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Motivation for Youth's Treatment Scale (MYTS): A New Tool for Measuring Motivation Among Youths and Their Caregivers

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Abstract

Treatment motivation can be important for treatment adherence and outcomes, yet few measures of motivation are available for youths in mental health settings. These authors describe the psychometric properties of the motivation for youth's treatment scale (MYTS), an 8-item measure with forms for youths and caregivers that assesses their problem recognition and treatment readiness. Results indicate that the MYTS offers practitioners and researchers a brief, psychometrically sound tool for assessing treatment motivation of youths and their caregivers. Multivariate analyses of clinical and non-clinical characteristics of youths and caregivers show that youths' symptom severity consistently predicts treatment motivation for both groups. However, the strain of caring for the youth adds significantly to caregivers' recognition of the youth's troubles. While caregiver and youth motivations correlate, their agreement is low. Caregivers are nearly always more treatment motivated than youths. The authors discuss the implications of their findings for measurement, treatment planning, and future research.

Keywords

Treatment motivation; Caregiver motivation; Treatment readiness; Predictors of motivation; Youth therapy

Introduction

Youth commonly come to treatment pressured by parents, schools, or the judicial system. Yet, some (e.g., DiClemente and Prochaska 1998) suggest that such external pressures are inadequate to effect the treatment adherence required for positive clinical outcomes (McMurran et al. 2006; Breda and Heflinger 2004; Simpson 2001; DiClemente and Prochaska 1998; Ryan et al. 1995; DeLeon et al. 1994). Thus, one focus of therapy is to transform external pressures into intrinsic motivation to seek and stay in treatment.

Definitions of treatment motivation generally include some aspect of the readiness among individuals to change their behavior (Prochaska 1995; Melnick et al. 1997). For example, the stages of change model (Prochaska 1995), which can be applied to substance use and mental health populations, identifies five phases through which one may progress (and regress) throughout the treatment process: precontemplation (not yet ready to recognize a problem), contemplation (willing to recognize a problem but not ready to commit to

change), preparation (intention to take action), action (overt actions toward change), and maintenance (continuing change behaviors). Of course, not all stages, such as action and maintenance, are necessarily applicable for understanding motivations at the onset of treatment. And the stage of change one is in at the start of treatment can affect the level of one's readiness to change during treatment (Prochaska 1995).

Research on treatment motivation offers some compelling evidence of its importance for seeking treatment, staying in treatment, and improving treatment outcomes (Nock and Photos 2006). However, most of this research has been conducted with adults, or adult substance abusers, or as part of evaluations of specialized programs directed toward helping substance abusers (e.g., motivation enhancement therapy; motivational interviewing). Little research on treatment motivation has been done with youths. And, what little research with youths has been done has largely focused on substance-abusing youths (e.g., Cady et al. 1996) often in residential placements (e.g., Melnick et al. 1997). Less is known about intrinsic motivation among youths with a variety of mental health needs in community-based settings.

Moreover, findings from the extant research on the correlates of youths' treatment motivation have been mixed. Melnick et al. (1997) found that age, race, and court-mandated treatment affect adolescents' incentives to change. Yet, Battjes et al. (2003) found that age, race, gender, and mandated treatment have little relation to treatment motivation. Instead, they found mental distress, negative consequences from alcohol and drug use, and the *level* of legal pressure (but not the source) significant. Breda and Heflinger (2004) found that race relates to extrinsic motivation but not to intrinsic motivation to change, and that greater mental health severity relates to lower treatment readiness. Others (Breland-Noble et al. 2010) have found that African American adolescents are less likely to define their problems clinically than as "personal issues." Such diverse findings leave questions about what influences youths' motivation for treatment, particularly at the beginning of services when motivation for treatment can create a framework for subsequent treatment experiences.

The study of treatment motivation among youths has also been challenged by the lack of a sound measure that can be used with youths with a variety of mental health needs, especially a brief scale that clinicians can use regularly with youths and their families in diverse clinical settings. The University of Rhode Island Change Assessment (URICA; McConaughy et al. 1989, 1983) offers a 24- and 32-item measure of stages of change (Prochaska et al. 1992) that has been used with adults and youths (McMurran et al. 2006) in psychotherapy and substance abuse treatment. However, the length of the measure can make it impractical to use during treatment, especially in non-residential settings, where each session or outpatient visit may be limited to 45–60 min of therapy. The 24-item problem recognition questionnaire (PRQ; Cady et al. 1996) and the 26-item treatment motivation questionnaire (TMQ; Ryan et al. 1995) have been shown to predict various treatment outcomes among youths. However, both measures have been used with substance-abusing populations and the TMQ does not specifically assess internalized mechanisms of problem recognition and treatment readiness. With 18 items, the circumstances, motivation, readiness, and suitability scale (CMRS; DeLeon et al. 1994) is shorter than other measures. It also includes a subscale assessing treatment readiness. However, its length still may preclude regular use in clinical practice, its development and use has been largely with youths in residential services for substance use only, and while the measure's total score shows good reliability, its subscales (including treatment readiness) demonstrate relatively low reliability (Melnick et al. 1997).

Another limitation in the research on treatment motivation in youth services is the lack of attention to the motivation that the youths' caregivers have to participate in treatment (Nock

and Ferriter 2005). This is odd given that caregivers play such a vital role in identifying the youth's service needs, making services accessible, supporting treatment adherence, and participating in the treatment process (Nock and Ferriter 2005; Burns et al. 1992).

In the research that has been done on caregivers' motivation for their youth's treatment, findings about the correlates of caregivers' motivation have been mixed. In their study with parents of children 2–12 years old with conduct disorders, Nock and Photos (2006) found that parent motivation was unrelated to demographic characteristics of the youth (e.g., gender, race), parent (e.g., single parent, biological parent), and family (e.g., receives public assistance). Similarly, research has shown that parents' perceptions of treatment barriers, one of which is their perception of the relevance of treatment, did not vary by race (Kazdin et al. 1997). Yet, research with African American caregivers has found that they are reluctant to define their child's problem clinically (dosReis et al. 2007), suggesting the potential significance of race for caregivers' contemplations on whether and how to recognize the youth's problems. Too, Nock and Kazdin (2001) found that compared to others, single-parent caregivers of minority ethnic status and lower income had lower treatment expectancies, a concept distinct from but related to treatment motivation (Bickman et al. 2010). Other research on the social-psychological characteristics of caregivers has suggested that caregiver well being and family stress are barriers to treatment that predict treatment engagement and retention (Kazdin et al. 1997). Others (Mechanic 1978) have indicated that parents may be more likely to consult others about their child's emotional or behavior problems when their own anxiety is high.

These findings suggest the importance of considering a variety of caregiver characteristics in understanding treatment-related phenomena such as motivation, barriers, and engagement in treatment protocols. Yet, research specifically on the motivation of caregivers to participate in treatment, particularly at the critical time when they first present for care, remains scant and unclear.

Moreover, reliable measures of caregivers' motivation to participate in the youth's treatment are nearly non-existent. Indeed, only one measure of caregiver motivation appears in the literature, the Parent Motivation Inventory (PMI; Nock and Photos 2006). The PMI is a 25-item measure developed with caregivers of children 2–12 years old with conduct disorders. Items on the PMI assess caregivers' desire for change in the child, their willingness to change their own behavior to help the child change, and their ability to enact needed changes. The applicability of the measure with caregivers of older youths in treatment for a wider range of mental health problems has not yet been determined. Too, the length of the PMI may diminish its utility for obtaining repeated assessments of caregivers' motivation during ongoing treatment encounters (e.g., sessions).

Kazdin et al. (1997) barriers to treatment participation scale (BTPS) includes 44 items that assess parents' (and clinicians') perceptions of four categories of treatment barriers, including the perceived relevance of treatment, ostensibly an aspect of treatment readiness. However, designed as a retrospective assessment of treatment barriers, the BTPS does not offer a contemporaneous assessment at the onset of services or throughout services, the parent version has only moderate reliability (with Cronbach's alphas ranging from 0.61 to 0.80 across the four subscales; median = 0.75), does not include items that assess the caregivers' desire for change or their willingness to engage in the treatment process, and as a whole is too long to be practical for obtaining repeated assessments throughout the treatment episode.

This review suggests that there is a need for a brief and reliable measure of treatment motivation for youths as well as for caregivers that clinicians can use to assess baseline

motivations and changes in motivation throughout treatment. There is also a need to understand better the factors related to treatment motivation among youths and their caregivers. This research helps to fill these knowledge gaps by: (1) describing a new measure of treatment motivation that can be used with caregivers and youths with a variety of emotional, behavioral, or substance use problems, (2) reporting findings from extensive psychometric testing that supports the reliability and validity of the measure, (3) assessing treatment motivation among youths and caregivers at the time they present for services and the clinical and non-clinical characteristics that relate to early motivation; and (4) examining the relationship between youth and caregiver reports of treatment motivation.

Method

Sample

Participants in this research were drawn from a larger study that evaluated the effects of a measurement feedback system (contextualized feedback systems; CFS™) on treatment outcomes of youths 11–18 years old (Bickman et al. 2011). Similar to other papers in this special issue, this research utilizes two different but overlapping samples. The psychometric analysis includes the larger group of youths and their caregivers who participated in the CFS™ evaluation by completing *any one* of the clinical measures used in the evaluation. Some of these youths were already in treatment when data collection for the evaluation began while other youths entered treatment after data collection began. We call this the “psychometric” sample. Inclusion in the psychometric analyses of the MYTS, which we describe below, required the completion of at least 85% of the baseline assessment of treatment motivation. This criterion was met by 503 youths and 457 caregivers. For a more detailed description of the procedures and the full sample, see Riemer et al. (2012) in this issue. The second sample in this paper includes only those youths ($N = 197$) and their caregivers ($N = 174$) who began treatment after data collection for the evaluation began and who completed at least 85% of the baseline MYTS assessment. We call this the “analytical” sample. These baseline assessments enable us to address the substantive research questions about treatment motivation among youths and their caregivers when they first present for services, and the correlates of their early motivation for treatment.

Measures

Motivation for Youth’s Treatment Scale (MYTS)—The MYTS was developed as part of a battery of theoretically based measures called the peabody treatment progress battery (PTPB; Bickman et al. 2007, 2010). Measures are completed by clinicians, youths, or their caregivers at intake and regularly throughout treatment in order to assess and monitor change in various treatment processes (e.g., motivation, expectancies, alliance) and outcomes (e.g., symptom severity, hopefulness). A small subset of the measures are completed during sessions on alternating schedules (e.g., one measure administered at every other session; another measure, every fourth session) so that any one data collection typically takes less than 5 min.

The MYTS is an 8-item measure of intrinsic treatment motivation completed by youths and their caregivers at intake and throughout treatment. This research is based only on the baseline assessment of motivation completed at intake. Most items on the MYTS are identical on the youth and caregiver forms except for minor rewording to be appropriate for the respondent type. The MYTS generates a Total score and two subscale scores. The two subscales assess the respondent’s (1) recognition that the youth has a problem (4 items for youths; 3 items for caregivers), and (2) readiness to participate in the youth’s treatment (4 items for youths; 5 items for caregivers). All responses are rated on a 5-point likert scale, from one (strongly disagree) to five (strongly agree), with higher ratings indicating higher

motivation. Non-missing responses to at least 85% of the items associated with each scale were required in order to calculate a valid score. Items associated with the *Problem Recognition* and *Treatment Readiness* subscales are shown in Table 1.

Symptoms and Functioning Severity Scale (SFSS)—As described by Athay et al. (2012) in this issue, the SFSS is a psychometrically sound measure of the youth's emotional and behavioral symptom severity. Youths, caregivers, and clinicians complete parallel forms. Twenty-six items are rated on a likert-type scale ranging from one (never) to five (very often), with higher scores indicating greater symptom severity. The SFSS provides a Total score as well as internalizing and externalizing subscale scores. For this paper, we use only the baseline assessment that youths and caregivers provided at intake to services.

The Caregiver Strain Questionnaire–Revised Short Form (CGSQ–RvSF7)—The CGSQ–RvSF7 is a psychometrically sound, 7-item measure (Bickman et al. 2010) that assesses the strain a caregiver experiences as a result of providing for a youth with mental health needs. Strain includes the observable events that can result from handling the youth's disorder (e.g., loss of personal time, disrupted work, financial hardship) as well as the caregiver's feelings related to those events (e.g., sadness, embarrassment, guilt, anger and worry). The CGSQ–RvSF7 is completed by caregivers at intake and throughout treatment. For this research, we use only the baseline assessment provided at intake. See Brannan et al. (2012) in this issue for more details on the CGSQ–RvSF7.

Background Questionnaire—As part of the baseline assessment, youths, caregivers, and intake staff completed background forms that provide demographic information and clinical history on the youth and caregiver. For this research, we examine youth demographics (e.g., age, gender), prior treatment experience (Prior MHS), the number of problems (e.g., depression, aggressiveness) that the youth presented with at intake, whether alcohol or drug use was among the problems (AOD), and whether the current services were mandated by the court (Court-mandated). For assessing motivation among caregivers, we also consider caregiver and family demographics (e.g., gender, marital status, household income) and whether the caregiver ever received professional treatment for emotional, behavioral, or substance use problems.

Analyses

We conducted two series of analyses. The first series included extensive testing of the psychometric properties of the youth and caregiver MYTS. Multiple methods were applied including classical test theory (CTT), confirmatory factor analysis (CFA), and item response theory (IRT). These methods provide information about the scale as a whole as well as the psychometric qualities of each individual item. Internal reliability (Cronbach's alpha) was calculated for the total and two subscale scores and distributional characteristics were examined. Additionally, each item was inspected for its fit to the total scale through the use of item-total correlations. Items with a low item-total correlation may not relate to the measured construct. IRT methods (specifically Rasch modeling) result in item fit statistics that indicate how well each item fits to the applied model and where items are most precise in estimating the level of treatment motivation. IRT results also provide indices of discrimination that indicate the ability of an item to differentiate between respondents with high versus low treatment motivation. CFA was used to evaluate the measure's factorial validity. More details about the psychometric procedures are provided in Riemer et al. (2012) in this issue.

The second series of analyses addressed the substantive questions about the early treatment motivation among youths and their caregivers and the correlates of their motivation. We

used univariate statistics to show how the analytical sample is distributed across clinical (e.g., SFSS) and non-clinical (e.g., gender) variables. Means on the three MYTS scales are shown for each group (e.g., males/females). We used tests of mean differences (ANOVA) to identify statistically significant bivariate relationships between each motivation scale and the other measures. We entered statistically significant variables simultaneously into three respective multiple regression models, with each motivation scale a dependent variable. The multivariate analyses enable us to identify significant correlates of motivation while controlling for the relationships among the variables. For caregiver motivation, we use a hierarchical regression model, entering significant youth characteristics first, followed by significant caregiver characteristics. This enables us to test whether information about caregivers adds significantly to what youth variables already explain about variability in caregivers' treatment motivation.

We also examined the relationship between youth and caregiver reports of motivation. We used Pearson correlations to show the strength and direction of the relationship. Discrepancy scores were also computed based on the absolute difference between youth and caregiver scores on the total motivation scale and the two subscales. For the total motivation scale only, we also used tests of mean differences to identify the clinical and non-clinical characteristics associated with rater discrepancies in total motivation.

Finally, we conducted a supplemental analysis. The 8-item MYTS (Bickman et al. 2010) that we describe and use to address the substantive questions in this paper is a shortened version of an earlier youth and caregiver MYTS (Bickman et al. 2007) that included ten and nine items, respectively. Having two similar versions of the MYTS gives us the opportunity to repeat the analyses with each version. Similar results lend additional support for the validity of the current measure. As will be described more fully below, results using the previous and current version of the MYTS were nearly identical. For more information about the differences between measure versions and the psychometric procedures used to revise the MYTS, see Riemer et al. (2012) in this issue.

Results

Psychometrics

Internal Consistency—Cronbach's alphas (unstandardized and standardized) for the total scale and the two subscales on the youth and caregiver MYTS all exceeded the commonly accepted criterion for internal consistency of 0.80. For the youth MYTS, standardized alphas for the total score, problem recognition, and treatment readiness were 0.82, 0.84, and 0.83, respectively. For the caregiver MYTS, standardized alphas were 0.86, 0.84, and 0.89, respectively.

Total Score and Item Psychometrics—The total score and comprehensive item analyses of the MYTS for the youth and caregiver are shown in Tables 1 and 2, respectively. For youths, the mean total score was 3.08 (Range: 1–5; SD = 0.89); the mean for problem recognition was 2.69 (Range: 1–5; SD = 1.13); and the mean for treatment readiness was 3.46 (Range: 1–5; SD = 1.05). Values for kurtosis and skewness for all youth items were in an acceptable range (i.e., less than 2.0 for kurtosis and between –1.0 and 1.0 for skewness). The Rasch analysis indicated that all items demonstrated good fit (i.e., infit/outfit values between 0.60 and 1.40; Wright and Linacre 1994). The Rasch analysis also indicated that item difficulties ranged from –0.71 to 0.57. This means that MYTS items are most accurate at measuring treatment motivation at a relatively small portion of the center of the latent continuum, something not uncommon to most clinical measures (Reise and Waller 2009). Additionally, all but one item had good discrimination (i.e., values close to one)—the item (8) about the youth wanting counseling. However, because this item otherwise demonstrated

adequate properties, it is not problematic to the scale as a whole. Overall, we think items in the youth MYTS meet standard criteria for acceptability.

For caregivers (Table 2), the mean total score was 3.81 (Range: 1–5; SD = 0.76); the mean problem recognition score was 2.98 (Range: 1–5; SD = 1.18); and the mean treatment readiness score was 4.31 (Range: 1–5; SD = 0.76). Four items (4–7) in the treatment readiness subscale demonstrated a high degree of kurtosis and skewness. Thus, the range of responses by this sample to these items was restricted and generally high. The Rasch analyses indicated that item difficulties ranged from –1.13 to 1.84. All but one item (3) about the youth's problems making the caregiver's life worse demonstrated good fit to the Rasch model and adequate discrimination. This suggests that this item behaves differently from other items and does not differentiate well among caregivers with varying levels of treatment motivation. However, because of the item's content validity, the acceptable item-total correlation, and our preference for keeping items across youth and caregiver measures as similar as possible, we retained this item in the caregiver scale.

Standard Errors of Measurement (SEM)—For the youth total score, the standard error of measurement (SEM) was 0.38 points, which gives us 95% confidence that the true score is between approximately ± 2 SEMs, or 0.76 points, of the observed score on the 1–5 point scale. The SEM for the caregiver Total Score was 0.28 points, giving 95% confidence that the true score is between approximately ± 2 SEMs, or 0.56 points, of the observed score on the 1–5 point scale.

Minimum Detectable Change (MDC)—The MYTS can be used at intake and, with a slightly reworded version, periodically thereafter to assess change in treatment motivation. Upward or downward trends can alert clinicians to address issues as treatment evolves. A minimum detectable change (MDC) index can be calculated based on the standard error of measurement (SEM) and the internal reliability of the scale. The MDC identifies the smallest change in scores from one time point to the next that indicates true change has occurred; that is, that change is not due to chance or measurement error (Schmitt and Di Fabio 2004). For the youth total score, the MDC was 0.61 points with 75% confidence. This gives us 75% confidence that a difference of more than 0.61 points is not due to chance or measurement error. MDCs for the two subscales were 0.74 for problem recognition and 0.70 for treatment readiness. For the caregiver total score, the MDC was 0.47 points, giving us 75% confidence that a difference of more than 0.47 points is not due to chance or measurement error. MDCs for the two caregiver subscales were 0.77 for problem recognition and 0.41 for treatment readiness.

CFA—There are commonly agreed upon thresholds for multiple CFA indices. These include Bentler's comparative fit index (CFI) and Joreskog's goodness of fit index (GFI) of 0.90 (Browne and Cudeck 1993), and Hu and Bentler's (1999) standardized root mean square residual (SRMR) of 0.08. The results from our CFA indicated that the proposed two-factor model fit the data well for the youth MYTS (CFI = 0.97; GFI = 0.96; SRMR = 0.06) and caregiver MYTS (CFI = 0.94; GFI = 0.93; SRMR = 0.06). Significant χ^2 difference tests confirmed the superiority of the two-factor model over the one-factor model for both respondent types. Items loaded correctly on each component as theoretically expected. Standardized factor loadings ranged from 0.38 to 0.75 for the youth form and from 0.32 to 0.83 for the caregiver form. The correlation between the two components, problem recognition and treatment readiness, for youths and caregivers was $r = 0.44$ and $r = 0.43$, respectively. This suggests that the components (subscales) assess related but distinct dimensions of treatment motivation.

The results of this extensive psychometric testing suggest that the MYTS offers a brief and reliable tool that service providers and researchers can use to assess treatment motivation among youths and their caregivers. Below, we address the substantive questions about youth and caregiver motivations when they first enter treatment.

Substantive Results

Youth Motivation and Its Correlates—Table 3 shows the distribution of the analytical sample of youths and the means for each of the three MYTS scale scores (total score and the two subscale scores). The first two columns show that most youths were White (58%), non-Hispanic (89%) males (55%) between 13 and 15 years old (Mean = 14.8; SD = 1.9). The majority (89%) had received some type of mental health service prior to their intake with the current service provider. About a quarter (26%) had been mandated to treatment through the juvenile court. The average level of self-reported symptomatology was 50.2, (Range: 31.6–79.6; SD = 10.7), suggesting a moderate degree of severity. In addition to the number of problems youths presented with at intake (Mean = 7; SD = 3.6), 15% also had problems related to alcohol or drugs (AOD).

Columns 3–5 show the mean scores for total motivation, problem recognition, and treatment readiness. for the overall sample, the mean total motivation score was 3.03 (SD = 0.92). Means on the two subscales show that youths had higher levels of treatment readiness (Mean = 3.39; SD = 1.04) than of an awareness that they had a problem to treat (Mean = 2.65; SD = 1.10).

All but three of the nine clinical and non-clinical youth variables we examined correlated significantly with one or more of the motivation scales. Females and youths with more severe levels of symptomatology reported greater problem recognition and treatment readiness than males and youths with less symptom severity. Youths who reported more numerous problems at intake also had greater problem recognition. Youths mandated to services by the court and those with substance use problems (AOD) had lower problem recognition than youths who came to services through other venues (e.g., school, self/parent referral) or without substance use issues. So, while the specific problem of AOD appears to dampen motivation, having more *numerous* problems seems to heighten it.

Several of the youth characteristics that we found salient for treatment motivation (any of the three scales) correlate. For example, there is a significant association ($\phi = 0.20$; $p < 0.001$) between being court-mandated to treatment and having AOD as part of the youth's presenting problem. Multivariate regression analysis, by controlling for the relationships among variables in a model, helps identify those variables that most strongly and uniquely relate to the dependent variable of interest. Results from separate analyses of the three motivation scales are shown in Table 4. For all analyses, continuous variables are used when available (e.g., number of presenting problems, level of symptomatology) instead of the categorical presentations in the tables.

Table 4 shows that greater symptom severity consistently related to higher levels of total motivation ($\beta = 0.48$), problem recognition ($\beta = 0.61$), and treatment readiness ($\beta = 0.19$). For problem recognition, no other variable contributed significantly to its total variance (47%) explained. Gender appeared salient for treatment readiness, with females reporting higher levels of readiness than their male counterparts ($\beta = 0.24$) when effects of other variables were controlled in that model. Too, youths who had received mental health services before their current intake were significantly more motivated for their current treatment than youths new to services ($\beta = 0.15$). Together, these variables accounted for 14% of the variance in treatment readiness.

Caregiver Motivation and Its Correlates—Table 5 shows the distribution of the analytical sample of caregivers and their means on each of the three MYTS scale scores (total score and the two subscale scores). As the first two columns of the table show, most caregivers were White (69%) females (85%) between 21 and 40 years old (Range: 23–77; Mean = 40; SD = 10). Only 11 were Hispanic (not shown). Nearly half (49%) of the caregivers were married or living as married; 30% were divorced or separated; 16% were never married; and 5% were widowed. Most (73%) caregivers were the youth's birth or adoptive parent. Other caregivers were the youth's grandparent (13%), other family member (5%), a step-parent (2%), a foster parent/group home staff person (5%), or someone with another relationship to the youth (2%). Annual household income was less than \$20,000 for nearly half (47%) of the families. More than a third (35%) of caregivers reported that they had sought professional help sometime in the past for their own emotional, behavioral, or substance use problems. Based on caregiver perceptions, the mean level of youths' symptomatology was 51.6 (Range: 30.2–80.6; SD = 11.1), suggesting a moderate degree of severity.

Columns 3–5 of Table 5 show the mean caregiver scores on total motivation, problem recognition, and treatment readiness. Their mean total score was 3.92 (SD = 0.82). Means on the two subscales show that, similar to youths, caregivers on average had greater treatment readiness (Mean = 4.36; SD = 0.86) than a recognition that the youth had a problem to treat (Mean = 3.18; SD = 1.17).

Among the caregiver characteristics we examined, the strain that caregivers experienced while providing for the needs of the youth in treatment most consistently related to their treatment motivation. Greater strain was associated with greater problem recognition and treatment readiness. Similar to youths, female caregivers also reported greater treatment readiness than male caregivers, though both genders recognized the youth's problems similarly. Among the youth characteristics that relate to caregivers' motivation, greater symptom severity and more numerous presenting problems were associated with greater problem recognition and treatment readiness among caregivers. Additionally, caregivers of youths who had used mental health services in the past had greater problem recognition than caregivers whose child was new to services. Further, caregivers of youths who had been mandated to treatment by the court had lower problem recognition than caregivers of youths who came to services through other sources (e.g., self or school referral).

Results from the multivariate analyses are shown in Table 6. Most notably, after controlling for effects of other variables, greater symptom severity of the youth continued to be associated significantly with higher levels of treatment motivation among caregivers. Indeed, symptom severity demonstrated a stronger association with caregiver motivation than any other variable in the three models, with betas ranging from 0.29 to 0.47. The negative relationship between court-mandated treatment and caregivers' recognition of youths' problems ($\beta = -0.23$) also persisted when effects of other variables were controlled. We also found that caregiver motivation was not only influenced by characteristics of the youth presenting for treatment. Caregiver motivation, especially their problem recognition, was significantly higher among caregivers who experienced greater strain in providing for the youth in treatment. The variance (Adjusted R^2) in total motivation, problem recognition, and treatment readiness explained by the variables in each model was 32%, 38%, and 14%, respectively.

Correlation Between Youth and Caregiver Motivation—Understanding the separate motivations of youths and caregivers for treatment is important for the treatment process. Also important is identifying the degree to which motivations between the youth and caregiver may align. Correlations between youth and caregiver ratings on total motivation (r

$= 0.27$; $p < 0.001$), problem recognition ($r = 0.33$; $p < 0.001$), and treatment readiness ($r = 0.15$; $p < 0.05$) were positive, generally significant, but small. And, caregivers' motivation for treatment was consistently higher than the youth ratings across all three motivation scales. We calculated the gap between youth and caregiver motivation as the absolute difference between their ratings on each of the three scales. The percentage of dyads where the caregiver rating was higher than the youth's rating was 77% for total motivation, 62% for problem recognition, and 79% for treatment readiness.

We explored whether clinical or non-clinical factors might relate to the absolute size of the gap in total treatment motivation between youths and caregivers. Results (not shown) suggested that the motivational gap *decreased* as the youth's self-rating of symptom severity increased. Specifically, the mean gap among youths who self-rated low, moderate, or high symptom severity was 1.33 (SD = 1.07), 0.78 (SD = 1.03), and 0.63 points (SD = 1.00), respectively ($p < 0.01$). A different pattern emerged based on the caregiver's report of the youth's symptomatology. The motivational gap *increased* as caregivers' perceptions of symptom severity increased. Specifically, the mean gap among caregivers reporting low, moderate, or high severity was 0.69 (SD = 0.97), 0.71 (SD = 1.08), and 1.24 points (SD = 1.04), respectively ($p < 0.01$). The motivational gap was also greater for boys (Mean = 1.09 points; SD = 1.09) than girls (Mean = 0.63; SD = 0.95; $p < 0.01$).

Results from a Supplemental Analysis with the 2007 MYTS—In the analyses above, we used the current 8-item version of the youth and caregiver MYTS (Bickman et al. 2010). In order to help assure the validity of this current measure, we ran parallel analyses using an earlier and longer version of the MYTS (Bickman et al. 2007). Of the 27 results presented above for youths, only two differed by the version used. Of the 39 results presented above for caregivers, only one differed by the version used. The three discrepant results pertained to the relationship between the youth problem recognition subscale and AOD, the youth total score and court-mandated treatment, and the caregiver treatment readiness subscale and caregiver gender. However, for these three discrepant results, descriptive statistics for the two versions of the MYTS were similar and correlations between the youth/caregiver pre-treatment characteristic and the motivation scale score were in the same direction. We think that these minimal differences were likely statistical artifacts and do not threaten the validity of the current version of the youth or caregiver MYTS.

Discussion

The psychometric evaluation of the MYTS shows that it offers service providers and researchers a measure that they can use reliably to assess two important dimensions of intrinsic treatment motivation: problem recognition and treatment readiness. The MYTS has similar forms that youths and caregivers can complete. Thus, clinicians can discern the kinds of gaps we found in this study in the type, direction, and strength of motivation between youths and their caregivers that could otherwise go undetected in therapy. The youth version of the MYTS gives youths who may be uncomfortable revealing personal information verbally to a clinician an opportunity to “voice” their own perceptions about their motivations for treatment. The youth MYTS also gives clinicians the opportunity to “hear” that voice, which is especially important given that youths do not likely come to them for treatment on their own volition.

Because the 8-item MYTS is short, it can be administered frequently, requiring negligible session time. And, used in conjunction with or independent of manualized interventions designed for motivational enhancement, results from the surveys can help practitioners assess whether motivational strategies are working in expected ways. Practitioners can also discuss the results with their clients as part of therapy, an intervention strategy made easier

by web-based feedback systems currently available that generate clinical reports immediately after data are entered. And, while this research used the baseline version of the MYTS, a slightly reworded version is also available for use throughout treatment. In sum, the MYTS offers researchers and practitioners a brief, psychometrically sound measure, with parallel versions for youths and caregivers that enables clinicians to know where clients' motivations lie before treatment begins and to track changes as treatment unfolds.

Our substantive analyses focused on motivation among youths when entering home-based services for a variety of mental health or substance use problems. Youth characteristics frequently found in the literature to relate to motivation were considered. From the multivariate analyses, we found that the strongest and most consistently significant variable for youths' treatment motivation was youth's symptom severity. Consistent with other research (e.g., McMiller and Weisz 1996), greater severity related to higher motivation. We cannot be sure whether symptom severity causes youths to be more problem aware and treatment ready, or whether stronger treatment motivations perhaps unfulfilled from prior treatment experiences have left youths with more serious symptoms at the current intake. In either case, it is hopeful that youths with heightened symptom severity are more motivated toward therapeutic options.

We also found that prior service history significantly related to greater readiness among youths for their current treatment. Perhaps youths had a great relationship with a counselor in the past, engaged in therapeutic exercises that seemed helpful, or simply acquired a mechanical familiarity with how the service system works. Of course, motivation to engage anew in treatment could be driven by negative past experiences as well as by positive ones. In either case, information on prior service use is frequently obtained at intake. Our finding suggests added value in learning "enough" about prior treatment experiences so that providers can use those insights to promote motivational gains in their current treatment planning.

Gender was also salient for youths' treatment motivation. While girls and boys did not differ appreciably in recognizing their problems, girls reported a significantly higher level of treatment readiness than boys. This is consistent with literature that shows that females are more help-seeking than males (Addis and Mahalik 2003; Saunders et al. 1994). We also found that gaps between youth and caregiver reports of their treatment motivation were significantly larger for boys than girls. These gender differences underscore the value of using or developing protocols that empower boys and remove barriers to their treatment (Möller-Leimkühler 2002).

Caregivers are instrumental in facilitating services for youths. Yet, caregivers' motivation for the youth's treatment has been largely ignored. In part, this is because there has not been a good measure of caregiver motivation. Our study describes such a measure that meets multiple criteria of rigorous psychometric testing. And, using this measure, we found that caregiver motivation related significantly to multiple clinical and non-clinical characteristics of youths and of the caregivers themselves.

We found that the strongest and most consistent correlate of treatment motivation among caregivers was the youth's symptomatology. Greater symptom severity related to greater problem awareness and readiness to engage in treatment. However, it was not only the youth's troubles that motivated caregivers. Caregivers who strained to provide for the youth in treatment were also more motivated, particularly in recognizing the seriousness of the youth's problems. Of course, it may be that the seriousness of the problems created the strain. Yet, findings from our multivariate analyses showed that strain motivated caregivers in ways unaccounted for by the severity of the youth's symptoms. Measures such as the

MYTS and the CGSQ-SF7 that assess the motivation and strain of caregivers at the outset of treatment (and during treatment) can alert practitioners to worrisome levels (e.g., low motivation, severe strain) and guide them in planning treatment attentive to caregivers' needs. Thoughtfully crafted treatment plans can offer some therapeutic respite for caregivers while sustaining their treatment motivation and, relatedly, the treatment motivation of the youth.

We also found that caregivers did not recognize the youth's problems as much when treatment had been mandated by the court than when recommended by others (e.g., schools, self). Courts have jurisdiction over youths who come to them from various agencies, such as social services and child welfare. However, for youths adjudicated delinquent, treatment can be mandated as an alternative to other dispositions such as short- or long-term detention. In this sample, a sizable group (26%) of youths was mandated to treatment by the court. While the rate of mandated treatment did not vary by the youth's racial identification, court-mandated youths were three times more likely than those referred by others to have AOD problems at intake. These findings suggest that integrated, across-agency supports or other resources directed toward caregivers of this special population of youths could help raise their awareness of the youth's service needs and motivate their involvement, and their youth's involvement, in the treatment process.

While understanding treatment motivation from the youth and caregiver perspective is important, so too is knowing how well the perceptions of youths and their caregiver align. We found a positive, significant, but small correlation between youth and caregiver motivation. And, caregivers were consistently more motivated for treatment than youths. Such perceptual discrepancies can impede the formation of the positive relationships, or alliances, that others (e.g., Bickman et al. 2012) suggest are important for the therapeutic process. Having information from all key participants in treatment can offer practitioners an opportunity to learn about and share with their clients the nature and scope of their differences. Then, strategies can be planned collaboratively that respect different viewpoints, recognize the value differences offer to the treatment process, and help align differences when they impede treatment progress.

Findings from this research identified several pre-treatment characteristics of youths and caregivers that are salient for early treatment motivation. Racial identification was not among them. Youths did not vary by race either in their problem recognition or treatment readiness. Caregivers did not vary by race in their recognition of the youth's problems. The bivariate relationship between caregivers' race and their treatment readiness was significant; however, it is important to note that this racial difference was between white and black caregivers as compared to caregivers of other racial groups. The difference between white and black caregivers in their readiness for treatment was nonsignificant. Further, the very small number (7) of caregivers in racial groups other than white or black likely underpowers our ability to detect a meaningful effect.

The research on racial disparities in various treatment-related phenomena such as service access, utilization, motivation, barriers, diagnosis, engagement, alliance, retention, quality, and outcomes is voluminous. Some research has found racial differences (e.g., U.S. Public Health Service 2000; Stein et al. 2010; Barksdale et al. 2010; Melnick et al. 1997; Breda 2003); other research has not (e.g., Stein et al. 2010; Nock and Photos 2006; Battjes et al. 2003; Kazdin et al. 1997; Garland 2000). Doubtless, findings depend on a myriad of factors, including the treatment-related process one examines and the methodology used (e.g., measures, sampling, analytical and other study procedures). Our findings should be interpreted in the context of the study design. Our question was about intrinsic motivation at intake to care. Our sample included 197 youths 11–18 years old who had a variety of mental

health or substance use problems. They with their caregivers presented for formal, community-based services in one of over 20 locations throughout the U.S. Research on treatment motivation with other samples of youths and caregivers would be informative.

This research has limitations. We focused on treatment motivation and its correlates at the outset of treatment. While baseline motivation is important for identifying potentially successful participants (Cady et al. 1996), more research is needed on how motivation changes during treatment and on the factors that help sustain motivation. Research is also needed on the impact that initial motivation or motivational changes have on clinical outcomes. Such follow up would likely benefit from considering the variables we have found here to relate to early motivation, as well as other factors such as treatment length. Our sample also included relatively few caregivers who were male or identified with a racial group other than African American or White. Further study with larger samples of more culturally diverse caregivers would be informative. Finally, the analyses are correlational in nature, thus, causal relationships cannot be drawn readily from the results. Future work is needed to investigate the causal directions and linkages between these variables. Despite these limitations, we think the study fills important gaps in research on the treatment motivation that youths as well as their caregivers have when they enter mental health services in diverse community-based settings.

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Table 1

Comprehensive item and total score analysis for the MYTS youth version

Item	Sub ^a	N	Mean	SD	Kurt	Skew	Corr	CFA	Rasch analysis			
									Measure	Infit	Outfit	Disc
1. Some of my feelings are really bothering me.	P	500	2.84	1.40	-1.37	0.00	0.57	0.71	0.25	0.98	0.96	1.10
2. My feelings are causing problems at home, school, with my friends, or in other places.	P	503	2.70	1.43	-1.31	0.20	0.60	0.75	0.40	0.94	0.93	1.16
3. My behavior is causing problems at home, school, with my friends, or in other places.	P	500	2.65	1.32	-1.20	0.17	0.55	0.73	0.43	0.93	0.99	1.01
4. My behavior is making my life worse.	P	503	2.52	1.34	-1.17	0.33	0.53	0.72	0.57	0.99	1.03	0.97
5. I want help finding solutions for my current problems.	T	497	3.74	1.25	-0.06	-0.93	0.53	0.46	-0.71	1.07	1.03	0.99
6. Getting counseling seems like a good idea to me.	T	503	3.62	1.25	-0.38	-0.74	0.58	0.46	-0.57	0.89	0.90	1.09
7. If I attend counseling, I think my life will get better.	T	501	3.57	1.26	-0.43	-0.69	0.54	0.44	-0.51	0.98	0.93	1.02
8. I am getting counseling because I want to.	T	500	2.94	1.39	-1.25	0.02	0.45	0.38	0.15	1.22	1.31	0.60
Total score		504	3.08	0.89	-0.48	-0.22						
Problem recognition subscale		462	2.69	1.13	-0.97	0.07						
Treatment readiness subscale		459	3.46	1.05	-0.37	-0.55						

^aSub: P = problem recognition; T = treatment readiness; SD = standard deviation; Kurt = kurtosis; Skew = skewness; Corr = correlation with total; CFA = confirmatory factor analysis (standardized factor loadings); Measure = item difficulty; Disc = item discrimination

Table 2

Comprehensive item and total score analysis for the MYTS caregiver version

Item	Sub ^a	N	Mean	SD	Kurt	Skew	Corr	Rasch analysis			
								Measure	Infit	Outfit	Disc
1. The way youth feels about him/herself is troubling me.	P	451	3.21	1.37	-1.16	-0.27	0.60	0.46	1.01	1.08	0.95
2. This youth's behavior is causing problems at home, school, with friends, or in other places.	P	456	3.19	1.40	-1.22	-0.30	0.58	0.38	1.04	1.30	0.94
3. This youth's behavior is making my life worse.	P	457	2.56	1.30	-0.98	0.37	0.52	0.32	1.84	1.03	0.70
4. Getting counseling for this youth's problems seems like a good idea to me.	T	457	4.45	0.84	5.30	-2.11	0.63	0.85	-1.13	0.86	1.18
5. I want help finding solutions for this youth's problems.	T	455	4.36	0.92	4.64	-2.03	0.65	0.77	-0.89	0.91	1.24
6. My participation in this youth's counseling is important for this youth to get better.	T	456	4.36	0.87	3.97	-1.81	0.62	0.83	-0.89	0.86	1.14
7. I am willing to make some changes in my life to help this youth become better.	T	454	4.26	0.92	3.13	-1.65	0.54	0.73	-0.66	1.04	0.96
8. It is my decision to get counseling for this youth.	T	452	4.11	1.05	0.99	-1.22	0.58	0.71	-0.33	1.13	0.90
Total score		457	3.81	0.76	0.99	-0.79					
Problem recognition subscale		453	2.98	1.18	-1.02	-0.11					
Treatment readiness subscale		447	4.31	0.76	4.75	-1.80					

^aSub: P = problem recognition; T = treatment readiness; SD = standard deviation; Kurt = kurtosis; Skew = skewness; Corr = correlation with total; CFA = confirmatory factor analysis (standardized factor loadings); Measure = item difficulty; Disc = item discrimination

Table 3Youth MYTS by youth characteristics ($N = 197$)

	<i>N</i> (%)	Total score mean (SD)	Problem recognition mean (SD)	Treatment readiness mean (SD)
Overall sample		3.03 (0.92)	2.65 (1.10)	3.39 (1.04)
Race				
Blacks	43 (25%)	2.91 (0.73)	2.43 (1.00)	3.41 (0.83)
Whites	102 (58%)	3.03 (0.95)	2.70 (1.13)	3.35 (1.07)
Other	29 (17%)	3.25 (1.08)	2.83 (1.27)	3.59 (1.17)
Hispanic ethnicity				
Hispanic	17 (11%)	2.98 (0.99)	2.50 (1.27)	3.38 (0.92)
Not hispanic	143 (89%)	3.05 (0.92)	2.67 (1.12)	3.42 (1.02)
Gender				
Females	88 (45%)	3.37 *** (0.80)	2.97 *** (1.01)	3.74 *** (0.92)
Males	106 (55%)	2.75 (0.93)	2.37 (1.11)	3.12 (1.05)
Age				
11–12	29 (15%)	3.14 (0.86)	2.84 (1.06)	3.43 (0.97)
13–15	84 (43%)	3.10 (0.92)	2.67 (1.12)	3.52 (1.03)
16–18	84 (43%)	2.93 (0.95)	2.55 (1.10)	3.24 (1.07)
Prior MHS				
No	20 (11%)	2.64 * (1.03)	2.46 (1.26)	2.83 ** (1.17)
Yes	166 (89%)	3.07 (0.90)	2.65 (1.10)	3.45 (1.01)
Court-mandated				
No	146 (74%)	3.11 * (0.93)	2.81 *** (1.09)	3.40 (1.05)
Yes	51 (26%)	2.79 (0.88)	2.19 (1.01)	3.36 (1.01)
SFSS: total severity score				
Low (bottom 25% of <i>N</i>)	48 (25%)	2.34 *** (0.69)	1.68 *** (0.78)	3.03 ** (0.86)
Middle (25–75% of <i>N</i>)	99 (52%)	3.07 (0.79)	2.65 (0.86)	3.45 (1.02)
High (Top 25% of <i>N</i>)	45 (23%)	3.65 (0.93)	3.60 (1.04)	3.68 (1.15)
No. of presenting problems				
1–4 (low third)	51 (29%)	2.67 ** (0.83)	2.09 *** (1.03)	3.22 (1.02)
5–8 (middle third)	72 (40%)	3.20 (0.86)	2.88 (0.97)	3.50 (1.02)
9–22 (high third)	55 (31%)	3.14 (0.99)	2.86 (1.17)	3.40 (1.08)
AOD				
No	167 (85%)	3.09 * (0.93)	2.71 * (1.11)	3.44 (1.04)
Yes	30 (15%)	2.71 (0.85)	2.27 (1.03)	3.10 (1.00)

* $p < 0.05$,** $p < 0.01$,*** $p < 0.001$ MHS = mental health services; AOD = indicated use of alcohol or drugs; all MYTS scale scores were measured on a 5-point Likert scale from *strongly disagree* to *strongly agree*

Table 4

Multivariate regression analyses of youth motivation by youth characteristics

	Unstandardized β (SE)	β
Dependent variable: total motivation		
(Constant)	0.42 (0.33)	
Youth gender (female = 1)	0.38 *** (0.12)	0.21
Prior MHS (yes = 1)	0.21 (0.18)	0.07
Court-mandated (yes = 1)	0.18 (0.14)	0.08
AOD (yes = 1)	-0.18 (0.16)	-0.07
No. of presenting problems	0.02 (0.02)	0.09
Total symptomatology	0.04 *** (0.01)	0.48
Adjusted $R^2 = 0.34$		
Dependent variable: problem recognition		
(Constant)	-0.85 (0.33)	
Youth gender (female = 1)	0.24 (0.13)	0.11
Court-mandated (yes = 1)	-0.02 (0.16)	-0.01
AOD (yes = 1)	-0.13 (0.18)	-0.04
No. of presenting problems	0.03 (0.02)	0.11
Total symptomatology	0.06 *** (0.01)	0.61
Adjusted $R^2 = 0.47$		
Dependent variable: treatment readiness		
(Constant)	1.83 (0.40)	
Youth gender (female = 1)	0.51 *** (0.15)	0.24
Prior MHS (yes = 1)	0.49 * (0.23)	0.15
Total symptomatology	0.02 ** (0.01)	0.19
Adjusted $R^2 = 0.14$		

SE = standard error; AOD = alcohol and/or drug use; MHS = mental health services

* $p < 0.05$,** $p < 0.01$,*** $p < 0.001$

Table 5Caregiver MYTS by caregiver and youth characteristics ($N = 174$)

	<i>N</i> (%)	Total score mean (SD)	Problem recognition mean (SD)	Treatment readiness mean (SD)
Overall sample		3.92 (0.82)	3.18 (1.17)	4.36 (0.86)
Caregiver characteristics				
Race ^a				
Blacks	39 (26%)	3.94 [*] (1.02)	3.38 (1.19)	4.27 [*] (1.06)
Whites	105 (69%)	3.99 (0.72)	3.23 (1.16)	4.45 (0.75)
Other	7 (5%)	3.16 (1.04)	2.38 (1.11)	3.63 (1.12)
Gender				
Females	134 (85%)	4.00 [*] (0.77)	3.28 (1.14)	4.43 [*] (0.80)
Males	23 (15%)	3.60 (1.03)	2.88 (1.24)	4.03 (1.12)
Age				
21–40	72 (47%)	4.07 (0.62)	3.32 (1.06)	4.51 (0.58)
41–50	48 (32%)	3.93 (0.79)	3.12 (1.20)	4.41 (0.84)
Over 50	32 (21%)	3.80 (1.08)	3.20 (1.30)	4.15 (1.19)
Marital status				
Married/living as married	75 (49%)	3.95 (0.84)	3.26 (1.14)	4.36 (0.90)
Divorced/separated	46 (30%)	4.03 (.69)	3.28 (1.15)	4.48 (0.70)
Never married	24 (16%)	3.81 (1.02)	3.07 (1.23)	4.25 (1.08)
Widowed	7 (5%)	3.88 (0.66)	3.00 (1.25)	4.40 (0.50)
Relationship to youth				
Birth/adoptive	114 (73%)	4.02 (0.73)	3.27 (1.11)	4.46 (0.72)
Step	3 (2%)	4.04 (1.45)	3.89 (1.39)	4.13 (1.50)
Grandparent	21 (13%)	3.79 (0.96)	3.08 (1.46)	4.22 (0.97)
Other family member	7 (5%)	3.93 (1.27)	3.48 (0.96)	4.20 (1.50)
Foster parent/group home staff	7 (5%)	3.50 (0.71)	2.67 (0.86)	4.00 (0.82)
Other	3 (2%)	3.88 (0.45)	2.67 (1.45)	4.60 (0.53)
Household income				
Less than \$20,000	61 (47%)	3.95 (0.76)	3.25 (1.05)	4.38 (0.87)
\$20–49,999	53 (41%)	4.12 (0.74)	3.40 (1.29)	4.55 (0.60)
More than \$50,000	15 (12%)	3.96 (0.69)	3.22 (1.10)	4.40 (0.73)
Ever Prof. Help for MH/AOD				
No	96 (65%)	3.85 (0.88)	3.15 (1.11)	4.27 (0.93)
Yes	52 (35%)	4.06 (0.75)	3.31 (1.19)	4.51 (0.74)
Strain caring for youth				
Low (bottom 25% of sample)	20 (22%)	3.63 ^{***} (0.73)	3.00 ^{***} (0.78)	4.01 ^{**} (0.96)
Middle (25–75% of sample)	49 (54%)	3.91 (0.79)	3.11 (1.11)	4.39 (0.88)
High (Top 25% of sample)	22 (24%)	4.64 (0.30)	4.29 (0.55)	4.85 (0.26)
Youth characteristics				
Prior MHS				

	N (%)	Total score mean (SD)	Problem recognition mean (SD)	Treatment readiness mean (SD)
No	19 (12%)	3.69 (0.91)	2.62 [*] (1.20)	4.34 (1.00)
Yes	145 (88%)	3.95 (0.82)	3.27 (1.16)	4.36 (0.86)
Court-mandated				
No	130 (75%)	4.01 ^{**} (0.77)	3.35 ^{***} (1.11)	4.40 (0.81)
Yes	44 (25%)	3.65 (0.91)	2.69 (1.21)	4.23 (0.99)
SFSS: total severity score				
Low (bottom 25% of N)	44 (26%)	3.32 ^{***} (0.82)	2.18 ^{***} (1.03)	4.00 ^{***} (1.02)
Middle (25–75% of N)	68 (41%)	3.86 (0.77)	3.19 (0.94)	4.26 (0.93)
High (Top 25% of N)	54 (33%)	4.48 (0.47)	4.04 (0.77)	4.74 (0.41)
No. of presenting problems				
1–4 (low third)	42 (27%)	3.54 ^{***} (0.99)	2.67 ^{***} (1.12)	4.05 ^{**} (1.14)
5–8 (middle third)	65 (42%)	3.98 (0.71)	3.23 (1.16)	4.42 (0.72)
9–22 (high third)	49 (31%)	4.24 (0.70)	3.66 (1.03)	4.59 (0.71)
AOD				
No	146 (84%)	3.92 (0.81)	3.19 (1.14)	4.35 (.85)
Yes	28 (16%)	3.92 (0.90)	3.13 (1.32)	4.39 (0.90)

MYTS scale scores were measured on a 5-point Likert scale from *Strongly Disagree* to *Strongly Agree*. The significant race effect is attributable to the “other” racial group which includes only 7 caregivers. Thus, we do not consider this a meaningful result

^{*}
p 0.05,

^{**}
p 0.01,

^{***}
p 0.001

Table 6

Hierarchical regression analyses of caregiver motivation by caregiver and youth characteristics

	Unstandardized β (SE)	β
Dependent variable: total motivation		
Step 1 (Constant)	2.02 (0.40)	
Court-mandated (yes = 1)	-0.09 (0.19)	-0.05
No. of presenting problems	0.03 (0.02)	0.15
Total symptomatology	0.03 *** (0.01)	0.47
Step 2 Caregiver gender (female = 1)	-0.31 (0.20)	-0.15
Caregiver Strain	0.21 * (0.09)	0.26
Adjusted R^2 step 1: 0.27		
Adjusted R^2 step 2: 0.32		
Sig. F change in R^2 : 0.03		
Dependent variable: problem recognition		
Step 1 (Constant)	0.61 (0.55)	
Prior MHS (yes = 1)	0.08 (0.32)	0.02
Court-mandated (yes = 1)	-0.64 ** (0.25)	-0.23
No. of presenting problems	0.04 (0.03)	0.14
Total Symptomatology	0.05 *** (0.01)	0.46
Step 2 Caregiver strain	0.24 * (0.11)	0.21
Adjusted R^2 step 1: 0.36		
Adjusted R^2 step 2: 0.38		
Sig. F change in R^2 : 0.04		
Dependent variable: treatment readiness		
Step 1 (Constant)	3.01 (0.46)	
No. of presenting problems	0.03 (0.03)	0.13
Total symptomatology	0.02 ** (0.01)	0.29
Step 2 Caregiver gender (female = 1)	-0.39 (0.24)	-0.17
Caregiver strain	0.19 (0.10)	0.22
Adjusted R^2 step 1: 0.10		
Adjusted R^2 step 2: 0.14		
Sig. F change in R^2 : 0.07		

SE = standard error

* $p < 0.05$,** $p < 0.01$,*** $p < 0.001$