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The Impact of Informant Discrepancy on Treatment Engagement Among Adolescents with Clinically Elevated Depressive Symptoms

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The Impact of Informant Discrepancy on Treatment Engagement  
Among Adolescents with Clinically Elevated Depressive Symptoms

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

in

Clinical Psychology

by

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2017

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The Dissertation for Minh-Chau Thi Do is approved, and it is acceptable in quality and form for publication on microfilm and electronically:

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Chair

University of California, San Diego

San Diego State University

2017

## DEDICATION

I am among the fortunate few who found their passion at a young age, as pursuing a degree in this field has been a goal of mine for almost two-thirds of my life thus far. This long path has been influenced by so many people, without whom this dissertation and degree would not be possible.

First, thank you to the researchers and clinicians who have inspired me to do the work that I do. While there are too many to name here, I want to note a few. Thank you to Dr. Joan Asarnow for providing me with my first full immersion in the research world. Thank you to Drs. May Yeh and Forrest Talley for the moral support through some of my toughest times in graduate school. A very heartfelt thank you to my undergraduate mentor, Dr. Stephen Hinshaw, whose undying dedication to this field and advocacy work continues to be unparalleled. To this day, I look to you for inspiration when it is hard to remember why I pursued this challenging career. Thank you to the wonderful clinical supervisors and clinicians I have had the privilege to work with; you are the ones who make this research relevant to the clients and patients with whom we work.

Thank you to all of the amazing friends I have made along the way for their incredible support. To my graduate school cohort-mates: thank you for the camaraderie, study dates, and mutual venting sessions. There is no “I” in JDP! To the internship-mates who spent the nights after long work days alongside me to work on our dissertations: thank you for helping me get through the final push!

And of course, the biggest thank you of all to my family and partner, Kristoffer. To my parents – two of the most resilient people I will ever know – thank you for instilling in me a lifelong desire to pursue knowledge and for making endless sacrifices to set me on this path to an education. To my sisters – some of the smartest women I will ever know – thank you for keeping me grounded, sharing your wisdom, and setting such good examples of how to be humble, well-rounded women. And to my partner, Kristoffer, who has been there since the day I began as a bright-eyed 1<sup>st</sup> year graduate student. While being a graduate student is no walk in the park, neither is being the partner of a graduate student. Thank you for the unrelenting encouragement and guidance. I would not have been able to finish this degree without you.

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## ABSTRACT OF THE DISSERTATION

The Impact of Informant Discrepancy on Treatment Engagement  
Among Adolescents with Clinically Elevated Depressive Symptoms

by

Minh-Chau Thi Do

Doctor of Philosophy in Clinical Psychology

University of California, San Diego, 2017  
San Diego State University, 2017

Professor V. Robin Weersing, Chair

Assessment of youth psychopathology is frequently multi-informant, as each informant is presumed to provide unique information. However, clinicians frequently face a difficult task of integrating varying reports between informants as discrepancies in reports are common, particularly for less observable symptoms. Informant discrepancies have been linked to poorer treatment engagement and may contribute to the high rates of attrition in community-based services. The current study examined informant agreement on depressive symptoms among youths, parents, and clinicians

to: 1) characterize patterns of agreement; 2) examine demographic and clinical predictors of agreement; and 3) examine the relationship between agreement and treatment engagement. It was hypothesized that levels of informant discrepancy would be high, predicted by sociodemographic and clinical factors, and predictive of poorer treatment engagement.

The sample consisted of 326 youths (ages 13-18) with clinically elevated depressive symptoms (as reported by the youth, parent, or clinician) seeking services from an outpatient mental health clinic serving an ethnically diverse, low-income population. The analyses examined parent-youth-clinician (triadic) agreement, in addition to three sub-samples of dyads (i.e., parent-youth, parent-clinician, and youth-clinician). The study aims were examined using regression models (linear, logistic, and negative binomial) nested within clinician.

Rates of dyadic agreement that the youth had clinically significant depressive symptoms ranged from 30.1% to 37.8%, while triadic agreement was 16.7%. Informant agreement was predicted by variables such as higher youth anxiety, higher perceived stress, and demographic factors (older age, female gender, and ethnic/racial minority status). A greater number of attended sessions was predicted primarily by agreement and clinical variables (lower youth anxiety). Greater consistency in treatment attendance was primarily predicted by agreement and demographic factors (being of non-minority status, not a recipient of public assistance). Clinician-defined dropout was not predicted by any of the variables of interest.

Among adolescent youths with elevated depressive symptoms, agreement among informants is low. Informant agreement affects both how many sessions youths attend and consistency of attendance, particularly in the youth-clinician analyses. Increasing agreement on youth depressive symptoms at the initiation of treatment may have a positive effect on critical treatment processes, and in turn, treatment outcomes.

## **Introduction**

Assessment is a frequently under-emphasized component of the treatment process despite its critical function in the development of a case conceptualization and treatment plan (Hodges, 2004). For children and adolescents, while there is a growing movement towards the implementation of empirically-supported treatments in the service sectors that provide mental health services to youths, the use of empirically-supported assessment practices lags behind (Jensen-Doss, 2015). In typical clinical settings, the assessment of youths frequently consists of unstructured interviews (Cashel, 2002), as the use of evidence-based assessment tools may be limited by a number of factors including managed care practices (Cashel, 2002), lack of sufficient resources (Jensen-Doss, 2015), time constraints, or even lack of understanding of the utility of integrating these tools into clinical practice (Garland, Kruse, & Aarons, 2003). Even when evidence-based assessment tools are used, the process of assessment for youth is increasingly complex relative to that for adults. This is due to the fact that the assessment of symptoms, impairment, and other mental health outcomes in youth is frequently multi-informant, consisting of self-reports in addition to reports from caregivers, teachers, and peers. Underlying multi-informant assessment is the assumption that each informant provides unique information about the youth (De Los Reyes, 2013) and that the integration of this information informs clinicians' diagnostic decisions and treatment planning (Hawley & Weisz, 2003).

While the importance of conducting accurate assessment is clear, this is a frequently difficult task when working with youth patients. Given the multi-informant

nature of youth assessment, clinicians are faced with the difficult task of integrating these reports and discrepancies in informant reports are common (Achenbach, McConaughy, & Howell, 1987; De Los Reyes et al., 2015). Disagreement among reporters (hereafter termed “informant discrepancy”) may negatively impact critical treatment processes such as working alliance, engagement in therapy tasks, and consistent attendance (e.g., Brookman-Frazee, Haine, Gabayan, & Garland, 2008; Hawley & Weisz, 2003). This may be especially likely to occur in the treatment of depressed youth. Although depression in youth is highly prevalent and broadly impairing, internalizing symptoms, such as depressed mood, may be less observable and more ambiguous and thus particularly prone to informant discrepancies (e.g., De Los Reyes, 2015). Little is known about the extent or impact of informant discrepancies in youth depression, suggesting this may be a promising area in which to improve the clinical assessment, treatment planning, and engagement of this population of youth. .

### **Informant Discrepancies in the Assessment of Youths**

Lapouse and Monk (1958) first noted informant discrepancies (between parents and youths) in the context of their epidemiological study in which they sought to estimate the prevalence of various behaviors and mental health symptoms, finding concordance to be greater for more observable behaviors. In an influential meta-analysis of 119 studies conducted by Achenbach and colleagues (1987), informant agreement was found to be highest among similar informants (e.g., parent-parent), with a mean correlation of 0.60, but with a considerably lower correlation of 0.28

between other types of informants (e.g., parent-teacher) and 0.22 between youths and others. A recent large meta-analysis found that multi-informant assessment continues to be characterized by poor agreement across different reporters (De Los Reyes et al., 2015). Across 341 studies, the overall correlation among informants was low to moderate, with a mean correlation of 0.28. Paralleling the report by Achenbach and colleagues in their earlier meta-analysis, greater convergence in reporting was found when the behaviors could be observed in the same setting or context (e.g., mother-father reports). Furthermore, consistent with that noted by Lapouse and Monk (1958), these meta-analyses have found greater convergence in reporting for more easily observable behaviors, such as externalizing symptoms. Informant discrepancies have been frequently found between parents and youths (e.g., Hawley & Weisz, 2003; Yeh & Weisz, 2001) as well as other informant dyads/triads such as clinicians and youths/parents (e.g., Garland et al., 2004; Hawley & Weisz, 2003), between parents (e.g., Mascendaro et al., 2012), parents and teachers (e.g., De Los Reyes et al., 2009), and between clinicians and research-based instruments (e.g., Jensen-Doss & Weisz, 2008).

### **Types and Predictors of Informant Discrepancies**

**Informant discrepancies between parents and youths.** Different informants' reports are influenced by varying factors (Collishaw, Goodman, Ford, Rabe-Hesketh, & Pickles, 2009), and thus it is unsurprising that discrepancies between reports from parents and youths have frequently been documented. Yeh and Weisz (2001) utilized a sample of 381 youths referred to an outpatient clinic to examine parent-child

agreement on target problems that were coded using a coding system that mapped onto items on the Child Behavior Checklist (CBCL; Achenbach, 1991a) and Youth Self-Report (YSR; Achenbach, 1991b). Parent-youth agreement was low, with 63% failing to agree on a single, specific problem and 34% failing to agree on even a general problem area. Overall, agreement was higher for externalizing problem areas as compared to internalizing problems, though rates of agreement were poor for both. The specific categories of aggressive behavior and ADHD had among the highest rates of agreement, presumably due to the greater ease with which these behaviors can be observed. Similar patterns have been found on parent-adolescent agreement in assessment of functional impairment. As with reports on specific symptoms, parent-adolescent agreement has been found to be greater when reporting on more observable forms of functional impairment than on less visible impairments (e.g., “thinking”; Frank, Van Egeren, Fortier, & Chase, 2000). Kramer and colleagues (2004) found agreement between parents and adolescents to be especially poor on reports of the youth’s relationships with friends, their peers’ engagement in delinquency, and leisure activities. Furthermore, these dyads generally expected that they would be in agreement more than in disagreement. Others have found youths to report more symptoms, but less associated impairment, than parents (Van Roy, Groholt, Heyerdahl, & Clench-Aas, 2010).

Low rates of agreement have been cited in reports of more specific internalizing problems. Parents of youths with an emotional disorder (i.e., depression or anxiety) have been found to report more symptoms than the youths themselves



(Garber, Van Slyke & Walker, 1998). Significant parent-child disagreement has been found in more homogeneous samples such as youths presenting to treatment for anxiety (Hoffman & Chu, 2015). Agreement on youth anxiety between these reporters has been found to be low (Villabo, Gere, Torgersen, March, & Kendall, 2012), even when parents are asked to complete the measure according to how they predict their child would complete it (Engel, Rodrigue, & Geffken, 1994). Agreement on anxiety at the symptom level has been found to be higher than overall diagnostic agreement, with greater agreement on more observable symptoms (Comer & Kendall, 2004). However, each informant's report may add incremental information to the other's report for different anxiety diagnoses (Villabo et al., 2012). The discrepancy between parent and youth reports on youth depressive symptoms has also been documented (Kazdin, 1994). Parents have been found to be less accurate reporters of adolescent symptoms while over-reporting on the youth's depression symptoms and under-reporting on suicidality (Lewis et al., 2014). In contrast, others have found parents to under-report depressive symptoms as compared to their adolescent children (Kiss et al., 2007). In a sample of youths (ages 7 to 15) with major depressive disorder, Kiss and colleagues (2007) found mothers' reports on their child's depressive symptoms to be higher than sons' reports, but not daughters' reports. Females reported greater symptoms with increasing age, while child age did not affect mothers' reports. The extent of parent-child agreement may vary by parent, as parent-parent dyads have been found to vary in their reports on their child's symptoms, including in the internalizing domain (Mascendaro, Herman, & Webster-Stratton, 2012). Discrepancies in parent-child

reports on depressive symptoms have been noted among youths with learning disabilities as well (Nelson & Harwood, 2011).

Discrepancies in parent-child reporting have been found in the assessment of a number of other domains such as victimization (Goodman, 2013), family dynamics and functioning (Ohannessian & De Los Reyes, 2014; Stuart & Jose, 2012), and prosocial behavior (Taylor & Wood, 2013).

*Predictors of discrepancies between parents and youths.* A number of factors have been associated with parent-child discrepancies, though the use of different methodologies and samples across studies has led to some inconsistencies in results. In their examination of parent-child agreement on a measure assessing for both symptoms and impairment, Van Roy and colleagues (2010) found that different factors were related to disagreement depending on which informant reported greater mental health problems. Specifically, when youths reported greater symptoms and impairment, variables related to the parent-child relationship and family structure significantly predicted disagreement. When parents reported greater symptoms and impairment, demographic variables had a more significant role in predicting disagreement. Greater parent-child discordance has also been linked to greater maternal distress (Garber et al., 1998), depression (Kiss et al., 2007), and psychopathology in general (Kroes, Veerman, & De Bruyn, 2003). In their examination of agreement among parent, child, and teacher reports, Kolko and Kazdin (1993) found greater agreement to be linked to lower family stress and higher child acceptance. Findings on the impact of demographic variables such as youth age have

been mixed (Hoffman & Chu, 2015; Hughes & Gullone, 2010; Stuart & Jose, 2012; Yeh & Weisz, 2001).

For internalizing symptomatology and depression more specifically, greater parent-child discrepancy has been linked to younger age and gender, with females reporting greater symptoms than their parents report (Kiss et al., 2007). Discrepancies have also been linked to higher levels of parent stress and psychopathology (Briggs-Gowan, Carter, & Schwab-Stone, 1996; Hughes & Gullone, 2010; Muller, Achtergarde, & Furniss, 2011; Randazzo, Landsverk, & Ganger, 2003), as well as less secure attachment (Ehrlich, Cassidy, & Dykas, 2011). Parent-child discrepancies may also be impacted by cultural factors. For example, the parents of ethnic/racial minority youth have been found to report fewer internalizing and externalizing symptoms than the youths themselves (Lau et al., 2004).

#### **Informant discrepancies between clinicians and other informants.**

Discrepancies in reports between clinicians and other informants have also been noted. Hawley and Weisz (2003) examined agreement between parents, youths, and clinicians and found that 76.8% of the triads in the sample did not agree on a single specific problem at the beginning of treatment. Furthermore, 44.4% of triads did not agree on even one general problem area. Consistent with findings in parent-child agreement, parent-youth-clinician agreement was higher for externalizing problems than for internalizing problems. When one reporter identified a problem, the other two reporters were in agreement 41.3% of the time for externalizing problems and only a staggering 6.7% of the time for internalizing problems. Clinician agreement with

parents was higher than that with youths, but differed depending on the problem area being reported on; clinicians agreed more with parents on reports of internalizing and externalizing symptoms, while clinicians agreed more with youths on reports of family and environmental problems. Paralleling patterns between other informant dyads/triads, there is some evidence of greater agreement between clinicians and parents on the assessment of externalizing problems as compared to internalizing problems (Jensen & Weisz, 2002).

Garland and colleagues (2004) similarly examined parent-youth-clinician agreement in a sample receiving community-based services. Each informant was asked to list three goals for treatment, and only 38% of the triads agreed on a single problem. Interestingly, of all three informants, youths were the least likely to list symptom reduction as a treatment goal. Relative to parents, youths and clinicians listed goals related to the family environment (e.g., improve relationships) more frequently.

*Predictors of discrepancies between clinicians and other informants.* Factors that have been found to be predictive of greater parent-youth-clinician agreement include the presence of a youth anxiety disorder, while a clinician's theoretical orientation towards cognitive-behavioral approaches has been linked to poorer agreement (Garland et al., 2004). Klein and colleagues (2010) found that discrepancies between clinicians and diagnoses derived from parent-reported questionnaires across externalizing and internalizing problems were linked to youth age, gender, level of symptomatology, level of impairment, and public assistance status (Klein, Lavigne, &

Seshadri, 2010). For internalizing problems specifically, greater discrepancies were found for youths who were male, older, less symptomatic, and receiving public assistance. However, findings on the influence of youth age and gender have been mixed (Jensen & Weisz, 2002). Again, higher levels of caregiver stress and depression have been linked to greater discrepancy between parents and other informants (e.g., teachers; Youngstrom, Loeber, & Stouthamer, Loeber, 2000).

### **Informant discrepancies between clinicians and structured assessment**

**instruments.** Given the infrequent utilization of evidence-based assessment measures and protocols in usual care (see prior discussion), it is in part unsurprising that discrepancies have been noted between clinician-generated diagnoses (i.e., those derived from typical intake procedures) and diagnoses derived from research-based instruments (Rettew, Lynch, Achenbach, Dumenci, & Ivanova, 2009). Discrepancies have been found between clinician-generated diagnoses and those derived from more structured diagnostic interviews (Jensen-Doss, Youngstrom, Youngstrom, Feeny, & Findling, 2014), as well as standardized assessment measures (e.g., CBCL; Jensen-Doss, Osterberg, Hickey, & Crossley, 2013). Discrepancies in these two sources have been found even when analyzed at a broader diagnostic category level (i.e. disagreement at the “internalizing” or “externalizing” level) and may be due in part to missed diagnoses by clinicians (Jensen-Doss et al., 2014).

### ***Predictors of discrepancies between clinicians and structured assessment***

**instruments.** Greater diagnostic agreement between clinicians and structured research instruments has been associated with a number of factors. For example, Jensen-Doss

and colleagues (2014) found that older youth age, higher family functioning, and clearer and less complex diagnostic presentation were linked to fewer diagnostic errors. This same study found that, among adolescents, greater parental depression was linked to fewer “extra” clinician-assigned diagnoses.

Overall, the extant literature clearly indicates that the assessment of youth psychopathology is frequently characterized by informant discrepancies and that the manner in which these discrepancies are reconciled may have implications for the treatment process. Furthermore, the factors that predict whether informants differ depend on the particular informant pair (or triad) of interest. Many hypotheses and theories have been put forth to explain why informant discrepancies occur, which are reviewed next.

### **Why Do Informant Discrepancies Exist?**

While many hypotheses have been suggested to explain why informant discrepancies arise, the simplest explanation is that they are the result of measurement error (De Los Reyes et al., 2015). However, viewing informant discrepancies as measurement error contradicts the rationale of conducting multi-informant assessment (that each reporter offers unique information about the child; De Los Reyes, 2013). Instead, these discrepancies can be extremely informative (De Los Reyes, 2011).

A number of other hypotheses have been postulated to explain informant discrepancies. For example, level of agreement between informants may be a proxy for severity such that greater agreement results from greater severity and impairment, when the clinical presentation is clearer or more prominent. Studies have supported

this. For example, greater agreement on symptoms of mania has been linked to greater symptom severity, greater psychopathology in general, and increased behavioral problems and longer hospital stays among inpatients (Carlson & Youngstrom, 2003; Thuppal, Carlson, Sprafkin, & Gadow, 2002). Informant discrepancy is also thought to arise due to different perspectives on what symptoms and behaviors constitute a problem, which may be affected by parent psychopathology (e.g., depression and anxiety; De Los Reyes & Kazdin, 2005) as well as who the symptom first affects. That is, different reporters may have varying “thresholds” for recognizing and designating a behavior as problematic, as parents may have lower thresholds for symptoms such as irritability (Freeman, Youngstrom, Freeman, Youngstrom, & Findling, 2011).

Reporting of mental health symptoms may also be affected by differences in cognitive abilities, social desirability (De Los Reyes et al., 2015; DiBartolo, Albano, Barlow, & Heimberg, 1998), emotion recognition (De Los Reyes, Lerner, Thomas, Daruwala, Goepel, 2013), cultural factors (Draguns & Tanaka-Matsumi, 2003), or perceptions in the purpose of the assessment process (De Los Reyes & Kazdin, 2005). One of the most frequently hypothesized explanations for informant discrepancies is that they arise as a result of different informant perspectives due to informant variability in the contexts in which various behaviors can be observed (Kraemer et al., 2003; De Los Reyes & Kazdin, 2005). Altogether, these proposed mechanisms may in part explain the frequent discrepancies seen in reports of youth depression. For example, parents and youths may report different symptoms and symptom severities depending on how the youth’s depression symptoms are manifesting and impacting the parent-child

relationship. It may be that parents will not be as accurate in their reports of internal symptoms characteristic of depression (e.g., low self-esteem), or may not observe and be cognizant of symptoms if they occur in other contexts (e.g., social withdrawal from friends and activities while at school).

De Los Reyes and Kazdin (2005) noted that the study of informant discrepancy has largely been atheoretical, leading to inconsistencies in findings and thus difficulty with integrating these findings into a unifying framework. As a result, they proposed the Attribution Bias Context (ABC) Model which integrates a number of the aforementioned hypothesized mechanisms and draws upon social and cognitive psychology concepts such as the actor-observer phenomenon, the impact of perspective-taking on memory recall, and source monitoring. The ABC Model posits that informant discrepancies arise from four mechanisms: 1) informant attributions: differences in informant attributions of youth behaviors, such that outside observers (e.g., parents) are more likely to attribute youth behaviors and symptoms to internal causes, while youths are more likely to make external attributions for their behavior; 2) informant perspectives: differences in informant perspectives on what problems warrant treatment, such that other informants are more likely to believe a youth's behavior warrants treatment due to their greater inclination towards internal causal attributions, and are likely to retrieve memories consistent with this perspective; 3) goal of clinical assessment: differences between informants' attributions of a youth's behavior and different perspectives on what warrants treatment may conflict or be more consistent with the goals of the assessment process, such that informants who



make internal attributions for the youth's behavior and believe treatment is needed are more likely to report more negative behaviors during the assessment process; and 4) these three components interact with one another.

The ABC model fits well in the context of understanding externalizing problems, and may in part explain why youths are more frequently brought into services for externalizing problems than internalizing problems (Weisz & Weiss, 1999). Indeed, empirical investigations have supported the ABC model in understanding informant discrepancies in reports of disruptive behavior disorders (De Los Reyes, Henry, Tolan, & Wakschlag, 2009). The ABC model may be useful in understanding discrepancies in reports of youth depression as well. For example, youths may be more likely than other observers to attribute their depressive symptoms to external causes (e.g., bullying, conflict at home, conflict with friends). As such, the model may help explain the findings by Hawley and Weisz (2003) that youths were more likely to report family and environmental problems as treatment targets, while parents were more likely to report externalizing and internalizing symptoms. The ABC model also provides context for understanding why informants may differ in the depressive symptoms that they report. For example, parents may be more likely to bring youth to services reporting symptoms such as irritability (e.g., seen by the parents as defiance) while youths may be more likely to report issues with self-esteem.

## **The Impact of Informant Discrepancies on Youth Outcomes**

Given the theorized impact that informant discrepancies may have on key therapeutic processes (Hawley & Weisz, 2003), a number of studies have examined how these differences in reporting relate to treatment engagement and outcomes.

**Engagement and attrition in youth psychotherapy.** The concept of “engagement” is a broad term that has been used to encapsulate many different stages in the process of child mental health care, starting from the initial recognition that there is a problem that needs to be addressed to the actual receipt of care (McKay & Bannon, 2004). The term has also been used to describe attendance to the first session as well as continued attendance, though the factors associated with mental health service use at each of these stages may differ. Researchers have increasingly called for enhanced precision in terminology, as this would allow for a more nuanced understanding of how different factors affect youth use of mental health services at different stages of the process (McKay & Bannon, 2004). Regardless of the specific way in which “engagement” is defined, it is clear that engagement in treatment is essential for positive outcomes.

Identification of the factors that impact treatment engagement is critical given the significant rates at which youths drop out of psychotherapy (Armbruster & Kazdin, 1994). It is estimated that approximately 30% to 75% of youths who enter mental health services end services prematurely (i.e., dropout/attrition; de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013; Kazdin & Mazurick, 1994; Warnick, Gonzalez, Weersing, Scahill, & Woolston, 2012). That is, attendance to sessions is often

infrequent and inconsistent, with youths presenting with a variety of mental health conditions, as well as youths presenting with mood disorders specifically, frequently receiving fewer than six sessions (Merikangas et al., 2011). Premature dropout is costly and keeps youths from receiving adequate care. As such, a number of research groups have developed and tested varying strategies and interventions aimed at increasing treatment engagement (Gopalan et al., 2010; McKay & Bannon, 2004; Warnick, Bearss, Weersing, Scahill, & Woolston, 2014), in addition to identifying the variables that predict treatment retention and dropout.

*Predictors of treatment engagement and attrition.* In work examining predictors of engagement in treatment, demographic and clinical factors are the two most frequently examined types of variables (McKay & Bannon, 2004). Miller and colleagues (2008) utilized a large sample of 447 youths seeking treatment from a public mental health clinic to explore predictors of treatment engagement, as defined in 4 different ways: returned to the clinic following intake, mutual termination (family and therapist), retained for mean treatment duration of the clinic, and total number of sessions. For the two latter definitions, youth ethnicity was a significant predictor with minority youth ending treatment earlier than non-minorities. Furthermore, the presence of an Axis IV stressor predicted more sessions, while the presence of an adjustment disorder diagnosis predicted fewer sessions. Others have similarly noted that, across studies, key variables that affect treatment engagement include the ethnic background of the youth, in addition to the youth's clinical diagnosis (Gopalan et al., 2010). In addition, greater dropout has been linked to socioeconomic status and lower

family cohesion (Armbruster & Fallon, 1994; Kazdin & Mazurick, 1994). Among youths presenting with externalizing problems, Kazdin and Mazurick (1994) found factors such as parental stress and severity of antisocial behaviors to predict dropout from treatment. Comorbidity may also play a role, as comorbid depressive symptoms have been found to predict attrition among anxious youths (Gonzalez, Weersing, Warnick, Scahill, & Woolston, 2011). Cultural factors such as lack of ethnic and language match between the youth and therapist has also been found to predict dropout among ethnic minority adolescents, though the relationships among these variables may differ by ethnic group (Yeh, Eastman, & Cheung, 1994).

Kazdin (1997) proposed the barriers-to-treatment model, which posits that families encounter many types of barriers such as practical issues (e.g., perceptions on whether treatment will be helpful, alliance with therapist) that affect treatment participation to a greater degree than other factors (i.e., those related to the family or child). Studies have found support of this model. For example, parent-clinician alliance has been found to affect treatment attendance, in addition to the clinician's years of experience (Garland, Haine-Schlagel, Accurso, Baker-Ericzen, & Brookman-Fraee, 2012). Findings from a recent meta-analysis appear to support the barriers-to-treatment participation model as well. In their meta-analytic examination of the factors that predict dropout, de Haan and colleagues (2013) found that generalization across studies was difficult due to varying methodology and definitions of "dropout" across studies. However, the authors concluded that treatment and therapist variables (e.g.,

the therapeutic alliance) were overall stronger predictors of dropout as compared to pre-treatment child, parent, and family variables.

Overall, these studies show that, in developing a comprehensive model of treatment engagement, the following types of variables should be included: demographic factors, clinical variables of the youth (and parents), family variables, as well as therapist and treatment variables (e.g., barriers, process variables). The current study focuses on the role of a potentially modifiable treatment process variable, informant discrepancy, and its impact on treatment engagement.

**Informant discrepancies and treatment engagement.** Although many have posited that agreement regarding a youth's diagnostic presentation or agreement on treatment target problems likely impacts treatment engagement (e.g., Hawley & Weisz, 2003), few have empirically examined these questions. The studies that have investigated these questions have examined the impact of agreement between parents and youths, clinicians and youths, clinicians and parents, as well as clinician-generated diagnoses and those derived from more structured research instruments.

Brookman-Frazer and colleagues (2008) examined predictors of the number of treatment visits among a sample of 169 youths (ages 11-18; mean=13.6) being seen by 57 therapists in a community clinic. The researchers examined the impact of sociodemographic variables, as well as youth clinical characteristics (e.g., symptom measures, functioning), parent/family characteristics (e.g., parent depression, caregiver strain, quality of family relationships), therapist characteristics (e.g., theoretical orientation, years of experience), and treatment entry characteristics (e.g., treatment

goal agreement) on treatment visit frequency. Treatment goals were assessed from the parent, youth, and therapist using an open-ended question at intake, which were then coded into five domains following the conceptual model outlined by Hoagwood and colleagues (1996): 1) symptoms, 2) functioning, 3) consumer perspectives (e.g., quality of life, satisfaction with care), 4) environments (e.g., stability in classroom or neighborhood, social supports), or 5) systems (e.g., integration with other systems such as schools). Goal agreement was operationalized as agreement on a minimum of one treatment goal between parent-youth, parent-clinician, or youth-clinician. These researchers found that higher youth self-reported symptom severity and greater parent-youth treatment goal agreement to be the only significant predictors of more treatment visits.

Hoffman and Chu (2015) examined the impact of agreement on treatment engagement using a more homogeneous diagnostic sample. Specifically, they utilized a sample of 95 youths (ages 7-17; mean=11.56) presenting to a university-based outpatient specialty clinic for anxiety-related treatment to examine parent-youth agreement. In the clinic protocol, youths and parents were asked to independently identify the top three problem areas they wished to address in treatment. Responses were then coded into 25 categories that corresponded with desire for change at the diagnostic level (e.g., separation fears, diffuse anxiety, depression), symptom level (e.g., sleep problems, self-esteem, suicidal ideation), or level of impairment (e.g., family or academic functioning, somatic symptoms). Parent and youth responses were coded as “matched” if there was a match between one or more of the target problems

that each respective individual identified, regardless of the problem's rank in priority for treatment. The researchers found that 44.2% of the parent-youth dyads matched on one target problem, while 21.1% matched on two target problems and 2.1% matched on all three. Moderate parent-youth agreement was found for the categories of "specific fears," "school attendance/distress," and "panic." While youth age, gender, and number of diagnoses did not predict parent-youth matching, the presence of an externalizing disorder significantly decreased rates of match. The researchers also examined the impact of match on therapy attrition, outcomes, and satisfaction. Target problem match was not predictive of attrition, which was defined as therapy dropout before session 10 (coinciding with before exposure treatment for the anxiety began). However, the attrition rate was low (88.3% stayed in treatment through session 10).

While these studies have found evidence for the importance of parent-youth agreement, others have noted the importance of agreement between clinicians and other informants. Jensen-Doss and Weisz (2008) examined the impact of diagnostic agreement on therapy engagement and treatment outcomes in a sample of 197 youths receiving mental health services in community clinics. As previously described, the correlation between clinician-assigned diagnoses and diagnoses derived from standardized research instruments is low (e.g., Jensen & Weisz, 2002). The researchers examined the impact of agreement between clinician-generated and research-generated (using the DISC) diagnoses on both the youth's primary diagnosis (i.e., the diagnosis likely to be primarily guiding treatment), as well as overall diagnoses. They found that agreement on both primary diagnosis and overall

diagnoses was predictive of fewer no-shows and cancellations, though neither agreement was predictive of the number of weeks that the youth was in treatment. In addition, disagreement on overall diagnoses for the youth was predictive of a five-fold greater likelihood of dropout from therapy.

Klein, Lavigne, and Seshadri (2010) examined predictors of agreement between parents and clinicians using a diverse sample of 900 youths (ages 3-19 years; mean=8.5) receiving care from an outpatient psychiatry clinic. The researchers examined diagnostic correspondence between clinician-generated diagnoses (i.e., those derived from typical intake procedures) and diagnoses derived from parent reports on the Child Symptom Inventory – IV, which produces scores that map on to different DSM diagnoses. Agreement between clinicians and instrument-derived diagnoses ranged from 1.3% for dysthymia to 34.4% for ADHD. The researchers grouped major depression, dysthymia, and generalized anxiety disorder into an “internalizing” category, while ADHD and oppositional defiant disorder were grouped into “externalizing problem.” They found there to be 7.0% agreement between clinicians and parents for an internalizing problem, while percent agreement on the presence of an externalizing problem was 45.7%. Agreement on the presence of an externalizing problem was greater for youths who were male, of younger age, and exhibited greater severity and impairment. For an internalizing problem, agreement was greater for youths who were female, of younger age, were more symptomatic, and not receiving Medicaid. Lastly, in their examination of the impact of diagnostic agreement on session attendance, they found that disagreement on internalizing



problems predicted fewer visits while disagreement on an externalizing problem did not.

Overall, these studies indicate that informant discrepancies negatively impact treatment engagement, highlighting the importance of clinical diagnostic accuracy as well as parent agreement with their child and the clinician. While Hoffman and Chu (2015) did not find discrepancies between parents and youths to negatively impact rates of treatment attrition among anxious youths, their sample size was small and may have thus been underpowered to find such an effect. Furthermore, the setting in which these youths received care (a more specialized university-based clinic as opposed to a general outpatient community clinic) may have also affected the results. The findings by Klein and colleagues (2010) in contrast indicate that the negative consequences of informant discrepancies may be especially critical for internalizing problems.

***Potential mediators of the link between informant discrepancy and treatment engagement.*** Informant discrepancies have been theorized to impact treatment engagement through a number of mechanisms. Potential mediators of this relationship that have been suggested include the impact of informant discrepancy on the therapeutic alliance and satisfaction.

***Impact of informant discrepancy on treatment alliance.*** One of the most frequently hypothesized mediators of the relationship between informant discrepancy and poorer treatment engagement is therapeutic alliance, a critical therapy component that has been found to affect treatment outcomes. The construct of treatment alliance is thought to be comprised of several components such as emotional bond,

collaboration on tasks, and agreement on treatment goals (Shirk, Karver, & Brown, 2011). Thus, failure to address the right problem or diagnosis may affect this working relationship (Jensen-Doss & Weisz, 2008). Using a sample of 344 youths (ages 7 to 18) who had ended outpatient treatment, Garcia and Weisz (2002) examined the potential role of a variety of parent-reported factors on dropout: therapeutic relationship problems, family/clinic practical problems, staff and appointment problems, time and effort concerns, beliefs about child need for treatment, and financial issues. The researchers found that problems in the therapeutic relationship and with finances were the only significant factors that predicted whether the youth completed treatment or prematurely dropped out. Furthermore, the therapeutic alliance between clinicians and parents versus youths may have different implications for outcomes. For example, Hawley and Weisz (2005) found that greater parent alliance with the clinician predicted engagement processes such as more consistent attendance (i.e., fewer no-shows and cancellations), while youth alliance was predictive of clinical outcomes (i.e., symptom improvement). In contrast, Jensen-Doss and Weisz (2008) did not find discrepancies between clinician-generated diagnoses and those derived from standardized research protocols to impact parent-reported therapeutic alliance.

*Impact of informant discrepancy on other therapeutic processes.* Informant discrepancy may affect treatment engagement through other mechanisms such as treatment satisfaction and parental involvement. For example, parent-child matching has been found to predict treatment satisfaction such that parents were more likely to

endorse greater likelihood of returning to the clinic in the future when they agreed with their child on a target problem (Hoffman & Chu, 2015). Israel and colleagues (2007) found parental involvement to be negatively affected by parent-child discrepancies on reports of symptomatology and impairment in a usual care setting.

### **Informant discrepancies and clinical outcomes.**

*Impact of informant discrepancies on treatment outcomes.* In addition to the effects that informant discrepancies may have on treatment engagement, these discrepancies may also impact clinical outcomes. For example, in the study by Jensen-Doss and Weisz (2008) described above, the researchers found greater diagnostic agreement to predict greater improvement on parent-reported youth internalizing symptoms. This finding provides evidence that diagnostic accuracy has a significant role in clinical outcome, as the relation between these two has been argued to be unclear (Nelson-Gray, 2003). Among anxious youths, others have similarly found greater agreement to predict greater treatment gains (Panichelli-Mindel, Flannery-Schroeder, Kendall, & Angelosante, 2005). In contrast, in the study by Hoffman and Chu (2015) previously described, the researchers found that target problem matching between parents and youths was not predictive of either the remission rates of the youth's primary diagnosis or anxiety symptoms at post-treatment. However, the sample size was small (n=95) and may have thus been underpowered.

*Impact of informant discrepancies on other clinical outcomes.* In addition to the impact of informant discrepancies on treatment processes and outcomes, these discrepancies have also been linked to adverse clinical outcomes in general. Goodman

(2013) found that the underreporting of victimization experiences (e.g., interpersonal violence) by youths relative to their parents was related to increased symptoms of youth depression and anxiety over a 2.5-year period. Discrepant parent-youth reports on prosocial characteristics have similarly been linked to increased odds of depression and anxiety (Taylor & Wood, 2013). Ferdinand and colleagues (2004) found parent-adolescent discrepancies on the CBCL and YSR to be predictive of later maladaptive outcomes such as drug use, police contact, and self-harm, and that these negative effects occurred across both internalizing and externalizing problem areas. The relationship between informant discrepancies and maladaptive outcomes may also be bidirectional (Stuart & Jose, 2012).

Overall, it appears that informant discrepancies may negatively impact clinical outcomes in youths. When this occurs in the context of treatment, this relationship may in part be mediated by the impact that informant discrepancies have on treatment processes such as engagement. Given the higher rates of discrepancy in reporting of less observable, internalizing symptoms, consideration of the potentially negative impact of informant discrepancies may be especially important when working with youths with depression.

### **Depression in Youth**

Depression is highly prevalent in youth, with some estimating that up to 25% of youths in the United States will experience depression by the end of adolescence (Kessler, Avenevoli, & Merikangas, 2001). While the prevalence of depression in young childhood among males and females is approximately equal, the prevalence of

depression approximately doubles in females relative to males in adolescence (Hyde, Mezulis, & Abramson, 2008). Depression in adolescence has been linked to a number of negative outcomes such as poorer school performance and social functioning, engagement in substance use and other delinquent behaviors (Brent & Weersing, 2008), and increased risk of suicide and self-harm (Brent & Birmaher, 2002). Most youths who die by suicide have a history of mood disorder (Bridge, Goldstein, & Brent, 2006). Given these negative outcomes and findings that adolescent depression frequently continues into adulthood (Lewinsohn, Allen, Seeley, & Gotlib, 1999), successful treatment of depression in adolescence is a pressing public health priority.

A number of clinical trials have shown various psychotherapy protocols to be efficacious in treating youth depression, with cognitive-behavioral therapy (CBT) models and interpersonal therapy (IPT) showing the most evidence of efficacy (Weersing, Jeffreys, Do, Schwartz, & Bolano, 2017). However, despite these positive effects in clinical trials, effects of therapy in community practice have been modest at best. Studies transporting CBT into community settings have had mixed results (e.g., Kerfoot, Harrington, Harrington, Rogers, & Verduyn, 2004; Weisz et al., 2009) and the outcomes of usual community care may not exceed the natural remission rate of depressive disorder (Weersing & Weisz, 2002). While the efficacy of the care youths receive in the community is unclear, most children and adolescents with depression are unlikely to receive any care at all (Merikangas et al., 2010), further exacerbating the problem. Thus, engagement of these youths in treatment when services are sought and examining the factors that may impact this engagement is of critical public health

importance. As informants frequently differ in their reports on youth internalizing symptoms and depression, examination of the potential impact of this discrepancy on treatment processes is especially needed for depressed youths.

## The Current Study

The extant research indicates that informant discrepancies may negatively affect a number of treatment processes such as engagement, though the work thus far has focused on general samples of youth presenting with either a range of mental health issues in community-based settings or anxiety within a more specialized clinic. The current study sought to address a gap in the literature by examining the link between informant discrepancies and treatment engagement among youth with clinically significant depressive symptoms. Given that the prevalence of depression is higher among adolescents as compared to younger children (Kessler et al., 2001) and that the negative sequelae associated with adolescent depression often continue into adulthood, the current study focused on adolescents seeking treatment from a large, community-based outpatient mental health clinic. Given the lack of a “gold standard” by which to identify depressed youth in community settings, youths with “elevated depressive symptoms” were operationalized as adolescents who scored in the clinical range on the *Mood and Feelings Questionnaire* (see *Methods*) per self-report or parent report, or who received a depressive disorder diagnosis by the clinician at intake. Analyses were conducted in the entire sample (parent-youth-clinician endorsement of significant depressive symptoms), and in three sub-samples (parent/youth endorsement; parent/clinician endorsement; and youth/clinician endorsement). The current study had the following proposed aims:

**Aim 1.** *Patterns of agreement among informants:* To examine and describe rates and patterns of informant discrepancies among youths, parents, and clinicians on reports of youths' depressive symptoms.

***Hypothesis 1.*** Parent-youth-clinician (i.e., across the three types of reporters, or triad) agreement on youths' depressive symptoms will be low. Parent-youth and parent-clinician agreement will be poorer than youth-clinician agreement.

**Aim 2.** *Predictors of informant discrepancies:* Using a model-building approach, examine what factors predict informant discrepancy. Examine youth demographic and clinical variables, in addition to family and parent variables (e.g., parental strain).

***Hypothesis 2.*** The examination was in part exploratory in nature. However, given past findings, membership in an ethnic minority group, receipt of public assistance (as a proxy for income), higher functioning, and presence of significant comorbid externalizing symptoms were hypothesized to be predictive of discrepancy among informants. Greater perceived stress for the youth per parent report and greater youth anxiety were hypothesized to predict greater agreement. Lastly, greater parental stress was hypothesized to predict greater discrepancy in parent-youth, parent-clinician, and parent-youth-clinician (i.e., triadic) agreement.



**Aim 3.** *Relationship between informant discrepancies and treatment*

*engagement:* Examine the relationship between informant discrepancy and treatment engagement, utilizing a number of different operationalizations of “engagement” given that the factors associated with attrition vary according to the way in which the construct is defined (Warnick et al., 2012).

***Hypothesis 3.*** Discrepancies between and among informants, after controlling for other key factors (e.g., demographic, clinical), would be predictive of lower treatment engagement such that these youths will attend fewer sessions, have more no-shows and cancellations (relative to the total number of scheduled sessions), and be more likely to be a clinician-reported dropout. While informant discrepancy/agreement was predicted to uniquely contribute to treatment engagement relative to the other predictor variables, factors such as youth level of impairment, parental stress, ethnicity, and public assistance status were predicted to significantly predict engagement as well. Greater parental stress, membership in a minority group, and receipt of public assistance status were hypothesized to negatively impact treatment engagement. While youth functioning was predicted to impact treatment engagement, there was no a priori hypothesis about the directionality of this relationship.

The findings of the current study had the potential for significant implications for optimizing treatment for depressed youth. That is, examination of the impact of

informant discrepancy, a potentially *modifiable* treatment process variable, on treatment engagement had the potential to illuminate how the critical process of assessment at the initiation of treatment may have lasting effects on the entire treatment process.

## Methods

### Participants

Participants in the study were an ethnically diverse sample of youths (ages 13-18) seeking treatment from a community-based outpatient mental health clinic (OMHC) located in New Haven, CT that serves approximately 500-600 youths and families each year. Youths in this clinic present with a wide range of mental health issues and most families receive public assistance. A majority of the services in the clinic are conducted in English. Several clinicians are bilingual English-Spanish speakers and are able to conduct sessions in English or Spanish depending on the family's preference. In addition, the clinic has interpreting services in order to provide sessions in a wide variety of languages. Youths included in the study were seen in the clinic between July 2005 and December 2014.

As described above, the sample was defined using adolescent and parent self-report, in addition to clinician diagnosis at intake. That is, the sample consisted of youth with significant depressive symptoms as indicated by youth or parent report on a well-validated depression measure (the *MFQ*, see below) or a clinician diagnosis of a depressive disorder at intake. Following these criteria, the sample consisted of a potential pool of 335 cases. Eight of these cases reflected youths who had more than one episode of care at the clinic. To maintain independence of observations, a random number generator was utilized to identify one episode of care for each youth with multiple episodes of care. This process resulted in a final sample size of 326 youths (ages 13-18). These 326 youths were seen by a 114 different clinicians in the clinic.

The number of youths treated by an individual clinician ranged from one to 25 cases. The majority of clinicians in this clinic were Master's-level clinicians in social work..

### **Procedures**

Initiation of treatment in the clinic typically occurred as follows: after an initial phone contact, parents/caregivers attended an orientation at the clinic in order to complete paperwork and a packet of intake measures (see *Measures* below).

Following orientation, families were brought in to the clinic for an intake evaluation, at which point youths ages 11 and older completed clinical measures, similar to those completed by their caregivers. At these initial appointments, parent and youth consent was sought for participation in de-identified, archival medical record research (approximately 80% of families consent to research participation). After intake, clinicians completed the Ohio Scales (see *Measures*), documented the appropriate diagnoses for the youth, and completed an initial treatment plan within 30 days of intake. Next, families were assigned to a clinician for therapy and the clinician collaborated with the family to develop Target Problems to focus on in treatment.

### **Measures**

The current study utilized data collected from standardized measures and clinician-generated chart diagnoses. Treatment engagement was measured using attendance data extracted from the youths' electronic medical records.

**Measures of depression.** Parent and youth reports of depressive symptoms were measured using data from questionnaires. Clinician report of significant youth depressive symptoms was coded from the clinician-generated chart diagnoses.

*Mood and Feelings Questionnaire (MFQ;* Angold, Costello, Pickles, & Winder, 1987). The MFQ is a widely-used, 34-item self-report measure that assesses for youth symptoms of depression in the past 2 weeks, originally developed following the criteria outlined in the *Diagnostic and Statistical Manual for Mental Disorders, 3<sup>rd</sup> edition (DSM-III;* American Psychiatric Association, 1987). The measure has strong psychometric properties, such as high internal consistency (Wood, Kroll, Moore, & Harrington, 1995), and has been shown to validly identify youths with major depression and other depressive disorders (Daviss et al., 2006).

As previously described, the MFQ was utilized to define the sample such that the sample in part consisted of youths with clinically significant depressive symptoms as per self-report or parent report. There is no consensus in the extant literature on what score on the MFQ constitutes the “clinical cut-off,” and past studies have indicated that this cut-off may differ for parent and youth reporters. However, to maintain consistency in measurement, the current study utilized the same cut-off score across both parent and youth reporters. The current study consulted the current literature to determine the most appropriate cut-off score.

Within a sample of youth attending services at an outpatient psychiatric clinic that specializes in assessment of depressed and suicidal youth, Wood and colleagues (1995) found that a score of 27 on the youth version of the MFQ and a score of 21 on the parent version served as the clinical cut-offs. Using a more heterogeneous sample of 470 youth, Daviss and colleagues (2006) determined the cut-off score for youth and parent versions to be 29 and 27, respectively. Using a sample of 113 youth at an

outpatient clinic, Kent and colleagues (1997) found scores of 29 and 25 on the youth and parent versions respectively best distinguished depressed from non-depressed youth. Based on this literature, the current study utilized a cut-off score of 27 for both parent and youth reports. This specific score was identified in two of the three papers as an appropriate cut-off and was mid-range in the remaining paper. As such, this score was considered to adequately detect youths with clinically significant depressive symptoms without over-identifying youths who may be suffering from significant psychological distress but may not fall clearly within the clinically depressed category. The score of 27 was at the high end of the range for parent report cut-off values; however, it was the recommended cut-off for parents by Daviss and colleagues (2006), the investigation with the largest sample of general outpatient youths and likely to be the best fit to the sample of the current study. As clinician agreement with other informants was dichotomous, parent-youth agreement was also dichotomized using this clinical cut-off score. The continuous MFQ score was utilized in the analyses for Aim 3 as a measure of depression severity.

*Clinician-generated diagnoses.* Youths were assigned diagnoses following standard intake procedures. Data from the parents' and youths' self-reports were made available to the clinicians to inform diagnostic decisions and aid treatment planning. Clinician diagnoses were coded as having a depression-related diagnosis present or absent. The category of "depression-related diagnosis" included diagnoses such as the following: major depressive disorder, depressive disorder NOS, dysthymic disorder,

and adjustment disorder with depressed mood. It did not include diagnoses such as mood disorder NOS.

All potential patterns of agreement/disagreement among the three informants are outlined in Table 1 below.

**Table 1:** Patterns of Informant Agreement

Pattern of Agreement	Informant		
	<i>Youth</i>	<i>Parent</i>	<i>Clinician</i>
	+	-	-
	-	+	-
	-	-	+
	+	+	-
	-	+	+
	+	-	+
	+	+	+

+ indicates presence of clinically significant depressive symptoms or diagnosis  
 - indicates absence of clinically significant depressive symptoms or diagnosis

Parent-youth agreement was described by utilizing the reports from these respective informants on the MFQ. Agreement between youths and parents was examined by dichotomizing scores on the MFQ as described above (below/above clinical cut-off). Presence of clinically significant depressive symptoms as determined by the clinician was based on clinician diagnosis. Given the dichotomous nature of this variable (presence of depressive disorder vs. absence of depressive disorder), clinician agreement with the other informants was measured by comparing match on clinician diagnosis (present/absent) to dichotomized parent and youth report on the MFQ (i.e.,

the report by parent or youth placed the youth in the clinical range or not). For example, clinician-youth agreement was defined as the presence of a clinician-generated depressive disorder diagnosis in addition to significant depressive symptoms as reported on the youth MFQ. Triadic agreement was defined as the presence of a clinician-generated depressive diagnosis, in addition to parent and youth reports on the MFQ that surpassed the clinical cut-off.

As agreement between reporters was determined from dichotomous reports, informant agreement was a dichotomous outcome. When conceptualizing agreement, reports were considered to be in agreement only when both reporters (or all reporters, in the case of the triad) agreed on the *presence* of significant depressive symptoms. That is, the *absence* of reports of significant depressive symptoms was not included in the construct of “agreement.” For example, when examining parent-youth agreement, the lack of significant depressive symptoms reported by either informant (row 3 above) was not considered agreement. Triadic agreement was operationalized as agreement across all reporters (row 7) in comparison to lack of triadic agreement (rows 1 through 6).

**Measures of demographic and clinical variables.** Data from the following measures were utilized to define the demographic and clinical variables of interest.

*Ohio Youth Functioning and Severity Scales (Ohio Scales;* Ogles, Melendez, Davis, & Lunnen, 2001). The Ohio Scales is a self-report measure with youth, caregiver, and case manager/therapist versions that assesses four domains in the past 30 days: youth problem severity, functioning, hopefulness, and satisfaction with



behavioral health services. The measure has high utility for assessing service need among youths (Warnick, Weersing, Scahill, & Woolston, 2009). The measure has been found to have adequate to excellent internal consistency, adequate test-retest reliability, as well as evidence of discriminant validity and sensitivity to change (Ogles et al., 2001). Items assessing for the presence of specific symptoms are rated on a 6-point scale, ranging from “not at all” to “all of the time.”

The functioning scale of the Ohio Scales was utilized in the analyses as an index of impairment. While the original data analytic plan proposed using parent report when the parent was in the informant pair/triad of interest (i.e., parent-youth, parent-clinician, and parent-youth-clinician) and clinician report to examine the remaining dyad (i.e., youth-clinician), a significant portion of the clinician data on youth functioning were missing (31.6% of the total sample did not have data on clinician report of functioning). Thus, parent report was utilized for all analyses. In addition, there were two items on the Ohio Scales that were reportedly often skipped by parents and youths. Specifically, these items asked youths and parents to identify the extent to which the youth had difficulty with “dating or developing relationships with boyfriends or girlfriends” and “earning money and learning how to use money wisely.” Exploratory data analyses found a potential age effect on whether the question regarding dating was answered (i.e., it was skipped more often when reporting on younger youth). To eliminate the potential for biased answering, the item-level scores for both of these items were removed in the calculation of the total functioning score.

*Screen for Childhood Emotional and Related Disorders (SCARED;* Birmaher et al., 1999). The SCARED is a 41-item self-report measure of youth anxiety symptoms with both youth and parent versions. The measure produces a total score, with a total score of 25 or higher indicating significant anxiety, in addition to five sub-scores that map onto more specific anxiety categories. The measure has been shown to have high utility as a screening tool for anxiety disorders (Simon & Bogels, 2009). It has been found to have good internal consistency, as well as sensitivity to treatment effects (Muris et al., 1999). The sub-scores, in addition to the total score, have demonstrated both good internal consistency and discriminant validity (between anxiety and other types of diagnoses, as well as within anxiety disorders; Birmaher et al., 1999). The five-factor structure of the SCARED in addition to sensitivity and specificity of the clinical cut-off score have been demonstrated in ethnic minorities as well (Gonzalez, Weersing, Warnick, Scahill, & Woolston, 2012). Parent report on the SCARED was examined in the current study as a potential predictor of informant discrepancy, in addition to as a predictor of treatment engagement.

*Perceived Stress Scale – 4 Item (PSS-4;* Cohen & Williamson, 1988). The PSS-4, an abbreviated version of the PSS (Cohen, Kamarck, & Mermelstein, 1983), is a self-report measure of perceived stress in the last month. The PSS-4 has acceptable internal consistency (Warttig, Forshaw, South, & White, 2013) and has been found to uphold its structure across cultures (Leung, Lam, & Chan, 2010). Parent report on the PSS-4 was utilized in the current study as a potential predictor of informant discrepancy, in addition to as a predictor of treatment engagement.

*Caregiver Strain Questionnaire (CSQ;* Brannan, Heflinger, & Bickman, 1997). The CSQ is a self-report measure developed to assess the stress experienced in the past month by caregivers of youths with mental health issues. It has been found to have a three-factor structure and high internal consistency (Brannan et al., 1997). Parental stress was examined as a potential predictor of informant discrepancy, as it has been found to predict greater discrepancies in reports of both externalizing and internalizing symptoms in prior studies (Penney & Skilling, 2012). Data on parent psychopathology and parent-child conflict were unavailable, though parental stress likely overlaps with these constructs. For example, parental stress has been found to mediate the relationship between mother-child conflict and discrepancies in reports on the youth's behavior (De Los Reyes & Kazdin, 2006). Given that parents and other informants, and not youths themselves, are the primary means by which youths are referred and taken to treatment (Kazdin, 1989), examination of the impact of parental factors on informant discrepancy and treatment engagement was needed.

*Swanson, Nolan, and Pelham (SNAP-IV;* Swanson, 1992). The SNAP-IV is a dimensional symptom measure intended for completion by parents and teachers about youth symptoms of attention-deficit hyperactivity disorder (ADHD) and other externalizing symptoms (e.g., oppositional defiant disorder). While it was originally developed based on *DSM-III* criteria, it has been adapted for newer versions of the DSM (Collett, Ohan, & Myers, 2003). The measure also has subscales that correspond to more specific domains (e.g., inattention). Examination of its psychometric properties has found good to excellent internal consistency and a three-factor structure

(Bussing et al., 2008; Collett et al., 2003). The measure has also been translated into different languages and been shown to have good psychometric properties (Inoue et al., 2014). Only parent report is available on this measure. Scores from the measure's subscales that assess symptoms of inattention, hyperactivity, and oppositional/defiant behavior were separately utilized as measures of externalizing comorbidity when examining both predictors of informant discrepancy and predictors of treatment engagement.

***Demographic characteristics.*** The role of demographic factors in predicting informant discrepancy and treatment engagement was examined using data collected from parents, which included the following: youth characteristics (age, gender, and ethnicity), family composition, parent marital status, household income, and public assistance status. The current study focused on examination of four demographic factors: youth age, youth gender, youth racial/ethnic minority status, and public assistance status. Measurement of public assistance status served as a proxy for family income, as many cases were missing data regarding income.

**Measurement of treatment engagement.** As previously described, treatment engagement was operationalized in multiple ways given evidence that the factors associated with different definitions of attrition and dropout vary. Treatment engagement was measured in the following three ways: 1) total number of sessions attended; 2) number of no-shows and cancellations relative to the total number of sessions scheduled; and 3) clinician-defined dropout. Data on youth attendance to treatment as indicated in their medical chart was utilized to construct the first two

definitions. To account for the fact that youths varied in the number of weeks that they spent in treatment, treatment engagement as defined as the number of no-shows and cancellations was standardized across youths by calculating the percentage of sessions in which the family or youth had a no-show or cancellation out of the total number of sessions they were scheduled for. The third definition of engagement was constructed by examining clinician-coded reasons for discharge, with reasons such as “child/family did not participate in treatment” and “unable to follow up with client/family” coded as dropout.

### **Data Analytic Plan**

**Characterizing informant discrepancy (Aim 1).** For Aim 1, levels of informant agreement in the sample were explored using a variety of descriptive statistics. Agreement between parents and youths, clinicians and youths, clinicians and parents, and among all three informants (triadic agreement) were examined.

**Predicting discrepancy (Aim 2).** To examine the second aim, informant discrepancy was the dependent variable. A model-building approach was utilized to examine predictors of informant discrepancy. Logistic regression was utilized for all analyses given the dichotomous nature of the outcome variable. For each dyad/triad definition of agreement, the following classes of variables were examined as potential predictors of informant discrepancy: 1) sociodemographic variables (youth age, gender, ethnicity/racial minority status, and public assistance status); 2) child clinical variables (level of impairment, comorbidity, perceived stress); and 3) parent variables (parental stress). For each definition of informant agreement, the following steps were

used: (a) conduct a univariate test of each potential predictor; (b) retain univariate predictors with  $p < .05$ ; (c) enter all significant univariate predictors into a multivariate prediction model to assess the relative strength of predictors; and (d) retain all variables with  $p < .05$  as predictors of the respective definition of informant discrepancy. Given the exploratory nature of the analyses, a Bonferroni correction was not employed.

**Relationship between discrepancy and engagement (Aim 3).** As with Aim 2, a model-building approach was similarly employed to examine the relationship between informant agreement and treatment engagement. Informant agreement was now the main independent variable of interest. All informant agreement dyads/triad were examined dichotomously (yes/no agreement).

The statistical analysis employed to examine the relationship between informant discrepancy and other predictors to treatment engagement varied depending on the specific definition of engagement. Number of attended sessions was examined utilizing negative binomial regression, as count variables are often non-normally distributed. The analyses were nested at the level of the clinician. Percentage of no-shows and cancellations (inconsistency of treatment attendance) was examined utilizing nested linear regression. Clinician-defined dropout was examined using nested logistic regression.

A similar model-building approach as described under Aim 2 was utilized to examine how the following variables impact treatment engagement: 1) sociodemographic variables (youth age, gender, ethnicity/racial minority status, and

public assistance status); 2) child clinical variables (functioning, comorbidity, perceived stress, depression severity); 3) parent variables (parental stress); and 4) informant agreement/discrepancy. Predictors that were statistically significant at the univariate level were entered into a multivariate model. The respective agreement variable, regardless of its significance at the univariate level, was included in all multivariate analyses as it was the primary independent variable of interest. In addition, all demographic characteristics, regardless of their statistical significance at the univariate level, were included at the multivariate level given past research indicating the importance of these factors in service utilization. Variables significant at the multivariate level were retained as predictors of the respective definition of treatment engagement.

Before conducting the analyses to examine the number of attended sessions, potential outliers were assessed for by using a commonly used technique, the Tukey (or boxplot) method (Tukey, 1977). This same procedure was repeated for each of the sub-samples (i.e., parent-youth, parent-clinician, and youth-clinician). Data points identified as outliers using this method were removed from the respective analyses. To estimate the impact of removal of these cases and to assess the stability of the results, sensitivity analyses were conducted by: 1) conducting the analysis with cases identified as outliers using the Tukey method removed, then 2) repeating these analyses with the highest data point not identified by the boxplot method removed (i.e., one additional data point removed), and 3) repeating these analyses with the lowest data point identified by the boxplot method included (i.e., one additional data

point included). Across these analyses, the results remained fundamentally unchanged. Thus, the boxplot method was deemed an appropriate method to detect outliers in the data.

**Nesting.** This sample included a high number of clinicians relative to the number of youths in the sample (i.e., 114 clinicians and 326 youths), making formal nesting methods such as hierarchical linear modeling more unstable and less appropriate for the data structure. Preliminary analyses were conducted to assess the potential for a clinician effect, and calculations of intra-class correlation coefficients produced extremely small, negligible values. However, all analyses in Aims 2 and 3 utilized the “cluster” function in Stata and clustered by clinician. This function adjusted the standard errors to account for non-independence of cases within clinicians.

**Power analysis.** In the analyses, continuous measures were employed when possible to maintain higher power. As previously noted, the alpha level was not restricted given the hypothesis-generating nature of the study. Given the overall sample size ( $n=326$ ), the analyses were sufficiently powered (.80) to examine all of the predictors of interest in Aims 2 and 3. The sample size is also comparable to prior studies that have examined informant discrepancies.



## Results

The sample included all youths who had elevated depressive symptoms (or a depression-related diagnosis) from parent, youth, or clinician report. Among the sample of 326 youths, 266 youths had clinically elevated depressive symptoms based on parent or youth report. Among the sample of 326 youths, 285 youths had clinically elevated depressive symptoms based on parent or clinician report. Among the sample of 326 youths, 274 youths had clinically elevated depressive symptoms based on youth or clinician report. Across the entire sample ( $n=326$ ), 28.8% of youths were also diagnosed by the clinician with an anxiety diagnosis (e.g., social phobia); 19.6% were diagnosed with a disruptive behavior disorder (e.g., oppositional defiant disorder); and 12.8% were diagnosed with ADHD. Table 2 (see *Appendix*) presents the demographic and clinical characteristics of the entire sample, in addition to the three sub-samples (parent-youth, parent-clinician, and youth-clinician).

### Rates of Agreement

**Parent-youth sub-sample.** Among those youths in which either the parent or youth reported clinically elevated depressive symptoms ( $n=266$ ), 37.8% of parent-youth dyads agreed that the youth had clinically significant depressive symptoms. Among those that were discrepant (i.e., either the parent or youth did not report significant symptoms), clinically elevated depressive symptoms were endorsed by 50.9% of parents (and 49.1% of youths).

**Parent-clinician sub-sample.** Among those youths in which either the parent or clinician reported clinically elevated depressive symptoms, 30.1% of parent-

clinician dyads agreed that the youth had significant depressive symptoms (i.e., either elevated symptoms as reported by parent or a depressive disorder diagnosis by the clinician). Among those that were discrepant (i.e., either the parent or clinician did not report significant depression), clinically elevated depressive symptoms were endorsed by 46.8% of parents (and 53.2% of clinicians).

**Youth-clinician sub-sample.** Among those youths in which either the youth or clinician reported clinically elevated depression, 35.9% of youth-clinician dyads agreed that the youth had significant depressive symptoms (i.e., either elevated symptoms as reported by youth or a depressive disorder diagnosis by the clinician). Among those that were discrepant (i.e., either the youth or clinician did not report significant depression), clinically elevated depressive symptoms were endorsed by 45.8% of youths (and 54.2% of clinicians).

**Parent-youth-clinician (whole sample).** Last, 16.7% of parent-youth-clinician triads agreed that the youth exhibited clinically elevated depressive symptoms. Among those that were discrepant (i.e., lacking triadic agreement), clinically elevated depressive symptoms were endorsed by 46.4% of youths, 47.6% of parents, and 52.0% of clinicians.

Graphs 1 through 3 illustrate the rates of agreement in the dyadic sub-samples. The graphs also illustrate the percentage of cases in which the third informant reported significant depressive symptoms (or a depressive diagnosis) when the main dyad of interest agreed on the presence of significant depressive symptoms (or a depressive diagnosis). For example, Graph 1 depicts the rate of agreement between parents and

youths in the parent-youth sample. It also portrays the percentage of clinicians who gave the youth a depression-related diagnosis when both parents and youths reported that the youth had significant depressive symptoms, in that sub-sample (i.e., triadic agreement within the sub-sample).

### **Predictors of Informant Agreement**

Results from the univariate-level analyses are presented in Table 3.

**Predictors of parent-youth agreement.** At the univariate level, agreement between parents and youths on reports that the youth had clinically significant depressive symptoms was predicted by greater youth anxiety ( $\beta=0.04, p<.001$ ), lower youth functioning ( $\beta=-0.02, p=.004$ ), greater perceived stress ( $\beta=0.28, p<.001$ ), and greater caregiver strain ( $\beta=0.06, p=.02$ ). When the variables significant at the univariate level were entered into a multivariate model, parent-youth agreement was predicted by greater youth anxiety ( $\beta=0.03, p<.001$ ) and greater perceived stress ( $\beta=0.23, p=.001$ )

**Predictors of parent-clinician agreement.** At the univariate level, agreement between parents and clinicians that the youth had clinically significant depressive symptoms (as indicated on the MFQ or by the diagnosis of a depressive disorder, respectively) was predicted by greater youth anxiety ( $\beta=0.03, p<.001$ ), lower youth functioning ( $\beta=-0.02, p=.01$ ), greater perceived stress ( $\beta=0.16, p=.001$ ), older youth age ( $\beta=0.21, p=.04$ ), and being of ethnic/racial minority status ( $\beta=0.62, p=.02$ ). At the multivariate level, parent-clinician agreement was predicted by greater youth anxiety

( $\beta=0.03$ ,  $p=.01$ ), older youth age ( $\beta=0.29$ ,  $p=.02$ ), and being of racial/ethnic minority status ( $\beta=0.87$ ,  $p=.01$ ).

**Predictors of youth-clinician agreement.** At the univariate level, agreement between youths and clinicians on whether the youth had clinically significant depressive symptoms (as indicated on the MFQ or by the diagnosis of a depressive disorder, respectively) was predicted by lower youth inattention symptoms ( $\beta=-0.33$ ,  $p=.05$ ) and lower youth hyperactivity symptoms ( $\beta=-0.56$ ,  $p=.01$ ). Older youth age ( $\beta=0.33$ ,  $p=.01$ ) and female gender ( $\beta=1.27$ ,  $p<.001$ ) also predicted agreement. At the multivariate level, youth-clinician agreement was predicted by older youth age ( $\beta=0.32$ ,  $p=.01$ ) and female gender ( $\beta=1.33$ ,  $p<.001$ ).

**Predictors of parent-youth-clinician (triadic) agreement.** At the univariate level, agreement among parents, youths, and clinicians (triadic agreement) was predicted by greater youth anxiety ( $\beta=0.03$ ,  $p<.001$ ), lower youth functioning ( $\beta=-0.02$ ,  $p=.002$ ), and greater perceived stress ( $\beta=0.23$ ,  $p<.001$ ). Older youth age ( $\beta=0.38$ ,  $p=.01$ ) and female gender ( $\beta=1.06$ ,  $p=.01$ ) also predicted agreement. At the multivariate level, triadic agreement was predicted by greater youth anxiety ( $\beta=0.02$ ,  $p=.03$ ) and greater perceived stress ( $\beta=0.23$ ,  $p=.01$ ). In addition, female gender ( $\beta=1.02$ ,  $p=.04$ ) and older youth age ( $\beta=0.38$ ,  $p=.01$ ) predicted triadic agreement.

### **Predictors of Treatment Engagement**

**Number of sessions attended.** Across the entire sample, prior to removal of outliers, the mean number of sessions attended was 24.3 ( $SD=32.5$ ). The number of sessions attended ranged from 0 to 212 sessions. Due to the significant dispersion of

the data, outliers were removed from the dataset using the Tukey method, or boxplot method, as described in the Data Analytic Plan. The mean number of sessions attended after removal of outliers for each respective sub-sample section is presented below.

Table 4 presents the results from the univariate-level analyses.

***Parent-youth report.*** Among the sub-sample of youths in which either the parent or youth reported clinically significant depressive symptoms, the mean number of sessions attended was 20.7 (SD=23.4). At the univariate level, the number of attended sessions was not predicted by any of the variables of interest. Parent-youth agreement did not predict number of sessions attended at the univariate level ( $\beta=-0.15$ ,  $p=.40$ ). In a multivariate model with all demographic predictors and the agreement variable included, no variables were found to significantly predict number of sessions attended.

***Parent-clinician report.*** Among the sub-sample of youths in which either the parent or clinician reported clinically significant depressive symptoms, the mean number of sessions attended was 20.2 (SD=21.2). At the univariate level, a greater number of attended sessions was predicted by lower youth anxiety ( $\beta=-0.01$ ,  $p=.01$ ) and lower ODD symptoms ( $\beta=-0.17$ ,  $p=.02$ ). Agreement was not significant at the univariate level ( $\beta=0.22$ ,  $p=.13$ ). In a multivariate model with all demographic predictors and the agreement variable included, anxiety was the only significant predictor ( $\beta=-0.01$ ,  $p=.003$ ), such that lower anxiety predicted a greater number of attended sessions.

***Youth-clinician report.*** Among the sub-sample of youths in which either the youth or clinician reported clinically significant depressive symptoms, the mean number of sessions attended was 23.1 (SD=28.2). At the univariate level, a greater number of attended sessions was predicted by a higher level of youth functioning ( $\beta=0.01, p=.04$ ) and lower ODD symptoms ( $\beta=-0.20, p=.01$ ). In the multivariate model with all demographic predictors and the agreement variable included, youth gender and informant agreement were significant such that youth-clinician agreement ( $\beta=0.46, p=.01$ ) and male gender ( $\beta=-0.34, p=.05$ ) predicted a greater number of sessions attended.

***Parent-youth-clinician (triadic) report.*** Across the sample, the mean number of sessions attended was 20.0 (SD=21.7). At the univariate level, a greater number of attended sessions was predicted by lower youth anxiety ( $\beta=-0.01, p=.02$ ) and lower ODD symptoms ( $\beta=-0.14, p=.05$ ). In the multivariate model with all demographic predictors and the agreement variable included, a greater number of sessions attended was predicted by triadic agreement ( $\beta=0.40, p=.03$ ) and lower youth anxiety ( $\beta=-0.01, p=.01$ ).

**No-shows and cancellations.** Results from the univariate-level analyses are presented in Table 5.

***Parent-youth report.*** Among the sub-sample of youths in which either the parent or youth reported clinically significant depressive symptoms, the mean percentage of no-shows and cancellations relative to the number of sessions scheduled was 33.3% (SD=22.6%). At the univariate level, a greater percentage of no-shows and

cancellations was predicted by higher ODD symptoms ( $\beta=0.04$ ,  $p=.01$ ), being an ethnic/racial minority ( $\beta=0.08$ ,  $p=.01$ ) and being a recipient of public assistance ( $\beta=-0.08$ ,  $p<.001$ ). Parent-youth agreement was not a significant predictor ( $\beta=-0.04$ ,  $p=.16$ ). At the multivariate level, with all demographic predictors and the agreement variable included, a greater percentage of no-shows and cancellations was significantly predicted by being of ethnic/racial minority status ( $\beta=0.07$ ,  $p=.01$ ) and being a recipient of public assistance ( $\beta=0.06$ ,  $p=.01$ ).

***Parent-clinician report.*** Among the sub-sample of youths in which either the parent or clinician reported clinically significant depressive symptoms, the mean percentage of no-shows and cancellations relative to the number of sessions scheduled was 32.4% (SD=21.0%). At the univariate level, a greater percentage of no-shows and cancellations was predicted by greater symptoms of ODD ( $\beta=0.04$ ,  $p=.02$ ), being of minority status ( $\beta=0.08$ ,  $p=.004$ ), and being a recipient of public assistance ( $\beta=0.05$ ,  $p=.03$ ). Parent-clinician agreement status was not predictive of consistency in treatment attendance ( $\beta=0.002$ ,  $p=.95$ ). At the multivariate level, with all demographic predictors and the agreement variable included, a greater percentage of no-shows and cancellations was significantly predicted by being of ethnic/racial minority status ( $\beta=0.07$ ,  $p=.01$ ).

***Youth-clinician report.*** Among the sub-sample of youths in which either the youth or clinician reported clinically significant depressive symptoms, the mean percentage of no-shows and cancellations relative to the number of sessions scheduled was 32.6% (SD=22.4%). At the univariate level, a greater percentage of no-shows and

cancellations was predicted by greater symptoms of hyperactivity ( $\beta=0.05, p=.02$ ) and ODD ( $\beta=0.04, p=.01$ ). Being of minority status ( $\beta=0.09, p=.001$ ) and a recipient of public assistance ( $\beta=0.06, p=.03$ ) significantly predicted greater inconsistency in treatment attendance. Lack of agreement between youths and clinicians regarding the presence of significant depressive symptoms was predictive of a greater percentage of no-shows and cancellations ( $\beta=-0.09, p=.001$ ). At the multivariate level, with all demographic predictors and the agreement variable included, higher percentages of no-shows and cancellations were significantly predicted by lack of agreement between youths and clinicians on depression status ( $\beta=-0.08, p=.01$ ) and being of ethnic/racial minority status ( $\beta=0.06, p=.05$ ).

***Parent-youth-clinician (triadic) report.*** Across the entire sample, the mean percentage of scheduled sessions that were no-shows or cancellations, relative to all of the sessions scheduled for the particular youth/family, was 33.2% (SD=22.4%). At the univariate level, a greater percentage of no-shows and cancellations was predicted by lower youth functioning ( $\beta=-0.001, p=.05$ ), greater symptoms of hyperactivity ( $\beta=0.04, p=.04$ ), and greater symptoms of ODD ( $\beta=0.04, p=.01$ ). Demographic factors also affected consistency of treatment attendance such that youth of ethnic/racial minority status ( $\beta=0.08, p=.004$ ) and youth receiving public assistance ( $\beta=0.06, p=.01$ ) had a greater percentage of no-shows and cancellations. Informant agreement was a significant predictor in that a lack of triadic agreement predicted a greater percentage of no-shows and cancellations ( $\beta=-0.06, p=.01$ ). When all significant predictors were tested in a multivariate model that included all demographic factors and the agreement



variable, being of minority status was the only variable that significantly predicted a greater percentage of no-shows and cancellations ( $\beta=0.05, p=.05$ ).

**Clinician-defined dropout.** Results from the univariate-level analyses are presented in Table 6.

**Parent-youth report.** Among the sub-sample of youths in which either the parent or youth reported clinically significant depressive symptoms, 44.2% of youths dropped out of treatment per clinician report. At the univariate level, dropout, as defined by clinician report, was not predicted by any of the variables of interest. Parent-youth agreement was not predictive of clinician-defined youth dropout ( $\beta=-0.14, p=.58$ ). In a multivariate model with all demographic variables and the agreement variable included, no predictors were significant.

**Parent-clinician report.** Among the sub-sample of youths in which either the parent or clinician reported clinically significant depressive symptoms, 45.1% of youths dropped out of treatment per clinician report. At the univariate level, dropout, as defined by clinician report, was not predicted by any of the variables of interest. Parent-clinician agreement was not predictive of clinician-defined youth dropout ( $\beta=-0.30, p=.23$ ). In a multivariate model with all demographic variables and the agreement variable included, no predictors were significant.

**Youth-clinician report.** Among the sub-sample of youths in which either the youth or clinician reported clinically significant depressive symptoms, 41.6% of youths dropped out of treatment per clinician report. At the univariate level, dropout, as defined by clinician report, was not predicted by any of the variables of interest.

Youth-clinician agreement was not predictive of clinician-defined dropout ( $\beta=0.28$ ,  $p=.28$ ). In a multivariate model with all demographic variables and the agreement variable included, no predictors were significant.

***Parent-youth-clinician (triadic) report.*** Across the entire sample, 44.1% of youths dropped out of treatment per clinician report. At the univariate level, dropout, as defined by clinician report, was not predicted by any of the variables of interest. Triadic agreement was not predictive of clinician-defined dropout ( $\beta=0.01$ ,  $p=.97$ ). In a multivariate model with all demographic variables and the agreement variable included, no predictors were significant.

## **Discussion**

Assessment has an important function in the treatment process such that it guides the development of treatment targets and goals. In working with youths, assessment is a multi-informant process that provides clinicians with rich information from multiple perspectives. However, these diverse informants often provide discrepant reports, particularly when reporting on internalizing symptoms, which poses a challenge for clinicians. Reports on depression more specifically may be especially vulnerable to discrepancies, given the frequently unobservable nature of this disorder (and possible misinterpretations of depression symptoms). Lack of agreement has implications for treatment processes, such as the therapeutic alliance and treatment satisfaction, and has been linked to poorer treatment engagement in broader samples of youths and youths presenting primarily with anxiety. The current study examined informant agreement on youth depressive symptoms among youths, parents, and clinicians, with the following aims: 1) characterize patterns of agreement among the informant types; 2) examine the role of demographic and clinical variables in predicting agreement; and 3) examine the relationship between agreement and treatment engagement. It hypothesized that informant discrepancy would be high, predicted by sociodemographic and clinical factors, and predictive of poorer treatment engagement. The results were broadly consistent with these hypotheses, but varied across the dyadic and triadic analyses.

In examining patterns of agreement, dyadic comparisons among parents, youths, and clinicians found that informants agreed that the youth had clinically

elevated depressive symptoms approximately one-third of the time. Inconsistent with the hypothesis that youths and clinicians would have the highest agreement rate, parents and youths exhibited a slightly higher rate of agreement (parent-youth, 37.8%; youth-clinician, 35.9%). As hypothesized, the rate of triadic agreement was low (16.7%). These findings are comparable to the low rates of informant agreement found in past studies, particularly regarding internalizing psychopathology (e.g., 37.0% agreement on a single, specific problem, Yeh & Weisz, 2001; 23.2% triadic agreement on a single, specific problem, Hawley & Weisz, 2003). These results suggest that depressive symptomatology may be especially difficult to detect, and may be due to the fewer observable symptoms that characterize depression. The lower rates of agreement found when clinicians were informants are especially concerning, as clinicians are typically the primary developers of treatment plans. Namely, clinicians may be overlooking a significant presenting concern and failing to adequately address the depressive symptoms in their treatment approaches.

Hypotheses regarding what demographic and clinical factors would significantly predict agreement were partially supported by the results. When a parent was one of the informants (parent-youth, parent-clinician, and triadic agreement), parent report of the youth's anxiety significantly predicted agreement. Garland and colleagues (2004) similarly found agreement (specifically, parent-youth-clinician agreement) to be predicted by the presence of an anxiety disorder. Anxiety frequently manifests itself in more noticeable ways as compared to depression (e.g., expressed worries, jitteriness). These "external" indicators of internalizing issues may be more

easily noticed by parents, thus leading to higher parental report of youth depression. Similarly, parents may observe general “distress” in the youth, leading to higher reports on both anxiety and depressive measures. When both parents and youths were informants (parent-youth dyadic agreement and triadic agreement), parent report of the stress they perceive the youth to be experiencing significantly predicted agreement. As with the findings on parent report of youth anxiety, this suggests that parents may perceive generalized distress in the youth, leading them to rate the youth high on multiple symptom domains or more sensitively detect depressive symptoms.

When clinicians were an informant, demographic factors such as older youth age and female gender significantly predicted agreement. Measurement of clinicians’ assessment of youths’ depressive symptoms was derived from the diagnoses entered into the youths’ medical records. These diagnoses were presumably developed following a clinical interview with the youth or parent. As such, it may be that clinicians were more inclined to specifically inquire about depressive symptoms in older, female youth, as depression is more prevalent in this demographic, thus contributing to greater agreement with other informants. These findings are both consistent and inconsistent with past work. For example, Klein and colleagues (2010) found older youth age and male gender to predict discrepancies in informant reports. These differences in findings may reflect differences in the sample, as Klein and colleagues (2010) examined a sample of youths with a broader age range and more diverse presenting problems. Jensen and Weisz (2002) have similarly noted mixed findings regarding the relationships of youth age and gender with agreement.

Contradictory to past work (Hoffman & Chu, 2015; Klein et al., 2010), clinical variables hypothesized to impact informant agreement, such as externalizing symptoms and youth functioning, were not significant predictors in any of the dyadic or triadic analyses. As the presence of externalizing symptoms can overshadow the presence of internalizing symptoms (Weisz & Weiss, 1991), leading to lower detection of the latter in youth, this result is reassuring. That is, the presence of externalizing symptoms did not appear to negatively affect informants' abilities to detect depressive symptoms in the youths. Parental stress also did not negatively impact agreement as predicted (e.g., Muller et al., 2011; Youngstrom et al., 2000).

Contrary to the hypothesis that ethnic/racial minority status would predict lower levels of agreement, inclusion in a racial/ethnic minority group predicted greater agreement between parents and clinicians. This reason for this finding is unclear. Follow-up analyses found that, among non-minority youth, 66.4% of parents reported elevated depressive symptoms in the youth, while 56.9% clinicians gave a depression-related diagnosis. Among minority youth, 63.3% of parents reported elevated depressive symptoms, while 75.9% of clinicians assigned the youth a depression-related diagnosis. Taken together, these results suggest that clinicians may be over-diagnosing depressive diagnoses in minority youth, leading to higher rates of false positives and thus higher rates of agreement (or parents are under-detecting symptoms).

The results have implications for clinical practice. The finding that the presence of anxiety symptoms assists in the detection of depression, particularly for

parents, suggests that parents may need additional psychoeducation about depression as a stand-alone disorder. Especially in adolescence, depression-related symptoms may be misinterpreted by caregivers. For example, anhedonia can manifest as a lack of motivation to complete homework, chores, and other responsibilities. Parents may view these behaviors as defiance “typical” of adolescence, when they in reality reflect symptoms of depression. Despite the frequent comorbidity of depression with anxiety disorders (Cummings, Caporino, & Kendall, 2014), the ability to detect depression alone is critical for obtaining timely care for these youths. Regarding minority youth, additional time or resources may need to be dedicated to ensure accurate diagnosis. Depression and internalizing disorders in general can manifest in different ways in ethnic minority groups and may be especially stigmatized in these cultures (Anderson & Mayes, 2010). As such, both parents and clinicians (and perhaps the youths themselves) need to consider these factors in order to accurately identify these youths.

### **How Do Informant Agreement and Other Variables Affect Treatment**

#### **Engagement?**

Rates of agreement were low in the sample, and a critical next question to examine was whether informant agreement/discrepancy has any practical or clinical importance among youths with elevated depressive symptoms. That is, does informant agreement truly matter or impact treatment in any meaningful way? Aim 3 sought to answer this question. The findings suggest that different factors predicted treatment engagement across the three operationalizations of this construct in the current study. These varying patterns across definitions further support the need to define treatment

engagement (and attrition) in different ways to gain a more nuanced understanding of this construct (Warnick et al., 2012).

The first operationalization of treatment engagement was defined as the overall number of sessions a youth attended. Youths in this sample attended approximately 20 sessions, a much higher number of attended sessions than documented by past studies of community-based clinics (McKay & Bannon, 2004; Merikangas et al., 2011). However, other indices of central tendency, such as the median, are important to consider given the significant dispersion of the data. Across the entire sample, the median number of sessions attended was 12. This is comparable to session data cited in past work. For example, Brookman-Frazer and colleagues (2008) noted that youths in their sample (with a broad spectrum of presenting issues) attended a mean of 13.8 sessions within a 6-month period.

The primary hypothesis that informant discrepancy negatively affects treatment attendance was partially supported. More specifically, agreement between informants appears to be particularly important when youths and clinicians are reporters. Disagreement between youths and clinicians on presenting problems is likely to negatively affect the therapeutic relationship, an important factor in treatment retention (Garcia & Weisz, 2002), as the clinician may focus treatment on areas that the youth does not find important. As the therapeutic relationship is critical in keeping clients committed to attending treatment and for therapy outcomes, it is unsurprising that agreement is particularly important for this dyad. Parent-youth agreement did not play a significant role in predicting how many sessions youths attended, contrary to



past work (Brookman-Frazee et al., 2008). This may be due to the current sample's older age, as treatment is less likely to heavily involve parents.

Across the dyadic and triadic analyses, the demographic variables generally did not predict number of sessions attended. Similarly, with the exception of anxiety when parents and clinicians were informants, clinical variables did not play a significant role, either. This is consistent with past findings (Brookman-Frazee et al., 2008). For example, among the parent-youth sub-sample, no predictors of interest were significant. These results are promising and imply that factors that have been found to negatively impact treatment attendance in previous studies (e.g., caregiver strain) are not negatively affecting attendance in the current sample. The finding that anxiety, and specifically, lower anxiety, predicts a greater number of attended sessions (among youths identified by parents or clinicians) suggests that youths with lower levels of anxiety may be less hesitant or more open to attending treatment. When working with youth with elevated depressive symptoms who also present with significant anxiety, it may be beneficial for treatment retention to address the anxiety symptoms simultaneously.

The general lack of significant findings for demographic and clinical variables underscores the importance of considering factors *not* defined by youths and families in understanding session attendance. That is, the *process*-related variable of informant agreement had a significant and positive role in how many sessions youths attended, while the typical demographic and clinical variables examined in studies of treatment engagement generally did not. These results bolster the critical need to consider and

address informant agreement as an influential component of the treatment process. The failure to find a relationship between minority status and session attendance, while in contrast to past findings (Miller et al., 2008), is a positive result such that being a member of an ethnic/racial minority group is not hindering these youths' ability to receive care.

The second operationalization of treatment engagement in the current study was consistency of treatment attendance, calculated as the percentage of sessions in which the youth did not show or cancelled, relative to the total number of sessions scheduled. Across the dyadic and triadic comparisons, youths did not show to or cancelled approximately one-third of their scheduled appointments. Inconsistent treatment attendance is not uncommon in community mental health settings (e.g., Watt & Dadds, 2007). Consistent treatment attendance is crucial, as regular attendance or a certain "dosage" of sessions within a prescribed period of time maximizes the potential for positive treatment gains (Warnick et al., 2012).

The hypothesized negative effect that lack of agreement would have on consistent session attendance was supported in the sub-sample of youths in which either the youth or clinician reported significant depression. This is consistent with the finding reported above that youth-clinician agreement predicts greater session attendance. These findings together again underscore the importance of agreement between clinicians and youths, as disagreement may negatively affect rapport, treatment goals, treatment satisfaction, and perhaps even treatment outcomes (Hawley & Wesiz, 2005). Among adolescents who have a more advanced cognitive capacity

than younger children to understand why they are attending therapy, or greater input as to whether they would like to participate in treatment, disagreement with clinicians may be especially detrimental to treatment processes. Agreement between parents and youths may take on lesser importance, as older youth are more likely to spend one-on-one time with clinicians in therapy with less parental input or oversight, as discussed above. These results suggest that agreement is not only an important goal during the initiation of treatment, but a critical component to maintain *throughout* treatment. As therapy progresses, symptoms fluctuate and treatment goals may shift, and it is important for clinicians to continually assess symptom and goal agreement in order to increase consistency of attendance and retention.

Demographic factors impacted consistency of treatment attendance as well. Being a recipient of public assistance was a significant predictor in the parent-youth sub-sample. Public assistance status may serve as a proxy for the home environment (e.g., greater number of stressors, more chaotic environment) and being a recipient of public funds may affect the ability of parents and youths to report on the youth's depressive symptoms, while clinicians' abilities to detect these symptoms remain unaffected. Across the dyads and triad, minority status was the only consistently significant demographic predictor, such that members of a racial/ethnic minority group had higher rates of no-shows and cancellations. This consistent result across sub-samples is especially of note in contrast to the general lack of finding of a significant relationship between public assistance status and consistency of attendance. Altogether, this suggests that being of ethnic/racial minority status creates an

additional barrier or incrementally adds to the disadvantage above and beyond that associated with being of lower socioeconomic status. This finding is consistent with past work. Using a broader sample of youth from the same clinic from which the current sample was derived (i.e., Yale Child Study Center), Warnick and colleagues (2012) found that being African-American or of Hispanic ethnicity was predictive of youths missing their last scheduled appointment. Moreover, youths who missed their last scheduled appointment were in treatment for a similar duration of time as compared to those who attended their last appointment, but they attended a fewer number of sessions in that time (i.e., had higher rates of no-shows/cancellations).

The last operationalization of treatment engagement was defined as clinician-defined dropout, which consisted of coding clinician-reported reasons for termination of treatment. These rates of dropout, as defined by a clinician-designated status of “child/family chose to discontinue” or similar reasons, ranged from 41.6% to 45.1% across the dyadic and triadic comparisons. These rates are slightly higher than that reported in a broader sample of youth from this same clinic setting (36.9%; Warnick et al., 2012), suggesting that the presence of elevated depressive symptoms may contribute to higher rates of dropout. Indeed, a prior study that examined rates of attrition among a primarily anxious sample of youth in this clinic found that the presence of comorbid depression predicted dropout (Gonzalez et al., 2011). As depression can be characterized by symptoms such as psychomotor retardation, lack of motivation, difficulty concentrating, and fatigue, these symptoms may be interfering with treatment attendance.

In contrast to the other definitions of treatment engagement, clinician-defined dropout was not predicted by the agreement variable or any of the clinical and demographic variables of interest. Post-hoc analyses found that youths considered to be a dropout by the clinician attended an average of 17.5 sessions (SD=18.6), while youths not considered to be a dropout attended an average of 20.1 sessions (SD=22.7). The difference in these means is fairly negligible, suggesting that there may not be enough variability between dropouts and non-dropouts to be able to identify any variables that predict this construct. The community mental health center from which this sample was derived may be especially effective in retaining clients for a longer period of time, as previous studies have cited high rates of dropout earlier in treatment (McKay & Bannon, 2004).

### **What Factors Are Most Important in Keeping Youths With Elevated Depressive Symptoms Engaged in Treatment?**

As previously described, the results of the current study underscore the importance of examining and operationalizing treatment engagement in multiple ways (Warnick et al., 2012), as these varying definitions measure slightly different constructs. Across the three definitions of treatment engagement, a few patterns are worthy of note.

As hypothesized, informant agreement is an important factor in predicting both the number of sessions youths attend and the consistency of such attendance. However, the results varied across the dyadic and triadic comparisons such that agreement was most critical for youths and clinicians. Agreement between parents and

clinicians, as well as parents and youths, had no significant influence on treatment engagement and may be reflective of the secondary role that parents frequently have in treatment when the client is of adolescent age. Parent agreement with youths, and particularly clinicians, would likely be a more critical factor in samples of younger youth. The lack of a significant finding in the parent-clinician analyses is promising in some ways. Given findings that internalizing problems are often overlooked by caregivers or given secondary importance when externalizing problems are also present (Weisz & Weiss, 1991), it is beneficial that parent-clinician discrepancy had no bearing on treatment attendance.

While agreement status and clinical factors were the primary determinants of the number of sessions youths attended, agreement status and demographic factors were critical in predicting consistency in attendance. This finding that informant agreement plays a significant role, even in the context of key demographic and clinical variables that past work has shown to affect youths' ability to attend and remain in treatment, has critical implications. It suggests that clinicians are in a powerful position to potentially greatly influence treatment engagement and outcomes. Clinicians cannot change demographic characteristics of a youth. Furthermore, clinicians have no influence over a youth's presenting symptoms at intake. However, clinicians do have varying levels of control over the assessment process (depending on the agency in which they work) and the development of treatment goals. In the current study, the analyses did not focus on treatment goals, and it is unclear whether addressing depressive symptoms was even a goal for treatment for any of the

informants. However, this emphasizes the consequentiality of the results such that the simple agreement (or discrepancy) on informant reports of sheer *symptom* presentation was enough to significantly impact youths' engagement in therapy. Thus, it is essential for clinicians to address any discrepancies in their assessment of the youths' depressive symptoms early in the treatment process, particularly with the youths themselves, as this will likely shape the treatment goals targeted in therapy.

The results of the current study are consistent with past studies examining the impact of informant agreement on treatment engagement in broader samples of youth, as well as youth presenting with significant anxiety. For youths with elevated depressive symptoms, agreement presumably positively affects critical treatment processes such as the therapeutic alliance, motivation towards treatment goals, and treatment satisfaction. The importance of this cannot be under-stated, as positive experiences in treatment increase the likelihood that families and youths will seek services again in the future if needed (Kerkorian, McKay, & Bannon, 2006). Moreover, as already noted, agreement has been linked to greater gains in treatment (Panichelli-Mindel et al., 2005). The most basic and necessary condition for positive treatment outcomes is attendance, and the current study's results indicate that informant agreement is a significant contributor to treatment attendance for youths with elevated depressive symptoms.

Aside from informant agreement, the examination of the role of other variables was illuminating as well. Of the clinical variables examined, comorbid anxiety symptomatology was the only variable that significantly predicted treatment

engagement. Anxiety symptoms also played a significant role in predicting agreement. Interestingly, while increased anxiety symptoms were predictive of greater agreement, lower levels of anxiety were predictive of greater session attendance. The presence of youth anxiety symptoms may help caregivers better detect depressive symptoms in youth, but lower levels of anxiety may help maintain treatment attendance. The reason for this latter finding is unclear, but may be attributable to the high rates of avoidance that characterize anxiety disorders. The comorbid presence of anxiety and depression is associated with higher dysfunction than the presence of either disorder alone (Garber & Weersing, 2010). Thus, the avoidant features that characterize anxiety may have a compounding effect on the disengagement that can characterize depression (e.g., low motivation) which, in conjunction, negatively affects treatment attendance.

The failure to find a significant relationship between other clinical dimensions (e.g., functioning, externalizing symptoms) and treatment engagement is surprising, as is the lack of relationship between parent variables (i.e., caregiver strain) and engagement. This latter finding is promising, however, such that the stresses experienced by caregivers did not negatively impact their ability to take the youths to treatment. However, it is possible that parental *functioning* is a stronger determinant of whether a youth receives and continues in treatment. While caregiver strain and stress are not negatively impacting treatment attendance, it may be that the extent to which these stresses interfere with caregivers' abilities to function would do so.

Alternatively, the lack of a significant link between caregiver variables and treatment engagement may be suggestive of the lesser role that parents may take on in this



particular youth population, and underscores the important influence of informant agreement on treatment engagement above and beyond these other potential barriers.

While demographic factors generally did not have a significant impact on number of sessions attended, these variables did significantly influence consistency of attendance. More specifically, being of minority status and being a recipient of public assistance did not negatively impact youths' abilities to commit to and attend treatment overall, but negatively affects one's ability to attend treatment consistently. This is a promising result overall and is in contrast to prior work documenting earlier dropout from treatment among ethnic and racial minorities (e.g., Miller et al., 2008). It suggests that further attention is needed on assisting ethnic minority families and those receiving public assistance in managing the more frequent stressors that they are likely experiencing that can negatively affect their consistency in attendance. For example, additional support through case management services or additional contacts by phone throughout the week may mitigate these barriers. Importantly, any cultural issues that may affect engagement in treatment that are relevant to the youth and family should be acknowledged and addressed appropriately early in treatment. These may include a mismatch in therapist-client ethnicity, language barriers, cultural discrepancies in parenting and discipline strategies, differences in how symptoms and disorders are conceptualized, stigma, and so on. In addition, clear expectations regarding attendance at the initiation of and throughout treatment should be set in place.

## **Limitations**

The current study has several limitations. While the study focused on youth with elevated depressive symptoms, it was not restrictive in its inclusion criteria in whether depression was the primary diagnosis or presenting problem (i.e., the target of treatment). It is possible that the results may have been different had the sample been restricted to those in which depression was the primary treatment target. Nevertheless, the results still have critical implications, as internalizing problems are frequently overlooked relative to other presenting issues. Thus, examination of when significant depressive symptoms are present, but not necessarily the focus of treatment, provides an important comparison to “real world” clinical practice.

The measurement of clinicians’ assessment of youth depression had some weaknesses. Firstly, consistency in depressive symptom measurement across all informants (e.g., MFQ scores from all informants) would have allowed for clearer comparisons. Secondly, clinicians had access to the completed MFQ measures from both parents and youths when making diagnostic decisions. However, the extent to which clinicians reviewed and considered the MFQ scores and data collected from the family when making diagnostic decisions is unknown. High levels of reference to these materials may artificially inflate the overall rates of agreement. However, the relatively lower rates of agreement between clinicians and the other reporters, as compared to parent-youth agreement, suggest that this was likely not the case. Moreover, the precision and accuracy of the clinician diagnoses is unknown. Studies have shown clinical judgment to be poor, particularly when compared to more

standardized, research-based diagnostic measurements (Jensen-Doss et al., 2014). Thus, it is unclear whether the youths who were given a depression-related diagnosis truly met the diagnostic threshold. However, the current study was not focused on youths who surpassed diagnostic threshold, and was instead focused on youths who had enough depressive symptoms such that addressing these symptoms in treatment may be warranted. That is, regardless of whether the youth indeed met diagnostic threshold, clinicians ostensibly assigned these diagnoses due to detection of significant depressive symptoms. This allowed for a parallel comparison to youth and parent report on the MFQ in this study, as it is unclear whether these MFQ scores were indicative of a diagnosis.

Additional areas of weakness include the general lack of available clinician-reported information (e.g., symptom measures/assessments, clinician characteristics), as these data would have been illuminating particularly in clinician-other comparisons. The study also did not include logistical factors (e.g., transportation issues, access to daycare) in its analyses of treatment engagement, as these data were not available. As Kazdin (1997) posited, inclusion of these types of factors is important in order to develop a comprehensive model of treatment engagement/attrition, as these factors may even play a larger role in keeping families in treatment than youth or parent variables. Lastly, the extent to which parents were involved in treatment for these youths is unknown. Such information would allow for a more nuanced understanding of the role of parental involvement in this specific population and help illuminate why youth-clinician agreement was particularly critical among these youths.

### **Future Directions**

As past work has found predictors of agreement/discrepancy to differ depending on which informant reported more symptoms (e.g., Van Roy et al., 2010), future studies should examine whether this is the case for depressed youth. As discussed above, the current study did not examine other types of variables that may impact treatment agreement such as logistical factors, clinician characteristics, and parental attitudes and perceived barriers to treatment (e.g., Kazdin, & Wassell, 1999). While informant agreement was found to significantly predict treatment engagement, the role of this variable in the context of a broader treatment engagement model is still unknown. As a comprehensive conceptualization of treatment engagement and dropout requires an understanding of how combinations of factors lead to dropout, and not just individual factors (Kazdin, Holland, & Crowley, 1997), this is an important next step for future research. In addition, the current study did not examine how agreement impacts treatment attendance in conjunction with treatment outcomes. This was outside of the scope of the study, and is surely an important area to examine in future work.

APPENDIX

**Table 2: Demographic and Clinical Characteristics**

	<u>All</u>	<u>P-Y</u>	<u>P-Clin</u>	<u>Y-Clin</u>
<b><u>Demographics</u></b>				
Age, mean years (SD)	15.5 (1.3)	15.6 (1.3)	15.6 (1.3)	15.5 (1.3)
Female (%)	64.4%	68.4%	64.6%	65.3%
Non-Hispanic White (%)	51.3%	51.3%	50.7%	54.3%
Receive Public Assistance (%)	83.3%	82.3%	84.4%	83.5%
<b><u>Youth Clinical Characteristics</u></b>				
MFQ, mean (SD)	28.0 (14.1)	31.3 (13.3)	29.8 (14.0)	26.8 (14.9)
SCARED, mean (SD)	22.5 (16.6)	24.6 (16.8)	23.3 (16.9)	21.6 (16.8)
Ohio Scales, mean (SD)	40.9 (15.9)	39.5 (15.8)	40.1 (15.8)	42.7 (15.9)
SNAP - Inattention, mean (SD)	1.4 (0.9)	1.5 (0.9)	1.5 (0.9)	1.3 (0.9)
SNAP - Hyperactivity, mean (SD)	0.8 (0.7)	0.8 (0.8)	0.8 (0.7)	0.7 (0.7)
SNAP - Oppositional, mean (SD)	1.3 (0.9)	1.4 (0.9)	1.4 (0.9)	1.2 (0.9)
Perceived Stress, mean (SD)	8.7 (3.1)	9.0 (3.0)	8.9 (3.0)	8.5 (3.1)
<b><u>Parent Clinical Characteristics</u></b>				
Caregiver Strain, mean (SD)	13.9 (5.7)	14.5 (5.5)	14.2 (5.8)	13.5 (5.6)

**Table 3:** Univariate Logistic Regression Analyses of Informant Agreement

	Parent-Youth		Parent-Clinician		Youth-Clinician		Par-Youth-Clin	
	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value
<b>Youth Clinical Variables</b>								
Anxiety	0.04	<.001***	0.03	<.001***	0.01	0.43	0.03	<.001***
Level of Functioning	-0.02	.004**	-0.02	0.01*	0.01	0.35	-0.02	.002**
<b>Externalizing Symptoms</b>								
Inattention	0.24	0.09	0.16	0.40	-0.33	0.05*	0.07	0.68
Hyperactivity	-0.02	0.91	-0.09	0.60	-0.56	0.01**	-0.33	0.09
ODD	0.13	0.42	0.13	0.39	-0.06	0.66	0.13	0.40
Perceived Stress	0.28	<.001***	0.16	.001**	0.02	0.51	0.23	<.001***
<b>Parent Variables</b>								
Caregiver Strain	0.06	0.02*	0.01	0.60	0.01	0.79	0.02	0.39
<b>Demographic Variables</b>								
Youth Age	0.20	0.08	0.21	0.04*	0.33	0.01**	0.38	0.01*
Youth Gender	0.52	0.08	0.31	0.20	1.23	<.001***	1.06	0.01*
Ethnic/Racial Minority Status	-0.21	0.42	0.62	0.02*	-0.09	0.70	-0.02	0.94
Public Assistance Status	-0.08	0.81	0.13	0.78	0.03	0.94	0.02	0.97

\*  $p < .05$     \*\*  $p < .01$     \*\*\*  $p < .001$

**Table 4:** Univariate Negative Binomial Regression Analyses for Number of Sessions Attended

	Parent-Youth		Parent-Clinician		Youth-Clinician		Par-Youth-Clin	
	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value
<b><u>Youth Clinical Variables</u></b>								
Depression Severity	-0.01	0.35	-0.01	0.08	-0.01	0.06	-0.01	0.21
Anxiety	-0.01	0.07	-0.01	0.01**	-0.01	0.07	-0.01	0.02*
Level of Functioning	0.01	0.11	0.005	0.20	0.01	0.04*	0.01	0.10
Externalizing Symptoms								
Inattention	-0.01	0.90	0.01	0.86	-0.05	0.52	0.01	0.91
Hyperactivity	-0.09	0.36	-0.08	0.30	-0.18	0.11	-0.05	0.55
ODD	-0.14	0.08	-0.17	0.02*	-0.20	0.01*	-0.14	0.05*
Perceived Stress	0.02	0.37	0.003	0.90	-0.01	0.60	0.02	0.48
<b><u>Parent Variables</u></b>								
Caregiver Strain	-0.02	0.11	-0.02	0.08	-0.02	0.13	-0.02	0.09
<b><u>Demographic Variables</u></b>								
Youth Age	-0.01	0.78	-0.001	0.99	-0.05	0.37	-0.01	0.79
Youth Gender	-0.18	0.24	-0.14	0.24	-0.24	0.10	-0.18	0.16
Ethnic/Racial Minority Status	0.09	0.56	-0.003	0.98	0.05	0.73	0.04	0.76
Public Assistance Status	0.06	0.70	0.12	0.57	0.20	0.30	0.06	0.71
<b><u>Informant Agreement</u></b>								
Agreement	-0.15	0.40	0.22	0.13	0.27	0.06	0.25	0.11

\* $p < .05$     \*\* $p < .01$     \*\*\* $p < .001$

Table 5: Univariate Linear Regression Analyses for No-Shows/Cancellations

	Parent-Youth		Parent-Clinician		Youth-Clinician		Par-Youth-Clin	
	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value
<b><u>Youth Clinical Variables</u></b>								
Depression Severity	0.001	0.72	0.001	0.20	0.0001	0.96	0.0005	0.66
Anxiety	-0.001	0.19	<-.0001	0.96	-0.001	0.17	-0.001	0.39
Level of Functioning	-0.001	0.13	-0.001	0.13	-0.001	0.15	-0.001	0.05*
<b>Externalizing Symptoms</b>								
Inattention	0.004	0.82	0.01	0.45	0.02	0.14	0.01	0.51
Hyperactivity	0.03	0.12	0.03	0.11	0.05	0.02*	0.04	.04*
ODD	0.04	0.01**	0.04	0.02*	0.04	0.01*	0.04	.01**
Perceived Stress	-0.005	0.35	-0.005	0.23	-0.01	0.14	-0.01	0.13
<b><u>Parent Variables</u></b>								
Caregiver Strain	0.002	0.35	0.004	0.10	0.003	0.20	0.003	0.23
<b><u>Demographic Variables</u></b>								
Youth Age	-0.01	0.60	-0.0004	0.97	-0.01	0.26	-0.01	0.51
Youth Gender	0.01	0.83	0.01	0.75	0.03	0.39	0.02	0.35
Ethnic/Racial Minority Status	0.08	0.01**	0.08	.004**	0.09	.001**	0.08	0.004**
Public Assistance Status	0.08	<.001***	0.05	0.03*	0.06	.03*	0.06	.01**
<b><u>Informant Agreement</u></b>								
Agreement	-0.04	0.16	0.002	0.95	-0.09	.001**	-0.06	0.01**

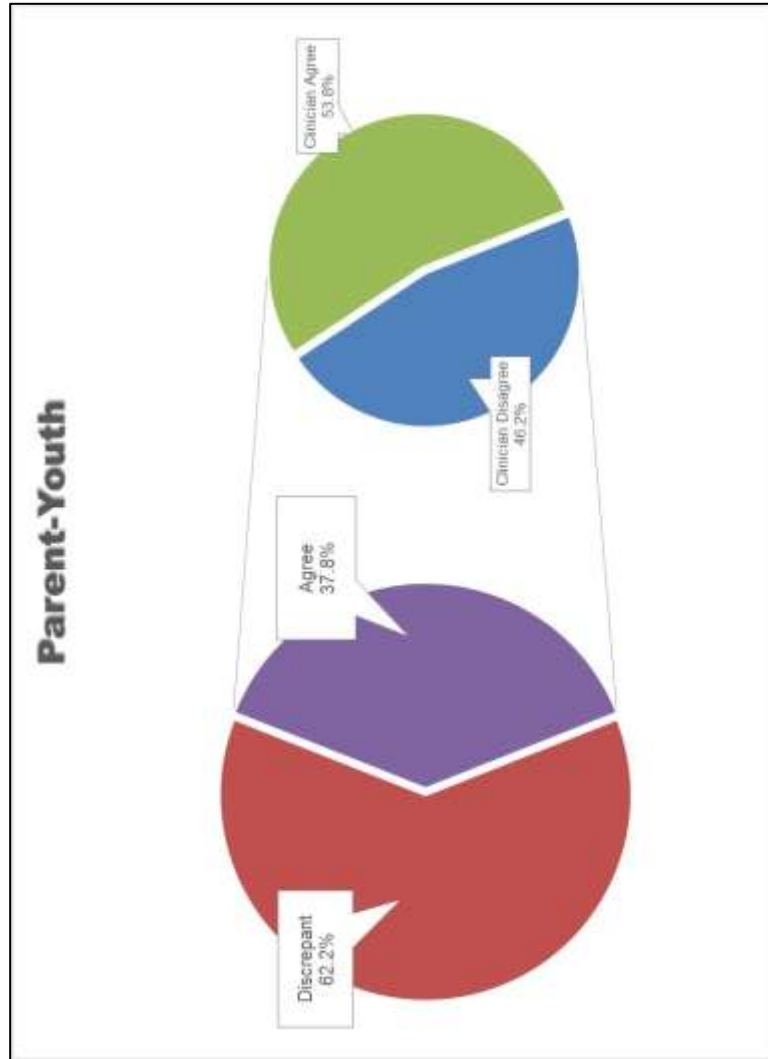
\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$



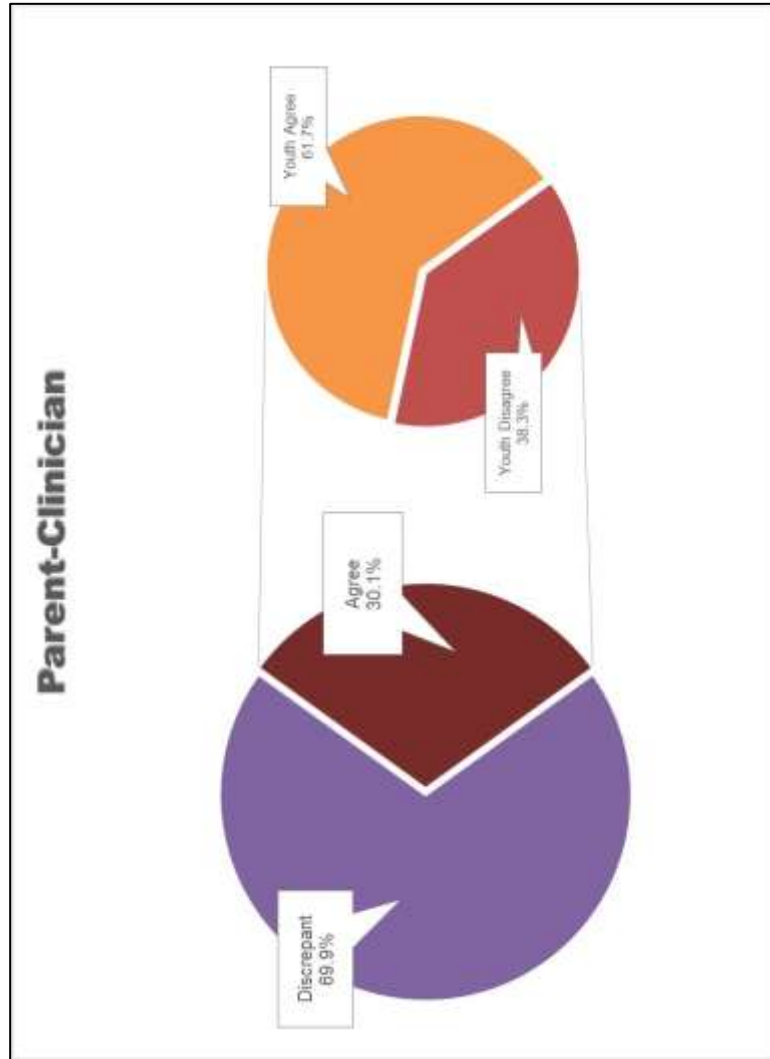
**Table 6:** Univariate Logistic Regression Analyses for Clinician-Defined Dropout

	Parent-Youth		Parent-Clinician		Youth-Clinician		Par-Youth-Clin	
	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value	$\beta$	p-value
<b><u>Youth Clinical Variables</u></b>								
Depression Severity	0.002	0.89	0.001	0.88	0.004	0.64	0.004	0.61
Anxiety	0.001	0.90	0.004	0.55	0.01	0.33	0.004	0.55
Level of Functioning	0.01	0.47	0.003	0.68	0.01	0.37	0.001	0.90
<b>Externalizing Symptoms</b>								
Inattention	-0.07	0.64	-0.08	0.57	-0.20	0.16	-0.05	0.67
Hyperactivity	0.28	0.09	0.21	0.21	0.04	0.84	0.24	0.11
ODD	0.19	0.27	0.18	0.21	-0.03	0.86	0.17	0.23
Perceived Stress	-0.07	0.07	-0.02	0.51	-0.05	0.19	-0.04	0.22
<b><u>Parent Variables</u></b>								
Caregiver Strain	0.04	0.11	0.02	0.32	0.01	0.59	0.03	0.18
<b><u>Demographic Variables</u></b>								
Youth Age	-0.01	0.90	0.05	0.60	0.05	0.59	0.04	0.63
Youth Gender	0.33	0.19	0.16	0.59	0.51	0.15	0.24	0.35
Ethnic/Racial Minority Status	-0.17	0.51	-0.18	0.45	-0.15	0.56	-0.15	0.50
Public Assistance Status	0.19	0.57	0.23	0.50	0.49	0.14	0.29	0.36
<b><u>Informant Agreement</u></b>								
Agreement	-0.14	0.58	-0.30	0.23	0.28	0.28	0.01	0.97

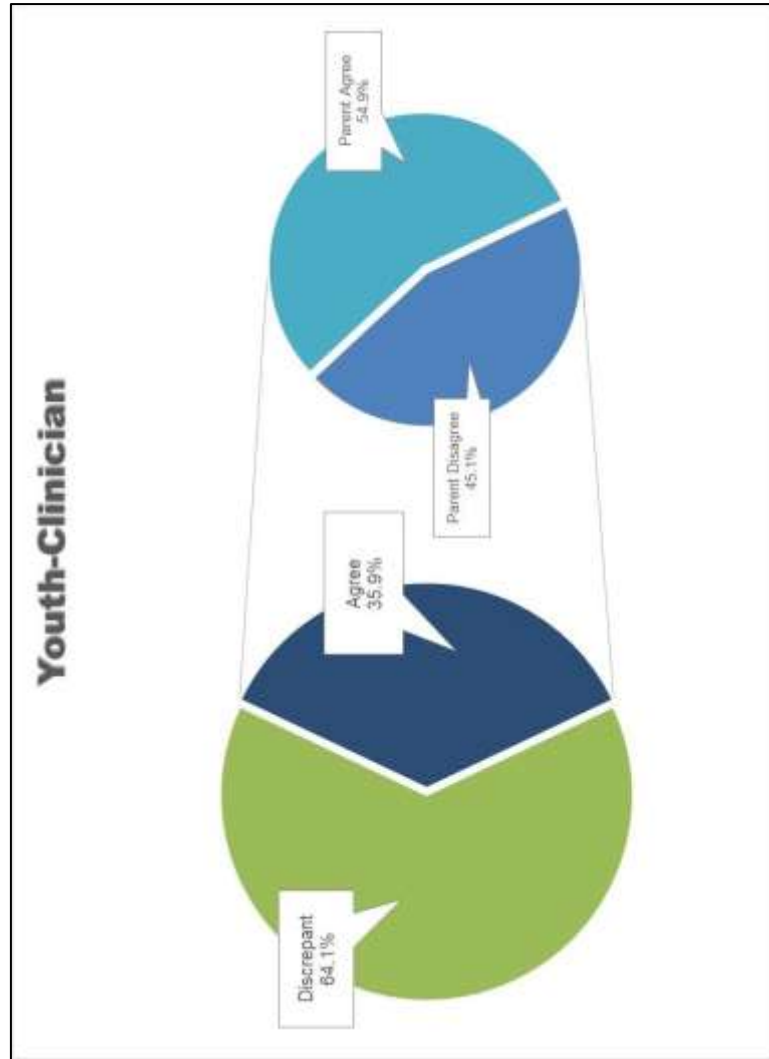
**Graph 1: Parent-Youth Agreement**



**Graph 2: Parent-Clinician Agreement**



**Graph 3: Youth-Clinician Agreement**



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