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Trajectories and Predictors of Response in Youth Anxiety CBT: Integrative Data Analysis

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Objective: Integrative data analysis was used to combine existing data from nine trials of cognitive–behavioral therapy (CBT) for anxious youth ($N = 832$) and identify trajectories of symptom change and predictors of trajectories. *Method:* Youth- and parent-reported anxiety symptoms were combined using item-response theory models. Growth mixture modeling assessed for trajectories of treatment response across pre-, mid-, and posttreatment and 1-year follow-up. Pretreatment client demographic and clinical traits and treatment modality (individual- and family-based CBT) were examined as predictors of trajectory classes. *Results:* Growth mixture modeling supported three trajectory classes based on parent-reported symptoms: steady responders, rapid responders, and delayed improvement. A 4-class

model was supported for youth-reported symptoms: steady responders, rapid responders, delayed improvement, and low-symptom responders. Delayed improvement classes were predicted by higher number of diagnoses (parent and youth report). Receiving family CBT predicted membership in the delayed improvement class compared to all other classes and membership in the steady responder class compared with rapid responders (youth report). Rapid responders were predicted by older age (parent report) and higher number of diagnoses (parent report). Low-symptom responders were more likely to be male (youth report). *Conclusions:* Integrative data analysis identified distinct patterns of symptom change. Diagnostic complexity, age, gender, and treatment modality differentiated response classes.

What is the public health significance of this article?
This study showed that multiple treatment response trajectories are evident in CBT for youth anxiety indicating the need to tailor interventions to specific groups. Predictor analysis provides leads for clinical decision-making and treatment development.

Keywords: youth anxiety, treatment predictors, integrative data analysis, symptom trajectories

Research on therapy for anxiety disorders for youth has advanced considerably yet the average remission rate of anxious youth receiving cognitive–behavioral therapy (CBT) has been reported to be about 63% (Silverman, Pina, & Viswesvaran, 2008). Research that classifies youth according to treatment response and identifies predictors of those classes could lead to enhanced treatment outcome in individual patients (Lutz et al., 2014). Both classification of responses and identification of prominent predictors require larger sample sizes than typically available in single trials. In particular, identifying predictors of treatment response using underpowered subgroup analyses result in inconsistent and inconclusive results.

Over 40 clinical trials have investigated the efficacy of CBT for youth with phobic and anxiety disorders with overall results supporting CBT as efficacious (Hollon & Beck, 2013). Yet, heterogeneity exists in both short- and long-term treatment response (Reynolds, Wilson, Austin, & Hooper, 2012). Most studies show an immediate benefit, but the size of the response is variable with posttreatment diagnostic remission rates ranging from 23% (Spence et al., 2011) to 79% (Wood, Piacentini, Southam-Gerow, Chu, & Sigman, 2006). Results of longer-term treatment response are mixed, with some studies reporting continued improvement from posttreatment to follow-up (e.g., Barrett, Dadds, & Rapee, 1996; Gibby, Casline, & Ginsburg, 2017; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008; Silverman, Kurtines, Jaccard, & Pina, 2009), while others do not (e.g., Bodden et al., 2008; Kendall et al., 1997; Nauta, Scholing, Emmelkamp, & Minderaa, 2003). Thus, there is controversy over the timing (intratreatment, posttreatment) and durability of CBT effects (Chu, Skriner, & Zandberg, 2013; Gibby et al., 2017; Peris et al., 2015). Identifying multiple classes of treatment responders and nonresponders helps isolate the effectiveness of interventions and identify client traits that predict response (Stein, Dickstein, Schuster, Litz, & Resick, 2012).

Less is known about the source of heterogeneity of treatment effects. One approach to understanding the heterogeneity is to identify subgroups of youth with different response trajectories. There might be groups of youth who recover quickly and stay symptom free, recover and relapse, partially recover, or do not respond at all. Knowing that heterogeneous response groups

exist during or after treatment helps to identify where vulnerability to nonresponse is greatest and directs attention to intratherapy or maintenance interventions. Further, identifying subgroups can inform efforts to tailor interventions to specific groups and allows for qualitative differences in how predictors relate to groups of youth, but existing research is limited. In adult samples, Stein et al. (2012) used growth mixture modeling (GMM) to identify two latent class trajectories (responders and nonresponders) from symptom measures across nine time-points during and following treatment for adults with posttraumatic stress disorder and identified specific predictors (e.g., presence of depression) of the nonresponder class. Lutz et al. (2014) identified four patterns of response during CBT for panic disorder (rapid improvement, high symptoms and slow improvement, low symptoms and slow improvement, and early deterioration) and found symptom level at pretreatment predicted group membership.

Initial research examining trajectories in CBT for youth anxiety is promising. Chu et al. (2013) identified significant variation around a single mean trajectory among youth using weekly symptom data and also identified qualitatively distinct response patterns that occurred during treatment using independent rater coding of individual trajectory plots. Peris et al. (2015) used weekly data to identify a discontinuous linear trajectory for CBT noting significant variability in individual slopes. The variability identified in these studies suggests that different classes of symptoms change trajectories are plausible; however, reliance on single samples receiving a single intervention limits the sample size and heterogeneity that can help identify diverse response trajectories and the factors that predict those trajectories. The next step in this line of research is to pool data from similar studies at the individual participant data level to increase power to identify robust predictors of treatment response.

The current study uses integrative data analysis (IDA; Curran & Hussong, 2009) with individual participant data from nine clinical trials to classify treatment response and identify predictors of those classes. IDA allows different measures of the same construct to be combined across studies to form a single index, thus facilitating both classification of treatment response and identification of

predictors (Curran & Hussong, 2009). We used item-response theory (IRT) to develop two common metrics of anxiety symptom scores; one for youth-reported and one for parent-reported symptoms. GMM was then used to assess for distinct trajectories of symptoms change over four time points: pre-, mid-, and posttreatment and 1-year follow-up. Based on previous literature, we hypothesized that at a minimum two distinct classes would emerge: one for response (i.e., showing a reduction in symptoms over time) and one for nonresponse (i.e., showing little change in symptoms over time).

Our secondary goal was to identify client and treatment characteristics that predicted membership in the resulting classes of symptom change. Knowing a set of variables that reliably predict class membership can help therapists provide realistic expectations to families or prepare for challenges. Identifying relevant pretreatment predictors provides information to researchers to develop more efficient and robust interventions for youth at risk of poorer treatment outcome. Studies of predictors of treatment response are prevalent but results are inconsistent (Hudson et al., 2015). One main reason for inconsistent results is the generally small sample sizes, leading to the issue of having too few individuals in each category of the predictor and limited heterogeneity to detect robust associations (Hudson et al., 2015). A few recent studies have included larger sample sizes (e.g., Bennett et al., 2013; Compton et al., 2014), yet they only focused on posttreatment outcomes. Predictors in the current study included youth demographics (age, gender, race/ethnicity), pretreatment comorbidity (number of diagnoses, comorbidity with either externalizing or depressive disorders), and CBT modality (individual, or ICBT, and family-/parent-based, or FCBT). Selected variables were those most commonly studied, those that were available across all included trials, and because pretreatment variables are easy to identify and useful when clinicians are making initial treatment plans.

Youth age has been implicated as a predictor of treatment outcome, as many protocols were developed for children under 12 and then adapted for adolescents. Adolescents may present with higher severity and be less responsive to interventions; adolescents' greater need for autonomy and its resulting challenges to treatment engagement may call for specific attention (Bennett et al., 2013; Hudson, 2005). Further, there may be important interactions between youth age and sex with treatment format, as younger children may benefit more from interventions that include intensive parenting strategies, while adolescents may be more receptive to individual interventions that speak to greater needs for autonomy (Chu, Suveg, Creed, & Kendall, 2010). For example, early comparisons of individual and family interventions suggested few differences between conditions, but that age/sex moderated treatment outcomes such that younger girls benefitted particularly from the family condition (Barrett et al., 1996; Cobham, Dadds, & Spence, 1998; Nilsen, Eisemann, & Kvernmo, 2013, for review). This suggests that some youth may be more receptive to some types of format. While the moderating effects of sex and age are inconsistently found, the most frequent findings suggest that younger females tend to have higher recovery rates when parents are involved in treatment while adolescents may attain less benefits (Bennett et al., 2013; Hudson et al., 2013; Nilsen et al., 2013).

Ethnicity has rarely been investigated, and when it has, results tend to be nonsignificant (see Nilsen et al., 2013, for review). However, one study reported a greater decrease in symptoms for European American than Hispanic youth, warranting further investigation (Pina, Silverman, Fuentes, Kurtines, & Weems, 2003). Why differential effects may occur is poorly understood, but it should be noted that most evidence-based treatments were initially developed and tested with majority populations (Huey & Polo, 2008). Issues can arise when translating standardized protocols to new communities where language, cultural attitudes, local resources, and socioeconomic factors can impact delivery or receipt of treatment (APA, 2017; Huey & Polo, 2008). At this stage, it is critical to document, over large databases what, if any, moderating effects of ethnicity can be detected to focus treatment development efforts.

Clinical convention suggests that diagnostic complexity imparts challenges that may be difficult to accommodate in standardized treatment formats (Hudson, Krain, & Kendall, 2001). Yet, empirical studies exploring the effect of diagnostic comorbidity and clinical complexity on CBT outcomes report mixed and somewhat contradictory findings (see Nilsen et al., 2013 for review). Depression has been most often associated with negative effects on anxiety treatment outcome at post treatment and 1-year follow up (Hudson et al., 2015; Manassis et al., 2014), while mixed results for externalizing disorders have been reported with the majority of studies showing no effect (Nilsen et al., 2013; Hudson et al., 2015). Given the general consistency in previous findings, we expect that the number of pretreatment diagnoses (i.e., diagnostic complexity) and comorbid depression would predict trajectories of nonresponse. Past research has not discriminated short-versus long-term outcomes; trajectory analysis will help identify the specific impact that comorbidity has on typical treatment course.

Several formats of CBT with increased parental or family involvement have been investigated. Inclusion of parents originated from evidence that parents play important etiological and maintenance roles in child anxiety and the rationale that improved parenting skills and parent–child interactions could impact youth functioning (Breinholst, Esbjørn, Reinholdt-Dunne, & Stallard, 2012). Yet, there is limited evidence favoring the involvement of parents in CBT, with studies comparing the relative efficacy of FCBT versus ICBT often yielding equivocal results. Several studies report better outcomes for FCBT (e.g., Barrett et al., 1996; Wood et al., 2006), some report better outcomes for ICBT (e.g., Bodden et al., 2008), but recent meta-analyses find no differences (see Manassis et al., 2014 and Thulin, Svirsky, Serlachius, Andersson, & Öst, 2014, for reviews). We assessed modality of CBT (ICBT vs. FCBT) as a predictor of symptom trajectory to help clarify previous findings and to assess whether meta-analytic findings would be replicated with symptom trajectories as the outcome. We considered these analyses exploratory. Identification of unique trajectory classes would potentially clarify the mixed evidence in the field and provide researchers/clinicians leads to selecting appropriate treatment modalities given the relevant presenting problems.

Table 1
Characteristics of Included Clinical Trials

Study	Sample and design	Age range (% female)	Diagnoses included	Treatment duration	Assessment points available	Diagnostic response, %	
						ICBT	FCBT
Bodden et al. (2008)	ICBT vs. FCBT	8–18 (59)	SAD, SEP, GAD, SP, PD	13 ss, 60–90 min.	Pre, post	53[d]	28
Chu et al. (2013)[a]	ICBT; open trial	7–16 (51)	GAD, SAD, SEP, SP	16–20 ss, 60 min.	Pre, mid, post	61[c]	n/a
Kendall (1994)	ICBT vs. WL	9–13 (40)	GAD, SAD, SEP	16 ss, 60 min.	Pre, post, 1-yr FU	64[c]	n/a
Kendall et al. (1997)	ICBT vs. WL	9–13 (48)	GAD, SAD, SEP	16 ss, 60 min.	Pre, mid, post, 1-yr FU	53[c]	n/a
Kendall, Hudson, Gosch, Flannery-Schroeder, and Suveg (2008)	ICBT vs. CBT/P vs. Control[b]	7–14 (44)	GAD, SAD, SEP	16 ss, 60 min	Pre, mid, post, 1-yr FU	64[c] (across both conditions)	
Nauta, Scholing, Emmelkamp, and Minderaa (2003)	ICBT vs. CBT/P vs. WL	7–18 (51)	SAD, SEP, GAD, PD	12 ss., 60 min.	Pre, post, 1-year FU	54[d]	59
Silverman, Kurtines, Jaccard, and Pina (2009)	ICBT vs. CBT/P	7–16 (57)	GAD, SAD, SEP, SP	12–14 ss, 60 min.	Pre, post, 1-yr FU	78[c] (across both conditions)	
Silverman et al. (1999)	ICBT vs. Control[b]	6–16 (51)	SP	10 ss, 80 min.	Pre, post, 1-yr FU	69[c]	n/a
Wood, Piacentini, Southam-Gerow, Chu, and Sigman (2006)	ICBT vs. FCBT	6–13 (40)	SAD, SEP, GAD	12–16 ss, 60–80 min.	Pre, mid, post, 1-yr FU	52[d]	78.9

Note. ICBT = individual cognitive–behavioral therapy; FCBT = family cognitive–behavioral therapy; SAD = social anxiety disorder; SEP = separation anxiety disorder; GAD = generalized anxiety disorder; PD = panic disorder; SP = specific phobia; ss = sessions; pre = pretreatment; post = posttreatment; FU = follow-up; n/a = not applicable.
[a] Additional data beyond the 2013 article is included; data were collected in accordance with Registered Trial NCT01829100. [b] Education/attention control conditions were included in item-response theory analyses but not in growth modeling. [c] Diagnostic-response rate reflects percent of youth with primary anxiety disorder absent at posttreatment. [d] Diagnostic-response rate reflects percent of youth with all anxiety disorders absent at posttreatment.

Method

Sample

Data were drawn from nine trials, eight completed randomized controlled trials of ICBT and FCBT, and one completed an open clinical trial of ICBT for youth anxiety.[1] Recent comprehensive reviews and meta-analyses were studied to identify relevant trials (e.g., Reynolds et al., 2012; Silverman et al., 2008). Trials were selected for inclusion based on the following criteria: (a) study participants were selected for a primary *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*)-*III-Revised* or *DSM-IV-Text Revision* diagnosis of anxiety including separation anxiety disorder, generalized anxiety disorder, social anxiety disorder, panic disorder, or specific phobia; (b) the treatment intervention was ICBT or FCBT; (c) sample age range was between 6 and 18; (d) studies had person-level symptom data for at least two time points including pre- and posttreatment; (e) studies had data for hypothesized predictors (e.g., age, gender, comorbidity status including number of diagnoses, and whether there was a comorbid depressive and/or externalizing disorder); and (f) study investigators agreed to share their raw data for inclusion in the project. Exclusion criteria included (a) group-CBT interventions, (b) inclusion of participants with subclinical anxiety, (c) prevention trials, and (d) primary diagnosis of OCD or posttraumatic stress disorder. Six investigators agreed to share data from nine clinical trials, totaling an overall sample of 832 youth who received short-term (between 12 and 20 sessions) ICBT ($n = 557$) or FCBT ($n = 275$).

The included studies have several methodological strengths that lend confidence to the use of an integrative approach. All studies were designed to sample the same general population (youth presenting with a primary anxiety disorder), used the same diagnostic assessment, used multiple reporters of symptoms (e.g., parent and youth), and demonstrated sufficient overlap in symptom measurement. The ICBT interventions used across studies were comparable for core elements of CBT (i.e., psychoeducation, cognitive skills, exposures). FCBT did not follow a standard approach across studies; however, there was significant overlap in format (all used adjunctive parent involvement; one study included siblings) and content (youth–parent communication, parental behaviors, thoughts, and feelings toward youth, parental anxiety). In four studies, parents were seen together with the youth (Bodden et al., 2008; Kendall et al., 2008; Silverman et al., 2009; Wood et al., 2006) and in one study, parents were seen independent from youth (Nauta et al., 2003).

Table 1 describes individual study characteristics. Regarding study design, all studies included an ICBT condition, five studies compared ICBT to FCBT, three studies included a waitlist group, two studies included an active or attention control condition, and one was an uncontrolled open trial.[1] All nine studies assessed anxiety symptoms at pre- and posttreatment. Four studies assessed anxiety at midtreatment, while seven studies assessed anxiety at 1-year follow-up. Table 2 presents descriptive statistics for basic demographic and pretreatment clinical characteristics for each

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[1] The open trial was included based on the similarity to the other included trials in treatment model, diagnostic approach, and treatment setting. In addition, its inclusion provided key measurement linkages needed for combining study samples across different measures of anxiety (i.e., it was the only study to assess both the RCADS and STAIC).

Table 2
Descriptive Statistics for Demographics and Pretreatment Clinical Variables

Statistic	Full sample	Bodden et al. (2008)	Chu et al. (2013)	Kendall (1994)	Kendall et al. (1997)	Kendall et al. (2008)	Nauta et al. (2003)	Silverman et al. (1999)	Silverman et al. (2009)	Wood et al. (2006)
Sample size	832	126	113	59	111	111[a]	76	78[a]	118	40
Age range		8–17	7–17	8–15	8–14	7–14	7–17	6–16	6–18	6–13
M_{age} (SD)	49.9	12.43 (2.59)	11.38 (2.60)	11.70 (1.78)	11.07 (1.37)	10.39 (1.80)	11.0 (2.44)	9.90 (2.46)	9.96 (2.74)	9.90 (2.12)
Percent female		59.7	55.8	37.3	43.2	43.2	50.0	48.7	56.8	40.0
Ethnicity (%)										
White	76.2	100.0	75.2	81.4	80.2	82.0	100.0	65.4	33.9	70.0
African American	4.8	0	4.4	15.3	9.9	11.7	0	0	.8	2.5
Hispanic	13.1	0	1.8	3.4	2.7	.9	0	32.1	61.0	10.0
Asian	1.3	0	5.3	0	1.8	0	0	0	0	7.5
Other/Mixed	3.8	0	12.4	0	5.4	3.6	0	1.3	4.2	5.0
Total diagnoses: M (SD)	2.78 (1.29)	2.75 (1.31)	3.16 (1.28)	2.69 (1.09)	2.92 (1.2)	3.53 (1.28)	2.08 (.80)	2.46 (1.33)	2.57 (1.36)	2.08 (.80)
Primary diagnosis										
ADIS severity: M (SD)		7.07 (1.02)	5.96 (.86)	6.42 (1.50)	6.73 (1.12)	5.88 (.90)	6.12 (1.01)	6.65 (1.24)	—	4.85 (.70)
ADIS severity range	4–8	4–8	4–8	4–8	4–8	4–8	4–8	4–8	—	4–6
Primary diagnosis (%)										
Generalized anxiety		18.0	46	64.4	55.9	46.8	22.4	0	21.2	10.0
Separation anxiety		25.8	12.4	16.9	25.2	23.4	30.3	0	22.0	47.5
Social anxiety		31.3	26.5	18.6	18.9	29.7	38.2	9.0	18.6	37.5
Specific phobia		16.9	7.1	0	0	0	0	83.3	36.4	0
Panic/Agoraphobia		7.1	8.0	0	0	0	9.2	7.7	1.7	5.0
Comorbid depression (%)	13.6	18.8	23	20.3	5.4	9.9	18.4	6.5	9.3	10.0
Comorbid externalizing Diagnosis (%)	20.3	9.7	35.3	16.9	19.8	38.7	5.3	23.1	12.7	12.5

Note. ADIS = Anxiety Disorders Interview Schedule for Children.
[a] Sample sizes reflect youth in active treatment or waitlist conditions; youth in educational/attention controls are not included.

individual study. Across all nine studies, 816 parents reported youth anxiety symptoms and 824 youth self-reported anxiety symptoms for at least two time points. Preliminary analyses assessing differences among studies on pretreatment variables suggested that all nine studies could remain in analyses· chi-square and analyses of variance indicated that pairs of studies differed on pretreatment diagnostic variables about half of the time (i.e., half of the pair comparisons). In general, there was no discernable pattern within analyses meaning that no one study appeared to be more different from the other studies than any other study (i.e., no study was an outlier). One study (Study 6 of Silverman et al., 1999) differed in sample inclusion criteria; the majority had a specific phobia primary diagnoses. Final growth models were tested with and without this study and no substantive differences resulted.

Measures

Anxiety Disorders Interview Schedule for Children–Child/Parent Interviews (ADIS-C/P). ADIS-C/P (Silverman & Albano, 1996) is a semistructured interview that assesses presence and severity of *DSM-IV-Text Revision* diagnoses. The ADIS-C/P has demonstrated good reliability and validity (Silverman, Saavedra, & Pina, 2001). Impairment (Clinician's Severity Rating) is rated per disorder on a 0 (*not at all*) to 8 (*debilitating*) scale, where 4 represents clinical threshold. Data from the ADIS-C/P were used for number of diagnoses and presence of a depressive or externalizing disorder. Number of diagnoses was defined as total number of all diagnoses, including comorbid anxiety, depressive, and externalizing disorders. Number of diagnoses was limited to five, based on the available data.

Anxiety symptom measures for primary analyses. The primary outcome measure was anxiety symptom scores. All studies utilized at least one and several studies utilized more than one anxiety symptom measure. There were four distinct anxiety measures used (two measures were considered the same due to identical items). Table 3 provides a visual representation of the structure of the anxiety symptoms data available across study groups. All studies shared at least one anxiety measure with at least one

other study. By utilizing IRT-based models, we calculated a set of latent trait scores that are anchored on a standard metric across studies and time using the following measures:

Revised Children's Manifest Anxiety Scale (RCMAS)–child and parent versions. The RCMASs (Reynolds & Richmond, 1978) are 28-item youth- and parent-report tools. Each item is rated 1 (*yes*) or 0 (*no*) and the items are summed to yield a Total Anxiety score. The RCMAS has been shown to have good psychometric properties (Reynolds, 1982; White & Farrell, 2001).

Multidimensional Anxiety Scale for Children (MASC)–child and parent versions (MASC-C/P). The MASCs (March, Parker, Sullivan, Stallings, & Conners, 1997) are 39-item youth- and parent-report questionnaires that ask how the child has been thinking, feeling, or acting over the last 2 weeks on a scale from 1 (*never*) to 4 (*often*). Both child and parent versions of the MASC have been shown to have strong psychometric properties (March et al., 1997; Muris, Merckelbach, Ollendick, King, & Bogie, 2002).

State–Trait Anxiety Inventory for Children–Trait–(STAIC-T)–Child/Parent Versions. The STAIC-T (Spielberger, 1973) is a 20-item child self-report scale that measures enduring trait anxiety. The STAIC-T–Parent (Strauss, 1987) is a 26-item parent-report version. Both are rated on a scale from 1 (*hardly ever*) to 3 (*often*). Both child and parent versions of the STAIC-T have demonstrated good psychometrics properties (Muris et al., 2002).

Spence Child Anxiety Scale (SCAS)–child and parent versions. The SCAS (Spence, 1998) is 44-item self-report measure with 38 items designed to assess symptoms consistent with the *DSM-IV* anxiety disorders and seven items measuring social desirability. Items are rated on a scale from 0 (*never*) to 3 (*always*). Both child and parent versions have shown good psychometrics (Arendt, Hougaard, & Thastum, 2014; Spence, 1998). Twenty-nine of the items overlap with RCADS items (see below), and these were used in the current study.

Revised Child Anxiety and Depression Scale (RCADS)–child and parent versions. The RCADSs (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000) are 47-item youth- and parent-report questionnaires of symptoms consistent with *DSM-IV* anxiety and depression symptoms. Items are rated on a scale from 0 (*never*) to 3 (*always*). The parent and child versions have demonstrated good psychometrics (Chorpita, Moffitt, & Gray, 2005; Muris et al., 2002). The RCADS was developed as a revised version of the SCAS.

Analytic Overview

The university's institutional review board approved all procedures. Following current recommendations for IDA (Curran & Hussong, 2009; Hussong, Curran, & Bauer, 2013; Hussong, Flora, Curran, Chassin, & Zucker, 2008), analyses proceeded in three phases. In the first phase, IRT analyses, conducted in PARSCALE-4.1 (Muraki & Bock, 2002), were used to calculate anxiety scale scores across all individuals and time points using linking procedures. In the second phase, the IRT-derived anxiety scores were used to model trajectories of anxiety symptoms over four time points from pretreatment through 1-year follow-up. Finally, in the third phase, multinomial logistic regressions were used to examine whether pretreatment and treatment variables differentially predicted to symptom trajectory classes. Analyses for Phases 2 and 3 were conducted using Mplus Version 7.0 (Muthén & Muthén, 1998–2012).

Table 3
Overall Structure of Anxiety Symptom Data From Each Trial

Clinical trial	RCMAS	STAIC	MASC	SCAS/ RCADS-A[a]
Bodden et al. (2008)		X		
Chu et al. (2013)		X	X	X
Kendall (1994)	X	X		
Kendall et al. (1997)	X	X		
Kendall et al. (2008)	X		X	
Nauta et al. (2003)				X
Silverman et al. (1999)	X			
Silverman et al. (2009)	X			
Wood et al. (2006)			X	

Note. RCMAS = Revised Children's Manifest Anxiety Scale; STAIC = State-Trait Anxiety Inventory for Children; MASC = Multidimensional Anxiety Scale for Children; SCAS = Spence Child Anxiety Scale; RCADS-A = Revised Children's Anxiety and Depression Scale–Anxiety subscale.
[a] The SCAS and RCADS-A are composed of the same items and same response scale.

Phase 1: IRT analyses. Calibration used a generalized partial credit IRT model (Muraki, 1992), which allows for polytomous item responses. Prior to main IRT analyses, the number of response categories for the MASC, SCAS, and RCADS was reduced to three by collapsing two categories due to sparse endorsement, which would introduce estimation problems and model instability. Estimated latent anxiety scores were assumed to follow a standard normal distribution. We used the expected a posteriori scoring method (Bock & Mislevy, 1982) to calculate IRT-scaled anxiety scores for each participant. These scores served as the observed dependent variables in the growth models, with higher scores indicating higher anxiety.

Phase 2: Growth mixture modeling. GMM was used with the anxiety IRT scores to evaluate whether distinct trajectories of anxiety symptom change over four time points could be identified. Analyses were conducted separately for parent and youth reports.

Model specification. Based on the results reported by each of the contributing clinical trials, we wanted to capture both the initial and the long-term change. We specified a model with a linear slope for the first three time points (pre-, mid-, posttreatment), while allowing the fourth time point (1-year follow-up) to be freely estimated. In this way, 1-year follow-up anxiety could continue with a downward trajectory or follow a more quadratic pattern.[2] Nesting of participants within study was accounted for using fixed-effects. Treating study as a random effect was constrained by the relatively small number of studies ($n = 9$).

Class enumeration. To identify the number of classes a series of models with progressively greater number of trajectory classes were estimated. Five models were fit starting with a single class and ending with five classes. Model selection relied on indices of model fit, class size, interpretability, and theoretical/clinical justification (Muthén, 2004). Indices of model fit included the sample-size adjusted Bayesian information criterion (ssaBIC; Tofighi & Enders, 2008) and the bootstrapped likelihood ratio test (BLRT; Nylund, Asparouhov, & Muthén, 2007). For the ssaBIC, smaller values indicate a better model fit. For the BLRT, a small p value suggests that the model with k classes is preferred over $k - 1$ classes. These fit indices were selected based on recent recommendations (see Henson, Reise, & Kim, 2007; Nylund et al., 2007). The reliability of classification was assessed using a measure of entropy, which ranges from 0 (*random classification*) to 1 (*perfect classification*), but entropy has been found to be unreliable in mixture models (Henson et al., 2007), so we relied primarily on ssaBIC and BLRT.

Missing data. Data was missing due to study design (i.e., not all contributing studies assessed anxiety at all four time points) and participant dropout. Across the sample of 832 youth, 99.3% of the sample had anxiety data at pretreatment, 33.2% at midtreatment, 85% at posttreatment, and 45.4% at 1-year follow-up. Previous studies that successfully used IDA methods have also reported high rates of missing data (as high as 90%) at some time points due to the data available from contributing studies (e.g., Hussong et al., 2008; Mun et al., 2015). Maximum likelihood approaches were used to address missing data for all analyses, which assumes that data are missing at random or that missingness is random given the predictors included in the model. Two participants were dropped during the third phase due to missing predictor data.

Results

Phase 1: Establishing a Common Metric for Anxiety Symptoms

As expected, bivariate correlations indicated moderate associations between youth and parent anxiety scores. Correlations across pre-, mid-, and posttreatment and 1-year follow-up time points were 0.32, 0.43, 0.39, and 0.33, respectively ($p < .01$ for all correlations).

Phase 2: Growth Modeling of Anxiety Symptom Trajectories

Parent-reported anxiety models. Results from the parent-reported one-class baseline model indicated that on average, there was a significant decline in anxiety symptoms in the initial slope from pre- through mid- and to posttreatment (slope = −0.42, $SE = 0.02$, $p < .001$) and from post to 1-year follow-up (slope = −0.20).[3] There was significant variance around the initial slope (slope variance = 0.05, $SE = 0.10$, $p < .001$) indicating variation around the mean growth trajectory. A three-class solution had the most support based on the ssaBIC and BLRT (see Table 4). Entropy was better for the two-class model; however, entropy has been shown to perform poorly with unbalanced class sizes (Henson et al., 2007), which were present currently. Class counts based on posterior probabilities were adequate (smallest was 7.2% of the entire sample) and the three-class model was more interpretable than the two-class model, in that it added a third small but interesting class of youth who experienced little symptom improvement.

Parameter estimates and class counts for the three-class model are presented in Table 5. Class names were based on overall shape of the trajectory (see Figure 1a): (1) *steady responders* (71.0%), whose members showed gradual, steady decline in anxiety symptoms from pre- through posttreatment and then slowed in symptom change through follow-up; (2) *delayed improvement* (21.8%), whose members consistently scored high on anxiety from pre- through posttreatment but then showed symptom decrease by follow-up; and (3) *rapid responders* (7.2%), whose members experienced a sharp and rapid decline in symptoms from pre to posttreatment followed by a slowing in symptom change though follow-up.

Youth-reported anxiety models. Results from the youth-reported one-class model indicated that on average, there was a significant decline in anxiety symptoms in the initial slope (slope = −0.45, $SE = 0.02$, $p < .001$) and from posttreatment to

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[2] A piecewise model with one slope specified from pre- to posttreatment and a second slope specified from posttreatment to 1-year follow-up was also considered. However, specifying a piecewise model led to problems with model convergence, prompting greater model constraints. Specifying a model with only 1 slope and a freely estimated 1-year follow-up time point allowed us to retain the slope parameter as a random rather than fixed effect.

[3] Slope from post-treatment to 1-year follow-up was calculated by multiplying the difference between the posttreatment (T3) and 1-year follow-up (T4) latent slope factor loadings by the mean of the slope for that class. For example, for Class 1 in the parent model, we used the following formula: (T4 loading − T3 loading) × −0.43. Because of calculating the slope in this way, the *SE* for the slope was not able to be calculated.

Table 4
Fit Indices for Growth Models

Classes	ssaBIC[a]	Entropy[b]	BLRT[c] Value	BLRT[c] p
Parent report				
1	4,811.79	n/a	n/a	n/a
2	4,793.92	.81	31.97	<.001
3	**4,791.80**	**.56**	**16.18**	**.02**
4	4,794.58	.57	11.35	.12
5	4,801.04	.62	11.45	.17
Youth report				
1	5,558.78	n/a	n/a	n/a
2	5,543.22	.66	29.7	<.001
3	5,529.85	.63	27.52	<.001
4	**5,523.09**	**.55**	**20.91**	**<.001**
5	5,523.11	.59	14.14	.07

Note. ssaBIC = sample-size adjusted Bayesian information criterion; LMR = Lo–Mendell–Rubin-adjusted likelihood ratio test; BLRT = bootstrap likelihood ratio test. Entropy refers to the average classification accuracy in assigning individuals to classes. Bold text indicates best model. [a] Lower values indicate better fit. [b] Values closer to 1 indicate high certainty in classification. [c] Significant values indicate k classes fit better than $k − 1$ classes.

1-year follow-up (slope = −0.22).[3] As in the parent model, there was significant variance around the initial slope (slope variance = 0.05, SE = .10, $p < .001$). The four-class solution had the most support, based on the ssaBIC and BLRT (see Table 4). Entropy was again low, yet the difference between entropy values between the three-, four-, and five-class models was relatively small. The four-class model had adequate class sizes (smallest class was 7.1% of the total sample) and contributed a clinically useful class; youth who reported relatively low symptoms throughout but who did show a decline in symptoms.

The parameter estimates and class counts for the four latent classes identified for youth-reported anxiety are presented in Table 5. The four classes identified (Figure 1b) were (1) *steady responders* (55.1%), whose members showed consistent, steady decline in anxiety across all time points; (2) *low-symptom responders* (25.3%), whose members started at lower levels of anxiety, showed a decline in symptoms through posttreatment, and then

maintained treatment gains through follow-up; (3) *rapid responders* (12.6%), who experienced a sharp decline in anxiety through posttreatment followed by a slight increase at follow-up; and (4) *delayed improvement* (7.1%), whose members showed a slight significant increase in anxiety by posttreatment followed by a sharp decrease from posttreatment to 1-year follow-up.

Phase 3: Predictors of Trajectory Classes

Multinomial logistic regression analyses using the three-step method (Asparouhov & Muthén, 2014) were conducted within the "best fitting" growth models from Phase 2. In this approach, the covariates do not affect the trajectories and classification uncertainty probabilities (i.e., measurement error) are incorporated into the regressions (Asparouhov & Muthén, 2014). Predictors were entered simultaneously and included demographic variables including age, gender, and race/ethnicity, pretreatment comorbidity variables and a treatment modality variable (ICBT vs. FCBT). Due to limited racial diversity in the trials, we dichotomized race as either White/non-Hispanic or non-White.

For parent-reported anxiety, membership in the rapid responder class was predicted by age, with a 1-unit increase in age associated with a 0.27 unit increase in log odds of being in the rapid versus the steady responder class (see Table 6). Thus, older youth were more likely to be in the rapid responder class compared to the steady responder class. Total number of diagnoses at pretreatment was also a significant predictor. Number of diagnoses predicted membership in the delayed improvement class and the rapid responder class compared to the steady responder class. Specifically, each additional diagnosis was associated with a 0.83 increase in the relative log odds of being in the delayed improvement class and with a 0.81 increase in the relative log odds of being in the rapid responder class. Of note, comorbid depression did predict to the delayed improvement class compared the steady responder class when entered alone in preliminary analyses; however, when variables were entered together, depression was no longer significant.

For youth-reported anxiety, gender, the total number of pretreatment diagnoses, and treatment modality emerged as predictors (see Table 6). Gender and number of pretreatment diagnoses predicted membership in the low-symptom responder class. Being female

Table 5
Class Counts and Parameter Estimates for Trajectory Classes

Class (class size: N, %)	Intercept (SE)	Slope (SE): pre-through posttreatment	Slope[a]: posttreatment to 1-year follow-up
Parent 3-class model			
1. Steady responders (577, 71.0%)	−.38 (.09)**	−.43 (.03)***	−.07***
2. Delayed improvement (178, 21.8%)	.04 (.15)	.009 (.01)	−.56*
3. Rapid responders (58, 7.2%)	.49 (.13)***	−1.31 (.10)***	−.25***
Child 4-parent model			
1. Steady responders (453, 55.1%)	−.47 (.11)***	−.31 (.04)***	−.41***
2. Low-symptom responders (208, 25.3%)	−1.42 (.25)***	−.48 (.10)***	.07***
3. Rapid responders (103, 12.6%)	−.04 (.21)	−1.27 (.15)***	.31***
4. Delayed improvement (58, 7.1%)	.05 (.18)	.097 (.04)***	−1.13**

[a] Calculated by multiplying the difference between the posttreatment (T3) and 1-year follow-up (T4) latent slope factor loadings by the mean of the slope for that class, e.g., for Class 1 in the parent model, we used the following formula: (T4 loading − T3 loading) × −0.43.
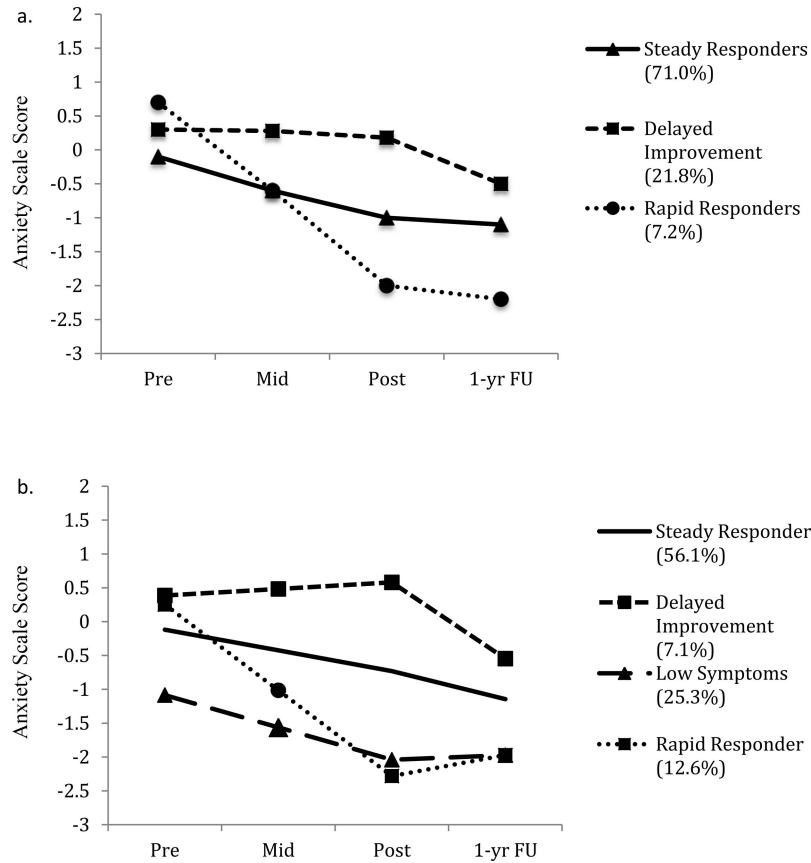* $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 1. (a) Estimated trajectory classes for parent-reported anxiety from pretreatment through 1-year follow up. (b) Estimated trajectory classes for youth-reported anxiety from pretreatment through 1-year follow-up.

was associated with a 0.72 decreased log odds of being in the low-symptom versus the steady responder class, indicating that males were more likely to be in the low-symptom class compared to the steady responders. Regarding diagnostic comorbidity, each additional diagnosis was associated with a 0.63 decrease in the log odds of membership in the low-symptom versus the delayed improvement class. Participant youth who received FBCT had an increase in the relative log odds of being in the delayed improvement class compared with all other classes. Receiving FCBT was associated with a 1.21 increase in the log odds of being in the delayed improvement versus steady responder class, a 2.60 increase in the log odds of being the delayed improvement versus the rapid responder class, and a 1.40 increase in the log odds of being in the delayed improvement versus the low-symptom responder class. Those in FCBT also had a 1.39 decrease in log odds of being in the rapid responder class compared to the steady responders class.

Discussion

Pooled data identified response trajectory classes and pretreatment client demographic and clinical traits successfully predicted class belonging. Substantively, youth age, gender, number of diagnoses, and CBT modality predicted trajectory class for either youth- or parent-reported anxiety. Older youth were more likely to

be in the rapid response class, males were more likely than females to be in the low-symptom class, greater pretreatment comorbidity predicted membership in both delayed improvement and rapid response classes, and youth receiving FCBT were more likely to be in the delayed improvement or steady response class.

As hypothesized, heterogeneity was found in both parent- and youth-reported anxiety symptoms. For both parent and youth models, we identified a class whose members followed a pattern of steady response (steady decline in symptoms), which appears to represent an "average" or typical class of individuals given that it was the largest for both youth and parent models. This "average" pattern reflects that therapy, over time, is not a "dramatic shift" but an incremental improvement in symptom reductions. Less typical of therapeutic change, a much smaller class in both models was a rapid responder class, whose members evidenced an overall steeper rate of improvement from pre- to posttreatment compared to the other classes. These classes are consistent with previous findings given that response rates reported in CBT trials (Silverman et al., 2008) indicate that the majority of youth show symptom improvement.

Though small, it is of interest that some improvements were delayed: These youth (parent model) showed no significant change in symptoms from pre- to posttreatment and then showed reduction in symptoms by 1-year follow-up. Perhaps, for this group, the

Table 6
Predictors of Trajectory Classes: Multinomial Logit Models, in Log Odds (SE)

Parent 3-class model	Rapid vs. steady responders	Delayed vs. steady responders	Rapid vs. delayed improvement
Number dx	.81 (.23)***	.83 (.29)***	.02 (.23)
Comorbid mood dx	−.17 (.73)	.55 (.59)	.73 (.66)
Comorbid externalizing dx	−.84 (.78)	−.61 (.60)	.23 (.66)
Treatment type	.17 (.52)	.58 (.48)	.42 (.52)
Age	.27 (.09)**	.10 (.11)	−.17 (.10)
Gender	−.43 (.53)	−.19 (.49)	.24 (.53)
Ethnicity	−.92 (1.26)	.31 (.79)	1.23 (1.38)

Child 4-class model	Delayed vs. Steady responders	Low symptoms vs. Steady responders	Rapid vs. Steady responders	Low symptoms vs. Delayed improvement	Rapid vs. Delayed improvement	Low symptoms vs. Rapid
Number dx	.47 (.31)	−.16 (.18)	.27 (.17)	−.63 (.30)*	−.20 (.32)	−.44 (.24)
Comorbid mood dx	.15 (.70)	−1.09 (.84)	.20 (.47)	−1.24 (.96)	.05 (.70)	−1.29 (.92)
Comorbid externalizing dx	.12 (.80)	−.17 (.50)	.35 (.54)	−.29 (.79)	.22 (.81)	−.51 (.72)
Treatment type	1.21 (.61)*	−.20 (.33)	−1.39 (.64)*	−1.40 (.60)*	−2.60 (.76)***	1.19 (.70)
Age	.22 (.19)	−.002 (.07)	.05 (.07)	−.22 (.18)	−.17 (.18)	−.05 (.09)
Gender	−.23 (.82)	−.72 (.33)*	−.09 (.40)	−.49 (.77)	.13 (.79)	−.63 (.48)
Ethnicity	.06 (.65)	.51 (.38)	−.51 (.47)	.45 (.64)	−.58 (.72)	−1.02 (.59)

Note. Dx = diagnoses.
* $p < .05.$ ** $p < .01.$ *** $p < .001.$

changes that were associated with treatment were not as apparent to parents until sufficient time had passed. In the youth model, this delayed group showed a slight *increase* in symptoms before showing a marked decline in symptoms by 1-year follow-up, a finding that suggests that both parents and youth observed delayed response. Perhaps, for the delayed group, the skills taught in treatment took longer to be relevant to and implemented by the youth. Receipt of nonstudy clinical services was also not controlled for. Although the delayed classes were less expected, they likely reflect the delayed gains reported over follow-ups. Bodden et al. (2008; trial included in the current study) reported that about 11% of the sample showed no improvement by posttreatment but showed significant change at follow-up, and multiple trials of CBT for youth anxiety have reported significant improvement in symptoms from posttreatment to follow-up (e.g., Gibby et al., 2017; Kendall et al., 2008; Silverman et al., 2009). The low-symptoms responder class has not been identified elsewhere, perhaps because of the small size. Combining trials and using GMM enabled us detect these different patterns of response. Clinically, these multiple response classes give reason for optimism. Pre–post response rates cited in clinical trials that hover around 60% may be capturing only one class of responders (here, steady responders). However, clinicians can educate clients that few youth see change by midtreatment (7–12% are rapid responders) and a larger proportion see clinical change by posttreatment (78–93% are not delayed responders). And even when change is not evident by posttreatment, long-term improvement is common (7–22% are delayed responders).

It is perhaps surprising that findings did not include a class where the youth showed no improvement by 1-year follow-up given other large trials documenting substantial numbers of youth who do not respond by follow-up (Silverman et al., 2008). One possible explanation is the current study's focus on symptom severity rather than diagnostic status. Youth may show improvement in symptoms while still meeting criteria for their anxiety diagnosis (Kendall et al., 1997), even as symptom change is clinically significant (Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999). In addition, there remains variability around each trajectory. Those in the delayed improvement groups may include individuals who show little improvement at all, even by 1-year follow-up. It is also possible that some of the nonresponders dropped out of the studies by follow-up. Unfortunately, we were not able to investigate study attrition as a predictor of response trajectories based on availability of data on attrition across studies.

Pretreatment number of diagnoses (including additional anxiety disorders, depressive disorders, and externalizing disorders) and treatment modality proved to be the most robust predictors of response class. In parent and youth models, a greater number of pretreatment diagnoses were associated with membership in the delayed improvement class. Intuitively, this suggests that more complex cases may respond to treatment more slowly or not at all because they may have more problem areas to address or the treatment protocols were not robust enough to affect this magnitude of pathology. Contrary to expectations, a greater number of pretreatment diagnoses were also associated with placement in the rapid responder class compared to the steady responder class for parent-reported anxiety. This result was surprising. Prior research exploring the effect of diagnostic comorbidity has found equally contradictory findings (see Nilsen et al., 2013 for review). For instance, Rapee and colleagues (2013) reported on the effects of comorbidity on CBT response in anxious youth among a large sample (with an $N > 700$), with results indicating that youth with comorbidities also showed improvement. However, youth with comorbidities reported higher symptom severity and were less likely to be free of their primary anxiety disorder at posttreatment and follow-up (Rapee et al., 2013).

Our findings indicate a similarly complex picture. First, diagnostic complexity was associated with placement in the delayed improvement group, suggesting that comorbid youth

showed resistance to improvement during the treatment phase. It may be that these youth needed additional time since they initiated treatment as more severe (Rapee et al., 2013). Second, diagnostic complexity predicted inclusion in the rapid responder class, compared to the average class. Analytic reasons may explain these results in part. Youth with greater pathology may start at a higher initial severity providing more room for improvement over the course of therapy (Doss & Weisz, 2006). Thus, placement in the rapid responder class may, in part, owe its steepness to regression to the mean. However, research with youth receiving substance abuse treatment have suggested that youth with greater clinical severity may come to treatment with greater awareness for the necessity of treatment and thus, with greater motivation (Breda & Heflinger, 2007). It is also possible that an unmeasured variable could moderate the relationship between comorbidity and outcome trajectory. For instance, cognitive variables such as motivation (Keeley, Storch, Merlo, & Geffken, 2008) and treatment expectancies (Westra, Dozois, & Marcus, 2007) have been shown to predict psychotherapy outcomes in adults, and therapy process variables such as therapeutic alliance (Cummings et al., 2013) and child involvement (Chu & Kendall, 2004) have predicted outcomes among anxious youth. Together, the literature and present results indicate that youth with greater clinical complexity are unlikely to respond to CBT in the typical, average way. Clinically, these results suggest that youth with higher degrees of comorbidity may deserve more concerted monitoring as multiple pathways are possible. Those who are likely to show delayed improvement could be identified early by extremely slow or nonexistent symptom change. Changes in either treatment approach or dosing (e.g., longer or more frequent sessions) may be useful. Also contrary to expectation, comorbid depression did not predict to trajectory class in the final models, though it did predict delayed improvement in preliminary analyses for the parent model. This suggests that while greater diagnostic complexity predicts outcome trajectories above and beyond the specific comorbidity, comorbid depression still appears to have a significant negative impact on treatment response.

Treatment modality (FCBT or ICBT) was also a strong predictor, though only based on youth report. Receiving FBCT significantly increased the probability of being in the delayed improvement class compared to all other classes and increased the probability of being in the steady responder compared with the rapid responder class. This finding is somewhat different than recent meta-analytic results showing no differences in the effectiveness of treatment based on level of parent involvement (see Manassis et al., 2014 and Thulin et al., 2014 for reviews). While the current finding seems to suggest that FCBT is associated with slower improvement than ICBT, there are important caveats. First, the members of the delayed improvement class show substantial decline in symptoms by 1-year follow-up, indicating that on average these youth do show improvement. Second, this class was the smallest and was only 7.1% of the sample. Finally, we did not take a moderator approach precluding specific conclusions about efficacy of FCBT compared to ICBT. These results do not suggest that it is counterindicated to involve parents in CBT for anxious youth. However, they do suggest that there exists a relatively small class of families who

may achieve slower results and may require greater monitoring or adaptations to format/dosing.

Gender was also a significant predictor in the youth-reported model, with males tending to be in the low-symptom responder compared with the steady responder class. In line with the majority of studies (see Nilsen et al., 2013, for review), this finding does not indicate gender differences in response overall to CBT for anxiety, but does suggest that males consistently reported somewhat less anxiety than their female counterparts. This finding is consistent with research showing that males are less likely to manifest anxiety (Albano & Krain, 2005) and at lower levels than females (Carter, Silverman, & Jaccard, 2011). In the parent-reported model, older age was associated with membership in the rapid responder class compared with the steady responder class. Although some individual studies investigating age as a predictor or moderator have found the reverse, with older age associated with poorer treatment response (Nilsen et al., 2013), recent meta-analyses (Bennett et al., 2013; Reynolds et al., 2012) have reported mixed findings. Thus, current results together with previous research seem to make it clear that that anxious adolescents are not at a particular risk for poor response to CBT. We did not assess interaction effects between gender and treatment format, but future research may aim to examine if age and gender (e.g., younger girls) moderated trajectory class as has been suggested in the treatment outcomes literature (Barrett et al., 1996; Cobham et al., 1998). Race/ethnicity was not a significant predictor of trajectory class in either parent or youth model. We had hoped the larger sample size would provide greater diversity of race/ethnicities to include, but limited diversity required that we define ethnicity into White/non-White categorization. Future research will want to include greater diversity to analyze ethnicity in a more differentiated way.

In addition to methodological strengths (e.g., data from multiple trials, large sample size, integrating a person-centered approach with a variable-centered approach, report from both youth and parents), there are potential limitations. First, a small number of potential predictor variables were assessed in similar ways across all of the included trials. Other factors (e.g., parent phytopathology, attrition) need to be considered as well as potential interactions among predictors. Second, due to limited available timepoints, we specified a linear trajectory from pre- to posttreatment despite recent research suggesting nonlinear patterns (Chu et al., 2013). We did allow the fourth time-point (1-year follow-up) to be freely estimated, allowing for a more quadratic pattern, however, it will be important for future studies to model fully nonlinear patterns. Third, the included trials were somewhat heterogeneous in their study design and in FCBT format. A certain degree of heterogeneity can be valuable in detecting latent classes and predictors and could lead to increased confidence in the generalization of findings.

Future research should go the next step in providing information to guide treatment-matching decisions. For example, knowing which interventions would best help youth who fell into different response classes would provide clinicians with a powerful tool. To do so, future research should consider different treatment interventions and conduct moderator analyses (e.g., intervention) as a central aim. The findings from future research will benefit from identifying moderators of response trajectories across treatment types to strengthen the current findings.

In sum, the current study provides a rigorous examination of trajectories of response to CBT for youth anxiety. We identified clinically meaningful subgroups of youth including a group of youth who show delayed improvement following CBT. Predictor results provide some clarity to predictors of response class and also raise some questions for future research. Diagnostic complexity, inclusion in FCBT, younger age, and male sex may be important factors that predict response class and can be used by clinicians to anticipate potential challenges in treatment.

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