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AGREE TO DISAGREE? THE ROLE OF AGE, SEX, AND SYMPTOM TYPE ON DIFFERENCES IN MOTHER-CHILD REPORTS OF CHILD PSYCHOPATHOLOGY

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AGREE TO DISAGREE? THE ROLE OF AGE, SEX, AND SYMPTOM TYPE ON DIFFERENCES IN MOTHER-CHILD REPORTS OF CHILD PSYCHOPATHOLOGY

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ABSTRACT

AGREE TO DISAGREE? THE ROLE OF AGE, SEX, AND SYMPTOM TYPE ON DIFFERENCES IN MOTHER-CHILD REPORTS OF CHILD PSYCHOPATHOLOGY

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The purpose of this research is to analyze longitudinal outcome data obtained about children and adolescents progress and improvement over the course of psychotherapy at a community based mental health training clinic. We used an analytic approach that allowed us to document both the average change and the individual variation in change. In addition, this research considers factors that contribute to our understanding of the variation around the overall trend of improvement including the types of symptoms (internalizing or externalizing) experienced by the child, the age and sex of the child, and the informant (mother or child). Our research demonstrates two robust findings. First, there is a general trend of perceived improvement in symptoms for both children and adolescents over the course of psychotherapy. Second, when we compare mother report to adolescent self-report of psychopathology, we find that mothers see their adolescents as more distressed than the adolescents see themselves. However, these perceptions of change differ as a function of the sex and age of the client, symptom type, and informant. Our findings have implications for treatment considerations as well as how the nature of the mother-child relationship impacts child behavior and mother-child perceptions of psychopathology.

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Introduction

Background

Psychotherapy in general is a complex interpersonal process and there is an added level of complexity when the clients are children and adolescents. This added complexity results from the inherent involvement of the parents in child and adolescent psychotherapy. It is often the parents who are most likely to initiate treatment for their child, the parents generally also need to be an active agent of change, and it is the parents who are crucial in the initial diagnostic assessments as well as in the assessment of progress. Despite these additional challenges in psychotherapy with children and adolescents, research to date on clinical treatment outcomes has indicated that children and adolescents who participate in psychotherapy on average show improvement in symptoms (Kazdin et al., 1990). Although empirically demonstrating average improvement is a positive finding, by itself it is a gross simplification of the data. In particular, there is generally substantial individual variation around this average, and the average finding itself may depend on who, the parent or child, is assessing the outcome.

The purpose of this research is to analyze longitudinal outcome data obtained about children and adolescents over the course of psychotherapy using an analytic approach that allows us to document both the average change and the individual variation in change so that we can have a less simplified understanding of psychotherapy outcomes. In addition this research will consider factors that will contribute to our understanding of the variation around the overall trend of improvement. These factors include the types of symptoms (internalizing or externalizing), the age and sex of the

child, and the person assessing the change (parent or child). And we will consider more complex interactive models of these factors.

Change and Variation In Change

Most analyses and results of psychotherapeutic change tend to focus on average or mean change across clients. However, psychotherapeutic processes are not so simple. The problem with traditional analytic techniques is two-fold. First, there is a restrictive focus on group mean change and group variance without considering intra-individual change. Second, many of these techniques require assumptions that are unjustified in the context of longitudinal psychotherapy outcome research (Gallop & Tasca, 2009). We cannot assume that variances across time are equivalent or that correlations between measurements of intra-individual data across time are equal. Psychotherapy research data is highly variable in terms of initial status, growth rate, and post-treatment status. If we fail to consider this, we are missing the nuanced differences within individuals that occur throughout the psychotherapeutic process.

Multilevel Modeling, also referred to as Mixed-Effects Regression, is a flexible and powerful model that accounts for this variability. It can be defined by two levels: Level 1 refers to how each individual changes over time (and the variation across individuals are called "random effects"), and at the Level 2 the individual intercepts and slopes are averaged (fixed effects). Equation (1) is the model for the Level 1 analysis.

$$Yti = \beta 0i + \beta 1i(weeks(j)) + eti \qquad (1)$$

In this equation, *Yti* represents the YOQ-30 score at time *t* for individual *i*, $\beta 0i$ is the predicted score for each individual client (*i*) at week 0, $\beta 1i$ is the predicted linear change

for each client(*i*) per week with weeks(j) representing the week of assessment since the first therapy session, and *eti* is the residual or error at each time point for each individual.

An advantage of this analytic technique is that it provides flexibility in approaching missing data. This technique allows missing data points and treats them as missing at random (MAR), which is a less restrictive assumption than other analytic techniques that assume data are missing completely at random (MCAR; Gallop & Tasca, 2009). Clients only need two data points to derive a slope and all clients will have an intercept.

Assessing Change Over Time

To accurately measure symptom change over time, valid and reliable treatment outcome measures must be administered at the start of treatment and consistently over the course of treatment. Symptom change can be measured through various mediums including questionnaires completed by the client or individuals who know the client well, behavioral observations, and physiological measures. Behavior rating scales and self-report measures are one of the most widely used forms of assessing child and adolescent psychopathology (Smith, 2007). The brevity and short administration time for completing these questionnaires make survey formats an efficient clinical tool. In children and adolescents, multiple informants may be evaluating one individual. Often informants on children include parents, teachers, extended family members as well as the children themselves. Research shows that collecting information on child psychopathology from multiple sources is clinically useful (Newman, Ciarlo, & Carpenter, 1999). Given that symptom presentation often varies depending on the setting or the environment, multiple informants who observe the child or adolescent in unique settings provide different

vantage points of the child's functioning. This collective information allows us to better understand the facets of the child's symptomology.

Internalizing and Externalizing Symptoms

There are a large number of symptoms that can occur in children and adolescents who are in psychotherapy. Often, measures of psychopathology provide an overall measure of symptomology by providing a total symptom count. Although collecting information on total symptoms is clinically useful, it is important to identify the specific syndromes that are related to the general symptom cluster. One way of organizing symptoms is by focusing on the two broad groupings of behavioral, social, and emotional problems demonstrated by children and adolescents, which are referred to as internalizing and externalizing symptoms (Achenbach et al., 2016). Internalizing symptoms describe the internal states experienced by the individual which typically manifests as a disturbance in emotion or mood (Graber, 2004) and include somatic symptoms, anxiety, and depression. Externalizing behaviors refer to a child's negative interaction with their external world and is manifested in outward behaviors. Externalizing symptoms typically present as antisocial behaviors such as aggression, oppositionality, as well as hyperactivity.

In this research, we evaluated overall symptoms of clients while also considering the impacts of internalizing and externalizing symptoms separately. Although these clusters of symptoms are conceptually distinct, they can be difficult to distinguish empirically as often they are co-occurring and correlated, meaning there is a great deal of comorbidity. Some child and adolescent problems can be primarily classified as internalizing or externalizing, but there is a high rate of overlap. Thus, it is important to

consider the heterogeneity of problems. There is also a conception of a General Psychopathology Factor or dimension, also referred to as the "p factor" that captures overall psychopathology (Caspi et al., 2014). In this research, we will focus on this general concept of psychopathology as well as its two broad-band symptom clusters.

Moderating Variables of Treatment Outcome

When measuring treatment outcomes, it is important to evaluate what client characteristics, if any, might be impacting change over time. Knowledge related to what treatments may or may not be as effective for unique groups will allow clinicians to tailor treatment for individual clients. Pre-treatment characteristics might help predict trajectory of psychopathology and levels of improvement in psychotherapy. These variables may also help predict treatment failure, dropout, and who is less likely to benefit from treatment. Client characteristics that have been studied in relation to treatment outcome include age, gender, ethnicity, comorbidity, symptom severity, family functioning, and parental psychopathology (Hudson, 2005). Although literature supports children getting better over the course of psychotherapy it is important to determine what groups of children are better suited for treatments and to efficiently and accurately assess symptom change over time. However, there are inconsistencies across studies on the treatment outcomes of different groups. Specifically, results across studies on the predictive value of age and gender are inconsistent and require further research. For this study, we examine the moderating role of age and gender on treatment outcome.

Age and Sex of Child

Age as a Moderator

Although the literature contains many inconsistencies, there is some evidence that age might be a key predictor of child psychotherapy outcome. Several studies have found support for older age having a negative impact on treatment outcomes (Weiss, Alicke, & Klotz, 1987; Bennett et al., 2013; Southam-Gerow, Kendall, & Weersing, 2001). Hudson (2005) examined at which age intervention is most beneficial for children. Results showed that older male child clients with internalizing disorders tend to have poorer outcomes than other groups and suggested that young children may improve faster than older children (Hudson, 2005). A study by Southam-Gerow, Kendall, and Weersing (2001) demonstrated that older children show a significantly poorer response to treatment than younger children, though this difference was not maintained at 1-year follow up.

A review by Nilsen, Eisemann, and Kvernmo (2012) identified a total of 45 studies examining gender and age as moderators of treatment outcome for children and adolescents with anxiety or depression. Sixteen out of 21 studies examining age as a predictor of outcome yielded no age effect. Of the five studies examining age effects in depressed children and adolescents, two of the studies found significant effects, indicating that older age predicts poorer outcomes. It is important to note that the age groups for the 45 studies reviewed used different ranges of age groups, with some studies not examining the lower and upper extremes of the age range. Bennett et al. (2003) purports that effect sizes for psychotherapy are based on a wide age range (i.e. ages 6-18) and may lead to an inaccurate interpretation of outcome if age-related effects are not considered. Age does not appear to moderate outcome in highly controlled efficacy

studies, though these effects might emerge in university or community clinics (Bennett et al., 2003)

Gender as a Moderator

Given that biological processes play a large role in child and adolescent development, there might be gender disparities in terms of development of symptoms, symptom presentation, and symptom change over time. Researchers have studied gender as a predictor and moderator of treatment outcome, though the results across studies are mixed. For example, Treadwell, Flannery-Schroeder, & Kendall, (1995) did not find that gender was a significant predictor of treatment outcome. However, Mendlowitz et al. (1999) found that girls presenting with internalizing symptoms did better than internalizing boys in treatment (Mendlowitz et al., 1999). A study by Manassis et al. (2004) found that female adolescents had higher symptom scores for both parent and self-report. Ogden and Hagen (2009) examined gender differences in behavioral improvement during treatment and found that parents rated boys as having more externalizing symptoms than girls at posttreatment. They did not find any differences on internalizing symptoms for parent report. When they examined the self-report data, they found that girls rated themselves as having significantly more internalizing symptoms than boys at the end of treatment (Ogden & Hagen, 2009). Although boys reported less internalizing symptoms than girls, they reported more externalizing symptoms and conduct problems. In a review by Nilsen, Eisemann, and Kvernmo (2012), 17 out of 21 studies examining gender as a moderator of treatment outcome found non-significant gender effects for anxiety. All seven studies examining children and adolescents with depression yielded non-significant results for a gender effect. Overall, there is no consensus in the field on

the role that age and gender play both in treatment outcome and how symptoms are reported by different informants. Moreover, there is insufficient research on the interaction of age and gender in relation to treatment outcome.

Parent Assessment of Children and Adolescents

Greater weight is typically placed on parent reports of child psychopathology for several reasons. First, children are generally brought to therapy by their parents, thus the referral problem is likely a reflection of the parent's perception of a problem the child is experiencing (Southam-Gerow, Kendall, & Weersing, 2001). It's important to consider that parent report of child symptoms doesn't necessarily represent the child's "true" behaviors or internal experiences, but rather a perception of them given a variety of factors, including the setting in which these behaviors are observed and the relationship with the child (Smith, 2007). The contexts that parents observe their children and adolescents plays a large role in symptoms that are reported (Smith, 2007). For example, parents likely observe their children most at home. The home environment might evoke behaviors (e.g. oppositionality) from the child that are not present in other settings.

Second, parents often have a great deal of involvement in the psychotherapeutic process and their involvement is necessary for change to occur. In many cases, parent training is the primary component of treatment, with parents attending more therapy sessions than the child themselves. Given that research largely supports parent involvements contribution to positive outcomes and treatment retention in child psychotherapy (Israel, Thomsen, Langveld, & Stormark, 2007), it's not surprising that parent involvement in the assessment process is a priority.

Third, parent report is especially important for younger children who may not have the capability to provide a self-report on symptom experience. Although developmentally appropriate measures allow young children to report on basic symptomology, their reports of abstract or complex symptomology are typically less useful (Luby, Belden, Sullivan, & Spitznagel, 2007). For this study, we focus on only parent report for younger children, as we only collect self-reports for children who are above 11 years old.

Parent and Adolescent Assessment

A complexity in this research is the imbalance of the design. Specifically, informant is partially confounded with age in that we can only compare effects of informants on adolescents and not children. There is a general conception that as children age, they become more accurate reporters on their internal experiences and are able to provide additional information in relation to their parents. Informants provide information on behavior exhibited in multiple contexts (e.g. home, school). Different environmental cues or stimuli evoke behaviors in some contexts but not others so the additional reports often provide us with additional information about the child (Grills & Ollendick, 2003). Informants have unique and valid perceptions of the observed behavior and collectively provide a more complete picture of child and adolescent functioning (De Los Reyes, Thomas, Goodman, & Kundey, 2013).

Although multiple informants provide rich information, it can also be a source of diagnostic disagreement (Choudhury, Pimentel, & Kendall, 2003). Parent and adolescent discordance on reports of psychopathology has consistently been demonstrated as the rule and not the exception in psychotherapy research (Carlston & Ogles, 2008). Meta-analytic

reviews support high rates of disagreement among parent and child ratings of overall symptoms as well as internalizing and externalizing problems (De Los Reyes & Kazdin, 2004). In fact, parent-child ratings are found to be more discrepant than any other pairs of informants (Carlston & Ogles, 2009). There are various patterns of disagreement, though parents generally tend to rate their children higher on symptomology than children rate themselves (Storch et al., 2015).

This research also considers that informant may have a unique relationship with specific symptom domains. Studies focusing on symptom type have yielded results indicating that parent-child concordance is lower for internalizing disorders and higher for externalizing disorders (Grill & Ollendick, 2003); however, there might be nuances within each symptom domain. For example, several studies have shown that parent-child agreement is higher for internal symptoms that manifests behaviorally such as social withdrawal, sleep hygiene, fatigue and tearfulness (Kemper, Gerhardstein, Repper, & Kistner, 2003) and is lower for worry and negative self-talk (Nguyen et al., 1994).

Parent-child report discrepancies are not simply a result of psychometric issues, but rather these differences can actually provide meaningful information. Corroboration across informants is not required for the endorsement of a behavior to be considered valid (Klein et al., 2005). If any one informant reports a behavior, then it is believed to exist. While this information is valuable, it is still unknown what variables are accounting for these discrepancies. This research aims to address this gap in knowledge. Additionally, while there is uncertainty on who should be considered the primary informant, this research argues for a multi-informant approach to assessing child and adolescent

symptomology. We aim to focus on the parent reports of child and adolescent clients in addition to adolescent self-assessment and parent assessment.

Current Study

The aim of the current study is to assess children and adolescents' progress and improvement in psychotherapy across time, demonstrate perceptions of change in multiple informants, and examine how improvement differs for different types of symptoms and client characteristics, including age and gender. It might be easiest to conceptualize the analyses as based on two partially overlapping datasets. One dataset consists of only parent reports of both the children and the adolescents, that is across the entire age range of the children seen at the clinic. The second set of analyses uses data collected from both parent and adolescents and this is restricted to only adolescents who are able to provide a self-report. First, we evaluate children and adolescents of all ages, but only using the parent report (Analysis 1). Second, we evaluate the adolescents, and we are able to include the client self-report and compare it to the parent report (Analysis 2).

Analysis 1:

The first set of analyses examines only parent report of child and adolescent psychopathology over the course of psychotherapy. We will examine the role of age and sex of the child and adolescent as it relates to overall symptoms as well as internalizing and externalizing symptom domains. The authors hypothesize that parents will report more symptoms for adolescents than for children at the start of psychotherapy and more rapid change in the children. The authors predict that at baseline, parents will endorse more externalizing symptoms in younger children and more internalizing symptoms in

the adolescents, with the children exhibiting more change at the end of psychotherapy. The authors hypothesize that adolescent boys with externalizing symptoms will demonstrate poorer treatment outcomes than girls and internalizing girls will demonstrate the most improvement.

Analysis 2:

The second set of analyses examine parent and adolescent perceptions of change over the course of psychotherapy. We will examine the role of informant, age and sex of the adolescent as it relates to overall symptoms as well as internalizing and externalizing symptom domains. The authors hypothesize that both parents and adolescents will report an overall trend of improvement (i.e. reduction in symptoms) over time, though parents will report higher levels of distress for their children at the start of psychotherapy and over the course of psychotherapy than their children will report on themselves. We also hypothesize that parents will report higher levels of distress for adolescent male clients (especially those with externalizing symptoms) at the start of psychotherapy and less improvement in symptoms over the course of psychotherapy than any other group.

Methods

Participants

Participants were recruited from the Center for Psychological Services, a community-based mental health training clinic located in Queens, NY. The Center provides psychotherapy to local members of the community by delivering evidence-based treatments. All services are provided by Doctorate level graduate students under the supervision of Licensed Psychologists. Given that the services are administered by student therapists, prospective clients who are high-risk and indicate suicidal or homicidal ideation, psychosis, or addiction problems are considered outside the scope of care of the Center. These prospective clients are referred out to appropriate providers.

At the first appointment, clients either agree or disagree to have their deidentified data included in our research database. We analyzed data for only those who agreed to participate in research. We analyzed data for 315 clients ages 4-18 (M=11.95, SD=3.36) and their mothers. Of the 315 clients, 178 are adolescent clients ages 11-18 (M=14.3, SD=1.8). Of the 128 adolescents who reported on their sex, there are 63 males (49.2%) and 65 females (50.8%). We analyzed 137 child clients ages 4-10 (M=7.96, SD=1.7). For the purposes of this paper, we will refer to clients who are ages 4 to 10 years old as children and we will refer to clients who are 11 to 18 years old as adolescents. Of the 113 child clients who reported on their sex, there were 65 (57.5%) males and 48 (42.5%) females. A total of 74 cases are missing the sex variable because these data were not being entered at the time that these clients were receiving treatment. The mean length of therapy for clients is 36 weeks and the median length is 16 weeks. Each client has an average of 21 therapy sessions.

Measures

The primary outcome measure at the Center is the Youth Outcome Questionnaire –30 (YOQ-30; Wells et al., 1996). The YOQ-30 is a 30-item questionnaire designed to describe a wide range of symptoms. It's comprised of six domains: (1) Somatic, (2) Social Isolation, (3) Depression/Anxiety, (4) Aggression, (5) Conduct Problems, and (6) Hyperactivity/Distractibility. The 30 items are based on a four-point Likert scale (0=almost never, 4=almost always). To obtain a total score, the sum of the 30 items is calculated, with higher scores indicating higher levels of psychopathology (e.g. score of 0 is no symptomology and score of 120 is severe symptomology). Based on exploratory and confirmatory factor analysis, Winarick and Chaplin (2018) derived a 12-item internalizing scale and an 8-item externalizing scale from the YOQ-30. There is a parent report and self-report version of the YOQ-30.

Procedures

The YOQ-30 is completed at the first appointment and on a biweekly basis for each client. The YOQ-30 intake is completed on a paper form and the subsequent biweekly YOQ-30's are completed on a Kindle in the waiting room of the Center before each appointment. Only clients who are 11 years-old and older complete the self-report version. Clients below 11 years of age only have parent report. Demographic information including the age and sex of the client is collected at the intake appointment and was used for the analyses.

Data Analyses

To capture critical change that occurs early in the psychotherapy process (Owen et al., 2015), we decided to restrict our analyses to clients who completed a YOQ-30

within the first 10 weeks of therapy. We also restricted our analyses to mothers only for the parent reports because 87% of informants were mothers. There were not enough reports by fathers in the dataset to appropriately compare mothers and fathers. Additionally, mixed informants over time for each client created noise in the dataset. We only analyzed cases with consistent informants, meaning all cases analyzed only had reports by mothers. We examined several variables as moderators of change. Sex of the adolescent and informant were dummy coded in preparation for the analyses. For the informant variable, mothers were coded as 0 and adolescents as 1. For the sex variable males were coded as 0 and females as 1.

To examine differences between parent-child reports of child psychopathology over the course of psychotherapy, we conducted Mixed Effects Regression. We used an unstructured covariance structure and for estimation we used restricted maximum likelihood (REML). To assess change over time we used weeks since the first appointment as a time varying covariate. We also included informant, sex, and age as covariates in our models.

First, we analyzed the parents report of overall symptoms on the YOQ-30 for all clients. To explore whether age has an effect on total YOQ-30 symptoms reported, we examined children and adolescents separately. Rather than dichotomize the groups, we examined age as a continuous variable. We centered age for the entire sample and then we centered age for children and adolescents separately. The children (ages 4-10) who were below the mean age were 4 to 7-year-olds and older children were the 8 to 10-year-olds. The adolescents (ages 11 to 18) were also analyzed based on those who were either below the mean age (ages 11 to 14) or above the mean age (ages 15 to 18). Then, we

analyzed children and their parents separately. Given that only adolescents complete self-report of the YOQ-30, the self-report analyses were restricted to adolescent's report on themselves. Next, we compared the adolescent's self-report to the parent report for each client in this age range. To examine the role that age may play in these analyses, we added the centered age for both age groups into the model. To assess whether sex of the client further explained differences in treatment outcome, we added sex of the client into our model. To examine specific domains of psychopathology over time, we conducted all of the analyses with the externalizing and internalizing subscales of the YOQ-30 as outcome variables.

Results

Reports on Overall Symptoms

Parent Report. The two-way interaction examining parent report on all clients did not reach conventional levels of significance (B=-.03, *p*=.095). The direction of the effects revealed that at the start of psychotherapy, parents reported less distress for younger clients and more distress for older clients, with younger clients getting worse over time and older clients improving (See Table 1). The two-way interaction examining parent report on adolescents was not statistically significant (See Table 2; B=.02, *p*=.31).

Adolescent Self-Report. The two-way interaction examining adolescent self-report did not reach conventional levels of statistical significance (B=-.03, *p*=.095), though the direction of effects shows older adolescents starting off more distressed than younger adolescents at the start of psychotherapy (See Table 3).

Adolescent and Parent Report. The two-way interaction examining weeks by informant showed parents reporting significantly more distress than adolescents over the course of psychotherapy (See Table 4; B=-.09, *p*<.001). To examine how age and sexmight further moderate this effect, we examined the effect of informant, age of the adolescent, and sex of the adolescent on distress reported over the course of psychotherapy. This four-way interaction was statistically significant (See Figure 1).

To further analyze the interactions embedded within the four-way interaction, we conducted the three-way analyses included in the four-way interaction separately. First, we examined the interaction of time, informant, and age of the adolescent, which remained consistent (See Table 6 and See Figure 2; B=-.01, *p*=0.010). Second, we

analyzed time, informant, and sex of the adolescent and the result was no longer significant (See Table 7 and See Figure 3; B=.02, p=0.325).

Reports On Externalizing Symptoms

Parent Report. The two-way interaction for the externalizing total score examining parent report on young children (ages 4-7) was not statistically significant (See Table 8; B=-.00, p=.93). When we examined clients of all ages, the three-way interaction examining weeks, age, and sex was significant (See Table 9; B=-.01, p=.03). Figure 4 demonstrates parents reporting more externalizing behaviors for younger clients at the start of psychotherapy, particularly male clients, though all younger clients are improving over time. Parents report an increase in externalizing behaviors for older male clients over time and a decrease in these behaviors for older female clients. Additionally, regardless of age, girls improve in externalizing symptoms over the course of psychotherapy (B=-0.048, p<0.01). Boys who are above mean age actually demonstrate more externalizing behaviors over the course of psychotherapy, according to their parents.

Adolescent Self-Report. When we analyzed the two-way interaction (weeks by sex) for adolescent self-report, we did not find a significant result (See Table 10; B=-.01, p=.378). There was also no interaction for weeks since the first appointment and age of the adolescent (See Table 11; B=-.01, p=.14).

Adolescent and Parent Report. For the externalizing subscale, the results were consistent with the YOQ-30 total score, such that the parents reported higher levels of distress at the start of psychotherapy than the adolescents reported (B=-1.58, p<0.01) and less improvement over time (See Table 12; B=-0.02, p<0.001).

Reports on Internalizing Symptoms

Parent Report. When we examined parent report of younger children, we found that parents see improvement in symptoms over time (B=-0.02, *p*=0.07), but it is not a function of whether the children are younger or older within the child group (See Table 13; B=-0.004, *p*=0.54). We examined parent report on adolescents' internalizing symptoms, and we found that older adolescents are seen as higher on internalizing symptoms at the start of psychotherapy, but there is not a difference in rate of improvement in these symptoms over time compared to the younger adolescents (Table 14; B=.004, *p*=.62). We added sex into the model, examining weeks, age, and sex of the adolescent. This three-way interaction depicted in Figure 5 shows that the interaction was not statistically significant, indicating that sex and age did not moderate internalizing symptoms over the course of psychotherapy (See Table 15; B=-.01, *p*=.40).

Adolescent Self-Report. The two-way interaction (weeks by age) was not statistically significant (B=-.01, *p*=.14); however, older adolescents report significantly more internalizing symptoms at the start of psychotherapy than younger adolescents (See Table 16; B=.93, *p*=.02). The two-way interaction including the time varying covariate and sex was also not significant (Table 17; B=-.02, *p*=0.59)

Adolescent and Parent Report. For the internalizing subscale, the results are consistent with previous parent-adolescent analyses, which indicate that parents report more symptoms at baseline than their adolescents. The adolescents report higher rates of change in internalizing symptoms over the course of psychotherapy (See Table 18; B=-0.02, *p*<0.001).

Discussion

The aim of the current longitudinal study was to examine differences in parent-adolescent and parent-child reports of psychopathology over the course of psychotherapy at a community-based mental health training clinic. Psychotherapy is a complex process and it is further complicated when the clients are children and adolescents, given the significant role that parents play in child and adolescent psychotherapy. Parents not only provide the referral problem and initial diagnostic assessment, but also provide critical information on the progress of psychotherapy. Parents often have significant involvement in their child's therapy. Especially for younger children, parents are often the focal point of treatment, with most sessions consisting of parent work. In many cases, parents become co-therapists and their involvement and engagement in the psychotherapeutic process is crucial for change to occur.

A vast literature supports children and adolescents improving over the course of psychotherapy (Kazdin, 1990), and this is true for the clients at our clinic. This research aimed to elucidate some of the complexity that underlies this basic finding specifically, the factors that impact perceptions of change. We approached our research questions by focusing on the average change and the individual variation in change of clients over the course of psychotherapy. To obtain a more nuanced understanding of parent report on child/adolescent psychopathology and discordance of parent-child reports of psychopathology, we considered the evaluation of children who change over the course of psychotherapy as a function of the informant (parent or adolescent), age of the child/adolescent, sex of the child/adolescent, and symptom type (internalizing and

externalizing). The results indicate differential improvement as a function of these variables.

Main Findings

Analyses of the Parent Report on the Children and Adolescents

When we examined parent report only for overall symptomology of children and adolescents, we found that generally parents see their children as improving. However, we see different effects when we consider the age and sex of the child and the symptom type. In other words, the degree of perceived improvement differs under different conditions. Consistent with our hypotheses, we found that parents report more distress for older clients at the start of psychotherapy and more improvement over time, however they also reported younger clients getting worse. And, when we further considered externalizing symptoms and sex of the clients, our finding reversed: consistent with our hypotheses, the parents perceived younger males as more distressed at the start of psychotherapy and improving over time, whereas older males externalizing symptoms worsened over time. Age is a driving force for externalizing symptoms for boys, such that older boys' externalizing symptoms (e.g. aggression, antisocial behaviors) tend to worsen with age. It's possible that we are seeing this trend with older adolescent boys, because the consequences of aggressive behaviors can worsen as age increases. Additionally, research shows that mother-son relationships tend to be particularly problematic and experience more conflict than other mother-child dyads (Heatherington, 1989), which might be impacting perception of symptoms. Results from Franz and McKinney (2018) suggest that older adolescent males' psychopathology is significantly influenced by the mother-son relationship.

Consistent with the literature, we found that older clients are perceived to experience more internalizing symptoms than younger clients. Internalizing symptoms including anxiety and depression are most prevalent in the adolescent years. According to the literature, girls are twice as more likely to experience internalizing disorders as boys and demonstrate more interpersonal concerns than boys (Altemus, Sarvaiya, Epperson, 2016). However, this was not reflected in our results as boys and girls were perceived to have similar levels of internalizing symptoms at the start of psychotherapy.

Analyses of the Parent and Adolescent Report

We compared parent and adolescent self-report on overall symptoms and, consistent with our hypotheses, we found discrepancies in symptom report between parents and their adolescents in terms of the overall level of distress that adolescents have at the start of therapy and how much they improve over the course of psychotherapy. Our most robust finding is that parents see their adolescents as more distressed than the adolescents see themselves. More specifically, parents see younger adolescents as more distressed than older adolescents. However, older adolescent girls report more distress than their parents at the start of psychotherapy, and more improvement over the course of psychotherapy than their parents report. In fact, their parents perceive their adolescent girls getting worse over the course of psychotherapy. There are several possible explanations for these results. We believe that parents might experience difficulty giving up the conceptualization of their child as being distressed or impaired and have more difficulty recognizing that their child is improving. The growth that adolescent's experience throughout the psychotherapeutic process may be out of the purview of their parents. On the other hand, adolescent girls often hide internalizing symptoms and as

these symptoms are unveiled over time, parent's awareness of their daughters' anxiety and depression increases. Adolescent girls who reduce perfectionistic tendencies over the course of psychotherapy and begin displaying behaviors consistent with an average teenager might appear to be getting worse to their parents.

Implications

What are the implications of the differences in mothers' perceptions of older and younger children and adolescents and the differential improvement perceived by mothers and adolescents? These findings have two important implications for mother and mother-child perceptions of psychopathology. First, the nature of the mother-child relationship greatly impacts child behavior as well as parent-child report of child behavior. Second, mother-child discrepancies in symptom report reflect considerations for treatment.

Mother-Child Relationship

Our findings highlight the importance of the mother-child relationship on perception of symptoms. Parents play a critical role in their child's early environment and lay the foundation for their children's social-emotional functioning. Mother-child relationship quality contributes to shaping child and adolescent emotional experiences and is often related to mental health later in life (Mallers, Charles, Neupert, Almeida, 2010). The child's interaction with their immediate environments is generally impacted by family dynamics and by the parent-child relationship. Belskey's (1984) parenting model posits that parenting is impacted by contextual influences, such as the social context of the family in addition to the parent and child characteristics. Children evoke types of parenting based on their genetic predispositions, and characteristics of the parent evoke certain reactions out of the child (Ayoub et al., 2018), which supports the

bidirectional nature of the parent-child relationship. In some cases, the incompatibility of the parent and child characteristics might influence mother-child conflict and disagreement. Thomas and Chess (1977) introduced goodness of fit, which describes the impact of compatibility between the child's disposition and the environment. Ultimately, if characteristics of the child are incompatible with that of their caregiver, it might negatively impact social-emotional development and the lack of goodness of fit may be contributing to the mother-child conflict and disagreement.

Although there are several factors that influence the nature of parent-child relationships, the sex of the parent and child are significant predictors (Russel & Saebel, 1997). There are four dyads that have been extensively studied: mother-daughter, mother-son, father-daughter, and father-son. These dyads are distinct relationships that uniquely influence the general parent-child relationship (Hughes & Gallone, 2001). Parents' sex has a significant influence on parenting behavior within and between cultures. Child sex differences impact how internalizing and externalizing symptoms are expressed and perceived, which impacts not only the parent-child relationship but also how these symptoms are differentially reported. Gender of parent and child is critical in understanding parent-child relationship quality and child adjustment (Franz & McKinney, 2018). Of course, not all families are comprised of different-sex parents and cisgender individuals. It is important to consider the heterogeneity in structure of families and parent-child dyads including transgender individuals and same-sex parents.

In the current study, only two of these dyads (mother-daughter and mother-son) are discussed due to the small sample size of fathers. Although we could not compare across parents, our work suggests that mothers might relate differently to their daughters

than to their sons and different socialization and relationship patterns emerge based on these different child characteristics (Siegal, 1987). In general, the literature strongly supports that mothering and fathering in relation to child behavior and outcomes is distinctively different (Moon & Hoffman, 2010). Mothering often differs from fathering in terms of interactions, accessibility, and responsibility. Mothers are typically more directly involved, more nurturing with their children, and engage more in caregiving as well as disciplinary interactions (Lamb, 1982). Mothers also have differential expectations and attributions for their sons and daughters, which contributes to the differential socialization of boys and girls. For example, boys are given more autonomy and girls are allotted less freedom and are more strictly supervised. Mothers expect more risky behavior from their sons and believe that they have greater control over risky behaviors in their daughters (Morrongiello & Hogg, 2004). Mothers report that they are more tolerant of externalizing symptoms from boys and expect more maturity from girls (Baumrind & Black, 1967). These stark mother-daughter and mother-son differences become more pronounced as the child transitions into adolescence (Collins & Russel, 1991). The unique nature of mother-daughter and mother-son relationships helps explain differences in reporting of child and adolescent psychopathology, such that mother's expectations of child behavior influences their perceptions of their child's behavior.

Our findings reflect the literature on the mother-child relationship, such that mothers generally perceive sons and daughters differently, especially at the start of psychotherapy. Research shows that daughters often tend to hide painful experiences from their mothers to protect both themselves and their mothers. Mothers want to "fix" the problem and feel demoralized when they are unable to do so, which leads the

daughter to take on the responsibility of appearing better to ease their mother's concerns (Butler & Shalit-Naggar, 2008). This literature supports our finding that mother's perceive their adolescent daughters getting worse over the course of psychotherapy. It is possible that daughters are practicing adaptive coping strategies in psychotherapy and are openly expressing distress with their mothers, leading their mothers to perceive them as more symptomatic. Additionally, daughters might be gaining a greater sense of individuation and autonomy throughout the psychotherapeutic process, which might impact mother's sense of control over their daughter's well-being.

Considerations for Treatment

Our discussion on the importance of the mother-child relationship in the context of development as well as psychopathology implies that treatment approaches that consider the family context might be more effective. Family systems theory considers the family as an emotional vessel that is comprised of complex interactions between family members (Bowen, 1978). Each member's thoughts, feelings, and behaviors impact other members of the family unit. Members evoke reactions or behaviors from other members and there is a bidirectionality of these interactions. The interconnectedness of families is indicative of the need for the consideration of all family members in the psychotherapeutic context. Individual therapy with a child or adolescent cannot purely be individual, as childhood experiences don't occur in a vacuum. The consideration of the role of the parent(s) and/or sibling(s) in relation to the child's social-emotional functioning is often necessary to gain a complete understanding of the mechanisms and possible maintaining factors of the child/adolescent's behaviors. functioning.

Our findings on the parent-adolescent discrepancies have important implications for treatment considerations. We believe that the discrepancies in reporting between parents and adolescents indicate that that family dynamics should be considered in the context of treatment. Additionally, these differences in reporting indicate that a parent component is crucial in child and adolescent treatment. Modern approaches to child and adolescent psychotherapy typically explicitly involve parents in treatment. Our data supports possible treatment approaches that include parent components such as interpersonal psychotherapy for adolescents (IPT-A), Cognitive Behavior Therapy (CBT), and Family Therapy, among others.

Although discrepant reports can be frustrating for the clinician to reconcile, they provide a richer set of information about the child. Psychotherapy with children and adolescents would be much easier if the story were simpler, but that should not be the expectation of anyone who does psychotherapy with this age group. Solely focusing on the parent report or the adolescent report leads to an oversimplification of the data and we will miss the opportunity for meaningful dialogue on why these discrepancies exist. In fact, transparently approaching the discussion of these discrepancies with the mother and the adolescent might uncover information that is crucial to the psychotherapeutic process or for improvement in the adolescent's functioning. Additionally, these discussions might strengthen communication between mothers and adolescents, which might lead to better outcomes.

We can also look at these discrepancies from another vantage point. In a sense, the fact that parents are reporting more distress is more advantageous for their youth. Parent reports are often given more weight than child reports, so in this case, the youth

symptoms are not going unnoticed and youth are more likely to receive appropriate psychological care. In other words, we would prefer to have a false positive rather than a false negative in terms of symptom report. This additional information gives the clinician the opportunity to follow up on reported distress and determine level of impairment it is causing the child. When examining discrepancies, it might be useful to monitor points in treatment where the magnitude of the discrepancy in reporting spikes, as this could be indicative of strain within the family system.

Limitations and Future Directions

Our findings reflect a short window of time of children and adolescents' social and emotional functioning. Although we would like to have information on our population from all developmental periods, it is not a possibility at our clinic. Conducting research in a university training clinic comes with opportunities as well as barriers. Barriers such as lack of continuity of care of clients as well as limited and shortened outcome measures restrict the types of research questions that we can pursue. We do not collect information on the onset of symptoms and their presentation over time, which restricts our ability to examine the developmental trajectory of reported psychopathology. Consequentially, this also restricts our ability to examine the developmental course of the discrepancies in symptom report. Although there are several limitations to the current study, we hope to focus on addressing those that can realistically be addressed at our training clinic or addressed in future research studies.

As mentioned above, this research only focused on mother-child reports and did not include father reports. This research presents the issue of the low frequency of father involvement in the psychotherapy process and lack of father-child reports of

psychopathology. Mothers have not only become primary caregivers but also the primary informants of child psychopathology. Mothers tend to be more involved in child and adolescent psychotherapy than fathers, which has contributed to the imbalance of assessment data from fathers. Given the significant influence that fathers have on child social-emotional functioning (Day & Padilla-Walker, 2009), it is crucial to encourage and promote their participation in the assessment and psychotherapy process. Differential interaction patterns and child behaviors emerge with fathers. If we don't make a concerted effort to collect father-child reports, then we miss out on important information on the child and on opportunities for father-child intervention. We hope to address this gap in our research by sending fathers of child clients electronic versions of our outcome measures that can be completed outside of the clinic. Even if fathers cannot attend psychotherapy sessions, they are still given the opportunity to report on their child's functioning. We aim to expand this to mothers who are unable to attend sessions as well. Additionally, given the heterogeneity of family structures, we will open our survey to all secondary caregivers including grandparents, aunts, uncles, and/or other individuals who care for the child. Future research should also be inclusive of same-sex couples and transgender individuals.

Our results suggest that examining discrepancies more closely might be fruitful, as these discrepancies might provide predictive value for treatment outcome. Future studies should obtain discrepancy scores at the start of psychotherapy and over the course of treatment. The magnitude of the differences and the direction of the effects should be evaluated to determine whether certain levels of differences serve as either a protective or risk factor. The role of informant, age, sex, and ethnicity of the parent and the

child/adolescent should be examined as moderators of these discrepancies. Our current study did not analyze ethnicity for this sample, which may have hindered the generalizability of the results. Ethnicity of the parent and child should be included in future research.

Generally, our research shows that mothers see their children and adolescents as improving over the course of treatment. Some of the variance in our results might be an actual improvement in symptoms, but the other variance might be related to the degree to which the parents want the child to improve. Parents might be making judgements about their parenting, which impacts how they report on their child or adolescent's symptoms. Parenting behavior can significantly influence mental health problems in youth, which can lead to emotional and behavioral problems (Smokowski, Bacallao, Cotter, & Evans, 2015). For example, specific parenting dimensions such as inconsistent or insufficient parental monitoring have been linked to externalizing behaviors in children (Berg-Nielsen TS, Vikan A, Dahl AA, 2002). Parenting characteristics such as parental negativity and lack of affection has been linked to internalizing and externalizing behaviors (Franz & McKinney, 2018). Webster-Stratton (1988) found that mothers who were depressed or stressed perceived more externalizing problems in their children. Often, parent's distress is transmitted onto their children. Parental distress could impact not only how the child reports on their functioning but also how the parent reports on the child's functioning as a result of their own stress.

More research is needed to explore parenting variables, such as parent stress and parent perceptions of their own parenting to determine how parenting relates to treatment outcome. We hope to address this limitation in future research by continuing to collect

the Biweekly-Longitudinal Youth (BILY) measure, which is completed by parents of children and adolescents at the Center. This alternative outcomes measure contains several parenting variables which were extracted from several parenting measures. We aim to analyze the BILY and the YOQ to determine how parents impact child and adolescent treatment outcome. Additionally, we hope to collect information on parent psychopathology at the first appointment to gain a better understanding of how the parent's functioning might contribute to the child or adolescent's functioning.

Conclusion

The research reported here was intended to be a broad assessment of psychotherapy outcomes in a naturalistic community mental health training clinic. Our focus was not on the trajectory of specific diagnoses as outlined by the DSM-5, but rather a broader constellation of symptom types (e.g. internalizing and externalizing) as outlined by the YOQ-30. Overall, our research demonstrates that children and adolescents from diverse backgrounds and with an array of presenting problems, on average, benefit from psychotherapy and show improvement in symptoms over time. Children, adolescents, and their parent's perceptions of change differ as a function of gender, age, and who is reporting the symptoms. These results add to the psychotherapy outcome literature on children and adolescents and provide an overall positive assessment of the effectiveness of psychotherapy delivered by student therapists in training. Our analyses address rather simple questions related to psychotherapy outcome using more updated and complex data analytic techniques than prior studies.

Table 1

Two-Way Interaction for Parent Report on All Child Clients Overall Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL.	UL
Intercept	22.06	2.4	14.1	9.16	<.001	17.29	26.82
Weeks	-.09	.06	55.96	-1.56	.13	-.21	.03
Age	1.30	.75	140.77	1.71	.09	-.20	2.80
Weeks*Age	-.03	.02	61.50	-1.70	.095	-.07	.01

Note. Dependent variable is the YOQ total score. Weeks=weeks since first appointment.

*=indicates interaction. LL=lower limit, UL=upper limit.

Table 2

Two-Way Interaction for Parent Report on Adolescents Overall Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	28.46	1.37	157.98	20.72	<.001	25.75	31.17
Weeks	-.04	.04	54.98	-.93	.36	-.11	.04
Age	-.09	.67	157.26	-.13	.90	-1.42	1.24
Weeks*Age	.02	.01	58.68	1.02	.31	-.02	.06

Table 3

Two-Way Interaction for Adolescents Self- Report on Overall Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	24.68	1.47	14.1	16.83	<.001	21.78	27.58
Weeks	-.16	.04	55.96	-4.3	<.001	-.23	-.09
Age	1.30	.75	140.77	1.71	.09	-.20	2.80
Weeks*Age	-.03	.02	61.50	-1.70	.095	-.07	.01

Table 4.

Two-Way Interaction for Parent and Adolescent Report on Overall Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	29.38	1.21	206.34	24.28	<.001	21.78	27.58
Weeks	-.04	.03	77.21	-1.3	.18	-.23	-.09
PC[a]	4.26	.66	2673.3	-6.44	<.001	-.20	2.80
Weeks*PC[a]	-.09	.01	2620.7	-6.9	<.001	-.07	.01

Note. PC=parent or child informant. [a] 0=parent report, 1=adolescent report.

Table 5

Four-way Interaction for Parent and Adolescent Report on Overall Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	29.15	1.93	146.05	15.12	.000	23.34	32.96
Weeks	-.06	.04	74.94	-1.28	.203	-.14	.03
PC[a]	-8.47	1.01	2149.86	.099	.921	-.05	.05
Age	-.14	0.96	150.25	-.14	0.89	-2.04	1.77
Weeks*Age	.01	.02	99.16	0.35	0.73	-.04	.05
PC*Age	0.65	0.58	2190.81	1.12	0.26	-.49	1.80
Weeks*PC*Age	.04	.02	2143.18	2.61	.01	.01	.07
Sex[b]	-2.68	2.78	150.04	-.96	.34	-8.18	2.82
Weeks*Sex	.05	.07	93.05	.68	.50	-.09	.18
PC*Sex	7.33	1.64	2196.10	4.49	.000	4.13	10.55
Age*Sex	.04	1.36	150.12	.03	.98	-2.66	2.73
Weeks*PC*Sex	-.08	.05	2160.13	-1.79	.07	-.17	.01
Weeks*Age*Sex	.04	.03	108.14	1.08	.28	-.03	.10
PC*Age*Sex	1.20	.88	2212.86	2.28	.02	.28	3.71
Weeks*PC*Age*	-.11	.02	2138.77	-4.49	.000	-.16	-.06

Covariance Parameters						
Parameter	Estimate	Std. Error	Wald Z	p-value	95%CI	
					LL	UL
Residual	116.42	3.63	32.09	<.001	109.53	123.75
Intercept Variance	191.35	27.81	6.88	<.001	143.91	254.44
Covariance	-.92	.44	-2.08	<.05	-1.79	-.05
Slope Variance	.04	.01	3.45	<.01	.02	.07

Note. PC=parent or child informant. *=indicates interaction. LL=lower limit, UL=upper limit. [a] 0=parent report, 1=adolescent report. [b] 0=male, 1=female.

Table 6

Three-Way Interaction for Parent and Adolescent Report on Overall Symptoms: Informant and Age as Moderators

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						UL	LL
Intercept	29.73	1.10	362.43	26.94	<.001	27.60	29.73
Weeks	-.05	.03	142.95	-2.03	.13	-.10	-.05
PC[a]	-4.50	.60	4082.20	-7.47	<.001	-5.68	-4.50
Age	-.45	.60	359.68	-1.81	.56	-.93	-.45
Weeks*PC	-.07	.25	4051.03	-5.07	<.01	-.10	-.07
Weeks*Age	.001	.01	127.78	.30	.77	-.01	.001
PC*Age	1.0	.21	4213.33	4.74	<.001	.59	1.0
Weeks*PC*Age	-.01	.002	4017.60	-2.60	.01	-.01	-.01

Covariance Parameters

Parameter	Estimate	Std. Error	Wald Z	p-value	95%CI	
					LL	UL
Residual	104.87	2.39	43.86	<.001	100.29	109.67
Intercept Variance	208.54	19.19	10.87	<.001	174.12	249.75
Covariance	-.55	.29	-1.93	.05	-1.12	.01
Slope Variance	.03	.01	4.87	<.001	.02	.05

Note. Dependent variable is the YOQ total score. Weeks=weeks since first appointment. PC=parent or child informant. *=indicates interaction. LL=lower limit, UL=upper limit.

[a] 0=parent report, 1=adolescent report.

Table 7

Three-Way Interaction for Parent and Adolescent Report on Overall Symptoms: Informant and Sex as Moderators

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						UL	LL
Intercept	31.58	1.37	254.98	23.12	<.001	28.89	34.27
Weeks	-.03	.03	83.45	-1.06	.29	-.08	.02
PC[a]	-7.78	.77	3484.36	-10.14	<.001	-9.29	-6.28
Weeks*PC	-.04	.01	3372.87	-6.33	<.001	-.06	-.03
Sex	-1.22	2.0	261.70	-.60	.55	-5.24	2.80
Weeks*Sex	-.07	.04	104.51	-1.63	.12	-.15	.01
PC*Sex	-5.82	1.27	3529.22	4.60	<.001	3.33	8.30
Weeks*PC*Sex	.02	.02	3321.21	.99	.33	-.02	.07
Covariance Parameters							
Parameter	Estimate	Std. Error	Wald Z	p-value	95%CI		
					LL	UL	
Residual	103.03	2.56	40.29	<.001	98.13	108.16	
Intercept Variance	212.60	21.91	9.7	<.001	173.72	260.19	
Covariance	-.58	.30	-1.97	<.05	-1.16	-.003	
Slope Variance	.03	.01	4.61	<.001	.02	.05	

Table 8

Two-Way Interaction for Parent Report on Externalizing Symptoms for Young Children

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	8.2	.47	139.15	17.67	<.001	7.30	9.13
Weeks	-.02	.01	38.87	-2.60	.01	-.03	-.004
Age	-.63	.28	143.59	-2.29	.02	-1.18	-.09
Weeks*Age	-.000	.004	34.57	-.09	.93	-.01	.01

Table 9

Three-Way Interaction for Parent Report on Externalizing Symptoms for All Clients

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	6.42	.51	573.37	12.50	<.001	5.41	7.43
Weeks	.01	.01	2556.26	1.01	.31	-.01	.03
Sex	.14	.74	579.72	.19	.85	-1.33	1.61
Weeks*Sex	-.05	.02	2562.08	-2.89	<.01	-.08	-.01
Age	-.51	.14	577.79	-3.60	<.001	-.79	-.23
Weeks*Age	.01	.003	1998.75	2.72	<.01	.002	.01
Sex*Age	.16	.20	590.11	.77	.44	-.242	.56
Weeks*Sex*Age	-.01	.004	2027.70	-2.2	.03	-.02	-.001

Covariance Parameters

Parameter	Estimate	Std. Error	Wald Z	p-value	95%CI	
					LL	UL
Residual	7.06	.23	30.92	<.001	6.63	7.53
Intercept Variance	26.55	1.78	14.92	<.001	23.28	30.27
Covariance	-.35	.02	-20.67	<.001	-.39	-.32
Slope Variance	.01	.00	.	.	.	.

Table 10

Two-Way Interaction for Adolescent Self-Report on Externalizing Symptoms: Sex as Moderator

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	3.5	.43	103.93	8.03	2.64	2.64	4.38
Weeks	-.01	.01	23.26	-.63	-.03	-.03	.01
Sex	-.36	.64	103.99	-.56	-1.62	-1.62	.91
Weeks*Sex	-.01	.01	26.81	-.90	-.04	-.04	.02

Table 11

Two-Way Interaction for Adolescent Self-Report on Externalizing Symptoms: Age as Moderator

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	4.25	.37	127.15	11.6	<.001	3.53	4.97
Weeks	-.02	.01	35.96	-3.3	<.01	-.04	-.01
Age	-.20	.19	127.65	-1.1	.29	-.57	.17
Weeks*Age	-.002	.004	39.64	-.70	.49	-.01	.01

Table 12

Two-Way Interaction for Parent and Adolescent Report on Externalizing Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	5.89	.33	194.95	17.3	<.001	5.14	6.45
Weeks	.001	.01	68.92	.24	.81	-.01	.01
PC	-1.59	.18	2672.12	-8.96	<.001	-1.93	-1.24
Weeks*PC	-.02	.003	2624.44	-5.99	<.001	-.03	-.01

Table 13

Two-Way Interaction for Parent Report on Internalizing Symptoms for Young Children

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	10.3	.56	139.85	18.53	<.001	9.24	11.45
Weeks	-.02	.01	40.40	-1.84	.07	-.04	.002
Age	.85	.33	144.71	2.57	.01	.20	1.51
Weeks*Age	-.01	.01	37.79	-.62	.54	-.02	.01

Table 14

Two-Way Interaction for Parent Report on Internalizing Symptoms for Adolescents

Fixed Effects

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	10.59	.59	159.18	17.84	<.001	9.41	11.76
Weeks	-.03	.0.2	41.95	-1.78	.08	-.06	.003
Age	.42	.29	158.47	1.44	.15	-.16	.99
Weeks*Age	.004	.01	45.04	.50	.62	-.01	.02

Table 15

Three-Way Interaction for Parent Report on Internalizing Symptoms for All Clients

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	10.86	.68	235.15	16.07	<.001	9.52	12.19
Weeks	-.01	.01	73.39	-.59	.56	-.04	.02
Sex	.52	.98	238.38	.53	.59	-1.41	2.46
Weeks*Sex	-.04	.02	91.53	-1.89	.06	-.09	.002
Age	.23	.18	237.99	1.23	.22	-1.4	.59
Weeks*Age	.002	.004	79.23	.50	.62	-.01	.01
Sex*Age	-.08	.27	243.48	-.31	.75	-.61	.44
Weeks*Sex*Age	-.01	.01	99.07	-.85	.40	-.02	.01

Covariance Parameter

Parameter	Estimate	Std. Error	Wald Z	p-value	95%CI	
					LL	UL
Residual	13.13	.44	29.66	<.001	12.29	14.03
Intercept Variance	45.42	4.76	9.54	<.001	36.98	55.78
Covariance	-.16	.07	-2.30	.02	-.30	-.02
Slope Variance	.01	.001	4.24	<.001	.004	.01

Table 16

Two-Way Interaction for Adolescent Self-Report on Internalizing Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL	UL
Intercept	10.5	.74	143.16	14.18	<.001	9.05	11.98
Weeks	-.07	.02	-3.59	-3.59	.001	-.10	-.03
Age	.93	.38	143.31	2.42	.016	.17	1.69
Weeks*Age	-.01	.01	54.21	-1.50	.14	-.03	.01

Table 17

Two-Way Interaction for Adolescent Self-Report on Internalizing Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL.	UL
Intercept	9.36	1.12	102.75	8.33	<.001	7.13	11.58
Weeks	-.04	.02	31.98	-1.55	.13	-.09	.01
Sex	2.64	1.64	102.32	1.61	.11	-.61	5.90
Weeks*Sex	-.02	.04	34.26	-.55	.59	-.09	.05

Table 18

Two-Way Interaction for Parent and Adolescent Report on Internalizing Symptoms

Parameter	Estimate	Std. Error	Df	T	p-value	95% CI	
						LL.	UL
Intercept	11.24	5.86	202.63	19.18	<.001	10.08	12.39
Weeks	-.03	.01	70.18	-2.24	.03	-.06	.003
PC	-.48	.29	2652.03	-1.65	.099	-1.05	.090
Weeks*PC	-.02	.01	2607.57	-4.09	<.001	-.03	

Figure 1

Four-Way Interaction for Parent and Adolescent Report on Overall Symptoms

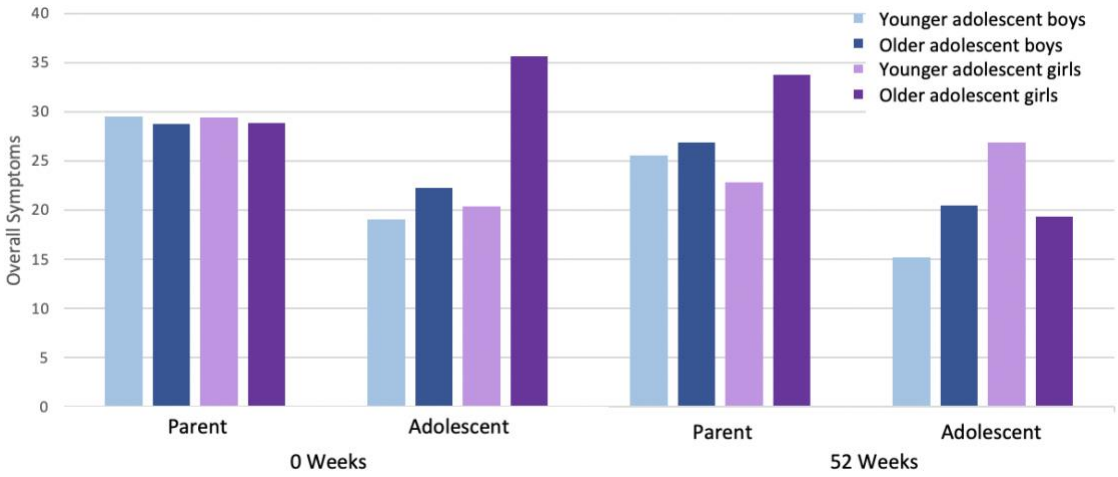


Figure 2

Three-Way Interaction for Parent and Adolescent Report on Overall Symptoms: Age as Moderator

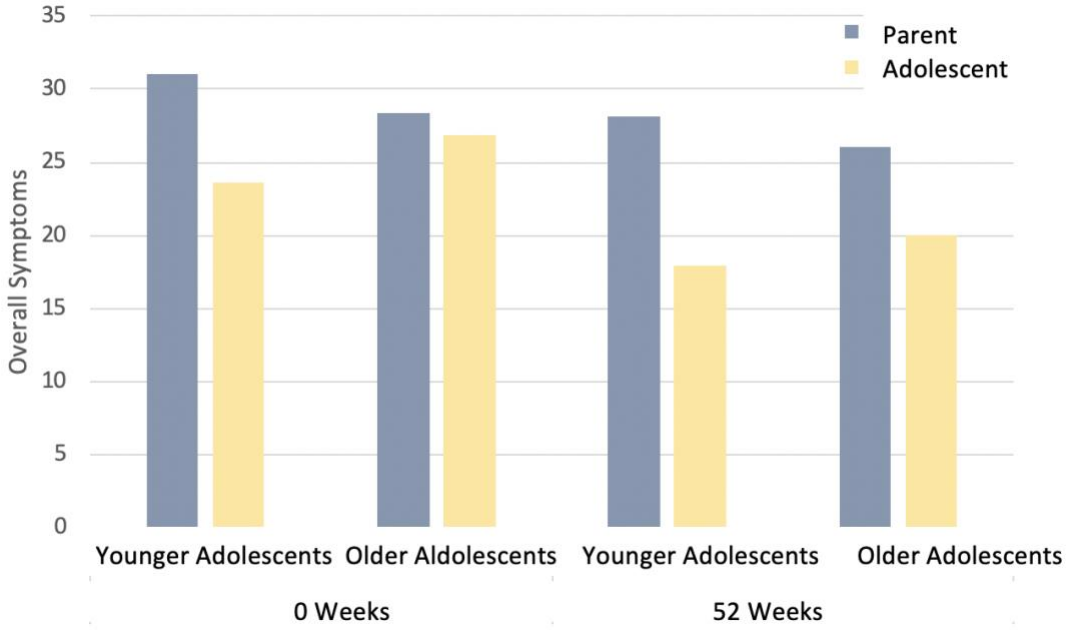


Figure 3

Three-Way Interaction for Parent and Adolescent Report on Overall Symptoms: Sex as Moderator

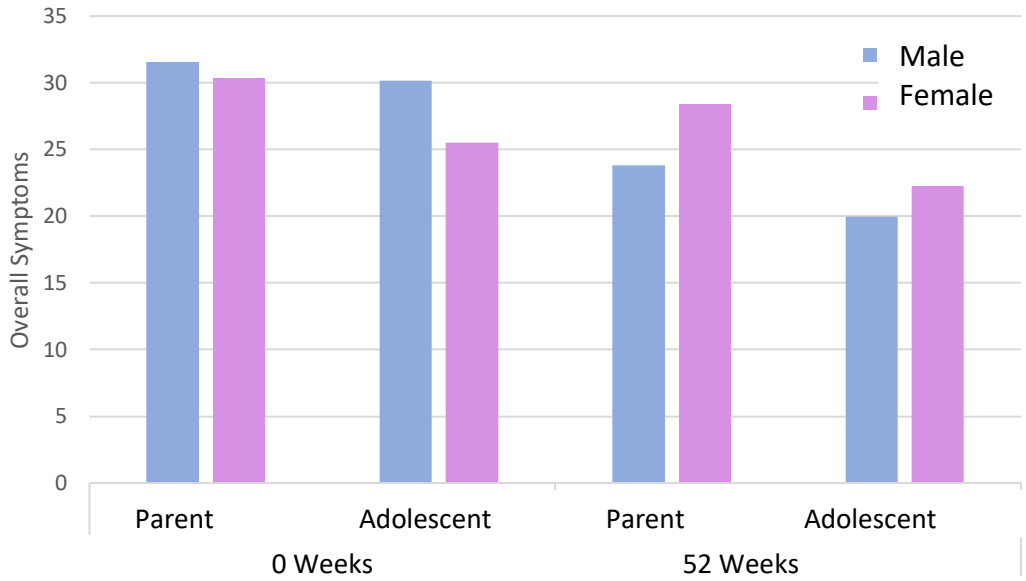


Figure 4

Three-Way Interaction for Parent Report on Externalizing Symptoms for all Child Clients

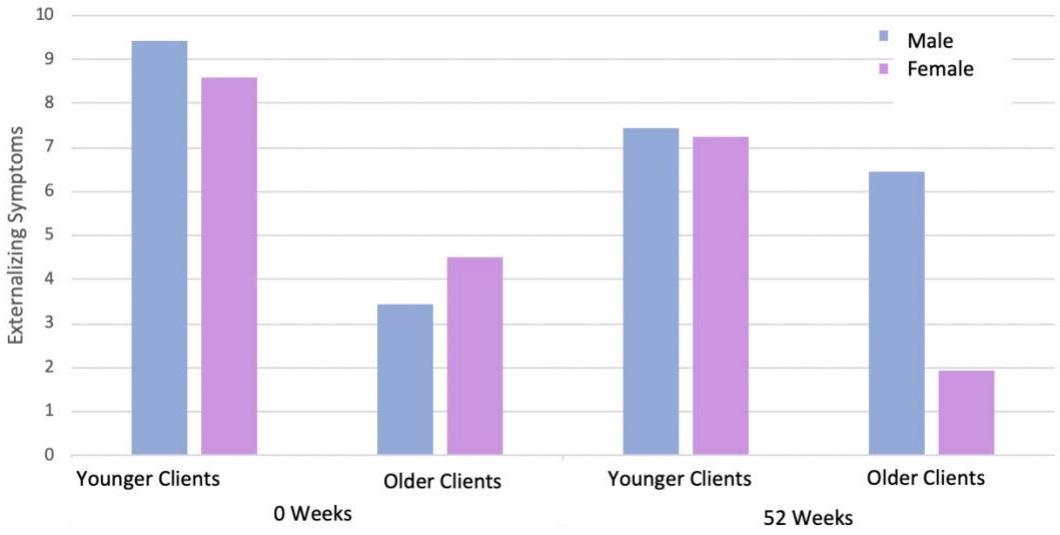
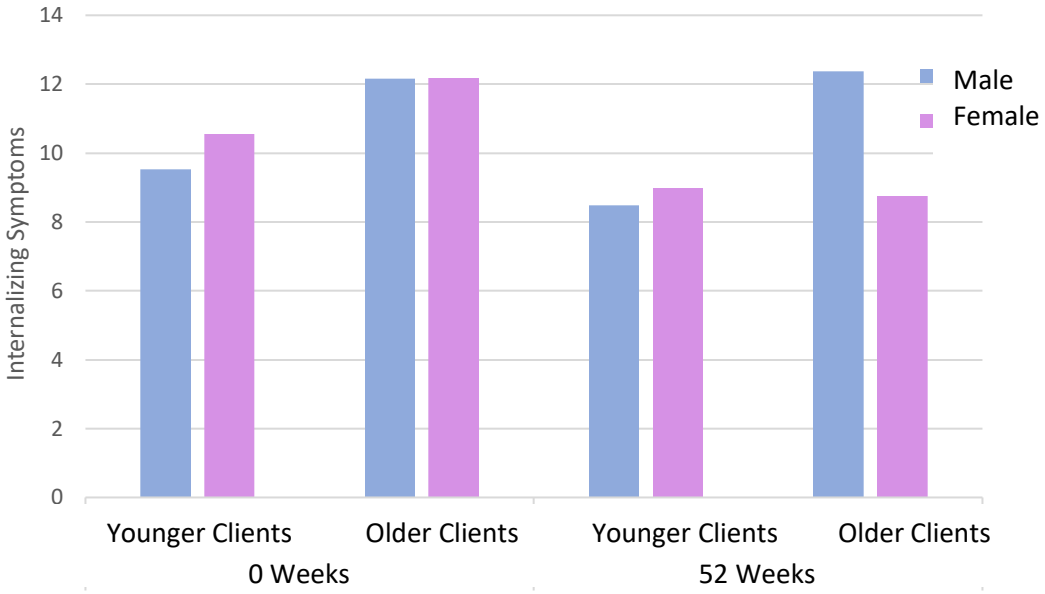


Figure 5

Three-Way Interaction for Parent Report on Internalizing Symptoms For All Clients



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