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Predicting Frequency of Treatment Visits in Community-Based Youth Psychotherapy

Lauren Brookman-Frazee, Ph.D.[1,2], **Rachel A. Haine, Ph.D.**[1,3], **Elaine N. Gabayan, M.A., M.F.T.**[3], and **Ann F. Garland, Ph.D.**[1,2]

[1] Child & Adolescent Services Research Center

[2] University of California, San Diego

[3] Rady Children's Hospital-San Diego

Abstract

The current study examines factors associated with the number of treatment visits attended by a youth and/or family, including sociodemographic variables, youth clinical characteristics and parent/family characteristics at intake, therapist characteristics, and treatment entry characteristics. A total of 57 therapists in two publicly-funded youth mental health clinics and 169 youths and parents from the therapists' combined caseloads were included in the study. Negative binomial regression was used to examine whether factors within these domains predict the number of treatment visits in this community-based sample. Both therapist and treatment entry characteristics significantly predicted the frequency of treatment visits. Specifically, youth self report of higher symptom severity and stronger parent-youth treatment goal agreement were associated with a higher number of treatment visits. Implications for research and practice are discussed.

Keywords

Community-based services; Youth psychotherapy; Treatment attendance

A majority of children and adolescents with psychiatric disorders and functional impairment are not receiving any care (e.g., Burns et al., 1995; Harrison, McKay, & Bannon, 2004; Yeh, McCabe, Hough, Dupuis, & Hazen, 2003; U.S. Department of Health & Human Services, 2001). Even among those who enter treatment, great variability exists in both the amount and type of treatment received. Further, high reported rates of premature termination are concerning (Burns, Hoagwood, & Mrazek, 1999; McKay & Bannon, 2004). For example,

Lauren Brookman-Frazee, Ph.D., Assistant Professor, University of California, San Diego Department of Psychiatry, Child & Adolescent Services Research Center, 3020 Children's Way MC 5033, San Diego CA 92123; 858-966-7703 (telephone), 858-966-7704 (FAX), lbrookman@ucsd.edu.
Rachel A. Haine, Ph.D., Assistant Research Scientist, Child & Adolescent Services Research Center, Rady Children's Hospital-San Diego; 3020 Children's Way MC 5033, San Diego CA 92123; 858-966-7703 (telephone), 858-966-7704 (FAX), rhaine@casrc.org.
Elaine N. Gabayan, M.A., M.F.T., Rady Children's Hospital-San Diego; 3020 Children's Way, San Diego CA 92123; 858-966-7703 (telephone), 858-966-7704 (FAX), egabayan@rchsd.org.
Ann F. Garland, Ph.D., Professor, University of California, San Diego Department of Psychiatry; Deputy Director, Child & Adolescent Services Research Center, Rady Children's Hospital-San Diego; 3020 Children's Way MC 5033, San Diego CA 92123; 858-966-7703 (telephone), 858-966-7704 (FAX), agarland@casrc.org.

the average length of care in urban settings has been reported to be as low as 3–4 visits with only nine percent of families still attending after three months of treatment (McKay & Bannon, 2004; McKay, Harrison, Gonzales, Kim, & Quintana, 2002). Rigorous examination of the service use patterns for youths in public sector treatment settings and determinants of patterns of use are high priorities for children's mental health services research (National Advisory Mental Health Council, 2001). Unfortunately, there has been minimal research characterizing treatment patterns in community-based service settings (Bickman, 2000; Weisz, Jensen-Doss, & Hawley 2006).

Consistent and sustained treatment attendance is assumed to be an important prerequisite for effective care; however, community-based clinicians identify inconsistent patient attendance and engagement as considerable challenges in providing effective care to families (Quinn, Epstein, & Cumblad, 1995). This is consistent with research indicating that approximately half of families who receive mental health services terminate prematurely (see Nock & Ferriter, 2005). Treatment attendance has been conceptualized in number of different ways including continuation of treatment (e.g., the number of treatment sessions attended, number of sessions cancelled) and premature termination (e.g., whether the family dropped out of treatment, clients' unilateral decision to end treatment) (Nock & Ferriter, 2005; Shuman & Shapiro, 2002). It has been noted that studies identifying predictors of premature termination have reached different conclusions based on their definition of treatment drop-out (Kazdin, 1996). However, the number of sessions attended and treatment drop-out have been shown to be highly correlated, and similar factors have predicted these measures of treatment attendance within the same study (e.g., Nock & Kazdin, 2001; Shuman & Shapiro, 2002).

Although some inconsistencies exist across findings, overall, the previous research has documented that several child and family sociodemographic and clinical factors are associated with treatment attendance. Ethnic minority status and low socioeconomic status, for example, are associated with poorer attendance in child therapy (Armbruster & Fallon, 1994). Further, the presence of parent psychopathology and stress has been associated with fewer treatment sessions attended and higher rates of premature termination (Armbruster & Kazdin, 1994; Nock & Kazdin, 2001). Lastly, poorer child functioning and more severe symptoms and behavior problems are also associated with poorer attendance and premature termination (e.g., Kazdin, Mazurick, & Bass, 1993; Kazdin, Mazurick, & Siegel, 1994).

In addition to the sociodemographic and clinical characteristics that are associated with treatment attendance, parent and child expectations about treatment have also been found to be related to treatment attendance. Specifically, Nock and Kazdin (2001) report that parents who report very high or very low expectations about treatment are likely to attend more sessions and are less likely to drop out of treatment, suggesting a complex relationship between parents' beliefs about treatment and treatment attendance. The authors hypothesize that this finding may be explained by two distinct processes occurring for families, such that families with high expectations may attribute therapeutic change to the therapy itself and those with low expectations are least likely expect change to occur, both resulting in continued attendance when change occurs.

While inconsistent patient attendance is not a new problem, it takes on increased significance given the current pressure to implement evidence-based practices in community-based treatment settings and the implicit assumption that patients will attend treatment consistently until completion. Several gaps exist in our knowledge base regarding attendance in community-based, publicly-funded outpatient mental health services. For example, one gap in the extant literature is the limited range of factors examined as determinants of treatment attendance. Current models of mental health service utilization emphasize the interaction of multidimensional factors that are likely to influence service use,

including individual child characteristics, parent and family characteristics, and the broader community context, as well as service delivery system or treatment variables (Costello, Pescosolido, Angold, & Burns, 1998; Srebnik, Cauce, & Baydar, 1996). Studies that utilize administrative data (e.g., billing information) to examine correlates of treatment data (e.g., Laitinen-Krispijn, Van der Ende, Wierdsma, & Verhulst, 1999) are limited to an examination of basic clinical, demographic, or fiscal variables. Existing research, however, indicates that parent expectations about treatment are also important to attendance and, more broadly, to participation in treatment (Nock & Kazdin, 2001). These findings suggest that family treatment entry characteristics are important factors in treatment attendance. A second gap in the extant literature is the limited information available regarding the interplay between client characteristics, therapist characteristics, and treatment variables in the prediction of treatment attendance. To address these two gaps, the current study includes several therapist characteristics (discipline, theoretical orientation, and length of experience) and characteristics of the treatment itself (agreement on treatment goals, expectations about treatment) that are associated with treatment process and outcome (Garland, Lewczyk-Boxmeyer, Gabayan, & Hawley, 2004; Garland, Haine, & Lewczyk-Boxmeyer, 2007; Nock & Kazdin, 2001) and may provide important information about variability in attendance in publicly-funded youth mental health clinics.

A third gap in the existing literature involves the settings in which studies of treatment attendance have been conducted. While recent attention has been given to treatment attendance in studies of care provided in the public sector (see studies by Mary McKay and colleagues), much of what we know about treatment attendance is based on studies of families receiving care in specialized university-affiliated clinics (e.g., Kazdin & Wassell, 2000). Findings from research-based intervention studies employing a specified treatment protocol or modality may not generalize to “usual care” where there may be significantly greater variability in treatment attendance and even in the definitions of treatment onset and completion. For example, the average number of treatment sessions attended in research studies (11 sessions; Weisz, Doss, & Hawley, 2005) is higher than in usual care (3–4 sessions; McKay & Bannon, 2004; McKay et al., 2002). Further, clinical and demographic characteristics, as well as youth and family treatment motivation, differ for the population attending usual care services compared to those attending university-affiliated clinics (Hawley & Weisz, 2002; Southam-Gerow, 2003). Given the importance of understanding treatment attendance in the context of public sector mental health services, descriptive studies of community treatment samples are needed. Further, most existing studies on treatment attendance have focused on the treatment of child externalizing disorders (Nock & Ferriter, 2005). While a majority of youths presenting for mental health care in community settings do have externalizing psychiatric diagnoses, community care is not limited to these diagnoses (Garland, Hough, McCabe, Yeh, Woods, & Aarons, 2001). A fuller picture of factors associated with attendance for youths with a broad range of diagnoses is needed. Therefore, the current study includes a heterogeneous group of participants with various diagnoses who are representative of the population of youths who received usual care in publicly-funded mental health clinics in a large urban area.

The current study examines factors associated with treatment attendance in community-based, publicly-funded services. As noted above, a number of methods to operationalize attendance exist. In community-based settings, treatment protocols with specific start and end dates of treatment are not necessarily imposed and great variability is seen in the consistency of clients’ attendance. Since premature termination and drop-out are not clearly defined in these settings, the frequency of treatment visit attendance is used as the primary outcome variable. The frequency of treatment visits outcome variable, which consists of a count of the number of sessions attended, has been used in previous studies of treatment attendance (e.g., Nock & Kazdin, 2001). In the current study, this count of number of

sessions was obtained through county billing data, providing an objective, broad measure of participation in treatment that can be helpful for understanding variability in families' attendance. Such understanding can assist community providers in tailoring intake procedures and clinician practices to promote the optimal attendance indicated for each family.

Overall, the current study is designed to address the gaps in the literature on treatment attendance and ultimately increase clinicians' and researchers' ability to improve attendance rates in community-based treatment settings by examining factors associated with variability in the frequency of treatment visits. We examine a number of the factors that have been identified as significantly related to various measures of treatment attendance (sociodemographics, child/family characteristics) in previous research, as well as measures that have not typically been examined (therapist and treatment entry characteristics).

Method

Sample

The participants in the current study are drawn from 170 families of youths ages 11 to 18 receiving publicly-funded outpatient mental health treatment in one of two participating community mental health clinics in San Diego County. All youths were entering a "new episode" of outpatient treatment, defined as receiving no treatment by that provider or in that clinic for the previous six months. Youths with any diagnoses according to the Diagnostic and Statistical Manual (DSM-IV; American Psychiatric Association, 2000) were included to obtain a representative sample of youths receiving publicly-funded mental health services (except those with significantly compromised ability to complete study questionnaires, namely those with mental retardation or acute psychosis). The study was approved by the human subjects protection committees at Rady Children's Hospital-San Diego and the University of California, San Diego.

Youth and parent participants—The 169 youths included in the current study were a mean age of 13.6 years (*SD* = 2.0) and included 63% males (one participant was excluded because of missing data). Forty-six percent self-identified as Caucasian, 17% as Latino, 14% as African American, .6% Filipino/a, 2% Native American, .6% Pacific Islander, 18% as multi-ethnic, and 2 % other ethnicity. Twenty-five percent of the youths lived with both parents; 55% lived with one parent; 20% lived in foster care (kinship or non-kin) The parents interviewed included 157 (93%) mothers or other female caregivers and 12 (7%) fathers or other male caregivers, ranging in age from 19 to 78 (*M* = 43.9, *SD* = 10.5). Thirty-nine (23%) youths had multiple diagnoses. Family income and youth primary diagnosis are listed in Table 1.

Clinician participants—The clinician participants included 57 therapists providing treatment in one of two publicly-funded youth mental health clinics in the region; 75% were female, ranging in age from 24 to 53 years (*M* = 32.3; *SD* = 7.2). Twenty-six percent held doctoral level degrees (Ph.D., Psy.D., M.D.); 44% held master's level degrees (M.S.W., M.F.C.C., M.F.T., M.A.); and 30% held bachelor's level degrees (B.A., B.S.). Fifty nine percent identified themselves as Caucasian, 18% as Latino, 14% as Asian American, 4% as African American, and 5% as multi-ethnic or other ethnicity. Sixty percent were employed as clinic staff and 40% were trainees (including graduate students and post graduates who were accruing hours for licensure and were required to have ongoing supervision by licensed staff). Therapist professional discipline, self report of primary theoretical orientation, and years of experience are listed in Table 1.

Treatment—The treatment delivered in this study consisted of outpatient psychotherapy provided in two publicly-funded, community-based mental health clinics in San Diego County. No specific treatment protocol was employed; however, weekly treatment visits was the standard model of session frequency for psychotherapy in these clinics. While utilization reviews were conducted every six months (via clinician assessment of medical necessity), there was no uniform definition of treatment completion and no restriction on the number of visits imposed by the public funding mechanism. Treatment was funded through Medicaid funding. As such, treatment was provided free of charge to the families.

Procedure

Baseline measures were collected from 2000–2002 through in-person interviews as sequentially-recruited eligible youths entered a new episode of treatment at one of the participating mental health clinics. Follow-up measures were obtained six months after baseline, regardless of whether the youth was still receiving mental health treatment. This timeframe was selected as it is consistent with the six-month utilization review process employed in the clinics. The primary caregiver (either biological, adoptive, or foster parent) responded to all parent interview questions. Informed written and verbal consent and assent were obtained prior to the interview from all participants, and all participants were paid $20 for their participation in each interview, which lasted approximately one hour.

Measures

Five categories of predictor variables were included in this study: (1) parent/youth sociodemographics, (2) youth clinical characteristics at intake, (3) parent/family characteristics at intake, (4) therapist characteristics, and (5) treatment entry characteristics. The outcome variable was number of therapy visits attended over the six-month period, which was obtained from administrative billing data. These visits represent individual and/or family psychotherapy sessions (as opposed to medication management, case management, or collateral care).

Parent/youth sociodemographics—Youths reported on their age, gender, and race/ethnicity; parents reported on family income.

Youth clinical characteristics—Youth clinical characteristics at intake included DSM-IV diagnoses per primary clinician report following intake, symptoms, and functional impairment. Youth internalizing and externalizing symptoms were assessed utilizing the parent-reported Child Behavior Checklist (CBCL) and the youth-reported Youth Self Report (YSR) and their accompanying scoring programs (Achenbach, 1991a, 1991b). The CBCL and YSR are commonly-used measures of youth symptomatology with well-established reliability and validity (Achenbach, 1991a, 1991b). Reliability estimates using Cronbach's alpha are .96 for the CBCL (Achenbach, 1991a) and .95 for the YSR (Achenbach, 1991b). The Vanderbilt Functioning Index (VFI) was used to assess youth and parent reports of youth functional impairment (Bickman, Lambert, Karver, & Andrade, 1998). Reliability estimates using Cronbach's alpha for parent and youth reports of the VFI at baseline were both .75 in the current sample, and the validity of the VFI has been documented (Bickman, et al., 1998).

Parent/family characteristics—The Center for Epidemiologic Studies-Depression Scale (CES-D) was used to assess parental symptoms of depression (Radloff, 1977). The CES-D has exhibited adequate validity in the general population across multiple racial/ethnic groups, and yielded a Cronbach's alpha of .93 in the current sample. The Caregiver Strain Questionnaire (CSQ) was used to assess the impact of caring for a child with emotional or behavior problems (Brannan, Heflinger, & Bickman, 1997). The CSQ has exhibited

adequate validity across multiple racial/ethnic groups (McCabe, Yeh, Lau, Garland, & Hough, 2003) and yielded a Cronbach's alpha of .93 in the current sample. The Family Relationship Index (FRI), a subscale of the Family Environment Scale, was used to assess the quality of family relationships based on both parent and youth report (Holahan & Moos, 1983), including subscales on family cohesion, appropriate emotional expression, and family conflict. The FRI has demonstrated good construct validity (Hoge, Andres, Faulkner, & Robinson, 1989), and reliability estimates for parent and youth reports of the FRI at baseline were .78 and .73, respectively. For the CESD and CSQ, higher scores represent higher levels of problems. For the FRI, higher scores represent better family functioning.

Therapist characteristics—Therapist characteristics were based on therapist self report during the baseline interview and included, (1) discipline (marital and family therapy, psychology, psychiatry, or social work), (2) primary theoretical orientation (family systems, behavioral/cognitive-behavioral, or other including psychodynamic, humanistic, eclectic), and (3) years of experience. Discipline and primary theoretical orientation were recoded into dummy-coded variables using the largest group as the reference group; this recoding allows for the regression analyses to include comparisons between all groups within each therapist characteristic (Aiken & West, 1991).

Treatment entry characteristics—Treatment goal agreement was determined by agreement on at least one treatment goal between parent/youth, parent/clinician, or clinician/youth agreement as measured in an open-ended question at treatment intake. Treatment goals were coded by two psychologists who achieved strong reliability as reported in Garland et al., (2004). Potential treatment goals reflected the five outcome domains defined by Hoagwood and colleagues (1996), including symptoms, functioning, consumer perspectives (e.g., enjoy therapy), environment (e.g., have a more peaceful home life), and systems (e.g., appropriate school placement). Treatment expectations were collected at baseline using two Likert-type scale questions for each informant (parent and youth) assessing their expectation that treatment would be beneficial or a waste of time (reverse scored). To assess previous counseling, parents reported whether their child had received counseling services prior to this treatment episode in the last three months.

Analysis Plan

The association between the predictor variables and number of visits were analyzed using negative binomial regression given that the outcome variable, number of visits, is in the form of a count, which has a highly skewed distribution. Although Poisson regression is often used for this type of outcome, the variance exceeded that which is assumed under Poisson regression and thus was over-dispersed. Negative binomial regression modifies the Poisson model to allow for greater variance, and therefore provides a much better fit to the data. Preliminary analyses of the bivariate associations between predictor variables within each domain (sociodemographic, youth clinical, parent/family, therapist, and treatment entry characteristics) and treatment visits were conducted. To account for the data as nested within therapist, the SAS GENMOD Procedure was utilized with therapist ID as a class variable. Predictors that were significantly related ($p \leq .05$) to number of visits in the preliminary bivariate analyses were then entered into the final multivariate model. This is a useful methodology for selecting variables for multivariate analyses when sample size is limited and there is not enough power to enter all variables of interest into the model. This procedure has been used in previous studies of community care (Garland, Haine, & Lewczyk Boxmeyer, 2007; Leslie, Landsverk, Ezzet-Lofstrom, Tschann, Slymen, & Garland, 2000; McCabe, 2002).

Results

Please see Table 1 for descriptives on all study variables. Approximately half of the youths in this study lived in a home with a family income below $35K. On average, youths scored above the established clinical cutoff on the CBCL (*M*=67.2), indicating clinically significant symptoms according to parent report. Likewise, they scored below the suggested clinical cutoff on both parent and youth report of family environment, indicating poor family functioning. Parents scored above the established clinical cutoff on the CESD (*M*=20.4), indicating significant symptoms of depression. There was range of therapists' years of professional experience (*M*=5.9 years). The most frequently represented professional discipline was Marital and Family Therapy (43.8% of therapists). The strongest goal agreement was between parents and clinicians with 70.4% of parent-therapist dyads agreeing on at least one goal. On average, both parents and youths endorsed positive expectations for treatment. The mean number of visits during six months was 13.8, with a range of 0 to 46 visits (*SD* = 9.4). The majority of youths (73%; *n* = 123) were still designated as "open" cases in the clinic at the end of six months.

Preliminary Analyses: Bivariate Associations between Each Predictor Variable and Number of Treatment Visits

Table 2 presents initial bivariate tests examining the associations between each factor of interest and the number of visits. As indicated in Table 2, having fewer visits was significantly associated with clinicians who were psychiatrists and a greater number of visits was significantly associated with the youth report of symptom severity on the YSR, parent report of youth functional impairment on the VFI, and parent and youth agreeing on at least one treatment goal at intake.

Primary Analyses: Multivariate Model Predicting Number of Treatment Visits

As seen in Table 3, the final regression analysis included all five significant variables from the preceding bivariate analyses. The two variables that significantly predicted number of visits in the multivariate model were youth self report of symptom severity (YSR) and parent-youth goal agreement, such that youths with higher self report of symptom severity and those who agreed with their parent on at least one treatment goal at intake had significantly more visits than youths who did not agree with their parents on treatment goals. Analyses comparing the 140 youths included in the multivariate model to the 30 youths excluded (due to missing data) on demographic variables did not detect any significant differences with the exception of youth gender (a higher proportion of boys were in the excluded group compared to the included group).

Exploratory Analyses of Associations among Predictor Variables

To further understand the findings of the multivariate analyses in a broader context, we conducted bivariate analyses among predictors to assess for patterns of overlap between the domains (i.e., child and family sociodemographics, youth clinical characteristics, parent/family characteristics, therapist characteristics, and treatment entry characteristics) explored. For example, we were interested in whether sociodemographic variables were associated with treatment entry characteristics given that parent-youth goal agreement was significantly associated with the number of treatment visits. However, results indicated no patterns of association across the different domains that added to the interpretation of the findings.

Discussion

The current study examined predictors of number of treatment visits attended in publicly-funded, community-based outpatient youth psychotherapy. The average number of treatment

visits attended was 13.8. Interestingly, this is somewhat similar to the average number of visits (11.4) found across other research studies (Weisz et al., 2005), but higher than some reports of average attendance of only three to four visits in community-based clinics (McKay & Bannon, 2004; McKay et al., 2002). Significant predictors of number of visits were found within two domains examined in the multivariate model, youth clinical characteristics and treatment entry characteristics. Youths self report of higher symptom severity and stronger parent-youth treatment goal agreement were associated with a higher number of treatment visits. These findings provide important information for treatment planning in community-based settings and directions for future research.

Youth clinical characteristics

The finding that youth self report of symptom severity was positively associated with frequency of visits highlights the role of assessing adolescents' perspectives on their problems. The positive association between youth report of symptoms and frequency of visits is inconsistent with previous research on premature termination of treatment, which has found that greater parent and teacher-reported symptom severity were associated with higher drop-out rates for children ages 5–13 (e.g., Kazdin, Mazurick, & Siegel, 1994). This discrepancy may be due to the inclusion of youth self-reported symptoms and the older ages of the participants in the current study. It is likely that treatment attendance for adolescents, in particular, requires a certain level of awareness of symptoms by the adolescents themselves. It may be important for clinicians to explicitly target youths' perspectives on their symptoms to increase their motivation for treatment. If an adolescent denies or minimizes symptoms, strategies aimed to increase motivational distress may be warranted to increase the likelihood that the youth will attend treatment and engage in the overall process.

Treatment entry characteristics

Another significant predictor of frequency of visits was in the domain of treatment entry characteristics. Specifically, parent-youth agreement on treatment goals independently predicted number of visits. While therapeutic relationship characteristics (e.g., therapeutic alliance) have previously been identified as significant predictors of treatment drop-out in community mental health services (Garcia & Weisz, 2002), it is interesting that our study found that parent-youth, rather than clinician-youth, goal agreement significantly predicted frequency of visits. Previous studies on multi-stakeholder treatment goal agreement indicate that agreement, in general, is relatively poor, especially between parents and children (Garland et al., 2004; Hawley & Weisz, 2003). Those families with agreement may represent stronger motivation for treatment, or generally better family functioning, which may, facilitate treatment attendance. If the parent and youth agree on treatment goals, there may be fewer struggles to get the youth to treatment. This finding reinforces the need for clinicians to be skilled in assessing youth and parent treatment goals, and facilitating parent/youth goal agreement in the early stages of treatment to promote attendance. Explicit attention to clients' goals and expectations for treatment has been identified historically as an important component of effective care (Frank, 1973), but this finding specifies the need to address parent/youth agreement in goals.

Sociodemographic, clinical, and family characteristics

It is important to note that variables within the other 3 domains measured (sociodemographics, youth clinical, and parent/family characteristics) were not significantly associated with frequency of treatment visits. It is possible that the role of demographic characteristics in predicting treatment attendance may be minimized in public service samples that tend to be more homogeneous on some socio-demographic variables (e.g., socio-economic status). The findings also suggest that significant symptomatology and youth/family functioning do not increase or decrease the likelihood that youth attend more

sessions. Rather, youth and family characteristics specifically related to treatment (e.g., agreement on the goals of therapy) appear to be more important predictors and highlight the importance of the engagement process early in treatment aimed at identifying mutually agreed-upon goals.

Strengths and limitations

While much of previous research in the area of treatment attendance has focused exclusively on one domain of predictors such as family sociodemographics, youth clinical characteristics, or therapeutic process, the current longitudinal study examines these factors simultaneously using multivariate analyses, and is the first to examine factors such as agreement on treatment goals. However, there are several variables not measured in this study that may be important to include in future studies, such as client-clinician race/ethnic or gender matching and therapeutic alliance. Previous research on attendance in substance abuse treatment for adolescents has shown that both youth-clinician gender and ethnic matching is associated with longer duration of treatment (Wintersteen, Mensinger, & Diamond, 2005). While the current study did examine goal agreement between clinicians and youths, it did not include subjective measures of perceived therapeutic alliance. In previous studies of treatment attrition or premature termination, therapeutic alliance has been identified as an important factor (Garcia & Weisz, 2002). The relationship between therapeutic alliance and treatment attendance is an important area for future studies. Further, this study did not examine issues related to practical support that may impact treatment attendance. For example, issues regarding transportation and child care for other children in the family have the potential to impact whether a family attends treatment. Also, beyond examining self report of race/ethnicity, this study did not examine cultural issues (e.g., level of acculturation, attitudes/beliefs about mental health care) that may be important to treatment attendance. Future research examining these factors can facilitate our understanding of variability in treatment attendance. We do not know about the nature of the therapy provided, such as who attended the visits and what primary therapeutic techniques were utilized. Future research on youth psychotherapy process in community settings can provide important information on the types of psychotherapeutic strategies associated with greater number of visits. (e.g., Garland, Hurlburt, & Hawley, 2006).

While studies of treatment attrition have distinguished between clients who have “completed” therapy and those who have not, there is no clear agreed-upon definition of treatment completion in community-based youth psychotherapy practice. Therefore, this study did not make distinctions between treatment dropouts and completers. This study is limited in that no information was gathered from clinicians or clients on whether termination was planned or unplanned. Instead, the current study focused on explaining the variability in the frequency of treatment visits as a broad-based, objective measure of treatment attendance that is useful when there is no established end of treatment. The related concept of premature termination (or drop out) is important. More detailed research is needed to examine reasons for ending treatment to prevent premature termination in community-based care. It is also important to note that the current study did not focus on identifying or predicting the optimal number of treatment visits in community-based youth psychotherapy, which is another important area for future studies.

Clinical implications

This study highlights the complexity and uncertainty involved in predicting variability in the frequency of treatment visits, as well as provides some important markers associated with a greater number of visits in community-based outpatient youth mental health care. This valuable information can be incorporated into clinical decision-making and treatment planning at the outset of treatment. For example, the findings indicate that clinician attention

to youths' initial perspective on symptoms may be an important area for focus early in treatment to increase attendance. In addition, this study highlights the importance of considering the entire family system in youth psychotherapy. Given that parent-youth treatment goal agreement was an important predictor of number of visits, clinicians can specifically target parent-youth goal identification and agreement as a method to improve attendance. Explicit attention to identifying client expectations and goals in treatment has long been encouraged as a way of improving treatment engagement and outcomes (Kazdin & Wassell, 1999). While one would expect that the relationship between the clinician and youth is key to keeping youths in treatment, the results of the current study indicate that the parent-youth relationship regarding treatment is important to focus on to promote attendance.

In community clinics, treatment attendance may mediate outcome. For clinicians, improving treatment attendance is essential to have time to build an alliance and implement techniques to improve outcomes. From a fiscal standpoint, high no-show rates are very problematic. Current and future studies focused on interventions to improve treatment attendance and prevent premature drop-out in community-based clinics, offer very promising strategies to improve treatment engagement and reducing barriers to treatment (e.g., McKay & Bannon, 2004; Nock & Kazdin, 2005).

Implications for research

Treatment efficacy and effectiveness research is heavily influenced by treatment attendance given the crucial role that attendance plays in participant enrollment, treatment, and post-treatment follow-up. For example, treatment adherence requires that clients attend treatment with a specified frequency and duration. Inconsistent attendance may influence both the efficacy of the treatment delivered and the validity of the study findings. As more research is conducted in community-based settings, treatment attendance is an important consideration. To date, little is known about community-based, usual care psychotherapy practices. Descriptive research may answer a number of questions that follow from the results of this study, including: "How do therapists of different disciplines and theoretical orientations manage issues related to treatment attendance?"; "What is the optimal number of visits associated with the greatest change in symptoms and functioning in community-based psychotherapy?"; and "What psychotherapeutic strategies are associated with the optimal number of treatments visits?".

Summary

This study examines predictors of frequency of treatment visits across multiple domains based on a prospective study with youths and families in community-based services. Therapists and administrators lament the challenges of consistent attendance for clinical effectiveness and administrative/fiscal reasons. Research identifying predictors of attendance may point to important interventions to reduce inconsistent attendance and/or premature termination of treatment.

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Table 1

Descriptives for All Study Variables.

Variable	*M* (*SD*) or %	Range
Sociodemographics		
Youth age	13.6 (2.0)	11 – 18
Youth male gender	62.7%	
Youth racial/ethnic minority status	54.4%	
Family income		
< 15K	28.7%	
15K – 30K	23.2%	
30K – 45K	15.9%	
> 45K	32.3%	
Initial Clinician-Assigned Diagnoses		
Externalizing Disorder	48.5%	
Mood Disorder	47.3%	
Anxiety Disorder	11.2%	
Youth Clinical Functioning at Intake		
CBCL – Total T-score	67.4 (9.5)	41 – 88
YSR – Total T-score	57.1 (13.5)	24 – 95
VFI Total – Parent	30.5 (17.1)	0 – 71.4
VFI Total – Youth	22.2 (18.2)	0 – 93.3
Parent/Family Characteristics at Intake		
FRI Total – Parent	6.5 (5.0)	−6.0 — 16.7
FRI Total – Youth	5.9 (4.6)	−4.7 — 16.0
CESD Total – Parent	20.4 (13.0)	0.0 – 50.0
CSQ Mean Item Score – Parent	2.9 (0.8)	1.1 – 4.8
Therapist Discipline		
Marital and Family Therapy	43.8%	
Psychology	10.1%	
Psychiatry	24.9%	
Social Work	21.3%	
Therapist Orientation		
Family Systems	36.1%	
Behavioral/Cognitive-Behavioral	15.4%	
Other	48.5%	
Therapist Years of Experience	5.9 (5.4)	0.6 – 34
Goal Agreement		
Parent-youth agree on > 1 goal	63.9%	
Parent-clinician agree on > 1 goal	70.4%	
Clinician-youth agree on > 1 goal	62.1%	
Positive Treatment Expectations		
Parent	3.53 (0.5)	2 – 4

Variable	*M* (*SD*) or %	Range
Youth	3.32 (0.6)	1.5 – 4.0
Outpatient counseling in past 3 months	91.1%	
Number of visits at 6-month follow-up	13.8 (9.4)	0 – 46

Note: The sample size for each variable is between 164 and 169, with the exception of the CBCL (*n* = 144) and the YSR (*n* = 140), which have missing data due to administrative error. CBCL = Child Behavior Checklist (clinical cutoff = 64; Achenbach, 1991a); YSR = Youth Self-Report (clinical cutoff = 64; Achenbach, 1991b); VFI = Vanderbilt Functional Impairment Scale (no clinical cutoff available); FRI = Family Relationship Inventory (suggested clinical cutoff = 9; Edwards & Clarke, 2005); CESD = Center for Epidemiological Studies - Depression Scale (clinical cutoff = 16; Radloff, 1977); CSQ = Caregiver Strain Questionnaire (no clinical cutoff available). “Other” theoretical orientation includes Psychodynamic (16.6%) and Eclectic (32.0%) orientations that were collapsed for the analyses.

Table 2

Initial Bivariate Relations with Number of Visits Using Negative Binomial Regression.

Factors		Rate Ratio	95% Confidence Limits
Sociodemographics			
Youth age		0.973	0.922–1.027
Youth gender		1.016	0.835–1.236
Youth race/ethnicity (Caucasian vs. Other)		0.996	0.778–1.274
Family income[a]		1.054	0.976–1.139
Youth Clinical Characteristics at Intake			
Clinician Diagnosis:	Externalizing Disorder	1.170	0.944–1.540
	Mood Disorder	0.895	0.735–1.090
	Anxiety Disorder	1.102	0.846–1.435
Symptom severity:	CBCL – Total T-score	1.010	0.997–1.022
	YSR – Total T-score	1.010**	1.003–1.018
Impairment:	VFI Total – Parent	1.007*	1.001–1.013
	VFI Total – Youth[b]	1.057	0.998–1.120
Parent/Family Characteristics at Intake			
Family relationship:	FRI Total – Parent	0.992	0.975–1.009
	FRI Total – Youth	0.987	0.964–1.011
Parental depression:	CES-D Total – Parent	0.998	0.991–1.005
Caregiver strain:	CSQ Mean Item Score – Parent	1.084	0.969–1.212
Therapist Characteristics			
Discipline:[c]	Psychology	0.855	0.626–1.170
	Psychiatry	0.688*	0.474–0.998
	Social Work	1.295	0.990–1.694
Primary orientation:[c]	Behavioral/Cognitive Behavioral	0.917	0.628–1.338
	Other	1.081	0.824–1.419
Years of experience[d]		1.095	0.938–1.279
Treatment Entry Characteristics			
Goal agreement:	Parent-youth agree on ≥ 1 goal	1.349**	1.095–1.662
	Parent-clinician agree on ≥ 1 goal	1.107	0.895–1.368
	Clinician-youth agree on ≥ 1 goal	0.952	0.779–1.165
Positive expectations:	Parent[b]	1.027	0.849–1.243
	Youth[b]	0.976	0.806–1.181
Outpatient counseling in past 3 months		0.962	0.771–1.201

Note: Rate ratios represent the rate of visits for one unit increase in continuous predictors and between the two groups in dichotomous predictors. The sample size for each analysis is between 164 and 169, with the exception of the CBCL (n = 144) and the YSR (n = 140), which have missing data due to administrative error. CBCL = Child Behavior Checklist; YSR = Youth Self-Report; VFI = Vanderbilt Functional Impairment Scale; FRI = Family Relationship Inventory; CESD = Center for Epidemiological Studies - Depression Scale; CSQ = Caregiver Strain Questionnaire.

* $p < .05$;

** $p < .001$

[a] Family income is coded as follows: 1 = < 15K; 2 = 15K – 30K; 3 = 30K – 45K; 4 = > 45K.

[b] Square root transformation.

[c] Marital and Family Therapy was used as the reference group for discipline and Family Systems was used as the reference group for orientation as they represented the largest groups of clinicians.

[d] Natural log transformation.

Table 3

Multivariate Negative Binomial Regression Predicting Number of Visits (n = 140)

Predictors	Rate Ratio	95% Confidence Limits
Youth Clinical Characteristics at Intake		
YSR – Total T-score	1.010*	1.001–1.019
VFI Total – Parent	1.001	0.995–1.007
Therapist Characteristics[b]		
Psychology Discipline	0.767	0.542–1.085
Psychiatry Discipline	0.717	0.511–1.008
Social Work Discipline	1.238	0.947–1.620
Treatment Entry Characteristics		
Parent-youth agree on > 1 goal	1.512**	1.206–1.895

Note. Rate ratios represent the rate of visits for one unit increase in continuous predictors and between the two groups in dichotomous predictors. YSR = Youth Self-Report; VFI = Vanderbilt Functional Impairment Scale.

* $p < .05$;

** $p < .001$

[b] Marital and Family Therapy was used as the reference group as it represented the largest group of clinicians.