two year span. Though non-routine termination was not related to clinical change trajectory in usual care or standard manualized EBT conditions, those who routinely terminated from the modular treatment had steeper change trajectories than those who had non-routine terminations on Total and Internalizing Problems. In terms of functional impairment, overall, routine terminators had lower functional impairment than non-routine terminators. Those in the modular treatment had higher overall functional impairment. In general, functional impairment reduced with time. Developing methods to encourage families to continue in treatment until consensus is reached may influence long-term clinical gains, and help increase the impact of evidence-based care.

*Keywords:* treatment engagement, dropout, modular treatment, randomized effectiveness trial

Over the past 30 years, there has been a proliferation of manualized evidence-based treatments (EBTs) for a broad range of childhood psychological disorders that have demonstrated efficacy in well-designed randomized clinical trials (RCTs). However, when transported to “real-world” community-based settings, these EBTs often have not shown the same degree of success in regards to ameliorating clinical symptoms when compared with usual care practices (e.g., Southam-Gerow et al., 2010; Weisz et al., 2013; Weisz et al., 2009). This inconsistency signals a need to understand and address challenges that might be arising for EBT implementation in the community.

Some have argued that the increased clinical complexity (e.g., high comorbidity rates) of community populations may be a barrier to the effectiveness of some EBTs (Weisz & Gray, 2008), especially those EBTs that are designed to cover only a single clinical problem. To address the issue of clinical complexity in community mental health settings, Chorpita and Weisz (2005; 2009) developed a modular treatment for youth anxiety, depression, and conduct-related problems that provides mental health providers with a framework and specific strategies to address clinically interfering behaviors, such as an anxious youth having intense tantrums at home, while using weekly feedback to inform ongoing treatment (Chorpita & Weisz, 2009). The modular protocol outperformed both standard, manualized EBTs and usual care (UC) in a randomized clinical effectiveness trial conducted in clinics serving impoverished populations (Weisz et al., 2012). Furthermore, a follow-up study demonstrated that the modular treatment continued to outperform UC over the course of two years, whereas the standard EBT condition did not (Chorpita et al., 2013).

Another challenge that may impact the effectiveness of some EBTs involves the high rates of non-routine termination (e.g., treatment dropout) often observed in community samples,

with an estimated 50% of clients dropping out in effectiveness trials and community-based usual care (Andrade, Bickman, & Lambert, 2000; de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013). The impact is robust even in the face of treatments specifically designed for clinically complex settings. For instance, although the modular approach in the Weisz et al. (2012) trial showed promise in managing clinically comorbid, complex cases, the rates of non-routine termination (Park et al., 2016) were nevertheless similar those seen in other effectiveness trials and community-based samples. With respect to treatment effectiveness, relatively little research has endeavored to characterize the relationship between non-routine termination and clinical and functional outcomes. In one of the few such studies, in a small sample of young children receiving Parent-Child Interaction Therapy (PCIT) for disruptive behaviors, children of those families who completed treatment had better long-term outcomes on measures of child behavior than those who dropped out of treatment (Boggs et al., 2008). Another study of families receiving treatment in a community psychiatric clinic found that functioning improved more markedly for those who had not dropped out of treatment than those who had (Lai, Chan, Pang, & Wong, 1997). In contrast to these findings, other research has failed to find a relationship between dropout and clinical outcomes. For example, a study of children with externalizing disorders found that after pretreatment severity of child dysfunction was controlled for, dropouts and completers had similar levels of dysfunction later on (Kazdin, Mazurick, & Siegel, 1994). Taken together, findings across these studies are equivocal regarding the relationship between non-routine termination and clinical outcomes.

Researchers have utilized different operational definitions to conceptualize premature (i.e., non-routine termination; de Haan et al., 2013), which may in part contribute to inconclusive findings on its effects on outcomes such as clinical change. For example, some define non-

routine termination as occurring when a client fails to complete a predetermined number of sessions (e.g., Prinz & Miller, 1994), but this definition may not capture those clients who have made significant clinical gains before the predetermined limit and therefore no longer require continued care (Johnson, Mellor, & Brann, 2008; Wierzbicki & Pekarik, 1993). An alternative method of defining dropout may be to consider whether the termination was mutually agreed upon by both the client and therapist versus a unilateral decision by the client (de Haan et al., 2013). Using this second definition may be more sensitive to clients' level of need for continued clinical care (Warnick, Gonzalez, Weersing, Scahill, & Woolston, 2012), and may help demonstrate a clearer pattern of the impact of non-routine termination.

Despite being the more objective measure of treatment engagement, non-routine termination may be a lagging indicator of other pre-existing engagement problems. Comprehensive frameworks of engagement (Azjen, 1991; Staudt, 2007) highlight the importance of a broader construct that encompasses both cognitive (e.g., perceptions of treatment relevance, acceptability, therapeutic alliance, expectations for treatment, and treatment satisfaction; Lindsey et al., 2014; Staudt, 2007) and behavioral components (e.g., therapy session attendance, therapy homework completion, and verbal or behavioral response to therapist's prompts; Karver, Handelsman, Fields, & Bickman, 2005; Nock & Ferriter, 2005). In fact, some cognitive components may influence behavioral expressions of engagement (Staudt, 2007).

Given the proposed contribution of cognitive engagement to behavioral indicators, therapeutic alliance, or the client's working relationship with the therapist, has been linked to dropout. For example, in a usual clinical care setting, higher parent-therapist alliance was associated with greater concurrence with therapist in decision to terminate therapy (Hawley & Weisz, 2005). Similarly, parents' perceptions of poor relationship with their therapist influenced

dropout among families with children with externalizing disorders (Kazdin, Holland, & Crowley, 1997). Mothers' therapeutic alliance was a predictor of dropouts in multidimensional family therapy. Specifically, differences in mothers' alliance were found between completers and dropouts as early as the second session (Robbins et al., 2006). Treatment satisfaction may also have an impact on dropout, in that dropouts may have lower levels of satisfaction. This association was demonstrated in a sample of families receiving PCIT (Brestan, Jacobs, Rayfield, & Eyberg, 1999), as well as a sample of adolescents receiving treatment in a variety of mental health settings (e.g., school-based clinic and university-based community mental health clinic; Garland, Aarons, Saltzman, & Kruse, 2000). Previous engagement behaviors may also predict future engagement behaviors. For example, one study, also of children with externalizing problems, demonstrated that the number of sessions attended was highly correlated with treatment dropout (Nock & Kazdin, 2001). Several other studies have shown that a pattern of missed appointments precedes dropout (Kazdin, 1996; Miller & Prinz, 2003; Mirabito, 2001; Prinz & Miller, 1994). These cognitive and behavioral engagement constructs may therefore be useful clues in predicting and possibly even preventing dropout.

Although there are a multitude of EBTs available for various children's mental health conditions, some are not performing to the same level as had been found in university-based efficacy trials (Southam-Gerow et al., 2010; Weisz et al., 2013; Weisz et al., 2009), warranting additional research attention. Thus, the aim of this study was to extend the findings of Weisz et al. (2012) and Chorpita et al. (2013) to examine the potential relationship between non-routine termination, defined as discontinuing services prior to agreement between family and therapist that sufficient gains have been made, and long-term clinical outcome trajectories in the context of a system implementing EBTs for a variety of childhood mental health conditions. In the

presence of evidence suggesting that at least some minimum dose of therapy is needed to reap maximal benefit (Prinz & Miller, 1994) and the effectiveness of the modular treatment over standard manualized EBTs and UC in terms of both short- and long-term outcomes (Chorpita et al., 2013; Weisz et al., 2012), we hypothesized that those who terminated treatment routinely in the modular condition (MATCH-ADC) would have superior long-term improvement trajectories for clinical and functional outcomes. We also proposed an exploratory question of whether a specific type of non-routine termination (e.g., family choosing to withdraw, treating therapist leaving agency) might provide a more nuanced perspective of dropout effects.

A secondary aim of this study was to explore the contribution of cognitive engagement, specifically therapeutic alliance and treatment satisfaction, and behavioral engagement (i.e., session attendance) to non-routine termination given previous research emphasizing the association between cognitive and behavioral components of engagement. We hypothesized that high therapeutic alliance will lower the likelihood of premature termination, but that the impact of treatment satisfaction would be limited due to ceiling effects of reporting. As found in past research, we also hypothesized that those who do not complete treatment would have a greater average of days between sessions, a marker of irregular attendance. We also examined the exploratory question of the impact of cognitive and behavioral engagement on type of non-routine termination. In elucidating the role of treatment termination status in clinical and functional improvement, we hope to continue efforts to improve EBTs and maximize their potential for helping youth and families with mental health need.

## Method

Study procedures were approved by institutional review boards (IRBs) at Judge Baker Children's Center, Harvard Medical School, and the University of Hawaii at Manoa. Additional approval was granted by the IRBs of participating service agencies that requested independent reviews. All youth and caregivers provided assent/consent to participate in the study.

### Participants

**Sample demographics.** Included youth were those who participated in the Weisz et al. (2012) effectiveness trial. As reported in that trial, youth ( $N = 174$ ) were 7-13 years old ( $N = 174$ ;  $M = 10.59$ ,  $SD = 1.76$ ) and the majority were boys (70%). Youth were from diverse racial/ethnic backgrounds: 45% White, 32% multiethnic, 9% African American, 6% Latino/ Latina, 4% Asian American/Pacific Islander, and 2% other. Eligible youth had clinical concerns related to anxiety, depression, or disruptive conduct disorders ( $n = 161$ ; Diagnostic and Statistical Manual of Mental Disorders, 4th ed.; American Psychiatric Association, 2000) as determined by semi-structured interview using the Children's Interview for Psychiatric Syndromes (Weller, Weller, Rooney, & Fristad, 1999a; 1999b). An additional 13 youth were included because of clinical elevations in those diagnostic areas on the Child Behavior Checklist or corresponding Youth Self-Report (Achenbach & Rescorla, 2001). Youth were excluded if there were concerns of mental retardation, pervasive developmental disorder, psychotic symptoms, or bipolar disorder, or if their primary clinical concern involved inattention or hyperactivity. Roughly 95% of the sample reported an Axis I diagnosis, and 79.8% had more than one Axis I diagnosis. Additional details regarding diagnostic composition of the sample is reported in Weisz et al. (2012).

**Therapists and service settings.** Therapy was provided by 84 therapists from 10 outpatient community- and school-based settings in Massachusetts and Hawaii. Therapists were primarily women (80%). They averaged 7.6 years of clinical experience and represented various mental health fields: 40% were social workers, 24% psychologists, and 36% other (e.g., licensed mental health counselor). On average, 2.07 cases ( $SD = 1.31$ ) in each therapist's caseload was a study participant. Therapists in the three study conditions did not differ on any demographic or professional experience characteristics or on the number of study cases seen.

## Measures

**Child Behavior Checklist for Ages 6–18 (CBCL; Achenbach & Rescorla, 2001).** The CBCL is a validated and reliable caregiver-report measure of youth emotion and behavioral symptoms (Achenbach, Dumenci, & Rescorla, 2003; Achenbach & Rescorla, 2001). The 113 items are rated on a three-point scale ranging from 0 (*not true*) to 2 (*very true* or *often true*), with higher scores indicating increased severity of symptoms. Items are organized into two broadband scales for Internalizing and Externalizing Problems, and a Total Problems scale, which represent clinical impairment.

**Youth Self-Report for Ages 11–18 (YSR; Achenbach & Rescorla, 2001).** The YSR is the corresponding youth self-report version of the CBCL that also assesses emotional and behavior problems in youths ages 11–18. In addition to validity and reliability across multiple populations (Achenbach & Rescorla, 2001), the broadband scales (Internalizing and Externalizing) and the Total Problems scale have demonstrated reliability and validity with children as young as age 7 (Ebesutani, Bernstein, Martinez, Chorpita, & Weisz, 2011).



**Brief Impairment Scale (BIS; Bird et al., 2005).** The BIS is a validated measure of youth functional impairment across interpersonal relations, school, and self-care domains as reported by caregivers. Lower scores indicate better functioning.

**Caregiver Satisfaction Questionnaire (CSQ; Attkisson & Greenfield, 2004).** The CSQ is an 8-item caregiver-report measure that is completed at the termination of treatment assessing perceptions of treatment quality, fit, effectiveness, and satisfaction. Items are rated on a 4-point scale, with higher scores indicating greater satisfaction. The CSQ-8 has demonstrated good internal consistency in numerous studies with diverse client samples ( $\alpha$  ranges = .83 to .93).

**Parent-Therapist Alliance (PTA; Chorpita & Weisz, 2005).** The PTA is a 9-item caregiver-report measure to examine “bond” and “task” dimensions of therapeutic alliance. Items are rated on a 4-point scale with higher scores reflecting a better relationship, except for reverse-scored items in which lower scores indicate a better relationship. It was adapted from the Therapeutic Alliance Scale for Children (TASC; Shirz & Saiz, 1992), a validated measure, for use in the current clinical trial. Item tense was changed from present to past, as the measures were intended to be completed at posttreatment. Because the TASC included items to measure the “bond” dimension, two additional items to examine the “task” dimension were added.

**Client Supervision Record.** The Client Supervision Record tracks client attendance in terms of sessions held and who attended each session (e.g., child, caregiver). A session was indicated to have taken place if at least one participant, child or caregiver, attended. These records are provided to the study team by each family’s therapist.

**CONSORT Status Instrument.** Study flow was noted following criteria outlined by the Consolidated Standards for Research Trial (CONSORT) Workgroup (Campbell, Elbourne,

Altman, & the CONSORT Group, 2004). This instrument allowed the recording of the nature of the client's termination from treatment as reported by each therapist and confirmed by consensus of study personnel, including postdoctoral fellows and the principal investigator. Codes assigned at the final treatment session included the following: routine termination (i.e., termination of treatment as mutually agreed upon by the family and the therapist), withdraw/lost (i.e., family deciding to withdraw from treatment without agreement of the therapist or family no longer able to be contacted by the therapist), and therapist reason/other (i.e., termination for reasons outside of the family's control either pertaining to the therapist, such as therapist leaving the clinic, or other reasons, such as the family moving to another city).

### **Measurement Schedule**

Research assessments were conducted by assessors blind to condition at seven time points: baseline, 3 months, 6 months; 9 months, 12 months, 18 months, and 24 months following study enrollment. The CBCL and YSR were administered at every interval, whereas the BIS was administered only at baseline, 12-month, and 24-month assessments. The CSQ and PTA were completed by families when they completed their treatment episode, regardless of the type of termination.

### **Experimental Design**

In this cluster randomization design (Campbell et al., 2004; Donner & Klar, 2000; Fayers, Jordhøy, & Kaasa, 2002), therapists were allocated to treatment condition (standard, modular, UC) using blocked randomization (Fayers et al., 2002) stratified by therapist educational level (doctoral vs. master's degree; see Weisz et al., 2012, for a full description of randomization

procedures and CONSORT flowchart). The current study includes data from all participants in the original trial.

### **Treatment Conditions**

**Usual care (UC) condition.** Therapists in the UC condition proceeded as usual with treatment until normal client termination.

**Standard EBT condition.** Therapists in the standard condition were trained in three treatment protocols: Coping Cat for anxiety (Kendall, 1994; Kendall, Kane, Howard, & Siqueland, 1990), Primary and Secondary Control Enhancement Training (PASCET) for depression (Weisz et al., 2005; Weisz, Thurber, Sweeney, Proffitt, & LeGagnoux, 1997), and Defiant Children for disruptive conduct and noncompliant behavior (Barkley, 1997). These protocols had manualized instructions and a prescribed order of treatment sessions (see Weisz et al. (2012) for additional details regarding treatment fidelity). The specific treatment protocol to be used for each client was determined using information gathered regarding diagnoses, CBCL and YSR scale scores, and youth- and caregiver-identified top problems from the Top Problems Assessment (Weisz et al., 2011). In the case that a single manual was completed but a clinical problem in one of the other two problems areas remained, therapists could use one of the other treatment manuals. Youths in this condition participated in an average of 16.3 treatment sessions ( $SD = 11.1$ ).

**Modular treatment condition.** Therapists in the modular condition used the Modular Approach to Therapy for Children (MATCH; Chorpita & Weisz, 2005; 2009). MATCH is comprised of 31 modules adapted from the three protocols used in the standard condition. Treatment module administration is arranged in a default sequence for one of the three problem

areas. However, in the event of clinically interfering issues, the MATCH algorithm allows for structured, real-time adaptation to address interference before returning to the default sequence. Details regarding fidelity to the protocol are described in Weisz et al. (2012). As in the standard condition, baseline diagnoses, CBCL and YSR scores, and Top Problems Assessment scores (Weisz et al., 2011) were used to determine the initial focus of the intervention. Youths in this condition received an average of 16.0 treatment sessions ( $SD = 8.8$ ).

## **Data Analysis**

**Primary analyses.** To examine the potential differential effect of non-routine termination (routine termination vs. non-routine termination) on long-term clinical and functional outcomes (i.e., CBCL-Internalizing Problems, CBCL-Externalizing Problems, CBCL-Total Problems, YSR-Internalizing Problems, YSR-Externalizing Problems, YSR-Total Problems, BIS), we estimated mixed effects regression models (Bryk & Raudenbush, 1992). Models were adapted from those reported in Chorpita et al. (2013) for long-term clinical and functional outcomes between treatment conditions. The following predictors were used: intercept, treatment condition, treatment termination status (e.g., routine termination or non-routine termination), time (the natural log transform of days since intake), treatment condition by time, termination status by time, and treatment condition by termination status by time. Treatment condition was included in this model to examine the unique contribution of dropout to clinical and functional outcomes over and above treatment effects. Intercept, termination status, and time were modeled as random effects. All models assumed data were missing at random such that the missing data were ignorable based on both the fixed-effects in the model (i.e., covariates) and the observed responses to the point of drop out.

The same mixed effects regression model was used to examine the exploratory question of the impact of type of non-routine termination on long-term clinical and functional outcomes. Type of treatment termination was substituted for the broader termination status variable as a predictor and in the corresponding interaction terms.

**Secondary analyses.** We utilized a multinomial logistic regression to compare effects of engagement variables (e.g., caregiver-therapist alliance, caregiver treatment satisfaction, average days between sessions) on the categorical treatment termination variable (e.g., routine termination or non-routine termination). Treatment condition was included in this model to control for this effect in relation to the engagement variables, as well as identify its unique contribution to termination.

The multinomial logistic regression model was repeated substituting type of treatment termination (e.g., routine termination, withdraw/lost, therapist/other issue) to investigate impact of engagement variables on type of termination.

## **Results**

### **Preliminary Analyses**

**Overall termination rates.** Rates of routine termination did not significantly differ between treatment conditions ( $X^2(2) = 4.76, p > .05$ ). Further, treatment conditions did not have differential rates of type of treatment completion ( $X^2(4) = 9.19, p > .05$ , Table 1).

### **Primary Analyses**

**Rate of clinical change by termination status and treatment condition.** The first column of Table 2 shows estimated slopes for the contrasts of the significant Treatment Condition x Termination Status x Time interaction on clinical outcomes on Total Problems

( $F(2,1788) = 3.72, p < .05$ ) and Internalizing Problems ( $F(2,1788) = 3.65, p < .05$ ) in the mixed effects regression model. The three-way interaction was not significant for Externalizing Problems. Clinical improvement trajectories were significantly different between routine terminators and non-routine terminators in the MATCH condition on Total Problems and Internalizing Problems, such that those who routinely terminated treatment had steeper change rates than those with non-routine terminations. There was no significant difference between routine terminators and non-routine terminators in the standard or UC conditions.

**Rate of clinical change by type of termination and treatment condition.** As noted above, type of termination categories were those who had routine terminations, those who withdrew from treatment or were lost to the therapist, and those who discontinued due to a therapist-related or other issue. The Treatment Condition x Termination Type x Time interaction was also significant for Total Problems ( $F(4,1788) = 3.06, p < .05$ ) and Internalizing Problems ( $F(4,1788) = 2.87, p < .05$ ). Again, the three-way interaction was not significant for Externalizing Problems. As shown in Table 2, column 2, participants in MATCH who had routine terminations had better long-term clinical change trajectories than those who withdrew or were lost to the therapist. Routine terminators in MATCH also had steeper trajectories than those who discontinued treatment due to therapist-related or other issues on Total Problems and Internalizing Problems. Additionally, MATCH participants who withdrew or were lost to the therapist had better trajectories than those who terminated for therapist-related or other reasons. Standard treatment youth who completed treatment had steeper change rates than those who discontinued treatment due to therapist-related or other issues on Internalizing Problems (Table 2).

**Functional outcomes by termination status and treatment condition.** The Treatment Condition x Termination Status x Time interaction on functional impairment as measured by the BIS was not significant. Analysis without the three-way interaction term failed to reveal two-way interactions, thus, interaction terms were dropped and the model was run for main effects only. The final model revealed main effects of termination status ( $F(1,126) = 6.54, p < .05$ ), treatment condition ( $F(2,126) = 3.22, p < .05$ ), and time ( $F(1,149) = 80.49, p < .0001$ ). As noted in Table 3, across all data points, routine terminators had lower functional impairment scores than non-routine terminators. Additionally, MATCH youth had higher impairment than standard youth. Overall, functioning improved over time.

The exploratory three-way and two-way interaction models including treatment condition, type of termination, and time were also not significant. In the main effects model, again, treatment condition ( $F(2,126) = 3.15, p < .05$ ), and time ( $F(1,149) = 80.51, p < .0001$ ) yielded significant effects in the same directions (Table 4). Those who had routine terminations had better average functional outcome scores across all data points than those who discontinued treatment due to therapist-related or other issues and those who withdrew or were lost to therapist.

## **Secondary Analyses**

**Predicting termination status from cognitive and behavioral engagement measures.** Table 5 displays means for caregiver satisfaction, parent-rated therapeutic alliance, and average days between sessions. The model predicting termination from caregiver satisfaction, parent-rated therapeutic alliance, and average number of days between sessions demonstrated a significantly better fit than an empty model, which included no predictors ( $X^2(3) = 19.63, p < .001$ ). Higher caregiver satisfaction increased odds of having a routine termination versus a

non-routine termination (OR = 1.22, df = 1, Wald = 10.11,  $p = .001$ ) Both parent-rated therapeutic alliance and average days between session did not contribute to termination status.

Our exploratory models predicting type of termination from caregiver satisfaction and parent-rated therapeutic alliance had a better fit than the empty model ( $X^2(4) = 28.84, p < .001$ ). Average number of days between sessions was not included in this model because it was not significant in the initial model ( $p > .05$ ). Higher caregiver satisfaction reduced the odds of terminating due to a therapist or other issue (OR = .83, df = 1, Wald = 6.03,  $p < .05$ ) compared with routine termination. High caregiver satisfaction also reduced odds of withdrawing or being lost to therapist (OR = .83, df = 1, Wald = 8.39,  $p < .01$ ). Parent-rated therapeutic alliance did not independently predict type of termination above and beyond caregiver satisfaction.

**Homework completion to termination status.** We also examined the effects of homework completion on treatment termination status. Because data on homework completion were only collected for SMT and MATCH participants, UC participants were not included in the analyses. Table 3 displays homework completion means. The logistic regression including rate of homework completion predicting termination status fit the data better than a model with no predictors ( $X^2(1) = 34.02, p < .001$ ). The results showed that as rate of homework completion increased, the odds of completing treatment increased regardless of treatment condition (OR = 6.67, df = 1, Wald = 787.10,  $p < .001$ ).

The homework completion model were also a significantly better fit than the intercept only model when predicting type of treatment completion ( $X^2(2) = 34.33, p < .001$ ). Greater homework completion significantly decreased odds of having a therapist or other issue-related termination (OR = .003, df = 1, Wald = 9.96,  $p < .01$ ). It also decreased odds of withdrawing or



being lost to the therapist (OR = .001, df = 1, Wald = 20.29,  $p < .001$ ) versus terminating routinely.

### **Discussion**

Despite efforts to improve the effectiveness of evidence-based care in the community through innovations such as modular treatment design (Chorpita et al., 2013; Weisz et al., 2012), the inconsistency in non-routine termination rates between university-based efficacy trials and community-based services still exist in community-based settings. As a possible quality improvement target, it is important to understand how non-routine termination may relate to long-term clinical and functional outcomes.

Current results suggest that clinical outcome trajectories vary as a function of both treatment termination status (routine vs. non-routine) and treatment condition. Although there was no difference in clinical improvement trajectories for those in UC or standard treatments whether they routine or non-routine terminations, youth who routinely terminated in MATCH had better rates of clinical improvement on Total Problems and Internalizing Problems. In a closer examination, within the MATCH condition, those who completed treatment improved faster across Total Problems and Internalizing Problems than those who discontinued due to therapist-related or other issues, though not those who withdrew or were lost to the therapist except on the Internalizing Problems scale. Those who withdrew or were lost to therapist also improved faster than those who discontinued due to therapist-related or other issues in MATCH. Lack of significant interactions for Externalizing Problems may be an artifact of including youth with primarily internalizing and externalizing problems in the models, which may obscure some of the broadband problem area effects. Additionally, the inclusion of caregiver and youth-report in a single model may also result in reduced ability to detect effects when considering

suggestions of preferred informants for certain problem areas (e.g., youth for internalizing and caregivers for externalizing; De Los Reyes & Kazdin, 2005).

Previous work by Chorpita et al. (2013) demonstrated that MATCH results in better long-term clinical improvement than UC, but did not find differences between standard manualized treatments and UC. However, from current results, we see that those in MATCH who discontinue treatment prior to agree with therapist about having made sufficient clinical improvement have similar trajectories to those who also non-routinely terminate in UC or standard treatment. Routine terminators in MATCH, on the other hand, have much steeper improvement trajectories than MATCH non-routine terminators. This may indicate that, within the MATCH condition, when the family and therapist reach consensus on the decision to terminate, the family has developed sufficient skills to maintain progress independent of the therapist. Conversely, families that terminate without agreement from their therapist may not yet have the ability to maintain gains in the long-term. An alternative explanation may be that families that terminate in a non-routine manner may simply be experiencing other stressors that impair their ability to engage in treatment and also contribute to the clinical problem (e.g., Grant et al., 2003), which might then impede improvement over the long-term.

Understanding families' impetus for discontinuing treatment may provide a more nuanced suggestion for why some families in MATCH have better long-term clinical outcomes than others. The results of this study revealed differences between those who withdrew from MATCH or were lost to their therapist and those who terminated due to a therapist-related or other issue, but no difference between those who withdrew or were lost to their therapist and routine terminators. One potential explanation for these results may be that families who decide

to withdraw or are lost to the therapist choose to leave treatment on their own accord because they believe that the presenting issues have improved enough despite therapist's opinion that more treatment might be warranted. Those whose discontinuations are due to a therapist-related issue, such as the therapist leaving the agency, or other reason, such as loss of insurance, may still view the presenting problem as significant, but can no longer access the care they need. Other reasons for discontinuing treatment prematurely may be an escalation of clinical severity or risk that would make outpatient care insufficient. Taken together, the lack of difference between those who terminated routinely and those who withdrew or were lost to their therapist and the difference between those who withdrew or were lost versus those who had a therapist- or other issue-related termination may suggest that families might be aware of improvements before therapists. This may support the case for therapists to assess families' opinion of their progress on a more regular basis to be able to terminate treatment in a shorter span of time.

The absence of a significant difference in clinical change trajectory between routine terminators and non-routine terminators in the standard condition may be due to limitations of using a manualized treatment protocol with a prescribed sequence of skills. In contrast to MATCH, which allows for real-time adaptation to address clinically interfering behaviors or to review of previously-covered skills, therapists are trained to cover each session in order and not provided with specific instructions for how to tailor treatment to the specific needs of each client. Thus, even though clients may make sufficient progress to terminate treatment with consensus of the family and therapist, gains may not be maintained if clinical concerns in different problem areas are not addressed or if relevant skills have not been reviewed enough to promote generalization beyond the treatment setting.

In regards to functional outcomes, there were no significant interactions. However, on average, routine terminators had better functioning across all time points than non-routine terminators. This main effect may suggest that it is still possible to differentiate between those who terminate routinely and non-routinely, though improvement trajectories were not significantly different. However, this analyses was limited because reports of functional impairment were only provided on three occasions (baseline, one year, and two years), which limited the power to detect a significant difference in trajectories, relative to a more frequent measurement schedule.

Termination is but one of several facets of treatment engagement. For a more holistic perspective, it is also important to understand how cognitive and behavioral engagement indicators may be related to treatment termination. From this study, we observed that higher caregiver satisfaction was associated with greater odds of terminating treatment routinely versus terminating non-routinely, and also was related to odds of terminating due to therapist-related or other issue and withdrawing or being lost to therapist to approximately the same degree. These findings are unsurprising in light of caregivers being drivers (both literally and figuratively) of youth treatment (Costello, Pescosolido, Angold, & Burns, 1998; Nock & Kazdin, 2001). Overall, this may indicate a need to elicit caregivers' feelings of satisfaction with treatment and alliance with therapist throughout the course of treatment so dissatisfaction may be addressed proactively.

In terms of behavioral indicators of engagement, homework completion in general was associated with higher odds of completing treatment within the MATCH and standard treatment sample. Homework is a contributor to clinical improvement (Mausbach, Moore, Roesch, Cardenas, & Patterson, 2010). It is possible that families who do not do homework regularly are

not seeing clinical improvement, which may then influence their decision to discontinue prior to reaching treatment goals. If this is the case, engaging families in doing more homework, or out-of-session practice, may result in better clinical outcomes and, thus, influence their decision to continue in treatment until a consensus is reached to discontinue. Alternatively, homework may simply be another indicator of low engagement with no causal effect on treatment termination status. Unlike homework completion, average number of days between sessions was not related to routine termination from treatment. However, some therapists choose to taper treatment sessions off as clients are nearing termination, thus, potentially mirroring pattern of greater gaps between sessions of clients who end up discontinuing.

## **Limitations**

We would like to note several limitations to this study. As noted by Chorpita et al. (2013), all analyses included both youth with internalizing and externalizing disorders, which may occlude target-specific change (e.g., Internalizing Problems score for youth with anxiety). However, the study was underpowered to examine each group separately. Additionally, as noted above, we combined informants (caregiver and youth) for clinical outcome trajectory analyses in an effort to increase power. In light of some suggestions about preferred informants for certain problem areas (e.g., youth for internalizing and caregivers for externalizing; De Los Reyes & Kazdin, 2005), the combined informant analyses may have been less sensitive to detect effects within area-specific sub-analyses. Another weakness is that we did not control for initial severity, despite some evidence suggesting that initial severity is a predictor of engagement (Kazdin, Mazurick, & Bass, 1993). However, we conducted follow-up analyses to examine the relationship between initial severity and termination and did not find significant effects. Because there were substantial data missing for youth satisfaction and alliance reports, analyses were

limited to caregiver reports of satisfaction and therapeutic alliance. Therefore, we lack information on how youths' attitudes toward treatment and the therapist might affect premature termination. Additionally, our satisfaction and therapeutic alliance measures were taken at the end of treatment, so we do not know how satisfaction and alliance may have changed over the course of treatment to relate to dropout. Future studies should elicit this information on a more regular basis throughout treatment.

## **Conclusions**

Many evidence-based practices have demonstrated efficacy in treating a range of childhood mental health conditions. However, some treatments are failing to demonstrate the same effects when implemented in the community indicating the presence of quality improvement targets. Weisz et al. (2012) and Chorpita et al. (2013) have demonstrated the promise of modular treatment design in addressing some of the clinical complexity found in community-based mental health settings that may be affecting greater EBT impact. Findings of the current study suggest that non-routine termination may be another quality improvement target for MATCH, given its association with lower clinical outcome trajectories over time. Because MATCH is a modular treatment which allows for structured adaptation when need arises, adding engagement practice elements that can be accessed when engagement concerns, such as low satisfaction or homework completion, arise, may be beneficial for increasing routine termination rates. Additionally, in light of the lack of difference in clinical improvement rates for those who withdrew or were lost to therapist and those who completed treatment within MATCH may suggest that agencies may not have to go to extreme efforts to pursue families who wish to discontinue of their own accord. Overall, finding ways to encourage families to continue in

treatment until consensus is reached by all parties may influence long-term clinical gains, and help increase the impact of evidence-based care.

Table 1

*Rates of Termination Status and Type of Termination by Treatment Condition*

Treatment Condition	Termination Status		Type of Termination		
	Routine Termination <i>n</i> (%)	Non-routine Termination <i>n</i> (%)	Routine Termination <i>n</i> (%)	Withdraw/Lost <i>n</i> (%)	Therapist/Other <i>n</i> (%)
MATCH	37(59.68)	25(40.32)	37(59.68)	19(30.65)	6(9.68)
Standard	24(40.68)	35(59.32)	24(40.68)	23(38.99)	12(20.34)
Usual Care	24(45.28)	29(55.77)	24(45.28)	14(26.42)	15(28.30)



Table 2

*Coefficient Estimates for Time by Termination Status by Treatment Condition Interaction and Time by Type of Termination by Treatment Condition Interaction for Clinical Outcomes*

Score	<i>n</i>	Routine Termination vs. Non-routine Termination			Routine Termination vs. Withdraw/Lost			Routine Termination vs. Therapist/Other			Withdraw/Lost vs. Therapist/Other		
		$\beta$	SE	<i>p</i>	$\beta$	SE	<i>p</i>	$\beta$	SE	<i>p</i>	$\beta$	SE	<i>p</i>
Total													
MATCH	62	-0.93	0.346	0.0073	-0.5964	0.3784	0.1152	-1.9215	0.5806	0.001	-1.3251	0.6277	0.0349
Standard	59	-0.3517	0.3427	0.3048	-0.2189	0.3727	0.557	-0.6448	0.4705	0.1708	-0.4258	0.4788	0.3739
Usual Care	53	0.4115	0.3516	0.2419	0.3333	0.4283	0.4366	0.4901	0.4154	0.2382	0.1568	0.4752	0.7414
Internalizing													
MATCH	53	-1.09	0.3569	0.0023	-0.7694	0.3907	0.049	-2.0197	0.6025	0.0008	-1.2503	0.6506	0.0548
Standard	62	-0.5773	0.3537	0.1028	-0.409	0.3855	0.2889	-0.9593	0.4861	0.0486	-0.5503	0.4944	0.2658
Usual Care	59	0.2723	0.3629	0.4532	0.2097	0.4427	0.6357	0.3374	0.4302	0.4329	0.1277	0.4913	0.7949

Table 3

*Coefficient Estimates for Termination Status, Treatment Condition, and Time for Functional Outcomes*

	$\beta$	SE	$p$
Termination Status			
Routine Termination vs. Non-routine Termination*	-2.71	1.06	.0117
Treatment Condition			
Usual Care vs. MATCH	-0.08	1.29	.9478
Standard vs. MATCH*	-2.85	1.27	.0271
Time (log day)	-0.92	.10	<.0001

Table 4

*Coefficient Estimates for Type of Termination, Treatment Condition, and Time for Functional Outcomes*

	$\beta$	SE	$p$
<b>Termination Type</b>			
Routine Termination vs. Withdraw/Lost to Therapist*	-2.55	1.20	.0363
Routine Termination vs. Therapist or Other Issue*	-2.99	1.44	.0409
<b>Treatment Condition</b>			
Usual Care vs. MATCH	-0.14	1.31	.9178
Standard vs. MATCH*	-2.85	1.28	.0274
Time (log day)*	-0.92	0.10	<.0001

Table 5

*Cognitive and Behavioral Engagement Means by Termination Status and Type of Termination*

	Termination Status		Type of Termination		
	Routine Termination	Non-Routine Termination	Routine Termination	Withdraw/Lost	Therapist/Other
	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Caregiver Satisfaction Questionnaire	29.47(2.98)	26.67(4.59)	29.47(2.98)	25.93(5.07)	27.86(3.43)
Parent-Therapist Alliance	24.90(2.76)	23.32(3.78)	24.90(2.76)	22.37(3.95)	24.89(2.91)
Average Days Between Sessions	12.00(6.07)	13.06(4.91)	12.00(6.07)	13.31(5.64)	12.66(3.50)
Homework Completion <sup>a</sup>	38.46(19.58)	18.59(15.72)	38.46(19.58)	17.92(16.55)	20.16(13.90)

*Note.* <sup>a</sup>Mean and standard deviation for MATCH and standard conditions only.

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## **CHAPTER III:**

### **Disentangling the Impact of Life Stressors on Treatment Engagement in Children's Community Mental Health Care**

## ABSTRACT

Life stressors, such as losing employment and domestic violence, may be significant contributors to poor treatment engagement in community-based mental health settings. This study explored the impact of life stressors, above and beyond demographic and clinical characteristics, on ongoing treatment engagement with a highly impoverished sample seeking treatment for youth anxiety/trauma, depression, and conduct problems in community mental health clinics ( $N = 138$ ). Youths' baseline clinical severity was associated with a greater number of no-shows to planned sessions. Older youth had a higher rate of family-initiated cancellations and no-shows, and lower overall attendance. At the family level, higher levels of caregiver employment were associated with fewer no-shows. Increased youth age negatively impacted youth-reported treatment satisfaction. However, life stressors, as measured in this study, did not predict attendance, dropout, or treatment satisfaction above and beyond demographic and baseline clinical characteristics. Despite lack of evidence supporting the negative impact of life stressors on ongoing treatment engagement in this study, a more nuanced exploration of life stressors, taking into account acuteness or timing of stressors, may elucidate differential effects on engagement outcomes.

*Keywords:* treatment engagement, dropout, modular treatment, randomized effectiveness trial, life stressors

Despite advances in developing and testing evidence-based treatments (EBTs) for a variety of youth mental health conditions, effectiveness trials have shown that many of these EBTs are not matching the success of efficacy trial outcomes when implemented in “real-world” community-based settings (Southam-Gerow et al., 2010; Weisz et al., 2013; Weisz et al., 2009). The limited effectiveness of EBTs sometimes observed in community settings may be due, in part, to low engagement (e.g., poor session attendance, low expectations for treatment, or dropout) in these settings. In community-based settings, attendance is often poor (Harpaz-Rotem, Leslie, & Rosenheck, 2004) and rates of premature termination are high (Armbruster & Kazdin, 1994; de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013; Office of Applied Studies [OAS], 2000; Pellerin, Costa, Weems, & Dalton, 2010; Weisz, Weiss, & Langmeyer, 1987) in contrast to engagement in efficacy trials. In light of this, as well as the increasing emphasis on EBT use in community settings, it is important to understand challenges facing community populations in order to increase effectiveness of EBTs.

Treatment engagement has been described as a dynamic and ongoing process that begins before a client enters therapy, termed initial engagement, and continues throughout the course of treatment, called ongoing engagement (Coatsworth, Santisteban, McBride, & Szapocnik, 2001; Liddle, 1995; Staudt, 2007). Researchers have proposed both behavioral and cognitive components that occur during these phases (Lindsey et al., 2014; Staudt, 2007). Behavioral markers of engagement include more objective measures, such things as session attendance, homework or out-of-session practice completion, verbal response to provider’s in-session prompts, and completion of the treatment episode (Karver, Handelsman, Fields, & Bickman, 2005; Nock & Ferriter, 2005). Cognitive engagement consists of subjective factors, such as perceptions of treatment relevance, acceptability, therapeutic alliance, expectations for treatment,

and treatment satisfaction (Lindsey et al., 2014; Staudt, 2007). Behavioral indicators, such as attendance and treatment adherence, are studied more often than cognitive measures (Nock & Ferriter, 2005, Staudt, 2007). However, cognitive measures are also important because difficulties in the cognitive domain may contribute to poor behavioral engagement (Miller & Prinz, 2003). In sum, both types of engagement are worthy of consideration given the suggestion that low engagement may contribute to poor clinical outcomes (Boggs et al., 2008).

For years, poor engagement has been the subject of empirical scrutiny, primarily within those populations most likely to have engagement concerns, such as youth with substance abuse issues, conduct problems, or members of racial/ethnic minority groups who live in urban communities. Researchers have made efforts to develop effective interventions to engage these youth and families in treatment (McKay, McCadam, & Gonzales, 1996; McKay, Nudelman, & McCadam, 1996; Nock & Kazdin, 2005; Santisteban et al., 1996; Szapocznik et al., 1988). A more recent effort has looked across various existing engagement interventions to identify common practices and unifying principles of engagement (Becker et al., 2015; Lindsey et al., 2014). These efforts have yielded valuable information about which specific strategies appear best suited to address particular engagement targets. Despite the advances, however, options for engagement interventions may be limited if engagement problems are not recognized early (e.g., after a family drops out of treatment). Thus, it becomes important to identify factors that may place families at risk for engagement issues to give mental health providers early opportunities to intervene in, or even prevent, engagement problems. With increased engagement, it is possible that families will be able to benefit more from treatment.

As discussed previously, researchers have already integrated some assumptions about populations more at-risk for engagement issues in the development of therapeutic interventions,



as is the case with substance abuse (e.g., Szapocznik et al., 1988). Other populations may not be expected to need additional engagement support and EBTs for these individuals may not include systematic engagement practice elements. However, although some of these assumptions may be correct, low engagement appears to be a much more pervasive concern as suggested by low attendance and high dropout rates in the community.

The pervasiveness of engagement problems may be indicative of other contributing factors. In contrast to the typically ethnically, socioeconomically, and clinically homogenous samples recruited for university-based efficacy trials, community-based samples are often ethnically diverse, socioeconomically challenged, and clinically more complex (Ehrenreich-May et al., 2011; Southam-Gerow, Chorpita, Miller, & Gleacher, 2008; Southam-Gerow, Weisz, & Kendall, 2003). Many of these differences have been implicated in influencing various engagement challenges for EBTs in community mental health settings, such as premature termination (de Haan et al., 2013). However, demographic characteristics and presenting problems may not be sufficient to capture the true complexity of these community samples or to understand underlying processes that are at work (Kazdin, 1996). Community-based samples are often faced with a greater number of life stressors compared with university-based samples (Southam-Gerow et al., 2008; Southam-Gerow et al., 2003). These stressors add further complexity in an already complex system of treatment delivery and may impair clients' abilities to fully engage in services.

Premature termination or attrition from treatment, colloquially called dropout, is one easily observable and measureable indicator of ongoing treatment engagement. Operational definitions of dropout vary from clients' failure to complete a specific number of treatment session (e.g., Peters, Calam, & Harrington, 2005; Prinz & Miller, 1994), a parent or family's

unilateral decision to terminate treatment against the advice of the treatment team (e.g., Kazdin, Holland, & Crowley, 1997), or failure to attend and loss of contact with the treatment team (Armbruster & Fallon, 1994). Despite the variability in these definitions, a convergence of research has identified several demographic and clinical predictors of dropout, such as racial/ethnic minority status, externalizing problems, and greater comorbidity (de Haan et al., 2013). In addition to children's demographic and clinical characteristics, caregiver and family characteristics have also been examined as predictors of premature termination. Among these are greater number of siblings, poor parenting, and low parenting confidence. Identification of these early indicators of risk is a step towards better understanding how to improve engagement in families with the greatest needs.

However, despite identification of a link between child and family characteristics and poor engagement, it is also possible that these demographic and clinical characteristics may co-occur with other life stressors, critical life events, or a greater perception of barriers that may be more proximal predictors of engagement challenges (Nock & Ferriter, 2005). In line with this, a comparison of privately-referred (i.e., referred to services by a university clinic, similar to research samples) and publicly-referred (i.e., referred to services through the public community mental health system, similar to community samples) youth with anxiety disorders demonstrated that publicly-referred youth were almost twice as likely to experience impairing life stressors, such as problems with the primary support system or educational difficulties (Southam-Gerow et al., 2008). Thus, it may be that baseline clinical and demographic indicators are associated with a higher likelihood of the very type of stressors or problems that are a direct and immediate threat to engagement.

Indeed, researchers propose that disadvantaged populations may experience a multitude of stressors and respond reactively to those requiring immediate attention at the expense of other demands, including mental health treatment (Barrett et al., 2008). Additionally, in the face of other life stressors and critical events, treatment demands may pose a burden, rather than a source of support (Kazdin, 1996). Consistent with this, research has demonstrated that greater perceptions of barriers, life stressors, and critical life events are linked to dropout (Kazdin, Holland, Crowley, & Breton, 1997; Kazdin, Mazurick, & Bass, 1993). For example, family-level factors, such as living in a single parent household, having a non-biological head of household, and homelessness predict dropout (de Haan et al., 2013). Financial concerns are also associated with premature termination (Garcia & Weisz, 2002).

Although dropout is an easily measurable indicator of a lack of engagement, when it occurs, providers may no longer be able to address engagement problems. Thus, it is also important to explore other facets of engagement that may be upstream indicators of low engagement, such as treatment attendance. Irregular treatment attendance has been linked to subsequent premature termination (Kazdin, 1996; Miller & Prinz, 2003; Mirabito, 2002; Prinz & Miller, 1994). Again, demographic and clinical factors, such as racial/ethnic minority status, being female, having both emotional and behavioral disorders, and higher clinical severity, have been implicated in poor attendance (Armbruster & Schwab-Stone, 1994; Burnett-Zeigler & Lyons, 2012; Gould, Shaffer, & Kaplan, 1985; Kazdin, Mazurick, & Bass, 1993; Kendall & Sugarman, 1997; McMahon, Forehand, & Griest, 1981; Wierzbicki & Pekarik, 1993). However, as discussed earlier, life stressors may co-occur with demographic and clinical factors, and may be a more proximal predictor of poor attendance. As such, findings of a study of adults with depression demonstrated that receiving a case management intervention for problems such as

housing, employment, and interpersonal relationships increased the number of sessions attended (Miranda et al., 2003). In contrast, one study found that presence of Axis IV problems (e.g., death of a family member, loss of employment) predicted a greater number of sessions attended, contradicting the idea that stressors might negatively affect engagement. However, this may also be suggestive of stressors interfering with the primary focus of treatment and necessitating a longer treatment episode (Miller, Southam-Gerow, & Allin, 2008). The unclear nature of the relationship between life stressors and attendance warrants additional scrutiny.

Cognitive engagement components, such as clients' attitudes towards treatment, perceptions of treatment quality, fit, and effectiveness, therapeutic relationship, and satisfaction with treatment, may also serve as early indicators of low engagement (Staudt, 2007).

Associations have been found between cognition engagement components and dropout (Garcia & Weisz, 2002; Kazdin, 2000; Kazdin et al., 1997). Some researchers propose that this relationship exists because cognitions predict behaviors (e.g., Staudt, 2007). Unfortunately, little research to date has examined predictors of cognitive engagement, with the exception of treatment satisfaction. Some youth and characteristics associated with lower satisfaction include belonging to a racial/ethnic minority group, being younger, and having disruptive behavior disorders (Garland et al., 2007; Garland, Aarons, Saltzman, & Kruse, 2000; Shapiro, Welker, & Jacobson, 1997; Turchik et al., 2010). Nevertheless, despite some indication that these demographic and clinical characteristics might be related to lower treatment satisfaction, studies have shown that these predictors only account for a small portion of the overall variance in satisfaction (Garland et al., 2000, Garland et al., 2007; Holmboe et al., 2011; Turchick et al., 2010). Again, it is possible that demographic and clinical characteristics may contribute to the experience of life stressors. Life stressors, then, may be a stronger contributor to low satisfaction.

For example, caregiver strain has been linked to lower satisfaction with treatment (Garland et al., 2007).

In the face of significant engagement challenges present in community mental health services, such as exceptionally poor attendance rates and high attrition, it is important to make efforts to mitigate such problems. Progress has been made in identifying effective engagement strategies and their respective engagement targets (e.g., therapeutic alliance), so a logical next step is to continue adding knowledge to the evidence base regarding which clients may be at risk for engagement problems from the outset. The primary aim of this study was to explore the impact of life stressors, above and beyond demographic and clinical characteristics, within a highly impoverished sample seeking treatment for youth anxiety/trauma, depression, and conduct problems in community mental health clinics that are associated with greater ongoing engagement issues, such as poor attendance (i.e., no-shows to planned session), low treatment satisfaction, and non-routine termination. Life stressors studied include financial concerns (e.g., difficulty paying for basic needs), family issues (e.g., incidence of domestic violence), and school-related difficulties (e.g., bullying at school). Other variables relevant to life stress include family-level predictors, such as single versus dual parent household, caregiver employment status, and parenting stress. Given research suggesting that life stressors are may pose significant barriers to treatment (Kazdin et al., 1997), we hypothesized that although demographic and clinical characteristics would have significant impacts on attendance, treatment satisfaction, and dropout, the presence of life stressors would have an effect over and above demographic and clinical predictors.

## Method

Families included in the current study were participating in the Child Systems and Treatment Enhancement Projects California cluster randomized effectiveness trial (Child STEPs in California) (Chorpita et al., 2017). All study procedures were approved by the IRB of the University of California, Los Angeles, and all participants signed IRB-approved informed consent/assent documents.

### Participants

**Youth participants.** Families included in the study received therapeutic services as part of standard service provision procedures in three large, county-funded community mental health agencies in southern California. In order to qualify for services at these clinics, all families had to be recipients of Medi-Cal, California's state welfare program. Eligible participants were families with youth, ages 3 to 15, receiving treatment for anxiety or trauma, depression, or conduct disorders.

*Sample demographics.* Youths were ages 3 to 15 ( $N = 138$ ;  $M = 8.36$ ,  $SD = 2.84$ ), slightly more than half (55.1%;  $n = 76$ ) were boys, and the sample was ethnoracially diverse: 78.3% Latino/a, 10.1% African-American, 8.0% Multiethnic, and 3.6% Caucasian. About 41% of families had caregivers who chose to complete study measures in Spanish. Most families reported issues with poverty, with 91.3% of the sample reporting household income of \$39,000 or less and 71.0% reporting income of \$19,000 or less, supporting an average number of 4.1 dependents per family ( $SD = 1.5$ ). Nearly half of primary caregivers reported not having completed high school (47.8%). The majority of families (58.0%) were led by a single parent (24.6% never married, 19.6% separated, 11.6% divorced, and 2.2% widowed), and 40.6% had

more than one adult caregiver (28.3% married and 12.3% unmarried living with partner). Two families (1.4%) did not report marital status.

**Providers and service settings.** Fifty service providers in three different community agencies in the Los Angeles area delivered treatment. Therapists were 96% female, had an average of 3.3 years clinical experience post degree ( $SD = 3.06$ ), and 40% described their professional specialty as social work, 44% marriage and family therapy, and 16% counseling or clinical psychology. All providers had graduate training in their specialties, with 14% reporting a doctoral degree (i.e., PhD or PsyD) and 86% reporting a Master's degree (e.g., MA, MS, or MSW) as their highest education obtained. Twenty-two percent held a state license. Therapists saw an average of 2.76 cases who participated in this study ( $SD = 2.06$ ; range = 1 to 9). There were no significant differences across condition on any therapist demographic or professional experience characteristics, or on the number of study cases seen.

## **Measures**

Caregivers were given the option of completing measures in Spanish if they preferred.

**Family Information Form (FIF).** The FIF collects information related to child and caregiver demographic characteristics (e.g., age, gender), the family's composition, and socioeconomic status (e.g., marital status, income, employment status).

**Strengths and Difficulties Questionnaire – Youth Version (SDQ-Y; Goodman et al., 1998).** The SDQ-Y is a 25-item self-report questionnaire of emotional symptoms, conduct problems, hyperactivity/inattention, peer relationships, and prosocial behaviors for youth ages 8 to 15. Higher scores on each domain generally represent greater psychopathology. All domains except prosocial behavior are summed to yield a total difficulties score. Preliminary evidence suggests that the youth version of the SDQ has satisfactory discriminant validity and reliability

with the caregiver version that is comparable to other established measures with caregiver and youth versions (Goodman, Meltzer, & Bailey, 2003).

**Strengths and Difficulties Questionnaire – Caregiver Version (SDQ-C; Goodman, 1997).** The SDQ is the corresponding 25-item caregiver-report measure of emotional symptoms, conduct problems, hyperactivity/inattention, peer relationships, and prosocial behaviors for youth ages 4 to 16. Like the youth version, all items except those corresponding to prosocial behaviors are summed to create a total difficulties score. The SDQ has been shown to have satisfactory reliability and validity (Goodman, 2001). Higher scores on the SDQ generally reflect greater psychopathology (Goodman & Goodman, 2009). The Spanish version of the SDQ-C has demonstrated adequate psychometric properties (Rodríguez-Hernández et al., 2012)

**Parenting Stress Index – Short Form (PSI-SF; Abidin, 1995).** The PSI-SF is an established measure used to identify stress in the caregiver-child dyad. The 36-item PSI measures caregiver and child characteristics and situational factors that predict potential for caregiver behavior problems and child adjustment problems within the family system. The PSI yields a total stress score and scale scores measuring caregiver and child characteristics separately. A higher score on any of the domain scores is reflective of higher stress within the family system. The PSI-SF has a reported internal consistency of .91 and a 6-month test–retest reliability coefficient of .84 (Abidin, 1995). The Spanish translation of the PSI-SF (Solis & Abidin, 1991) has also been validated for Spanish-speaking populations.

**Life Events During Treatment Questionnaire (LETQ).** The LETQ is a 41-item checklist that assesses the occurrence of life events during the course of treatment that is completed by therapists and caregivers independently. English and Spanish versions were developed for use in the Child STEPS in California trial. The checklist assesses six domains of



stressors: financial (e.g., difficulty paying for basic needs), family (e.g., incidence of domestic violence), legal (e.g., incarceration), treatment (e.g., negative attitudes toward treatment), school (e.g., bullying at school), and miscellaneous (e.g., lack of transportation to treatment sessions, immigration issues). Reporters are prompted to indicate whether or not the youth, caregiver, or other persons related to the youth (e.g., grandmother) experienced the life event. Due to poor inter-rater reliability for including events related to other people related to youth, domains were summed for events that occurred for youth and caregiver only. There was good preliminary inter-rater reliability on financial, family, treatment, and school domains (ICC range = .404 - .562,  $ICC_{total} = .507$ ). The legal and miscellaneous domains had poor inter-rater reliability and, thus, were dropped from analyses in this study. Because the treatment domain reflected treatment engagement problems rather than concrete life events, this domain was also excluded from analyses.

**Caregiver and Youth Satisfaction Questionnaire (CSQ and YSQ; Attkisson & Greenfield, 2004).** The CSQ and YSQ are 8-item caregiver- and youth-report measures that are completed at the termination of treatment assessing perceptions of treatment quality, fit, effectiveness, and satisfaction. Items are rated on a 4-point scale, with higher scores indicating greater satisfaction. Youth under the age of seven were not administered the CSQ. The CSQ-8 has demonstrated good internal consistency in numerous studies with diverse client samples ( $\alpha$  ranges = .83 to .93). The CSQ was translated into and back translated from Spanish using standard procedures by independent members of the study team.

**Client Supervision Record.** The Client Supervision Record tracks client attendance in terms of sessions held and who attended each session (e.g., child, caregiver). A session was

indicated to have taken place if at least one participant, child or caregiver, attended. These records are provided to the study team by each family's therapist.

**No Show or Cancellation Record.** The No Show or Cancellation Record tracks missed treatment sessions, specifying no-show, family-initiated cancellation, therapist-initiated cancellation, or missed attempt (e.g., client being absent from school while participating in mental health services provided by the community mental health agency in the school at a family's request). These records were also provided to the study team by each family's therapist.

**CONSORT Status Instrument.** The study used a structured instrument to code status of each case according to the study flow criteria outlined by the Consolidated Standards for Research Trial (CONSORT) Workgroup (Campbell, Elbourne, Altman, & the CONSORT Group, 2004). This instrument allowed the recording of the nature of the client's termination from treatment as reported by each therapist and confirmed by consensus of study personnel, including postdoctoral fellows and the principal investigator. Codes assigned at the final treatment session included the following: routine termination (i.e., termination of treatment as mutually agreed upon by the family and the therapist), withdraw/lost (i.e., family deciding to withdraw from treatment without agreement of the therapist or family no longer being contactable by the therapist), and therapist reason/other (i.e., termination for reasons outside of the family's control either pertaining to the therapist, such as therapist leaving the clinic, or other reasons, such as the family moving to another city. Full study flow criteria are outlined in Chorpita et al. (2017)

## **Experimental Design**

This study utilized a cluster randomization design (Campbell et al., 2004; Donner & Klar, 2000; Fayers, Jordhøy, & Kaasa, 2002) in which therapists were assigned to treatment condition

using blocked randomization. Therapists were allocated to specific treatment conditions (MATCH or community implemented treatment) in order to protect against contamination across treatments. Youth were referred to specific therapist following standard operating procedure of each clinic. Referred youth were then screened for study eligibility.

## **Treatment Conditions**

**Modular Approach to Therapy for Children with Anxiety, Depression, Trauma, or Conduct Problems (MATCH-ADTC; Chorpita & Weisz, 2009).** MATCH is comprised of 33 therapeutic modules garnered from evidence-based treatment practices for anxiety, depression, trauma, and conduct problems. A flowchart suggests a default sequence of modules depending on the primary treatment focus (e.g., anxiety). The flowchart allows for systematic deviation from the sequence should interference arise (e.g., child with depression exhibiting frequent tantrums), followed by a return to the default sequence once the interference has been addressed. MATCH includes psychoeducation modules for all treatment areas, as well as a specific caregiver engagement module for conduct problems. In a previous RCT, MATCH was found to be more effective than traditional, manualized EBTs, and traditional usual care (Weisz et al., 2012).

**Community Implemented Treatment (CIT).** Therapists randomized to CIT were expected to provide treatment from an approved list of EBTs determined by local county leadership (see Southam-Gerow et al., 2014, for a detailed description of the service context and Prevention and Early Intervention transformation of Los Angeles County Department of Mental Health). Training and quality management for these EBTs were conducted by the county. EBTs utilized included: Trauma Focused Cognitive Behavioral Therapy (e.g., Cohen & Mannarino, 1996), Seeking Safety (e.g., Najavits, Gallop, & Weiss, 2006), Positive Parenting Program (e.g.,

Sanders, Markie-Dadds, Turner, & Ralph, 2004), Depression Treatment Quality Improvement (e.g., Asarnow et al., 2005), Incredible Years (e.g., Webster-Stratton, 2011), and Parent Child Interaction Training (e.g., Eyberg & Matarazzo, 1980).

## **Procedures**

Families receiving care in the community mental health agencies were invited by their therapists to participate in a larger study examining the effectiveness of various treatment approaches. The families who consented to participate continued to receive treatment provided by their therapist and also participated in regular assessments with study personnel, for which they received monetary compensation. Included families could elect to have therapy provided by a bilingual therapist if English was not their primary language. Therapists serving study families provided additional data on treatment attendance and completion.

## **Data Analysis**

**Attendance.** Client attendance was calculated as a ratio of type of missed treatment session, either no-show or family-initiated cancellation, to number of planned sessions. We selected to use these proportions because each client differed in number of planned sessions due to standard operating procedures of the community mental health clinics (i.e., natural differences in treatment length across contexts). Therapist-initiated cancellations were not included due to missed session occurring for reasons outside of the family's control. Missed attempts were also excluded because of the unclear nature as to whether clients were not present at school due to reasons related to therapy or reasons unrelated to therapy.

**Preliminary analyses.** We examined correlations between continuous predictors (i.e., youth age, number of people dependent on family income, parenting stress, clinical severity, life stressors on the LETQ, and frequency of emergent life events reported in session). We also

investigated rates of life stressors and frequency of life events between categorical predictors (i.e., youth sex, dual-parent home, caregiver employment status, internalizing vs. externalizing problems, and treatment condition).

We checked for normality of the data by examining residual plots. Two outliers were removed. Predictor variables were organized into five blocks: youth demographic predictors (i.e., age and sex), family characteristics (i.e., dual-parent home, caregiver employment status, number of people dependent on family income, and parenting stress), youth clinical characteristics (i.e., clinical severity, internalizing vs. externalizing problem), treatment condition, and life stressors (life stressors on the LETQ and frequency of emergent life events reported in session).

**Primary analyses.** Because data met assumptions for linear regression after removal of two outliers despite use of proportions for attendance variables, we proceeded with multiple linear regression to determine the effect of life stressors on attendance (i.e., no-show, family-initiated cancellation, overall session attendance) and caregiver and youth treatment satisfaction over and above the contributions of demographic and clinical predictors. Predictor blocks were added in a sequential manner, beginning with youth demographic characteristics, then adding family characteristics, youth clinical characteristics, treatment condition, and life stressors. This resulted in a total of five models for each outcome variable. Fit indices of each model were examined to determine which accounted for the most variance in the outcome.

We utilized a binary logistic regression with the same sequential approach to examine how demographic, clinical, and life stress predictors impacted completion of treatment.

A multinomial logistic regression was utilized to identify how life stressors predicted termination (e.g., routine termination versus dropout versus other termination) over and above the demographic, family, and clinical characteristics noted above.

In the case of missing data on each variable, cases were dropped from analyses using listwise deletion. Accordingly, analyses were more conservative than those using other methods, such as imputation of data. Seventy-one participants (51.45% of the full sample) had complete data for all variables, including therapist-reported life stressors on the LETQ. A subset of participants ( $n = 23$ , 16.67% of the full sample) had full data including caregiver-reported life stressors on the LETQ.

## **Results**

### **Preliminary Analyses**

Correlations between continuous predictors (i.e., youth age, number of people dependent on family income, parenting stress, clinical severity, life stressors on the LETQ, and frequency of emergent life events reported in session) are reported in Table 1. Frequency of caregiver-reported life stressors was significantly different between those who were unemployed ( $M = 3.69$ ,  $SD = 2.36$ ) and employed part-time ( $M = 1.25$ ,  $SD = 1.28$ ,  $t(19) = 2.68$ ,  $p = .015$ ), and those who were unemployed and employed full-time ( $M = 1.91$ ,  $SD = 1.58$ ,  $t(22) = 2.13$ ,  $p = .044$ ). Families in MATCH ( $M = 2.22$ ,  $SD = 2.31$ ) reported more emergent life events in session than those in CIT ( $M = 1.46$ ,  $SD = 1.99$ ,  $t(135) = -2.02$ ,  $p = .045$ ).

### **Session Attendance**

We conducted a series of multiple regression analyses to predict attendance outcomes (i.e., no-show rate, family-initiated cancellation rate, and overall session attendance rate) from youth demographic characteristics, family characteristics, youth clinical characteristics, treatment condition, and life stressors. Each set of predictors was added in subsequent blocks as noted above resulting in five models per outcome.

One set of analyses was conducted using the therapist-reported life stressors on the LETQ, and a second set was run with the subset of data with caregiver-reported life stressors instead of the therapist-report.

**No-show rate.** Overall, families no-showed to about 7.56% ( $SD = 11.09$ ) of scheduled sessions. Table 2 displays the results of the multiple regression analysis predicting the rate of no-shows to planned sessions. The model including youth demographics, family characteristics, and youth clinical indicators accounted for significant variance in rate of no-shows to planned sessions. In this model, as youth age increased, so did proportion of no-shows. Youth-reported clinical severity also increased proportion of no-shows. Youth in dual-parent homes had a decreased proportion of no-shows.

In the analysis including the subset of participants who had caregiver-report data on occurrence of life stressors (see Table 2), similarly, the model which included youth demographics, family characteristics, clinical characteristics, accounted for most variance in no-show rate. In this model, higher levels of caregiver employment (e.g., full-time vs. part-time vs. unemployed) decreased the proportion of no-shows. Increased baseline clinical severity as reported by the youth increased the rate of no-shows.

**Family-initiated cancellation rate.** Families cancelled approximately 10.70% ( $SD = 12.15\%$ ) of scheduled sessions. Table 3 illustrates results of the multiple regression analysis predicting the rate of family-initiated cancellations to planned sessions. Only the first model including youth demographic characteristics accounted for significant variance in rate of family-initiated cancellation. Increases in youth age led to an increase in family-initiated cancellations. None of the models in the subset of analyses with caregiver-reported life stressor data accounted for significant variance.

**Overall attendance rate.** On average, families attended 77.80% ( $SD = 17.13\%$ ) of scheduled sessions. Table 4 displays multiple regression analysis results predicting overall attendance rate. The model including youth demographics and the subsequent model which added family characteristics accounted for significant variance in predicting overall attendance rate. As youth age increased, overall attendance decreased.

### **Treatment Completion**

**Rate of treatment completion.** Table 5 displays treatment completion rates across treatment conditions. Treatment completion rates were not significantly different between conditions ( $X^2(1) = .05, p > .05$ ). The logistic regression models predicting treatment completion from youth demographics, family characteristics, clinical indicators, treatment condition, and life stressors did not account for significant variance for analyses including therapist-reported life stressors or the subset of analyses using caregiver-reported life stressors.

**Type of treatment termination.** Table 5 also displays treatment termination type rates across treatment conditions. These rates did not differ significantly between treatment conditions ( $X^2(2) = .105, p > .05$ ). The multinomial logistic regression models did not account for significant variance in type of treatment termination (i.e., routine termination vs. withdrawing or being lost to therapist vs. therapist or other issue-related termination).

### **Treatment Satisfaction**

**Caregiver satisfaction.** None of the multiple regression models accounted for significant variance in caregiver satisfaction. Overall caregiver satisfaction was high ( $M = 28.59, SD = 3.94$ , range = 11-32).

**Youth satisfaction.** Table 6 shows the analyses predicting youth treatment satisfaction. The youth demographic characteristic model accounted for significant variance. As youth age



increased, treatment satisfaction decreased. However, overall youth-reported treatment satisfaction was high ( $M = 27.95$ ,  $SD = 3.71$ , range = 15-32). None of the models in analyses using the caregiver-report life stressor subset were significant.

### **Discussion**

As mental health care systems strive to improve the effectiveness of the care they provide, it is increasingly important to understand factors that can reduce the impact of evidence-based care. One such factor is treatment engagement. In light of evidence demonstrating poor engagement in community mental health services, further exploration of factors that may be contributing to poor engagement is warranted. Various demographic and clinical factors, such as youth sex and pretreatment clinical severity, have been associated with poor engagement in previous research. However, little work has been done to understand the influence of life stressors, especially because these are frequent in families served by community mental health settings.

Consistent with previous research on treatment engagement, we found that youths' baseline clinical severity was significantly related to treatment attendance. Specifically, greater baseline clinical severity resulted in greater no-shows. Additionally, youth age was also associated with treatment attendance. Older youth had greater family-initiated cancellations and no-shows to planned sessions, as well as lower overall attendance. In terms of family-level characteristics, youth in dual-caregiver homes had fewer no-shows. Additionally, higher levels of caregiver employment were also associated with fewer no-shows. In terms of treatment satisfaction, consistent with previous research, increased youth age negatively impacted youth-reported treatment satisfaction. Importantly, life stressors, as measured in this study, did not

predict attendance, dropout, or treatment satisfaction over and above demographic and baseline clinical characteristics.

The lack of significant effect of life stressors may indicate that pre-existing characteristics may be more influential on treatment engagement. However, it is also possible that life stressors are highly associated with other characteristics, such as caregiver employment status, and thus there is little unique variance of stressors once we know caregiver employment status. With knowledge of pre-treatment characteristics that are associated with life stressors, we may be alerted to the need to integrate more engagement efforts for particular youth and families.

That life stressors were not significantly related to engagement outcomes may reflect methodological issues with this study rather than a true lack of a relationship. There were several limitations to how life stressors were defined and measured in this study. First, because the LETQ was developed for the larger clinical trial from which this data were taken, we were not able to validate this measure against other previously validated measures of life stressors, such as the UCLA Life Stress Interview (Hammen, 1997). Moreover, the LETQ included both chronic and acute stressors, which may have a differential impact on families. For example, families may have adapted to more chronic stressors, like older siblings aiding in childcare for younger siblings in families with larger numbers of dependents, which would not have a negative impact on treatment engagement. However, families in general may be less adept or have fewer resources to manage more sudden, acute stressors (e.g., the financial cost of childcare if a child is suspended from school), which might then hinder their ability to participate in treatment. Clear differentiation between chronic and acute stressors may yield a more nuanced pattern of the relationship between stressors and treatment engagement.

Beyond the limitations of our definition of life stressors, we had limited caregiver data on the occurrence of life stressors, so lacked adequate power to detect an effect. Additionally, some of the therapist reports of life stressors were taken after clients' cases had closed. Therapists may not have remembered life stressors with sufficient detail to produce a reliable indicator. Moreover, due to poor reliability between therapist and caregiver report of life stressors that occurred for others close to the family, we chose to exclude these specific data. However, life stressors that occur to close others (e.g., siblings, grandparents, close family friends) might have had potentially significant impacts on the daily lives of the youth and caregiver that, in turn, could affect treatment engagement.

Furthermore, although life stressors did not uniquely impact engagement in this study, we do not know how they might have affected clinical improvement. Life stress has a demonstrated relationship to clinical symptoms (e.g., Grant et al., 2003). Additionally, in the face of life stressors or emergent life events, research has shown that therapists stray from evidence-based practices to help families manage stressors in unstructured ways (Guan et al., 2015), which might then impede clinical improvement.

There were several additional limitations to this study. First, the small sample size may have limited power to detect effects of life stressors when many other predictors (e.g., demographic and family characteristics) were also included in the models. Also, we did not test time-variant models (which would require knowing the timing of the onset of stressors, such as ELEs) to see if there was an immediate impact of a stressor on attendance in a subsequent time interval (e.g., the following session or two). Future research could capture the onset of the stressor, or timing of a peak severity to see whether these are temporally proximal predictors of

specific no-shows, for instance, rather than just overall rate across the entire episode. If we found that timing of stressors did impact subsequent attendance, then better preparing providers to handle ELEs and other stressors might prevent some missed sessions. Along these lines, we do not currently have information on how therapists' strategies for managing life stressors and ELEs are impacting treatment engagement. It is possible that overly focusing on life stressors may lead families to feel frustrated with the lack of attention to clinical issues, and thus, less inclined to attend sessions or less satisfied with treatment. On the other hand, families may feel more allied with a therapist who is attentive to challenges they face beyond the therapy room, and be more willing to attend sessions. A final limitation is the relative focus on engagement variables related to treatment attendance and the few cognitive engagement measures. The experience of stressors may have a greater impact on cognitive constructs, such as the motivation for treatment or positive expectancies for treatment. Future studies may include more cognitive engagement constructs to provide a more holistic view of engagement.

Evidence-based practices have demonstrated potential to improve the effectiveness of clinical care in the community. However, community-based populations face significant challenges in their daily lives that might impact their ability and desire to engage in mental health services. Future research may take a more nuanced approach to examining life stressors, such as differentiating between chronic and acute stressors, investigating the impact of the timing of stressors, and exploring different categories of stressors (e.g., financial issues vs. family difficulties), to understand potential differential effects on engagement outcomes. Further research may also focus on developing strategies to guide how therapists help families manage stressors to maximize engagement while continuing to attend to the clinical focus of treatment. Understanding how life stressors and emergent life events might impede engagement and

developing strategies for how therapists might address them is an important step towards increasing the impact of evidence-based care.

Table 1

*Correlations between Continuous Predictors and Life Stress Variables*

	Youth Age	SDQ-P	SDQ-Y	Number of Dependents	PSI Total Stress	Caregiver-Reported Life Stress	Therapist-Reported Life Stress	Frequency of ELEs in Session
Youth Age	-							
SDQ-P	-.029	-						
SDQ-Y	<b>-.288**</b>	<b>.219*</b>	-					
Number of Dependents	.115	-.061	-.124	-				
PSI Total Stress	.035	<b>.469**</b>	-.014	.010	-			
Caregiver-Reported Life Stress	<b>.374*</b>	<b>.404*</b>	-.211	.044	.104	-		
Therapist-Reported Life Stress	-.119	<b>.219*</b>	<b>.269*</b>	<b>-.203*</b>	-.009	.353	-	
Frequency of ELEs in Session	.084	<b>.216*</b>	.065	-.082	.140	.037	<b>.222*</b>	-

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

Table 2

*Multiple Regression Models for No-Show Rate*

Predictor	Youth Demographics			Family Characteristics			Youth Clinical Characteristics			Treatment Condition			Life Stressors and Emergent Life Events		
	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>
(Constant)	-0.04	0.05	-0.82	0.01	0.07	0.13	-0.09	0.08	-1.21	-0.12	0.08	-1.43	-0.12	0.08	-1.42
<b>Youth Age</b>	0.01	0.00	2.49	0.01	0.00	2.53	<b>0.01</b>	<b>0.00</b>	<b>3.03**</b>	<b>0.01</b>	<b>0.00</b>	<b>3.03**</b>	0.01	0.00	2.99
Youth Sex	-0.01	0.02	-0.41	0.00	0.02	-0.18	0.00	0.02	-0.10	-0.01	0.02	-0.26	0.00	0.02	-0.20
<b>Dual-parent home</b>				-0.04	0.02	-1.95	<b>-0.05</b>	<b>0.02</b>	<b>-2.26*</b>	<b>-0.05</b>	<b>0.02</b>	<b>-2.20*</b>	-0.05	0.02	-2.16
Caregiver Employment				-0.02	0.01	-1.28	-0.01	0.01	-0.99	-0.01	0.01	-0.99	-0.01	0.01	-0.98
Number of Dependents				0.00	0.01	0.64	0.01	0.01	0.74	0.01	0.01	0.76	0.00	0.01	0.63
PSI Total Stress Scale				0.00	0.00	0.05	0.00	0.00	-0.11	0.00	0.00	0.08	0.00	0.00	0.10
Baseline SDQ-Parent							0.00	0.00	0.42	0.00	0.00	0.31	0.00	0.00	0.45
<b>Baseline SDQ-Youth</b>							<b>0.00</b>	<b>0.00</b>	<b>2.31*</b>	<b>0.00</b>	<b>0.00</b>	<b>2.44*</b>	0.00	0.00	2.44
Problem Area							0.01	0.02	0.48	0.01	0.02	0.57	0.01	0.02	0.57
Treatment Condition										0.02	0.02	0.85	0.02	0.02	0.89
Therapist-Reported Life Stress <sup>a</sup>													0.00	0.00	-0.26
Frequency of ELEs in Session													0.00	0.01	-0.34
R <sup>2</sup>	0.084			0.169			0.248			<b>0.257</b>			0.260		
Adjusted R <sup>2</sup>	0.057			0.091			<b>0.137</b>			<b>0.133</b>			0.107		
<i>F</i>	3.12			2.17			<b>2.24*</b>			<b>2.08*</b>			1.70		

Predictor	Youth Demographics			Family Characteristics			Youth Clinical Characteristics			Treatment Condition			Life Stressors and Emergent Life Events		
	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>
(Constant)	-0.03	0.09	-0.38	0.19	0.15	1.29	0.05	0.14	0.38	0.04	0.16	0.29	0.06	0.15	0.41
Youth Age	0.01	0.01	1.35	0.00	0.01	0.26	0.00	0.01	-0.31	0.00	0.01	-0.34	0.01	0.01	0.60
Youth Sex	-0.04	0.04	-0.93	-0.08	0.05	-1.50	-0.11	0.05	-1.99	-0.11	0.06	-1.92	-0.09	0.05	-1.77
# of CGs				-0.02	0.07	-0.27	0.04	0.07	0.58	0.04	0.07	0.59	0.05	0.07	0.78
<b>Caregiver Employment</b>				-0.04	0.02	-1.64	<b>-0.04</b>	<b>0.02</b>	<b>-2.17*</b>	-0.04	0.02	-2.04	-0.08	0.03	-2.77
Number of Dependents				-0.03	0.03	-1.17	-0.05	0.03	-2.12	-0.05	0.03	-2.05	-0.07	0.03	-2.58
PSI Total Stress Scale				0.00	0.00	1.18	0.00	0.00	2.00	0.00	0.00	1.81	0.00	0.00	1.62
Baseline SDQ-Parent							0.00	0.00	0.03	0.00	0.00	-0.04	0.01	0.00	1.37
<b>Baseline SDQ-Youth</b>							<b>0.01</b>	<b>0.00</b>	<b>2.57*</b>	0.01	0.00	2.46	0.01	0.00	1.74
Problem Area							-0.02	0.04	-0.45	-0.02	0.05	-0.41	0.00	0.04	-0.02
Treatment Condition										0.01	0.04	0.21	-0.01	0.04	-0.31
Caregiver-reported Life Stress <sup>b</sup>													-0.03	0.02	-1.81
Frequency of ELEs in Session													0.00	0.01	-0.68
R <sup>2</sup>		0.117			0.449			<b>0.665</b>			0.666			0.757	
Adjusted R <sup>2</sup>		0.028			0.242			<b>0.433</b>			0.388			0.466	
<i>F</i>		1.32			2.17			<b>2.87*</b>			2.40			2.60	

Note. <sup>a</sup>Therapist-reported life stressors on the LETQ (*n* = 71), <sup>b</sup>Caregiver-reported life stressors on the LETQ (*n* = 23), \**p* < .05, \*\**p* < .01



Table 3

*Multiple Regression Models for Family-Initiated Cancellations*

Predictor	Youth Demographics			Family Characteristics			Youth Clinical Characteristics			Treatment Condition			Life Stressors and Emergent Life Events		
	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>
(Constant)	-0.03	0.04	-0.64	-0.03	0.06	-0.45	0.00	0.07	0.03	0.00	0.07	0.00	0.00	0.07	0.00
<b>Youth Age</b>	<b>0.01</b>	<b>0.00</b>	<b>2.72**</b>	0.01	0.00	2.55	0.01	0.00	2.06	0.01	0.00	2.04	0.01	0.00	1.96
Youth Sex	-0.01	0.02	-0.70	-0.01	0.02	-0.72	-0.01	0.02	-0.76	-0.01	0.02	-0.76	-0.01	0.02	-0.76
# of CGs				-0.01	0.02	-0.32	0.00	0.02	-0.18	0.00	0.02	-0.17	0.00	0.02	-0.17
Caregiver Employment				0.01	0.01	0.56	0.01	0.01	0.73	0.01	0.01	0.72	0.01	0.01	0.71
Number of Dependents				0.00	0.01	-0.07	0.00	0.01	-0.04	0.00	0.01	-0.04	0.00	0.01	-0.01
PSI Total Stress Scale				0.00	0.00	0.26	0.00	0.00	-0.36	0.00	0.00	-0.32	0.00	0.00	-0.32
Baseline SDQ-Parent							0.00	0.00	1.78	0.00	0.00	1.74	0.00	0.00	1.55
Baseline SDQ-Youth							0.00	0.00	-1.45	0.00	0.00	-1.37	0.00	0.00	-1.34
Problem Area							-0.02	0.02	-0.99	-0.02	0.02	-0.97	-0.02	0.02	-0.94
Treatment Condition										0.00	0.02	0.10	0.00	0.02	0.07
Therapist-Reported Life Stress													0.00	0.00	0.07
Frequency of ELEs in Session													0.00	0.00	0.09
R <sup>2</sup>		<b>0.098</b>			0.104			0.174			0.175			0.175	
Adjusted R <sup>2</sup>		<b>0.071</b>			0.019			0.053			0.037			0.004	
<i>F</i>		<b>3.69*</b>			1.23			1.43			1.27			1.02	

Note. <sup>a</sup>Therapist-reported life stressors (*n* = 71), <sup>b</sup>Caregiver-reported life stressors (*n* = 23), \**p* < .05, \*\**p* < .01

Table 4

*Multiple Regression Models for Overall Attendance*

Predictor	Youth Demographics			Family Characteristics			Youth Clinical Characteristics			Treatment Condition			Life Stressors and Emergent Life Events		
	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>
(Constant)	1.04	0.07	15.78	0.97	0.09	10.25	1.04	0.11	9.21	1.09	0.12	9.09	1.08	0.12	8.80
<b>Youth Age</b>	<b>-0.02</b>	<b>0.01</b>	<b>-3.59***</b>	<b>-0.02</b>	<b>0.01</b>	<b>-3.49***</b>	-0.02	0.01	-3.44	-0.02	0.01	-3.47	-0.02	0.01	-3.30
Youth Sex	0.02	0.03	0.747913	0.02	0.03	0.55	0.02	0.03	0.49	0.02	0.03	0.72	0.02	0.03	0.76
# of CGs				0.04	0.03	1.25	0.04	0.03	1.33	0.04	0.03	1.25	0.04	0.03	1.23
Caregiver Employment				0.00	0.02	0.12	0.00	0.02	-0.14	0.00	0.02	-0.15	0.00	0.02	-0.15
Number of Dependents				0.00	0.01	-0.17	0.00	0.01	-0.22	0.00	0.01	-0.26	0.00	0.01	-0.36
PSI Total Stress Scale				0.00	0.00	0.28	0.00	0.00	0.71	0.00	0.00	0.43	0.00	0.00	0.43
Baseline SDQ-Parent							0.00	0.00	-1.25	0.00	0.00	-1.10	0.00	0.00	-0.82
Baseline SDQ-Youth							0.00	0.00	-0.56	0.00	0.00	-0.83	0.00	0.00	-0.70
Problem Area							0.00	0.03	0.13	0.00	0.03	-0.01	0.00	0.03	0.01
Treatment Condition										-0.04	0.03	-1.21	-0.03	0.03	-1.03
Therapist-Reported Life Stress Frequency of ELEs in Session													0.00	0.01	-0.27
													0.00	0.01	-0.42
R <sup>2</sup>	<b>0.159</b>			<b>0.183</b>			0.211			0.230			0.233		
Adjusted R <sup>2</sup>	<b>0.135</b>			<b>0.106</b>			0.094			0.101			0.075		
<i>F</i>	<b>6.44**</b>			<b>2.39*</b>			1.81			1.79			1.47		

Note. <sup>a</sup>Therapist-reported life stressors ( $n = 71$ ), <sup>b</sup>Caregiver-reported life stressors ( $n = 23$ ), \* $p < .05$ , \*\* $p < .01$

Table 5

*Rate of Completion and Type of Termination by Treatment Condition*

Treatment Condition	Completer vs. Non-completer		Type of Termination		
	Completer <i>n</i> (%)	Non-completer <i>n</i> (%)	Routine Termination <i>n</i> (%)	Withdraw/Lost <i>n</i> (%)	Therapist/Other <i>n</i> (%)
MATCH	34(43.59)	44(56.41)	34(43.59)	24(30.77)	20(25.64)
CIT	25(41.67)	35(58.33)	25(42.37)	20(33.90)	14(23.73)

Table 6

*Multiple Regression Models for Youth Satisfaction*

Predictor	Youth Demographics			Family Characteristics			Youth Clinical Characteristics			Treatment Condition			Life Stressors and Emergent Life Events		
	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>	b	SE	<i>t</i>
(Constant)	35.05	2.28	15.38	35.80	3.13	11.44	32.38	3.91	8.27	32.02	4.12	7.77	31.28	4.37	7.16
<b>Youth Age</b>	<b>-0.65</b>	<b>0.22</b>	<b>-2.98**</b>	-0.63	0.23	-2.77	-0.52	0.25	-2.06	-0.52	0.25	-2.06	-0.50	0.26	-1.91
Youth Sex	0.92	0.98	0.943483	1.06	1.06	1.00	1.27	1.08	1.17	1.23	1.10	1.12	1.25	1.11	1.12
# of CGs				1.29	1.07	1.21	1.27	1.08	1.17	1.30	1.10	1.19	1.34	1.11	1.20
Caregiver Employment				-0.02	0.62	-0.04	-0.12	0.64	-0.18	-0.12	0.65	-0.19	-0.10	0.66	-0.15
Number of Dependents				-0.24	0.36	-0.67	-0.24	0.37	-0.67	-0.23	0.37	-0.63	-0.33	0.40	-0.84
PSI Total Stress Scale				-0.02	0.02	-0.85	-0.02	0.03	-0.60	-0.01	0.03	-0.53	-0.01	0.03	-0.27
Baseline SDQ-Parent							-0.03	0.09	-0.29	-0.03	0.09	-0.33	-0.01	0.09	-0.15
Baseline SDQ-Youth							0.13	0.09	1.53	0.14	0.09	1.55	0.16	0.09	1.71
Problem Area							0.74	1.12	0.66	0.76	1.14	0.67	0.88	1.19	0.74
Treatment Condition										0.32	1.03	0.31	0.68	1.11	0.61
Therapist-Reported Life Stress Frequency of ELEs in Session													-0.04	0.18	-0.21
													-0.23	0.27	-0.86
R <sup>2</sup>		<b>0.141</b>			0.180			0.224			0.266			0.240	
Adjusted R <sup>2</sup>		<b>0.109</b>			0.081			0.075			0.057			0.032	
<i>F</i>		<b>4.43*</b>			1.83			1.51			1.34			1.16	

Note. <sup>a</sup>Therapist-reported life stressors ( $n = 57$ ), <sup>b</sup>Caregiver-reported life stressors ( $n = 23$ ), \* $p < .05$ , \*\* $p < .01$

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