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Individual Differences in Psychotherapy Change Among Ethnic Minority Patients

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INDIVIDUAL DIFFERENCES IN PSYCHOTHERAPY CHANGE AMONG ETHNIC MINORITY PATIENTS

A Dissertation Presented

by

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ABSTRACT

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There is limited research on ethnic minorities in psychotherapy, particularly with regard to the process of change. Most existing studies subscribe to a "uniformity myth" in which individual differences across and within minority groups are often masked or ignored because of an assumption of shared characteristics and experiences. The primary aim of this study was to address the gap in research on individual differences in psychotherapeutic change by analyzing a large sample of adult patients ($N = 2,272$) of varying ethnicity who received psychotherapy across various naturalistic settings. The treatment settings all participated in a national practice-research network, administering the same outcome measure (the Treatment Outcome Package) at regular intervals throughout treatment. I used latent class growth curve modeling to examine whether patients of a particular ethnicity (Caucasian, Hispanic, African American) had multiple depression and panic change trajectories over time. I then explored whether patient characteristics (e.g., age, gender, patient socioeconomic status) predicted membership in one or another trajectory group. Several different trajectories emerged for each ethnicity, and patterns of change in depression and panic symptoms were predicted by some patient

socio-demographic variables. Taking the Hispanic group as an example, two classes emerged in the depression model; patients in one class had low symptoms at pretreatment and improved over time, while patients in the other group started with moderate symptoms and failed to improve over time. The odds of having low baseline symptoms and then responding to treatment were higher for patients who were married or who had higher income. In the panic model, two groups emerged with low panic symptoms at pretreatment, but these groups varied in treatment response with one group improving in treatment and the other worsening during treatment (this heterogeneity would have been masked with a one class analytic model). Also, patients who were younger or employed were more likely to be in the responding group than in the worsening group. Such knowledge of different change trajectories, as well as predictors of latent class membership, can help to identify individuals' change prognosis, which, in turn, can help to facilitate the development of sensitive and helpful interventions.

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CHAPTER I

INTRODUCTION

Ethnic minorities, who currently comprise almost 37% of the U.S. population (U.S. Census Bureau, 2010), may require mental health services in greater proportions than Caucasians, perhaps largely because of stress associated with racial discrimination, prejudice, pressure to assimilate, and lower socioeconomic status (Hall, Bansal & Lopez, 1999; Smart & Smart, 1995). Moreover, ethnic minorities in the U.S. are overrepresented among groups with high rates of psychopathology and, thus, in need of mental health services (e.g., homeless or incarcerated persons; Koegel et al., 1988; Teplin, 1990; Vernez et al., 1988). Yet, despite this greater need, ethnic minorities are less likely to access mental health services compared to Caucasians (e.g., Barrio et al., 2003, Garland et al., 2005; Mays & Albee, 1992; U.S. Department of Health and Human Services [USDHHS], 2001). This access discrepancy remains even when controlling for financial factors (Garland et al., 2005; USDHHS, 2001), as well as health history and attitudes toward health issues (National Institute of Mental Health, 1999). Studies have linked perceptions of discrimination and psychological distress with patient self-stigmatization, which can result in less psychological help seeking (Cheng, Kwan, & Sevig, 2013).

When ethnic minorities do engage in mental health services, outcomes are occasionally, or perhaps even frequently (depending on the outcome measured), inferior compared to those for non-minority patients engaging in comparable treatments (Jerrell & Wilson, 1996; Rosenheck, Leda, Frisman, & Gallup 1997; USDHHS, 2001; Zane, Enomoto, & Chun, 1994). For example, ethnic minorities have demonstrated a poorer level of posttreatment functioning. In one study of treatment-as-usual across multiple

community mental health centers in Los Angeles, Caucasian patients improved more than African American patients (Sue, Fujino, Hu, Takeucho, & Zane, 1991). In a study of outpatients receiving short-term psychodynamic psychotherapy, Caucasian patients had superior outcomes and reported greater treatment satisfaction than Asian-American patients (Zane et al., 1994).

Ethnic minority patients have also been shown to attend fewer treatment sessions than non-minorities. For example, in a study of 1,166 college students undergoing psychotherapy, Caucasian students attended significantly more sessions than any other ethnic group, despite Asian-American students reporting the greatest distress at intake, followed by Latino, African American, and Caucasian students (Kearney, Draper, & Baron, 2005). Attending fewer sessions is often detrimental to the treatment process given that treatment duration is generally positively associated with favorable outcomes (Lambert, Hansen, & Finch, 2001; Orlinsky, Grawe, & Parks, 1994). Research also suggests that ethnic minorities are more likely to terminate treatment prematurely compared to non-minorities (e.g., Center for Mental Health Services, 1998; Sue, 1977; USDHHS, 2001; Vasquez, 2007; Wierzbicki & Pekarik, 1993). In one study, patients in each ethnic minority group studied (i.e., African Americans, American Indians, Asian-Americans, and Hispanics) had a significantly higher dropout rate than Caucasian patients (Sue, 1977).

Even when ethnic minorities do receive and maintain mental health treatment, the treatment delivered often deviates from empirically supported approaches (Wang, Berglund, & Kessler, 2000). Because of the field's initiatives to substantiate empirically supported, or evidence-based, treatments (e.g., Chambless et al., 1996; David &

Montgomery, 2011), psychologists have substantial information on what treatments work for which disorders among Caucasian patients. However, the controlled clinical trials that largely establish evidence-based treatments are often lacking in ethnic minority representation (USDHHS, 2001). Even when minority patients are included in trials, there is often limited information to draw meaningful conclusions about the change process for those patients. For example, from 1986 to 2000, over 10,000 participants were included in randomized clinical trials (RCTs) evaluating the efficacy of psychotherapy for several disorders (e.g., mood disorders, schizophrenia, attention-deficit/hyperactivity disorder; USDHHS, 2001). However, for 4,991 of the patients enrolled in these trials, the RCT reports provided no information on race or ethnicity; furthermore, for 650 participants, the only reported ethnicity was "non-White." This exclusion of minorities, or the lack of specific information regarding ethnicity, can lead to the false assumptions that ethnicity does not impact outcome or that all "non-White" clients are the same. Furthermore, even when there is specific ethnic minority representation in an RCT, the associated primary efficacy analyses are rarely conducted by ethnicity. Finally, new and existing psychotherapies are often developed primarily for and by Caucasians (Zane, Hall, Sue, Young, & Nunez, 2004). Although there have been some promising studies examining African American, Asian-American, and Hispanic patients undergoing cognitive-behavioral therapy (CBT) for a variety of disorders (Voss Horrell, 2008), it remains difficult for a therapist to determine the best treatment approach for ethnic minority patients.

Although there are non-RCT studies that have examined treatment efficacy for ethnic minority patients, many have included small samples and have lacked adequate

controls (USDHHS, 2001). Additionally, many studies have grouped ethnic minorities together as one category as opposed to analyzing by different ethnic groups (Aponte & Crouch, 1995; Kearney, Draper, & Baron, 2005; Maramba & Hall, 2002; Sue & Sue, 2002). Not only is it likely that one ethnic minority group differs from another, there is also evidence that ethnic minorities demonstrate high within-group heterogeneity with respect to preferences, personalities, values, acculturation, and attitudes (Leong & Gupta, 2008). Even among Caucasians, cultural differences such as recent or historic immigration, region of the country, and so on, can contribute to a great deal within-group heterogeneity. These differences discount the assumption that all Caucasians can be neatly categorized as White, or as the "majority."

When ethnic minorities in psychotherapy are researched uniquely, a variety of results have emerged. One study found that African Americans and Caucasians utilized treatment equally for posttraumatic stress disorder (PTSD) in the VA system (Rosenheck & Fontana, 1994), though additional research has found that African Americans with PTSD were often undiagnosed or undertreated in inner-city settings (Graves et al., 2011). In another study, African American and Caucasian women with PTSD had similar responses to therapy both at posttreatment and at 12-month follow-up (Zoellner et al., 1999); however, another examination of PTSD in women found that African American women with PTSD, relative to Caucasian women, were less likely to start cognitive processing therapy (CPT) – an empirically supported treatment – more likely to experience co-occurring depression (Liverant, Suvak, Pineles & Resick, 2012). CBT for anxiety has been shown to reduce symptoms comparably for African American and Caucasian patients (Friedman et al., 1994; Treadwell et al., 1995). On the other hand, a

study of behavioral treatment for agoraphobia found that African American patients were less responsive than Caucasian patients (Chambless & Williams, 1995). Another study found that African Americans were similar to Caucasians in their response to psychotherapy for depression, with the exception of community functioning (for which African American patients demonstrated less improvement; Brown, Shear, Schulberg, & Madonia, 1999). In a study of exposure therapy for panic disorder, treatment was ineffective for African Americans patients (Williams & Chambless, 1994), and a controlled clinical trial comparing psychotherapies for HIV-positive patients with depressive symptoms found that African American patients assigned to CBT had significantly poorer treatment outcomes than Hispanic or Caucasian patients assigned to the same treatment group (Markowitz, Spielman, Sullivan & Fishman, 2000).

In other ethnic populations, Dai et al. (1999) found that older Chinese Americans responded similarly to Caucasians in CBT for depression, as did a multiethnic population in a previous study of CBT for depression (Munoz, Ying, Pérez-Stable, & Miranda 1993). In two large-scale studies of mental health systems, treatment outcomes for Asian-American patients were either similar or inferior to outcomes for Caucasian patients; for instance, Sue (1977) found that Asian-American patients significantly underutilized services and had significantly higher dropout rates compared to Caucasian patients, while Sue et al. (1991) found that Asian-American patients underutilized services compared to Caucasian patients, but exhibited comparable symptom improvement. Finally, Lambert et al. (2006) examined psychotherapy outcomes among a large sample of college students. In this study, Caucasian students were matched with an ethnic minority student on intake scores on distress, gender, martial status, and age. No differences in outcome were found

between ethnic groups, and the only significant difference in dropout was between Caucasians and Latinos, with Latino patients dropping out less frequently.

In sum, although studies have varied in their results, ethnic minorities seem to experience mental health issues in proportions that are similar to or greater than Caucasians. Such prevalence, combined with lower treatment utilization, poorer quality of care, and a lack of evidence-based treatments, has resulted in a higher proportion of ethnic minorities with unmet mental health needs compared to Caucasian populations. For over 20 years, researchers have investigated ways to improve or understand psychotherapeutic services and treatment practices for ethnic minority populations (Sue & Zane, 2009); yet, to date, ethnic minorities tend not to receive effective mental health services (at least not to a degree that is consistently comparable to Caucasian patients). Furthermore, many of the contemporary guidelines for improved psychotherapy services for ethnic minorities are based on theory rather than empirical findings (Matthews & Peterman, 1998; Sue, 1998).

Approaches to Improving Psychotherapy for Ethnic Minorities

One proposed model for improving psychotherapy for ethnic minorities focuses on patient/therapist ethnic match. If an ethnic minority patient is paired with an ethnically similar psychotherapist, it is possible that treatment engagement and outcomes may improve. Numerous studies have examined this issue with decidedly mixed results. For example, when Asian-American and Mexican-American patients were matched ethnically or linguistically with their therapist, they attended more sessions, dropped out less, and had better treatment outcomes than non-matched patients (Sue, 1977). In the same study, being matched with an ethnically similar therapist was associated with

attending more sessions for African American patients; however, match for these patients was not associated with dropout or treatment outcome.

Other studies have demonstrated conflicting results regarding matching and treatment outcome, with some finding that an ethnic match improved treatment process and/or outcome (Atkinson, 1983; Sue et al., 1991), and others finding no benefit of a patient-therapist ethnic match (Fiorentine & Hillhouse, 1999; Gottheil et al., 1994; Sterling, Gottheil, Weinstein, & Serota, 2001). Maramba and Hall (2002) conducted a meta-analysis of the match question across seven studies. Ethnic matching had an aggregated small, significant effect on treatment dropout (r = .03), a small, significant effect on sessions attended (r = .04), and a negligible, non-significant effect on outcome (r = .01). Although it is unclear why matching is related to some outcomes for some groups but not others, again, it is likely that ethnic minority groups not only differ from one another, but also contain considerable within-group heterogeneity. In this sense, it is important to highlight that an ethnic match does not necessarily equal a cultural match (Zane et al., 2004). Thus, some have suggested that matching at an overall ethnic similarity level might not be as fruitful of a strategy for improving psychotherapy for minority patients as initially believed (Sue & Zane, 1987).

A second proposed model for improving psychotherapy for ethnic minorities focuses on cultural sensitivity and training; that is, increasing psychotherapists' cultural competence, as well as increasing the number of culturally adapted psychotherapies. Griner and Smith (2006) conducted a meta-analysis of 76 culturally adapted psychotherapies and found that 84% of the treatments incorporated cultural values and concepts in the intervention and 17% provided cultural sensitivity training for clinicians.

The same meta-analysis found support for the efficacy of culturally adapted interventions over traditional evidence-based treatments with a small to medium effect size (d = 0.45), and that interventions were four times more effective when culturally modified for a specific ethnic group compared to a general non-White group. However, there is little indication that current evidence-based treatments lacking cultural adaptation do *not* work for minority patients (Hall, 2001; Miranda et al., 2005; Weisz, Huey, & Weersing, 1998). Furthermore, even if advantageous, the potential adaptations of current evidence-based treatments for various communities could results in endless variations. In addition, studies in which cultural variation has been examined have not demonstrated differential treatment outcomes between the adapted treatments, and a number of violence prevention trials have shown that treatment effects were robust across race (Elliott & Mihalic, 2004). Given the lack of research on whether ethnic minorities vary reliably in their response to current treatments, especially given that ethnic minorities are often not treated with evidence-based therapies, some have suggested that more basic research is needed on the ethnic minority patient population before implementing theory-based solutions (i.e., Lau, 2006).

Although some scholars have proposed, and begun studying, means for improving psychotherapy outcome for ethnic minorities – including, as discussed above, matching patient and therapist ethnicity and improving therapists' cultural competence – few studies have explored specific psychotherapy change processes for ethnic minority groups. Moreover, when studying any aspect of psychotherapy for ethnic minorities, researchers have tended to focus on groups as a whole instead of focusing on individuals. This neglect of the individual falls prey to the erroneous assumption that every member

of one particular ethnic group will experience and respond to psychotherapy in a uniform manner (Sue & Sue, 2008). Indeed, studies have shown greater variability within ethnic groups than among them (e.g., Leong & Gupta, 2008). Several researchers have noted that greater consideration should be paid to this heterogeneity within patient samples so as to evaluate more thoroughly the efficacy of different treatments (Cuijpers, van Lier, van Straten, & Donker, 2005; Stulz, Thase, Klein, Manber, & Crits-Christoph, 2010). Thus, it seems important to direct psychotherapy research on ethnic minorities toward the individual and his or her relevant characteristics.

Psychotherapy Change Processes and Patient Characteristics

Although RCTs have been useful in determining psychotherapy's general effectiveness across individuals in a given sample, they typically offer limited information on *how* therapy works or how patients change at the individual level. This limitation is particularly true for ethnic minorities who have been historically under-represented in RCTs. Unfortunately, it is nearly impossible to answer the question of what treatment works for whom at the group level, as doing so would require over 100,000 studies testing the specific efficacy of specific treatments for specific patient populations experiencing specific problems (Kazdin, 2000). To address this shortcoming in fewer studies, some researchers have pointed to repeated measurements of outcome variables throughout treatment, in order to assess whether or not all individuals change in the same manner (e.g., Hayes, Laurenceau & Cardaciotto, 2007). Repeated measures allow for "patient-focused research" at the individual and group level, essentially exploring how people change differentially (Howard, Moras, Brill, Martinovitch, & Lutz, 1996). By assessing such change over time, researchers can also assess variables that

influence individual and group change trajectories. One such variable includes patient characteristics, which Castonguay and Beutler (2006) refer to as one horse in the "three-horse race" for understanding determinants of change (the other two being therapist characteristics and relationship variables). Understanding here which *patient* characteristics influence psychotherapy change (and how) would be particularly useful when examining ethnic minorities in order to avoid what Kiesler (1966) called the "patient uniformity myth."

Ethnic Minority Groups and Patient Characteristics

As noted above, most psychotherapy studies on ethnic minorities have focused on an aggregated sample of minority patients or have used small samples. The few studies with larger samples that included multiple ethnic minority groups are dated, and they have rarely examined patient characteristics beyond ethnicity (e.g., Sue et al., 1991). Moreover, patient socio-demographic characteristics beyond ethnicity – including age, education, gender, income, religion, marital status, and employment – have been shown, in some cases, to relate to treatment processes and outcome when examined independently and alongside patient ethnicity. For example, a large Finnish study examined the impact of patient socio-demographic factors on length of treatment (Joutsenniemi, Laaksonen, Knekt, Haaramo, & Lindfors, 2012). Married and highly educated patients benefited from shorter therapies, while single-parent patients, divorced patients, and patients who did not work outside the home either did not improve without additional sessions or did not benefit from any treatment. Furthermore, younger patients had their depressive symptoms remit more quickly than older patients, though younger patients needed more treatment sessions for anxiety symptoms compared with older

patients. Overall, women were found to need more treatment sessions to reduce depression compared to men, while men needed more treatment sessions for anxiety reduction compared to women. In the United States, a study of socioeconomic status (SES) and treatment for depression revealed that lower patient SES correlated with less symptom improvement regardless of treatment modality, however, SES was not associated with treatment attrition (Falconnier, 2009). Finally, a review of predictors of early treatment termination evidenced that lower patient SES and patient ethnicity have been the only consistent predictors of psychotherapy treatment dropout (Reis & Brown, 1999). These studies point to the need to include other socio-demographic factors in addition to race and ethnicity when considering patient variables in psychotherapy.

Existing psychotherapy studies on ethnic minorities have also tended to study treatment outcomes at the average level, which is likely to mask information on those patients who have better outcomes than the average minority patient and those who have worse outcomes. Patient-focused studies, such as those involving growth mixture models (GMMs), allow researchers to better predict and understand change in psychotherapy for any given individual (e.g., Lutz, Stulz, & Köck, 2009; Stulz, Lutz, Leach, Lucock, & Barkham, 2007). This method is a compromise between relying on mean scores (which have the potential to hide individual differences) and multiple individual trajectories (which have the potential to be unwieldy when trying to draw conclusions). Examining a large sample of ethnic minority patients who complete repeated measures during psychotherapy would help shed light on different change trajectories at both the group and individual level. Furthermore, it would allow, with sufficient statistical power, the

ability to examine which specific patient characteristics beyond ethnicity (e.g., SES) predict the level and type of change.

Specific Aims

The current study examined how different ethnic minority groups, and different members within minority groups, differentially change in psychotherapy delivered naturalistically. Because ethnicity likely influences treatment outcome through an interaction with participant characteristics, it can be expected that some, but not all, ethnic minority patients will experience poorer treatment outcomes compared to non-minorities, and that some will show other patterns of change. Therefore, it is important to identify empirically different subgroups of ethnic minority patients (both across and within ethnic groups), and to examine patient characteristics (as just one possible domain) that may predict membership in different change groups, including age, education, number of mental of hospitalizations, gender, income, religion, marital status, and employment. Because many studies use Caucasians as a comparison group when examining ethnic minority patients in psychotherapy (Zane et al., 2004), I also compared subgroups found in the minority groups with subgroups found in this majority group to observe what differences, if any, exist. Given that prior research on individual level change trajectories in ethnic minority psychotherapy patients is virtually non-existent, this study was fully exploratory in nature.

CHAPTER II

METHOD

Participants

Data derived from a subset of a large sample of adult patients (age ≥ 18 years) of therapists participating in a national practice-research network (PRN). Patients were referred to the various clinics for psychological services from multiple sources (e.g., physician, county base service unit, self) and all patients were in outpatient psychotherapy. The data analyzed in the current study were collected between 2000 and 2009. From the original sample of 48,768 cases, the following eliminations (cases or sessions) were made: (a) any data collections that reflected posttreatment assessment (104 sessions), (b) any data collections where the session number was unknown (10,787 sessions), (c) all duplicate cases in which the same patient came to the same clinic two or more times for treatment (16,637 cases), (d) patients whose first data collection was at midtreatment or posttreatment (481 patients), (e) patients with less than three data collections (1,601 patients), and (f) ethnic groups with less than 100 patients (505 patients; this included bi-racial patients). The data set was then transposed so that patients with repeated measures would appear as one entry. The above exclusions and data transformation led to the current sample of 2,272 patients across three broad ethnic groups of Hispanic, African American, and Caucasian (as it was only these three groups that had a large enough sample to conduct the analyses of interest). See Table 1 for demographic information across the three subgroups, including indications of any significant differences between the groups.

There were 409 therapists that treated patients in this sample. Therapists treated a range of 1 to 97 patients, seeing an average of 10.22 patients (*SD* = 15.72). Because there are limited and inconsistent data provided on the therapists in this database, it is not possible to report on therapist gender, theoretical orientation, ethnicity, or specific therapy employed for a given case.

Measure

Treatment Outcome Package (TOP; Kraus, Seligman, & Jordan, 2005). The TOP is a brief suite of self-report measures developed by Behavioral Health Laboratories and validated on a wide array of psychiatric patients across various naturalistic treatment settings. It was developed to meet all of the criteria set by the Core Battery Conference (Horowitz, Strupp, Lambert, & Elkin, 1997). The clinical scales, derived from 58 items (see Appendix A) rated on a 6-point scale ranging from 0 (*None*) to 6 (*All*), assess 12 symptom and functional domains, including depression, panic, mania, work, sleep, sexual functioning, social conflict, psychosis, suicidality, violence, substance abuse, and quality of life. TOP scores on each subscale are presented as z-scores and are standardized using general population means and standard deviations. Higher scores indicate more symptoms. A total TOP distress score can also be derived across all items. Finally, characteristics such as patient demographics are recorded via patient self-report. The TOP demonstrates good test-retest reliability (.76 to .94 for the 12 subscales), sensitivity to change, and convergent validity with other relevant clinical scales such as the Beck Depression Inventory (BDI; Beck, Steer, & Ranieri, 1988), the Brief Symptom Inventory (BSI; Derogatis, 1975), and the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; Graham, 1993; Hathaway & McKinley, 1989) (Kraus et al., 2005). For the current

study, the TOP subscales of depression and panic were examined because (a) they are prevalent (major depressive disorder affects approximately 6.7% of the U.S. adult population, World Health Organization, 2004; anxiety disorders affect approximately 18.1% of the U.S. adult population, Kessler, Chiu, Demler, & Walters, 2005), (b) they are frequently co-morbid with one another (Kessler et al., 2005), and (c) to limit the number of analyses conducted. For depression, the theoretical range on the TOP is -1.67 to 4.63; for panic, the theoretical range is -1.13 to 7.59. See Table 2 pretreatment (baseline) symptoms by ethnic group, including indications of any significant differences between the groups.

Procedure

All therapists participating in this ongoing PRN administer the TOP throughout treatment. On average, the first data collection was at treatment intake (baseline). The second data collection was, on average, at session 6. The third data collection was, on average, at session 10. Finally, 1,456 of the 2,272 patients had a fourth data collection, which was, on average, at session 19. Because of the nature of this naturalistic data set, correct session numbers were not always recorded for each data collection and different clinics collected data at different time points. Because of these inconsistencies, I included time as a covariate in the final analyses to correct for differences in time between data collections.

GMMs were fit to the repeated-measures data using mPlus (version 5.1, Muthen & Muthen, 2005). GMMs allow longitudinal data to be fit to multiple trajectories of change, with each trajectory representing a subsample of the total data (with a unique intercept and slope). Using such models, it was possible to examine the following

questions for any given ethnicity: (1) Do patients of a particular ethnicity have multiple change trajectories over time? (2) What participant characteristics predict membership in one or another group, as defined by the trajectories? These models also make it possible to strike a balance between data derived from individual scores and data derived from group means. This balance allows researchers to predict better how any one individual will change in psychotherapy compared to individual scores and group means.

To contrast analyses-as-usual with the GMMs I conducted here (described more fully below), I ran the standard one-class model regression analyses for each ethnicity by subscale. The regression models are presented here to demonstrate the potential masking that can occur when heterogeneity is not explored. If only one-class models were examined for each of the different ethnicities on the depression subscale, the intercepts and slopes for Hispanics (2.46, -0.075), African Americans (2.13, -0.068), and Caucasians (2.20, -0.074) demonstrated low to moderate depression scores at pretreatment for all three groups with near equivalent rates of change (see Figure 1). If only one-class models were examined for each of the different ethnicities on the panic subscale, intercepts and slopes for Hispanics (2.47, -0.05), African Americans (1.45, -0.03), and Caucasians (1.71, -0.05) demonstrated low to moderate panic scores at pretreatment for all three groups with near equivalent symptom improvement (see Figure 2). The following GMM analyses allowed for the examination of heterogeneity within these groups that the one-class models masked.

Data Analyses

Using the depression and panic subscales of the TOP, GMMs were fit for each of the three ethnic groups. Models were built in the manner established for use with

psychotherapy data (see Stulz & Lutz, 2007). I first ran a one-class model. I then ran a two-class model and compared the fit of the second model against the first model through inspection of the Bayesian Information Criteria (BIC) and the Bootstrap Likelihood Ratio Test (BLRT). The BLRT assesses the null hypothesis that the data are equivalently explained by a model with one less class than the current model. Lower *p*-values indicate that the current model significantly improves fit over a model with one less class. The BIC, derived from the log-likelihood statistic, accounts for the number of parameters in the model, favoring more parsimonious models; a lower BIC indicates a model that more accurately reproduces the data, accounting for the parameters used. I added classes to the model until the fit criteria no longer improved. The nature of GMMs is exploratory, where the model itself derives the appropriate number of classes for the data. The more classes set by the model for the data, the more heterogeneity is present in the data sample.

Once the best-fit model was established, I explored whether any of the participant variables influenced membership in one or more classes. Using logistic regression, it is possible to regress the emergent latent classes onto an observed variable in order to examine whether the observed variable reliably determines class membership. Continuous variables included age (in years), education (in years), and number of mental health hospitalizations. Categorical variables included gender, annual income (less than $10,000, $10,000-20,000, and more than $20,000), religion (Catholic, Protestant, other Christian, other religion, and none), marital status (single, married, divorced/separated, and other), and employment (employed/student, unemployed and looking for work, unemployed and not looking for work, and other). In addition, the probability of being in a given class, at different values of the observed variable, was estimated. Thus, this

method allowed me to examine whether any of the proposed patient variables influenced class membership. Finally, I engaged two consultants with expertise in psychotherapy and cultural competence to review my interpretations for potential biases.

CHAPTER III

RESULTS

Hispanic Group on Depression Scale

As noted, an unconditional GMM was built by starting with a two-class model and comparing it to a model with one class. A two-class model improved the model fit, so then a three-class model was added and tested against the two-class model. A two-class model best fit the data based on the BLRT *p*-values[1]. See Table 3 for demographic information for both classes.

The two distinct groups that emerged from the analysis and their treatment trajectories are depicted in Figure 3. The first group ($n = 60$) began treatment with moderate depression symptoms (3.27, $p < 0.001$) and had a flat change trajectory of change (0.03, $p = 0.44$). This group is called Class 1: Moderate Symptom, Non-responding. The second group ($n = 234$) began treatment with low depression symptoms (2.30, $p < 0.001$) and had a significant trajectory of change with decreasing depression scores (-.11, $p < 0.001$). This group is called Class 2: Low Symptom, Responding.

Observed patient variables were then regressed onto these two classes. The odds of being in Class 2 (Low Symptom, Responding) versus Class 1 (Moderate Symptom, Non-responding) increased with membership in higher income brackets ($\beta = .92$, $df = 1$, $p = 0.02$) and if patients were married ($\beta = 1.45$, $df = 1$, $p = 0.01$).

African American Group on Depression Scale

[1] BLRT values were $p < .05$ for adding class 2. For adding class 3, the BLRT value was $p = 0.19$.

An unconditional GMM model was built comparing a two-class model with a one-class model. A two-class model best fit the data based on the BLRT p-values[2], and model fit did not improve with added classes. See Table 4 for demographic information for both classes.

The two distinct groups that emerged from the analysis and their treatment trajectories are depicted in Figure 4. The first group (n = 51) began treatment with moderate depression symptoms (3.35, $p < 0.001$) and had a significant trajectory of change with depression scores decreasing over time (-0.13, $p < 0.001$). This group is called Class 1: Moderate Symptom, Responding. The second group (n = 34) began treatment with low depression symptoms (0.54, $p = 0.03$) and had a flat trajectory of change (0.01, $p = 0.75$). This group is called Class 2: Low Symptom, Non-Responding.

Observed patient variables were regressed on these two classes. None of the observed variables significantly predicted membership in either class.

Caucasian Group on Depression Scale

An unconditional GMM model was built comparing a two-class model with a one-class model and so on until model fit improvement stopped after Class 8. An eight-class model best fit the data based on the BLRT p-values[3]. See Table 5 for demographic information across all classes.

The eight distinct groups that emerged from the analysis and their treatment trajectories are depicted in Figure 5. The first group (n = 87) began treatment with high depression symptoms (4.03, $p < 0.001$) and had a significant trajectory of change with depression scores decreasing rapidly over time (-0.37, $p < 0.001$). This group is called

[2] BLRT values were $p < .05$ for adding class 2. For adding class 3, the BLRT value was $p = 0.37$.
[3] BLRT values were $p < .05$ for adding classes 2-8. A nine-class model failed to successfully converge.

Class 1: High Symptom, Rapid Responding. The second group (n = 39) began treatment with very low depression symptoms (0.45, p = 0.06) and had a significant trajectory of change with depression scores increasing over time (0.29, $p < 0.001$). This group is called Class 2: Low Symptom, Worsening. Class 3 (n = 543) started with very low depression symptoms (0.33, $p < 0.001$) and had a shallow trajectory of change with depression scores slightly decreasing (-0.02, p = 0.01). Class 3 was labeled Low Symptom, Mild Responding. Class 4 (n = 304) started treatment with moderate depression symptoms (2.23, $p < 0.001$) and demonstrated a significant trajectory of change with decreasing depression symptoms (-0.18, $p < 0.001$). Class 4 was labeled Moderate Symptom, Responding. Class 5 (n = 391) started treatment with moderate depression symptoms (1.96, $p < 0.001$) and had a flat trajectory of change (-0.001, p = 0.97). Class 5 was labeled the Moderate Symptom, Non-Responding. Class 6 (n = 270) started with high depression symptoms (4.11, $p < 0.001$) and had a significant trajectory of change with depression symptoms decreasing across time (-0.20, $p < 0.001$). Class 6 was labeled the High Symptom, Responding. Class 7 (n = 161) began treatment with high depression (4.49, $p < 0.001$) and showed a flat trajectory of change (-0.05, p = 0.002). Class 7 was labeled the High Symptom, Non-Responding. Finally, Class 8 (n = 92) started treatment with moderate depression symptoms (2.80, $p < 0.001$) and had a significant trajectory of change with depression scores increasing across time (0.08, p = 0.03). Class 8 was labeled the Moderate Symptom, Worsening.

Observed patient variables were then regressed onto these eight classes. For the low depression symptom groups, the odds of being in Class 3 (Low Symptom, Non-Responding) versus Class 2 (Low Symptom, Worsening) increased if members were

employed (β =1.26, *df* = 1, *p* = 0.01), had fewer mental health hospitalizations (β = -0.15, *df* = 1, *p* = 0.01) and were male (β = -0.94, *df* = 1, *p* = 0.04). For moderate depression symptom groups, Class 5 (Moderate Symptom, Responding) (β = 0.08, *df* = 1, *p* = 0.01) and Class 8 (Moderate Symptom, Worsening) (β = .13, *df* = 1, *p* < 0.001) members were more likely to have prior mental health hospitalizations compared to Class 4 (Moderate Symptom, Non-Responding). Class 4 members were also more likely to be in a higher income bracket compared to Class 5 (β = 1.06, *df* = 1, *p* < 0.001) and Class 8 (β = 1.20, *df* = 1, *p* = 0.01). Finally, Class 5 members were less likely to be employed than members of Class 4 (β = -.68, *df* = 1, *p* < 0.01). Members of Class 8 were more likely to be unemployed compared to Class 4 (β = .90, *df* = 1, *p* = 0.03) and Class 5 (β = 1.04, *df* = 1, *p* = 0.02). Among the high depression symptom groups, Class 1 (High Symptom, Rapid Responding) members are more likely to be employed (β = .92, *df* = 1, *p* = 0.02) than Class 7 (High Symptom, Non-Responding) members, while Class 7 members were less likely to have higher incomes (β = -1.18, *df* =1, *p* < 0.001) compared to Class 1. Class 6 (High Symptom, Responding) members also were less likely to have higher incomes (β = -0.60, *df* =1 *p* = 0.03) compared to Class 1. Members of Class 6 also were more likely to have higher incomes (β = .58, *df* = 1, *p* = 0.02) compared to members of Class 7.

Hispanic Group on Panic Scale

An unconditional GMM was built by starting with a two-class model and comparing it to a model with one class. A 3rd, 4th, 5th and 6th class were then added and each new model was tested against the one with one less class. A five-class model best fit

the data based on the BLRT p-values[4]. See Table 6 for demographic information for across all classes.

The five distinct groups that emerged from the analysis and their recovery trajectories are depicted in Figure 6. The largest group (n = 139) began treatment with low panic symptoms (1.53, $p < 0.001$) and had a significant trajectory of change with panic symptoms improving over time (-0.10, $p < 0.001$). This group is called Class 1, Low Symptom, Responding. Class 2 (n = 14) began treatment with high panic symptoms (5.55, $p < 0.001$) and had a steep trajectory of change with panic symptoms improving rapidly (-0.52, $p < 0.001$). Class 2 is called High Symptom, Rapid Responding. Class 3 (n = 72) began treatment with moderate panic symptoms (4.02, $p = 0.001$) and had a significant trajectory of change with panic symptoms improving (-0.10, $p = 0.03$). Class 3 is called Moderate Symptom, Responding. Class 4 (n = 8) began treatment with moderate panic symptoms (2.78, $p = 0.003$) and the trajectory of change was significant with symptoms worsening over time (0.45, $p = 0.001$). Class 4 is labeled Moderate Symptom, Worsening. Finally, Class 5 (n = 58) began treatment with low panic symptoms (1.85, p = 0.16) and had a significant trajectory of change with panic symptoms getting worse over time (0.17, $p = 0.01$). Class 5 is labeled Low Symptom, Worsening.

Observed patient variables were then regressed onto these five classes. For the low depression symptom groups, the odds of being in Class 1 (Low Symptom, Responding) versus Class 5 (Low Symptom, Worsening) increased with employment (β = 0.03, df =1, $p = 0.05$) and increased with younger age (β = -0.68, df = 1, $p = 0.01$). Given the small sample size of Class 4 (Moderate Symptom, Worsening) (n = 8) it was

[4] BLRT values were $p < .05$ for adding classes 2-5. For adding class 6, the BLRT value was $p = 0.07$.

not possible to statistically compare the moderate symptom groups. Observationally, some differences were viewed between Class 4 and Class 3 (Moderate Symptom, Responding) – Class 4 members were more likely to have more mental health hospitalizations ($M = 1.43$ vs. $M = 0.38$); more likely to be single (75.0% vs. 37.5%); more likely to be unemployed, not looking for work (75.0% 56.7%); and more likely to identify as Catholic (87.5% vs. 48.6%). Additionally, all members of Class 4 were in the lowest income bracket compared to 73.6% of the members of Class 3.

African American Group on Panic Scale

An unconditional GMM model was built comparing a two-class model with a one-class model; additional classes were added until model fit ceased to improve. A five-class model best fit the data based on the BLRT p-values.[5] See Table 7 for demographic information for across all classes.

The five distinct groups that emerged from the analysis and their recovery trajectories are depicted in Figure 7. The largest group ($n = 51$) started treatment with low panic symptoms (0.68, $p < 0.01$) and had a significant trajectory of change with panic symptoms improving (-0.06, $p < 0.01$) and was labeled Class 1 – Low Symptom, Responding. Class 2 ($n = 2$) began treatment with moderate panic symptoms (4.30, $p < 0.001$) and had a significant trajectory of change with panic symptoms increasing over time (0.19, $p < 0.001$). Class 2 was labeled Moderate Symptom, Worsening. Class 3 ($n = 19$) started treatment with moderate panic symptoms (3.10, $p < 0.001$) and had a significant trajectory of change with panic symptoms improving over time (-0.12, $p < 0.01$). Class 3 was labeled Moderate Symptom, Responding. Class 4 ($n = 10$) started

[5] BLRT values were $p < .05$ for adding classes 2-5. For adding class 6, the BLRT value was $p = 0.27$.

treatment with low panic symptoms (1.17, $p < 0.01$) and had a significant trajectory of change with panic symptoms increasing over time (0.20, $p < 0.001$). Class 4 was labeled Low Symptom, Worsening. Finally, Class 5 ($n = 1$) had high panic symptoms at the start of treatment (8.67, $p < 0.001$) and had a non-significant trajectory of change (0.00, $p = .78$). Class 5 was labeled High Symptom, Non-Responding.

Observed patient variables were then regressed onto three of these five classes. Class 2 ($n = 2$) and Class 5 ($n = 1$) were too small to be included in the regression analyses. The power was too low in the analyses of the other groups to determine significant differences. However, in comparing the low symptom groups of Class 1 (Low Symptom, Responding) and Class 4 (Low Symptom, Worsening), Class 4 had higher average number of mental hospitalizations ($M = 3.00$) compared to Class 1 ($M = 1.63$). Class 4 also had more members who were unemployed and not looking for work (80.0%) compared to Class 1 (51.1%).

Caucasian Group on Panic Scale

An unconditional GMM was built by starting with a two-class model and comparing it to a model with one class. Additional classes were added until model fit failed to improve. An eight-class model best fit the data based on the BLRT p-values[6]. See Table 8 for demographic information for across all classes.

The eight distinct groups that emerged from the analysis and their recovery trajectories are depicted in Figure 8. Class 1 ($n = 119$) began treatment with moderate panic symptoms (4.54, $p < 0.001$) and had a significant trajectory of change with panic symptoms improving rapidly over time (-0.42, $p < 0.001$). This group is called, Moderate

[6] BLRT values were $p < .05$ for adding classes 2-8. A nine-class model failed to successfully converge.

Symptom, Rapid Responding. Class 2 (n = 132) began treatment with moderate panic symptoms (3.95, $p < 0.001$) and had a non-significant trajectory of change (0.04, p = 0.08). Class 2 is called Moderate Symptom, Non-Responding. Class 3 (n = 1005) began treatment with low panic symptoms (0.40, $p < 0.001$) and had a flat trajectory of change (-0.04, $p < 0.001$). Class 3 is called Low Symptom, Non-Responding. Class 4 (n = 17) began treatment with high panic symptoms (5.41, $p < 0.001$) and the trajectory of change was significant with symptoms worsening over time (0.14, $p < 0.001$). Class 4 is labeled High Symptom, Worsening. Class 5 (n = 53) began treatment with high panic symptoms (6.70, $p < 0.001$) and had a significant trajectory of change with panic symptoms getting better rapidly over time (-0.34, $p < 0.001$). Class 5 is labeled High Symptom, Rapid Responding. Class 6 (n = 210) began treatment with low panic symptoms (0.79, $p <$ 0.001) and had a significant trajectory of change with panic symptoms increasing over time (0.19, $p < 0.001$). Class 6 was labeled Low Symptom, Worsening. Class 7 (n = 18) began treatment with low panic symptoms (0.99, $p < 0.01$) and had a significant trajectory of change with panic symptoms rapidly getting worse during treatment (0.51, $p < 0.001$). Class 7 was labeled Low Symptom, Rapid Worsening. Finally, Class 8 (n = 323) began treatment with moderate panic symptoms (3.05, $p < 0.001$) and had a significant trajectory of change with panic symptoms improving during treatment (-0.10, $p < 0.001$). Class 8 was labeled Moderate Symptom, Responding.

Observed patient variables were then regressed onto these eight classes. When examining the low symptoms classes, several differences emerged. The odds of being in Class 6 (Low Symptom, Worsening) versus Class 3 (Low Symptom, Non-Responding) increased with the endorsement of other religion (β = .73, df = 1, p = 0.01) and decreased

with higher income (β = -0.23, *df* = 1, *p* = 0.01). Approaching significance, Class 3 members were less likely to be in unemployed categories (β = -0.18, *df* = 1, *p* =0.6). Class 7 (Low Symptom, Rapid Worsening) was not compared to Class 1 and Class 6 given its comparatively small *n*. Within the moderate symptom classes, the odds of being in Class 1 (Moderate Symptom, Rapid Responding) versus Class 8 (Moderate Symptom, Responding) increased with younger age (β = 0.02, *df* = 1, *p* = 0.05) and approached significance with gender – Class 1 members were less likely to be female than Class 8 members (β = -0.49, *df* = 1, p =0.06). The odds of being in Class 2 (Moderate Symptom, Non-Responding) compared to Class 8 were higher with membership in the lowest income bracket (β = 0.47, *df* = 1, *p* < 0.001) and with membership in the unemployed groups (β = 0.27, *df* = 1, *p* = 0.04). Class 8 members were less likely to have mental health hospitalizations (β = -0.07, *df* = 1, *p* = 0.02), be single (β = -1.77, *df* = 1, *p* = 0.02), and be divorced (β = -1.77, *df* = 1, *p* = 0.02). In the high symptom groups, the difference between Class 4 (High Symptom, Worsening) and Class 5 (High Symptom, Rapid Responding) approached significance (β = 1.11, *df* =1, *p* = 0.06), with Class 5 more likely to be female.

It was not possible to compare directly and statistically the classes between ethnic groups; however, it is possible to get an idea of the proportions of patients who improved in treatment (defined as having a significant negative slope), those who maintained their level of severity in treatment (defined as a slope not significantly different from zero), and those who worsened in treatment (defined as a significant positive slope). Within the depression scale, the percentages of patients in a responding group were as follows: Hispanic (80%), African American (60%), and Caucasian (64%). The percentages of

patients in a flat, non-responsive group were as follows: Hispanic (20%), African American (40%), and Caucasian (29%). There were no Hispanic or African American patients in worsening groups, while 7% of Caucasian patients were classified as such. Within the panic scale, the Hispanic model showed 77% of patients in a responding treatment group; in the African American model, 84% of patients were in a responding treatment group; in the Caucasian model, 26% of patients were in a responding treatment group. Non-responding group percentages were 1% and 61% for African American patients and Caucasian patients, respectively. This left 23% of patients in the Hispanic model, 15% of patients in the African American model, and 13% of patients in the Caucasian model in the worsening panic symptom groups.

CHAPTER IV

DISCUSSION

This study examined (a) heterogeneity in response to naturalistically delivered psychotherapy within ethnic minority groups, and (b) the relation between variability in response to treatment and patients' socio-demographic variables. With respect to the first question, I found that there were multiple change trajectories over time within each ethnic group – Hispanic, African American, and Caucasian – on the depression and the panic scales of the TOP. With regard to the second question, various patient demographic variables predicted membership in some trajectory groups. In particular, class clusters emerged around initial symptom severity, and in some cases it was possible to detect socio-demographic predictors of different change trajectories that emerged from these symptom-based starting points.

When looking at the GMM models compared to the one-class models for each ethnicity in each scale, heterogeneity was present within each ethnic group that would have otherwise been masked. Although the Caucasian models had many more classes than the others, I interpret this as a straightforward consequence of the relative sizes of the samples and corresponding power to find additional classes, not as an indication that one group has more heterogeneity than another. The GMMs allowed me to observe broadly that some patient groups are starting with low, moderate, and high pretreatment symptoms on depression and panic, and that they change differentially – sometimes worsening, sometimes remaining stable, or sometimes improving across time (and in some cases quite rapidly). The importance of allowing for multiple change trajectories is well-illustrated by examining the African American and Caucasian depression models.

While the one-class models had recovery trajectories that were nearly parallel to one another, the GMMs demonstrated that patients in these groups were changing quite differently from one another, as 20% of African Americans were in a moderate symptom non-responding group compared to approximately 5% of Caucasians. The GMMs permitted me to reject empirically the "patient uniformity myth" in this sample..

In addition to demonstrating heterogeneity in response to treatment, the GMMs allowed me to examine predictors of different response class membership. In the Hispanic depression model, findings indicated that for patients having lower pretreatment depression scores, having a higher income and being married are likely positive prognosticators for treatment response. The marital status finding is not surprising, as previous studies have found that being married is related to improvement in treatment for depression (Burns, Sayers, & Moras, 1994; Hausberg, Schulz, & Andres, 2013; Thase & Howland, 1994; Van, Schoevers, & Dekker 2008). Having a significant other may help to motivate a patient in treatment, or the significant other may provide valuable support during the treatment process. As for income, it is possible that people who make more money have better treatment outcomes because they face fewer financial obstacles to engaging in treatment. Furthermore, as with ethnic minorities, patients with low income are less likely to receive an empirically supported treatment (EST) and therefore may not be getting the same benefits as higher income patients (Miranda, Azocar, Organista, Dwyer, & Areane, 2003). It is possible that the lower income patients in this sample were not receiving ESTs at the same rates as the treatment-responding, higher income patients. Thus, when working with Hispanic patients with depression, therapists could use a shorter-term therapy such as CBT for patients at greater risk of treatment deterioration, as

a targeted, briefer, and empirically supported therapy may help circumvent poverty-related problems that might negatively influence treatment (Organista, 2006).

In the African American depression model, there were no demographic variables predicting group membership other than pretreatment symptomatology. This does not necessarily indicate that African American patients with depression do not have other socio-demographic factors that would influence treatment trajectory; however, I was unable to identify statistically what factors, of those measured, might be treatment-promoting in this model. Treatment providers should be aware that SES factors (perhaps those that were not measured in this study) could still influence depression treatment. It is also possible that other, non-demographic factors influence treatment, including the 20% of the current sample that had no meaningful change. For example, it has been suggested that racist events account for up to 15% of the total variance in psychological symptoms for African American patients (Klonoff, Landrine, & Ullman, 1999), and that anger about racism and discrimination has been shown to be one of the reasons African American patients seek therapy (Clark, 2000). If a therapist of an African American patient was not sensitive to such experienced racism and its emotional consequences, it is possible that the treatment was ineffective. Thus, clinicians should assess whether experiences of racism and discrimination are salient for their African American patients and, if so, employ culturally adapted treatments that focus on such experiences (Laszloffy & Hardy, 2000). Therapists should review such culturally specific manuals, especially in cases where other predictors do not guide them toward treatment recommendations.

Finally, in the Caucasian depression model, there were three clusters of pretreatment symptoms (low, moderate and high) with higher incomes, employment, and

fewer mental health hospitalizations as either treatment promoting factors or factors that protected patients from depressive worsening. A large percentage of the patients in this study who were unemployed were in the "not looking for work" category, which is a proxy for patients on Social Security Disability (SSDI). Patients on disability may have a physical illness co-occurring with their depression, which could complicate treatment. Patients in this group could also be in the process of applying for SSDI for their depression, potentially changing the nature and utility of the patient-therapist relationship. While there is little published literature on the impacts of SSDI on depression treatment, researchers have noted that the therapeutic alliance could be compromised when the treatment provider is asked to complete disability paperwork, especially if the therapist does not believe the patient meets disability criteria (Mischoulon, 2002). Finally, there would seem to be a connection between previous mental health hospitalizations and depression severity. In a recent study, Boswell, McAleavey, Castonguay, Hayes, and Locke (2012) highlighted the potential negative impact on depression treatment of previous treatment experiences, including hospitalizations. As one possible mechanism of this effect, the authors suggested that patients who have had previous negative treatment experiences, such as an involuntary hospitalization, might have negative expectations for their current treatment. If patients with previous hospitalizations do have lowered treatment expectations, the therapist might consider using empirically supported expectancy persuasion strategies, such as providing a compelling treatment rationale, a non-technical review of the research evidence supporting a proposed treatment, and hope inspiring interventions (Constantino, Ametrano, & Greenberg, 2012).

In the Hispanic panic model, younger age and employment were treatment promoting or protective factors for patients with low panic symptoms at pretreatment. As noted, it makes sense that employment would be a protective treatment variable given the increased stability and potential improvement in self-esteem that can come from having a job. As for younger age as a protective factor, older patients may lack consistent transportation, making it difficult to attend weekly appointments regularly. There is also evidence that traditional CBT for anxiety is less effective for older adults than for younger adults (Chambless & Peterman, 2004). Older adults also may prefer not to add psychiatric mediations to their treatment in an attempt to limit overall medication use, thus possibly failing to enhance the effectiveness of psychotherapy for anxiety (Gum et al., 2006). Thus, with regard to treating older Hispanic patients with anxiety, clinicians may have to negotiate treatment parameters carefully and collaboratively.

In the African American panic model, being employed or having fewer mental health hospitalizations appeared protective against worsening panic symptoms. As discussed with the depression models, these preliminary findings are not surprising. In this model, I found increased heterogeneity compared to the depression models, as I did with the Hispanic panic model, which may demonstrate that anxiety symptoms and their predictors can look quite different within one particular ethnicity. For instance, in one study, race-based discrimination was a significant predictor of generalized anxiety disorder (GAD) for African American patients, but not for Afro-Caribbean patients, even though both groups experienced similar rates of this discrimination (Soto, Dawson-Andoh, & BeLue, 2011). Soto et al. (2011) also pointed to potential differences in immigrant experiences and the protective factor of younger age against GAD symptoms

in the Afro-Caribbean group. Although I did not have specific information about the ethnic differences within the African American group in this sample, therapists addressing anxiety within this population should reflect on within-group heterogeneity, as assuming that all African American patients with anxiety will have experienced their symptoms similarly or will look the same in treatment would be contraindicated.

Finally, in the Caucasian panic model, having low income, unemployment, or belonging to a minority religion were risk factors for worsening in treatment when starting with low panic symptoms; having younger age, being male, being married, having a higher income, being employed, and having fewer mental health hospitalizations were treatment-protective factors when starting with moderate panic symptoms; being female was a treatment-promoting factor when starting with high panic symptoms. The non-majority religion patients, including patients who identified as Jewish, Muslim, Buddhist, or Hindu, or those who endorsed "other religion," were combined in the analyses because each category was too small to run individually. As the patients who endorsed these categories also endorsed Caucasian as their ethnicity, it is possible that they experience discrimination in their own communities, which could heighten anxiety. It is also possible that treatment providers are less familiar with non-majority religion and have a difficult time incorporating these patients' beliefs into the treatment frame. Therapists should consider reflecting on a patient's religious identity in treatment as they do with ethnic identity, especially if the patient belongs to a non-majority religion. It is also important to highlight that for Caucasians on the panic scale, male gender provided a treatment protective factor for those with moderate baseline panic symptoms, but female gender provided a treatment protective factor for those with high baseline panic

symptoms. Again, therapists need to be aware that the intersection of demographic variables and pretreatment symptomatology can influence treatment course.

For the depression models overall, fewer patients were classified as worsening compared to the panic models, perhaps indicating that depression in this sample was more responsive to treatment or at least less sensitive to poorer treatments. It is also possible that more patients directly addressed their depression in treatment, therefore bringing more attention to these symptoms, while anxiety symptoms were secondary goals. The differences in treatment response to depression and anxiety disorders, particularly within the two ethnic minority groups, highlight the need for therapists to set clear treatment goals with patients and to continue monitoring progress during treatment. There was also more heterogeneity in the panic scale models than the depression scale models, perhaps indicating that there are more varied responses to treatment of anxiety symptoms within ethnic minority patients than in the treatment of depression symptoms. It is also possible that because the panic subscale was potentially capturing more varied diagnoses (e.g., GAD, panic disorder, obsessive compulsive disorder, specific phobias, etc.) than the depression subscale (i.e., major depression and dysthymia), treatment responses were more varied.

Although there were no direct statistical comparisons among the three ethnic groups examined here, some differences and similarities were observed. All ethnic groups had some classes on both subscales in which patients improved and classes in which patients did not improve. One finding to reflect on in these models is that the percentages of ethnic minority patients in the responding groups on the depression subscale were very similar to the Caucasian group. Although these are aggregated data

from multiple treatment sites, and we are unaware of the process complexities, it would be a disservice to ethnic minority patients to assume that they will always respond more poorly to therapy than Caucasian patients. A high percentage of ethnic minorities in a responding group was also seen in the panic subscale, while the Caucasian response percentages were quite low. Again, a therapist's assumptions of response based on ethnic group membership alone would be highly flawed.

It was initially surprising to see how many patients were in worsening treatment groups across ethnicities on the depression and panic scales. Worsening treatment groups were noted particularly in the Hispanic patients on the panic scale. Although it is concerning to see these percentages of patients get worse, these numbers are not without precedent. Lambert and Ogles (2004) found approximately 5–10% of patients deteriorate during psychotherapy. Therapists who belittle, blame, and/or ignore patients (Henry, Schacht, & Strupp, 1986, 1990), have poor management of countertransference (Gelso, Latts, Gomez, & Fassinger, 2002), or have rigid adherence to a treatment manual, especially in the face of an alliance rupture (Castonguay et al., 1996), can produce poorer treatment outcomes. A therapist who is uncomfortable or unfamiliar with cultural differences represented by ethnic minority patients could possibly be more likely to try to control the patient with rigid manual adherence and be less likely to examine and work through their own countertransference. Panic symptoms were especially vulnerable to deterioration during treatment in this sample, perhaps highlighting differences in how symptoms are presented in different ethnic groups. For example, the somatization of anxiety has been seen in Puerto Rican and Mexican-Americans populations and includes symptoms such as gastrointestinal upset and chest pain (Escobar, Burnam, Karno,

Forsythe, & Golding, 1987). In addition, some Hispanic patients experience *ataque de nervios*, a condition that includes attacks of screaming and trembling occasionally accompanied by loss of conscious and self-harm (Guarnaccia, Canino, Rubio-Stipec, & Bravo, 1993). Therapists who are unaware of these cultural differences in psychopathology may have trouble demonstrating cultural competence in treatment, potentially leading to a worsening of panic symptoms.

Many of the treatment-hindering factors were related to socioeconomic status (SES), such as income and employment, pointing to the importance of SES when considering issues of diversity. In fact, researchers have noted the lack of SES information in psychotherapy studies (Watkins, 2012) and found that low SES negatively impacts treatment outcome (e.g., Falconnier, 2009). Sue, Zane, and Young (1994) theorized that the narrow focus on patient ethnicity in psychotherapy studies has resulted in the neglect of important SES variables. By neglecting this component of an ethnic minority patient's identity, it is possible to miss the opportunity to acknowledge heterogeneity and its treatment impacts. It is important to note here that some patients may have been experiencing temporarily low income, such as students, while other patients may have been experiencing generational poverty that is less likely to change in the short-term. Low-income patients are also receiving treatment in ways that may be different than middle or higher income patients – in this case, most of the outpatient providers were community mental health centers, not private practices. The way in which treatment is provided in these two different settings may result in different treatment processes.

Other demographic factors had the ability to impact treatment progression, including age, gender, marital status, and prior mental health hospitalizations. If an ethnic minority patient enters treatment with high pretreatment panic and a treatment-hindering variable such as older age, that clinic may need to consider an empirically supported treatment, a culturally competent therapy, or a patient-therapist ethnic match instead of relying on treatment-as-usual. On the other hand, if classes such as these are confirmed by future research, an ethnic minority client without any treatment-hindering demographic variables with low or moderate depression symptoms, for example, may be well served by treatment assignment per usual.

Another overarching implication of these findings is that all clinics and therapists should be monitoring their outcomes, perhaps especially when working with minority patients, as people appear to respond variably to treatment. It is concerning that therapists could have rapid-worsening patients, as seen in some classes here, and not be aware of it. It is estimated that only about 30% of psychotherapists currently monitor outcomes (Phelps, Eisman, & Kohout, 1998) and researchers have been calling for clinicians to routinely monitor treatment in order to "catch" negative outcomes, which we as a field continually underestimate (e.g., Kraus et al., 2011; Lambert, 2010). Outcome monitoring feedback to the therapist has also been shown to improve therapy cases that are "not-on-track" (de Jong, van Sluis, Nugter, Heiser, & Spinhoven, 2012). In addition, repeated-measure collections, instead of only pre- and post-treatment evaluation, allow for real-time feedback to help clinicians who may be overestimating their own effectiveness (Constantino, Overtree, & Bernecker, in press).

These present results also highlight the risk of lumping ethnic minority clients together as a single "non-white" group. For example, on the depression scale, patients in the Hispanic group who started treatment with low depression symptoms saw improvement over time, while patients in the African American groups who started treatment with low depression did not improve. The reverse was true in these groups when patients started treatment with moderate depression symptoms. If a therapist began treatment with an ethnic minority patient and assumed that the patient would either (1) not respond to treatment because of their minority status, (2) respond similarly to treatment as other ethnic minorities, or (3) respond similarly to other patients with the same ethnicity without taking into account other patient characteristics such as pretreatment symptomatology or SES, the therapist would be missing opportunities to make relevant treatment decisions. Using patient-focused research findings such as these may allow therapists to have a rational basis to inform their treatment choice or could help future research to develop sensitive and helpful interventions for patients who are not expected to change (or, worse, are expected to deteriorate).

Several limitations are present in this study. The data were naturalistic and therefore not always collected uniformly. There were no therapist data available, negating my ability to analyze the impact of therapist ethnicity, treatment modality, skill, and so forth. There were several therapists who treated multiple patients in this sample and I could not control for these therapist effects because I did not have enough patients per therapist to calculate therapist-level effects. Given the importance of therapist effects in treatment process and outcome, and given the absence of therapist information here, it is impossible to say *why* certain treatments reduced symptoms and others did not.

Therefore, it is important not to draw conclusions about the patient's responsibility for treatment success or failure – all that can be described here is how depression or panic symptoms changed over the course of treatment in this sample and what demographic variables helped to predict membership in different change groups. There are likely many other factors predictive of group memberships that were not available here to analyze. The TOP is also not normed on different racial/ethnic groups as other symptom measures are (i.e. BDI) and the group membership here could change if different norms were employed.

There was also no information on patient ethnicity beyond the broad categories of Hispanic, African American, and Caucasian; thus, I was unable to unpack further any within-group heterogeneity. Broad racial categories such as the ones examined here may have limited value compared to more nuanced ethnicity identities, which could be more representative of how patients view themselves. Additional demographic factors that are closely tied to ethnicity could not be explored in this study. For example, nearly 13% of the U.S. population speaks Spanish (U.S. Census Bureau, 2010), but U.S. psychotherapists are predominantly trained in providing treatments in English (Biever, Gómez, González, & Patrizio, 2011). Given the importance of verbal communication in psychotherapy, a therapist unable to communicate in the dominant language of his or her patient may compromise the quality of services delivered to that patient (Altarriba & Santiago-Rivera, 1994). Without knowing the language spoken by patients and their therapists in this sample, patients' immigration status or the mobility of patients based on their work status, it was impossible to examine the likely influence of these variables.

Along with understanding differing identification with race versus ethnicity mentioned above, the Minority Identity Development Model – a model that proposes stages of identification within a minority status (Atkinson, Morten & Sue, 1993) – should also be kept in mind when interpreting results with ethnic minority clients. The stage of identification that a minority patient is experiencing could affect their feelings about a given treatment and/or therapist. In addition, non-minority therapists may feel different levels of comfort and expertise with patients in different stages of identification, though we did not know in this study which stage of identification patients were in during treatment.

There was also limited power to detect some predictors; although I began with a large sample, assembling patients into classes resulted in some "groups" as small as one person. Although these groups are still statistically meaningful and highlight heterogeneity, it is difficult to draw firm conclusions about group membership related to socio-demographic factors. Also, in order to use GMMs, patients with fewer than three treatment sessions were excluded, so these findings only describe patients who were maintained in treatment for at least three sessions for which data were collected. Mood and anxiety disorders are commonly co-morbid with other presenting problems and can be reactive to change in these other areas. These two symptom groups were selected for analysis because of their prevalence as presenting problems but I do not know what the presenting problems were for the patients in this sample.

Even with the above limitations, the current study does demonstrate that heterogeneity exists within each ethnic group and that, regardless of ethnicity, change is better described by multiple trajectories instead of one regression model. These findings

indicate that interventions to improve psychotherapy utilization, retention, and outcome should indeed consider that members within an ethnic minority group may have very different responses to treatment and that there will not be a "one size fits all" remedy. I also discovered, at least preliminarily, that some patient demographics matter in how a patient will respond to treatment, and that these factors may vary by ethnicity. Although the results here do not *directly* translate into specific treatment recommendations, they do serve as a starting point for examining diversity in psychotherapy process and change. Such work will help more appropriately answer the questions of what works for whom for ethnic minorities in psychotherapy.

Table 1

Descriptive Statistics for Patient Characteristics by Ethnicity

	Caucasian (N = 1,887; 83.1%)		Hispanic (N = 294, 12.9%)		African American (N = 91, 4.0%)	
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***
Age	40.08[1]	12.08	37.23	11.81	36.89	11.80
Education (in years)	11.51	2.81	9.79[2]	2.73	11.26	1.94
# of mental hospitalizations	1.68[3]	2.92	1.23	2.32	1.70	2.87
Gender	***N***	**%**	***N***	**%**	***N***	**%**
Female	1,316	69.7	210	71.4	59	64.8
Male	540	28.6	80	27.2	30	33.0
N. I.	31	1.7	4	1.4	2	2.2
Marital Status	***N***	**%**	***N***	**%**	***N***	**%**
Single	770[5]	40.8	155	52.7	60	65.9
Married	566[4]	30.0	55	18.7	14	15.4
Divorced/Separated	471	25.0	67	22.8	14	15.4
Other	80	4.2	17	5.8	3	3.3
Employment	***N***	**%**	***N***	**%**	***N***	**%**
Employed/Student	724[7]	38.4	51	17.3	23	25.3
Unemployed, not looking	573[8]	30.4	153	52.0	40	44.0
Unemployed, looking	260[6]	13.8	27	9.2	13	14.3
Other	330	17.5	63[9]	21.4	15	16.5
Religion	***N***	**%**	***N***	**%**	***N***	**%**
Catholic	721	38.2	131[10]	44.6	9	9.9
Protestant	357	18.9	19[11]	6.5	14	15.4
Other Christian	199	10.5	45	15.3	18	19.8
Other	353[12]	18.7	40	13.6	28	30.8
None	257	13.6	59	20.1	22	24.2
Income	***N***	**%**	***N***	**%**	***N***	**%**
<$10,000	714	37.8	192	65.3	49	53.8
$10 – 20,000	268[13]	14.2	46	15.6	16	17.6
Above $20,000	734[14]	38.9	18	6.1	12	13.2

Notes. N.I. = No information provided. [1] Using Tukey HSD post hoc tests on one-way ANOVAs, Caucasians significantly older than African Americans and Hispanics. [2]Hispanics had significantly fewer years of education than African Americans and Caucasians. [3]Caucasians had significantly higher rates of mental hospitalizations than Hispanics. [4]Caucasians were significantly less likely to be single than Hispanics and African Americans. [5]Using chi-square tests, Caucasians were significantly more likely to be married than Hispanics and African Americans. [6]Caucasians were significantly more likely to be Employed/Student than African Americans and Hispanics. [7]Caucasians were significantly less likely than African American and Hispanics to be Unemployed and Not Looking for Work. [8]Caucasians were significantly more likely to be Unemployed and Looking for Work than Hispanics. [9]Hispanics were significantly more likely to endorse Other Employment (e.g., Retired, Homemaker) than Caucasians. [10]Hispanics were significantly more likely to be Catholic than Caucasians and African Americans. [11]Hispanics were significantly less likely to be Protestant than Caucasians and African Americans. [12]Caucasians were significantly more likely to endorse Other Religion than Hispanics. [13]Caucasians were significantly less likely to be in the $10-20,000 income bracket than African Americans and Hispanics. [14]Caucasians were significantly more likely to be in the highest income bracket than African Americans and Hispanics.

Table 2

Descriptive Statistics of Baseline TOP Subscales by Ethnicity

	Caucasian (N = 1,887, 83.1%)		Hispanic (N = 294, 12.9%)		African American (N = 91, 4.0%)	
Variables	*M*	*SD*	*M*	*SD*	*M*	*SD*
Depression	2.20	1.69	2.46[1]	1.46	2.13	1.75
Panic	1.77	2.08	2.46[2]	2.03	1.44	1.94

Note. [1]Tukey HSD post-hoc tests of one-way ANOVAs indicate that Hispanics had significantly higher Depression subscale scores compared to Caucasians. [2]Hispanics had significantly higher Panic subscale scores compared to Caucasians and African Americans.

Table 3

Descriptive Statistics by Class for Hispanics on the Depression Scale

	Class 1 *(n = 60)*		Class 2 *(n = 234)*	
Variable	***M***	***SD***	***M***	***SD***
Age	38.53	11.26	36.89	11.97
Education (in years)	9.66	2.61	9.82	2.76
# of mental hospitalizations	1.30	2.27	1.21	2.34
Gender				
Female	76.7%		70.1%	
Male	21.7%		28.6%	
N. I.	1.7%		1.3%	
Marital Status				
Single	53.3%		52.6%	
Married	8.3%		21.4%	
Divorced/Separated	33.3%		20.1%	
Other	5.0%		6.0%	
Employment				
Employed/Student	11.7%		18.8%	
Unemployed, not looking	50.0%		52.6%	
Unemployed, looking	11.7%		8.5%	
Other	26.7%		20.1%	
Religion				
Catholic	45.0%		44.4%	
Protestant	6.7%		6.4%	
Other Christian	11.7%		16.2%	
Other	11.7%		14.1%	
None	25.0%		18.8%	
Income				
<$10,000	78.3%		62.0%	
$10 – 20,000	8.3%		17.5%	
Above $20,000	1.7%		7.3%	
N.I.	11.7%		13.2%	

Note. N.I. = No information provided.

Table 4

Descriptive Statistics by Class for African Americans on the Depression Scale

	Class 1 *(n = 51)*		Class 2 *(n = 34)*	
Variable	***M***	***SD***	***M***	***SD***
Age	36.14	10.60	36.53	13.54
Education (in years)	11.31	1.44	10.83	2.17
# of mental hospitalizations	1.57	2.77	1.78	2.81
Gender				
Female	72.5%		55.9%	
Male	27.5%		38.2%	
N. I.	0.0%		5.9%	
Marital Status				
Single	66.7%		70.6%	
Married	17.6%		5.9%	
Divorced/Separated	15.7%		14.7%	
Other	0.0%		8.8%	
Employment				
Employed/Student	23.5%		26.5%	
Unemployed, not looking	52.9%		35.3%	
Unemployed, looking	13.7%		17.6%	
Other	9.8%		20.6%	
Religion				
Catholic	11.8%		8.8%	
Protestant	17.6%		11.8%	
Other Christian	23.5%		17.6%	
Other	23.5%		35.3%	
None	23.5%		26.5%	
Income				
<$10,000	58.8%		50.0%	
$10 – 20,000	17.6%		17.6%	
Above $20,000	11.8%		11.8%	
N.I.	11.8%		20.6%	

Note. N.I. = No information provided.

Table 5

Descriptive Statistics by Class for Caucasians on Depression Scale

	Class 1 *(n = 87)*		Class 2 *(n = 39)*		Class 3 *(n = 543)*		Class 4 *(n = 304)*		Class 5 (*n* = 391)		Class 6 (*n* = 270)		Class (*n* = 1	
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	
Age	40.33	12.78	38.85	10.71	40.40	12.84	39.85	12.23	40.29	11.96	39.53	11.25	40.80	
Education (in years)	12.14	2.31	11.64	1.98	11.61	2.18	11.56	2.13	11.37	1.89	11.24	2.55	11.83	
# of mental hospitalizations	1.59	2.51	2.94	3.70	1.32	2.57	1.25	2.53	1.87	3.12	1.82	2.84	2.39	
Gender														
Female	75.9%		76.9%		61.7%		71.4%		71.6%		73.7%		75.2	
Male	23.0%		17.9%		36.8%		26.6%		26.3%		25.6%		23.0	
N. I.	1.1%		5.2%		1.5%		2.0%		2.0%		0.7%		1.9	
Marital Status														
Single	39.1%		51.3%		44.0%		37.2%		39.4%		39.3%		39.1	
Married	33.3%		25.6%		33.1%		30.6%		30.4%		24.1%		26.1	
Divorced/Separated	25.3%		20.5%		19.9%		25.0%		25.3%		32.2%		31.1	
Other	2.3%		2.6%		2.9%		7.2%		4.9%		4.4%		3.7	
Employment														
Employed/Student	41.4%		28.2%		49.7%		50.7%		32.0%		27.0%		17.4	
Unemployed, not looking	27.6%		33.3%		22.8%		22.0%		35.3%		35.9%		46.6	
Unemployed, looking	11.5%		10.3%		13.3%		11.8%		13.6%		14.8%		15.5	
Other	19.5%		28.2%		14.2%		15.5%		19.2%		22.2%		20.5	
Religion														
Catholic	42.5%		28.2%		37.2%		37.2%		37.3%		39.3%		34.8	
Protestant	21.8%		15.4%		22.5%		20.4%		18.2%		16.7%		12.4	
Other Christian	5.7%		10.3%		10.1%		10.5%		11.8%		10.7%		12.4	
Other	16.1%		25.6%		17.9%		17.8%		19.4%		21.1%		20.5	
None	13.8%		20.5%		12.3%		14.1%		13.3%		12.2%		19.9	
Income														
<$10,000	35.6%		38.5%		30.0%		33.2%		39.9%		43.3%		57.8	
$10 – 20,000	10.3%		10.3%		12.7%		10.5%		18.7%		15.9%		11.8	
Above $20,000	44.8%		35.9%		48.3%		50.3%		30.9%		30.0%		22.4	
N.I.	9.2%		15.4%		9.0%		5.9%		10.5%		10.7%		8.1	

Note. N.I. = No information provided.

Table 6

Descriptive Statistics by Class for Hispanics on the Panic Scale

	Class 1 *(n = 139)*		Class 2 *(n = 14)*		Class 3 *(n = 72)*		Class 4 *(n = 8)*		Class 5 (*n = 58)*	
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Age	35.45	11.72	34.79	8.78	40.33	12.04	38.12	9.00	39.09	11.60
Education (in years)	10.18	2.68	8.45	2.80	9.42	2.84	8.00	2.45	9.73	2.58
# of mental hospitalizations	1.14	2.06	2.33	4.16	1.43	2.84	.38	.74	1.13	1.80
Gender										
Female	71.2%		71.4%		73.6%		75.0%		69.0%	
Male	27.3%		28.6%		25.0%		25.0%		29.3%	
N. I.	1.4%		0.0%		1.4%		0.0%		1.7%	
Marital Status										
Single	59.0%		57.1%		37.5%		75.0%		50.0%	
Married	17.3%		7.1%		26.4%		12.5%		17.2%	
Divorced/ Separated	19.4%		14.3%		27.8%		12.5%		29.3%	
Other	4.3%		21.4%		8.3%		0.0%		3.4%	
Employment										
Employed/ Student	23%		28.6%		9.7%		0.0%		8.6%	
Unemployed, not looking	45.3%		35.7%		56.9%		75.0%		65.5%	
Unemployed, looking	10.1%		7.1%		11.1%		0.0%		6.9%	
Other	21.6%		28.6%		22.2%		25.0%		19%	
Religion										
Catholic	45.3%		28.6%		48.6%		87.5%		36.2%	
Protestant	5.0%		7.1%		8.3%		0.0%		8.6%	
Other Christian	13.7%		21.4%		15.3%		0.0%		20.7%	
Other	13.7%		21.4%		11.1%		12.5%		13.8%	
None	22.3%		21.4%		16.7%		0.0%		20.7%	
Income										
<$10,000	61.9%		50%		73.6%		100.0%		62.1%	
$10 – 20,000	18.7%		7.1%		12.5%		0.0%		15.5%	
Above $20,000	7.9%		7.1%		2.8%		0.0%		6.9%	
N.I.	11.5%		35.7%		11.1%		0.0%		15.5%	

Note. N.I. = No information provided.

Table 7

Descriptive Statistics by Class for African Americans on the Panic Scale

	Class 1 *(n = 51)*		Class 2 *(n = 2)*		Class 3 *(n = 19)*		Class 4 *(n = 10)*		Class 5 *(n = 1)*	
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Age	37.47	12.45	36.00	15.56	32.53	9.24	40.40	11.60	35.00	-
Education (in years)	11.29	1.30	12.00	-	11.64	.92	10.67	1.75	-	-
# of mental hospitalizations	1.63	2.80	0.00	0.00	1.21	1.43	3.00	4.55	3.00	-
Gender										
Female	68.6%		50.0%		57.9%		80.0%		100.0%	
Male	27.5%		50.0%		42.1%		20.0%		0.0%	
N. I.	3.9%		0.0%		0.0%		0.0%		0.0%	
Marital Status										
Single	68.6%		50.0%		84.2%		40.0%		0.0%	
Married	11.8%		0.0%		5.3%		30.0%		100.0%	
Divorced/ Separated	13.7%		50.0%		10.5%		30.0%		0.0%	
Other	5.9%		0.0%		0.0%		0.0%		0.0%	
Employment										
Employed/ Student	23.5%		0.0%		36.8%		10.0%		0.0%	
Unemployed, not looking	51.0%		0.0%		21.1%		80.0%		100%	
Unemployed, looking	11.8%		50.0%		26.3%		10.0%		0.0%	
Other	13.7%		50.0%		15.8%		0.0%		0.0%	
Religion										
Catholic	11.8%		0.0%		10.5%		10.0%		0.0%	
Protestant	11.8%		50.0%		10.5%		30.0%		0.0%	
Other Christian	21.6%		50.0%		26.3%		0.0%		100.0%	
Other	31.4%		0.0%		26.3%		30.0%		0.0%	
None	23.5%		0.0%		26.3%		30.0%		0.0%	
Income										
<$10,000	54.9%		100.0%		57.9%		10.0%		0.0%	
$10 – 20,000	19.6%		0.0%		10.5%		50.0%		100.0%	
Above $20,000	13.7%		0.0%		5.3%		20.0%		0.0%	
N.I.	11.8%		0.0%		26.3%		20.0%		0.0%	

Note. N.I. = No information provided.

Table 8

Descriptive Statistics by Class for Caucasians on Panic Scale

	Class 1 *(n = 119)*		Class 2 *(n = 132)*		Class 3 *(n = 1005)*		Class 4 *(n =17)*		Class 5 (*n* =53)		Class 6 (*n* = 210)		Cla (*n* =
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***
Age	38.65	12.06	39.54	11.14	40.05	12.21	42.94	13.16	39.15	12.49	39.29	11.82	41.39
Education (in years)	11.55	2.43	11.38	2.43	11.59	2.08	12.13	1.73	11.34	1.75	11.43	2.31	10.25
# of mental hospitalizations	1.55	2.93	2.67	3.61	1.43	2.69	2.60	3.72	2.14	2.65	1.99	3.11	1.31
Gender													
Female	79.0%		63.6%		70.0%		52.9%		77.4%		68.1%		66.
Male	20.2%		34.1%		28.5%		47.1%		22.6%		30.0%		33.
N. I.	0.8%		2.3%		1.6%		0.0%		0.0%		1.9%		0.
Marital Status													
Single	38.7%		47.7%		39.9%		47.1%		32.1%		47.1%		50.
Married	24.4%		19.7%		32.6%		17.6%		28.3%		27.6%		38.
Divorced/Separated	35.3%		31.1%		23.3%		29.4%		34.0%		22.4%		5.
Other	1.7%		1.5%		4.2%		5.9%		5.7%		2.9%		5.
Employment													
Employed/Student	37.8%		27.3%		42.2%		41.2%		32.1%		34.3%		22.
Unemployed, not looking	31.1%		39.4%		27.7%		35.3%		37.7%		31.9%		50.
Unemployed, looking	12.6%		13.6%		14.2%		11.8%		11.3%		15.2%		11.
Other	18.5%		19.7%		15.9%		11.8%		18.9%		18.6%		16.
Religion													
Catholic	36.1%		37.1%		39.5%		47.1%		39.6%		38.1%		50.
Protestant	16.8%		15.9%		20.4%		29.4%		17.0%		17.1%		11.
Other Christian	9.2%		8.3%		11.3%		11.8%		9.4%		6.7%		16.
Other	22.7%		22.0%		15.6%		11.8%		18.9%		27.1%		22.
None	15.1%		16.7%		13.1%		0.0%		15.1%		11.0%		0.
Income													
<$10,000	37.8%		56.1%		33.8%		41.2%		49.1%		40.5%		50.
$10 – 20,000	17.6%		11.4%		13.6%		11.8%		11.3%		15.7%		5.
Above $20,000	35.3%		22.7%		43.6%		35.3%		28.3%		32.9%		38.
N.I.	9.2%		9.8%		9.0%		11.8%		11.3%		11.0%		5.

Note. N.I. = No information provided.

Table 9

Summary Table for Treatment-Hindering and Treatment-Promoting Factors

Patient Group by Scale	Treatment-Hindering Factors	Treatment-Promoting Factors
Hispanic on Depression	Lower income, divorced or single	Higher income, married
African American on Depression	No significant factors	No significant factors
Caucasian on Depression	Unemployed, lower income, more mental health hospitalizations, female	Employed, higher income, fewer mental health hospitalizations, male
Hispanic on Panic	Unemployed, older age	Employed, younger age
African American on Panic	More mental health hospitalizations, unemployed	Fewer mental health hospitalizations, employed
Caucasian on Panic	Other religion, lower income, unemployed, more mental health hospitalizations, male	Christian or Catholic, higher income, employed, fewer mental health hospitalizations, female

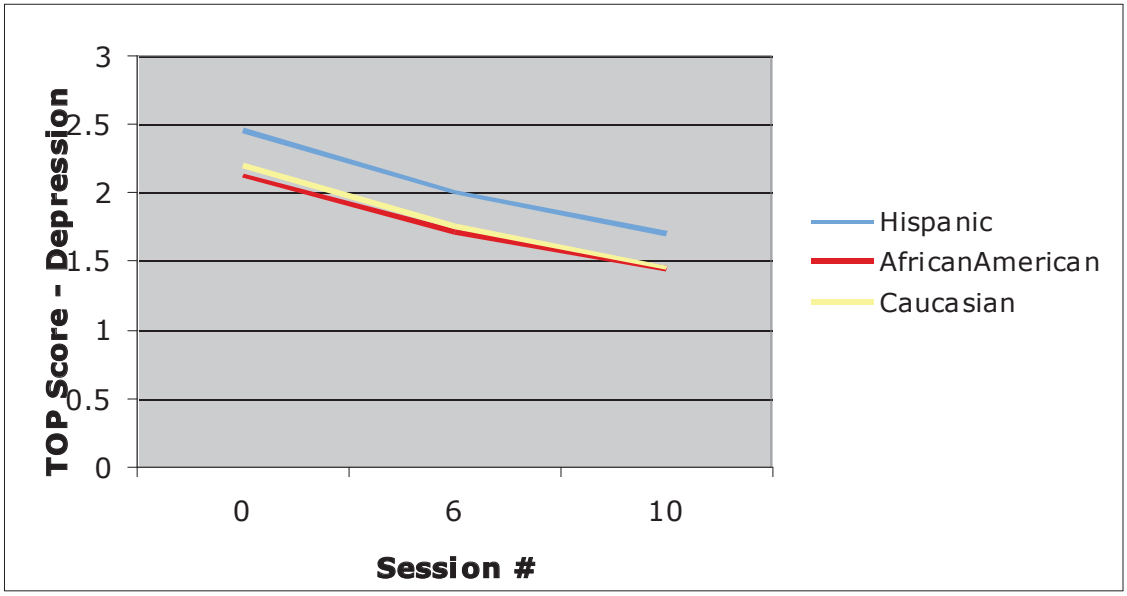

Figure 1. A comparison of three one-class models for each ethnicity on the depression subscale.

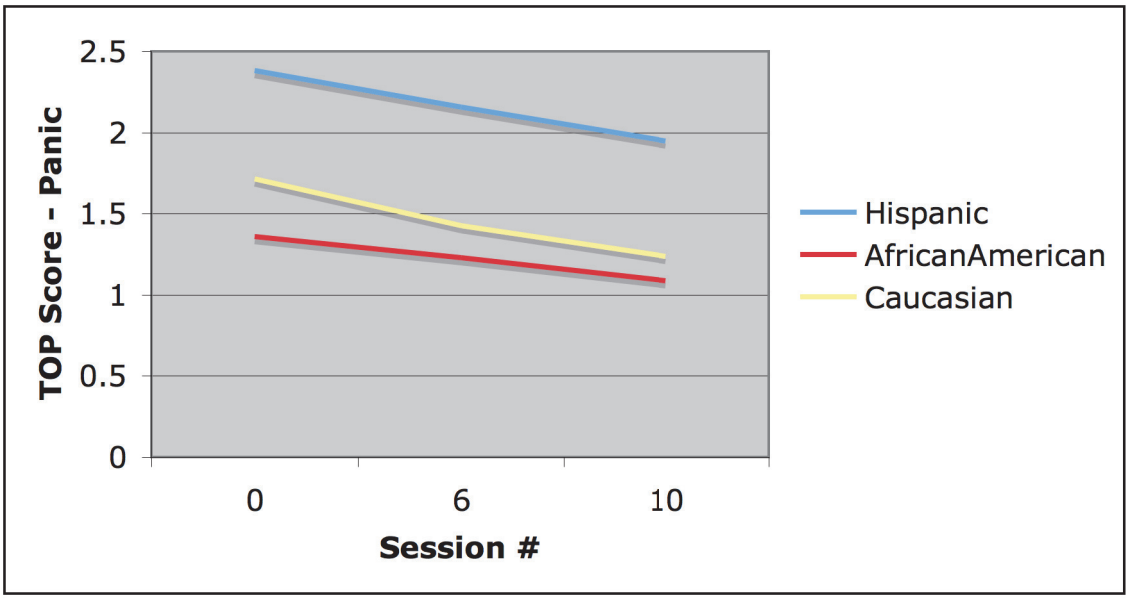

Figure 2. A comparison of three one-class models for each ethnicity on the panic subscale.

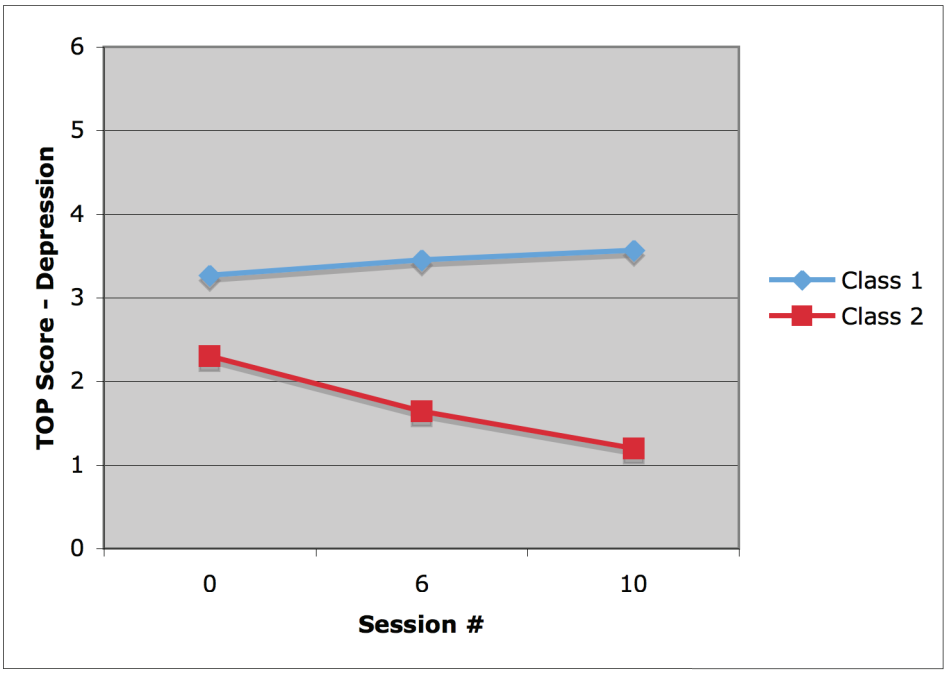

Figure 3. Hispanic Depression Model. Two-Class Model with Class 1: Moderate Symptom, Non-responding (n = 60) and Class 2: Low Symptom, Responding (n = 234).

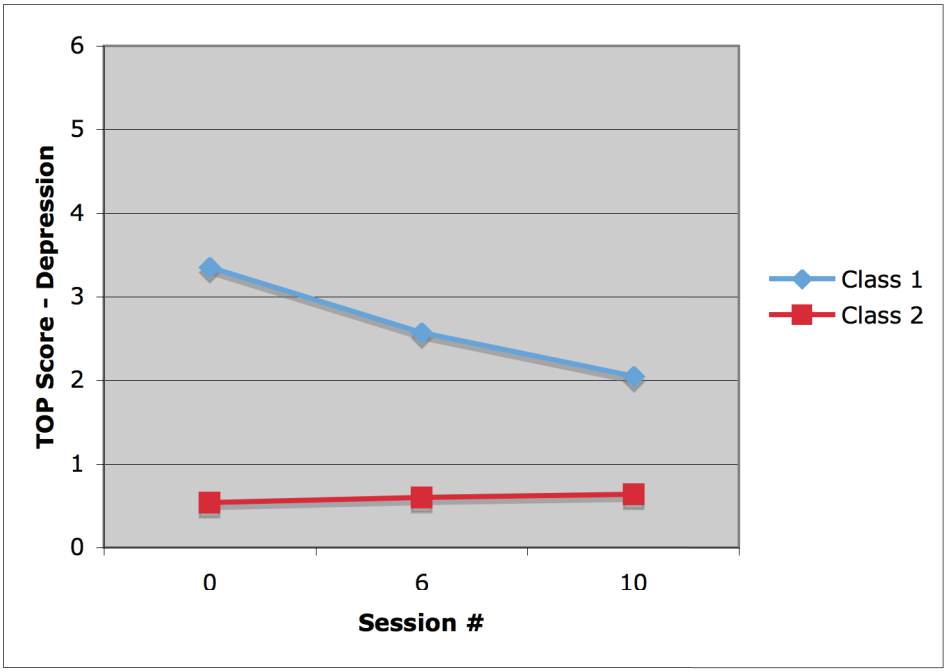

Figure 4. African American Depression Model. Two-Class Model with Class 1: Moderate Symptom, Responding (n = 51) and Class 2: Low Symptom, Non-responding (n = 34).

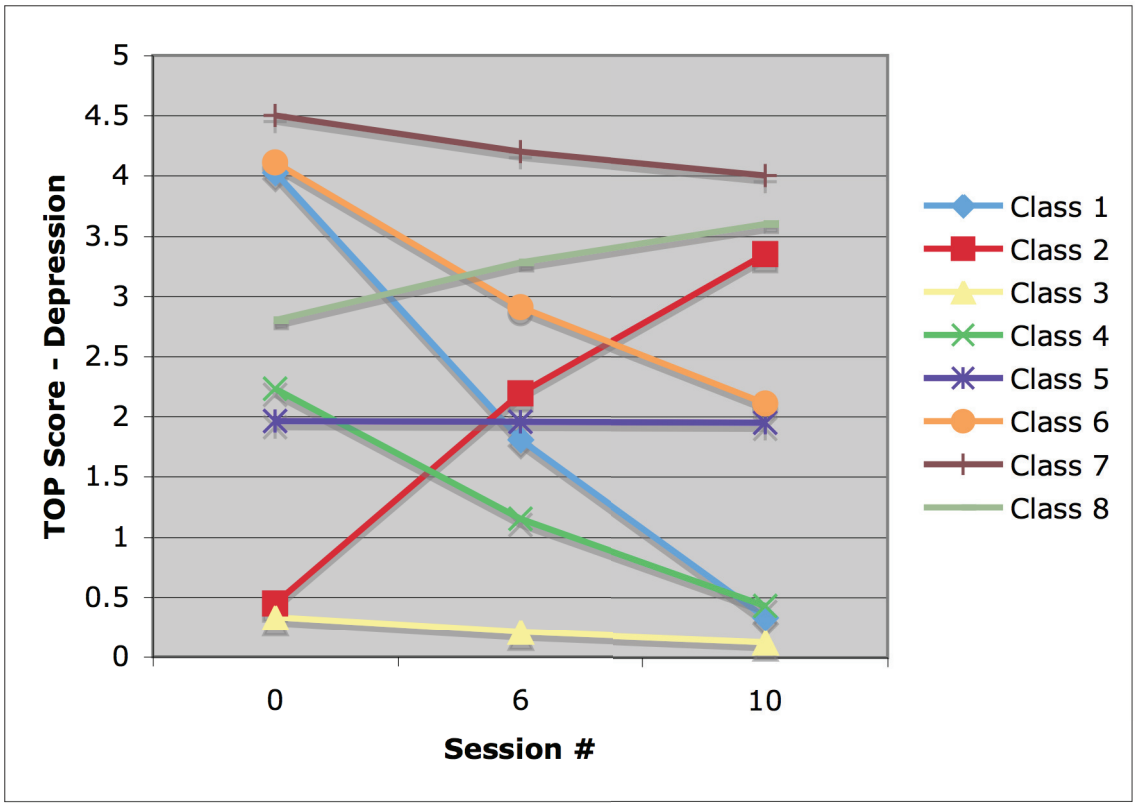

Figure 5. Caucasian Depression Model. Eight-Class Model with Class 1: High Symptom, Rapid Responding (n = 87); Class 2: Low Symptom, Worsening (n = 39); Class 3: Low Symptom, Mild Responding (n = 543); Class 4: Moderate Symptom, Responding (n = 304); Class 5: Moderate Symptom, Non-Responding (n = 391); Class 6: High Symptom, Responding (n = 270); Class 7: High Symptom, Non-Responding (n = 161) and Class 8: Moderate Symptom, Worsening (n = 92).

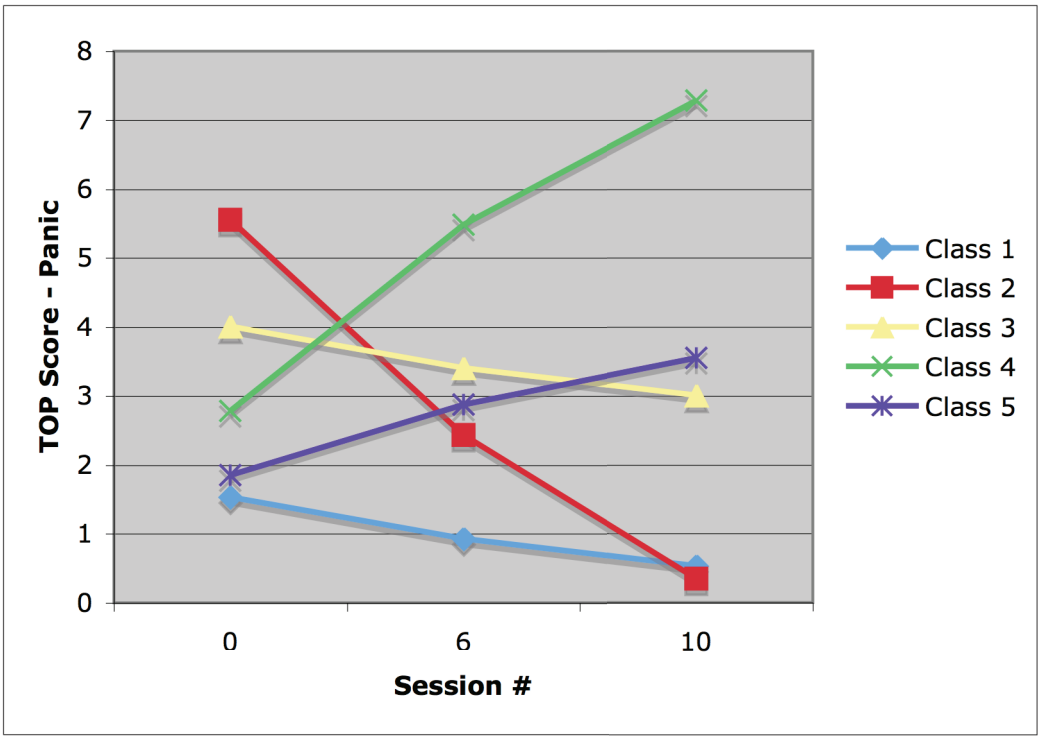

Figure 6. Hispanic Panic Model. Five-Class Model with Class 1: Low Symptom, Responding (n = 139); Class 2: High Symptom, Rapid Responding (n = 14); Class 3: Moderate Symptom, Responding (n = 72); Class 4: Moderate Symptom, Worsening (n = 8); Class 5: Low Symptom, Worsening (n = 58).

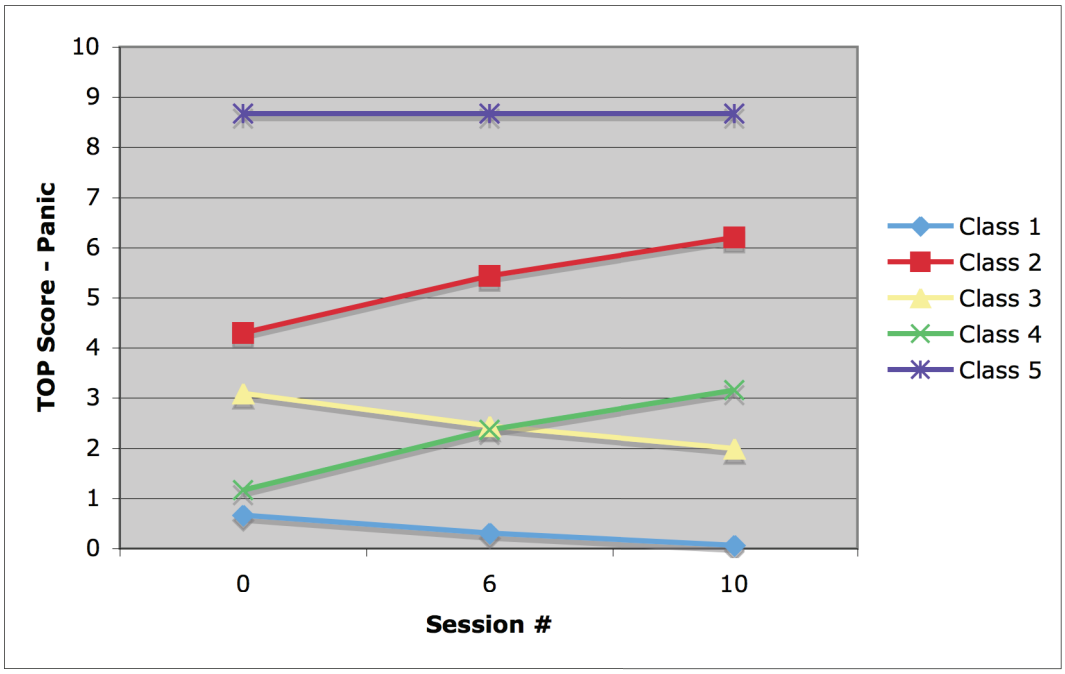

Figure 7. African American Panic Model. Five-Class Model with Class 1: Low Symptom, Responding (n = 51); Class 2: Moderate Symptom, Worsening (n = 2); Class 3: Moderate Symptom, Responding (n = 19); Class 4: Low Symptom, Worsening (n = 10); Class 5: High Symptom, Non-Responding (n = 1).

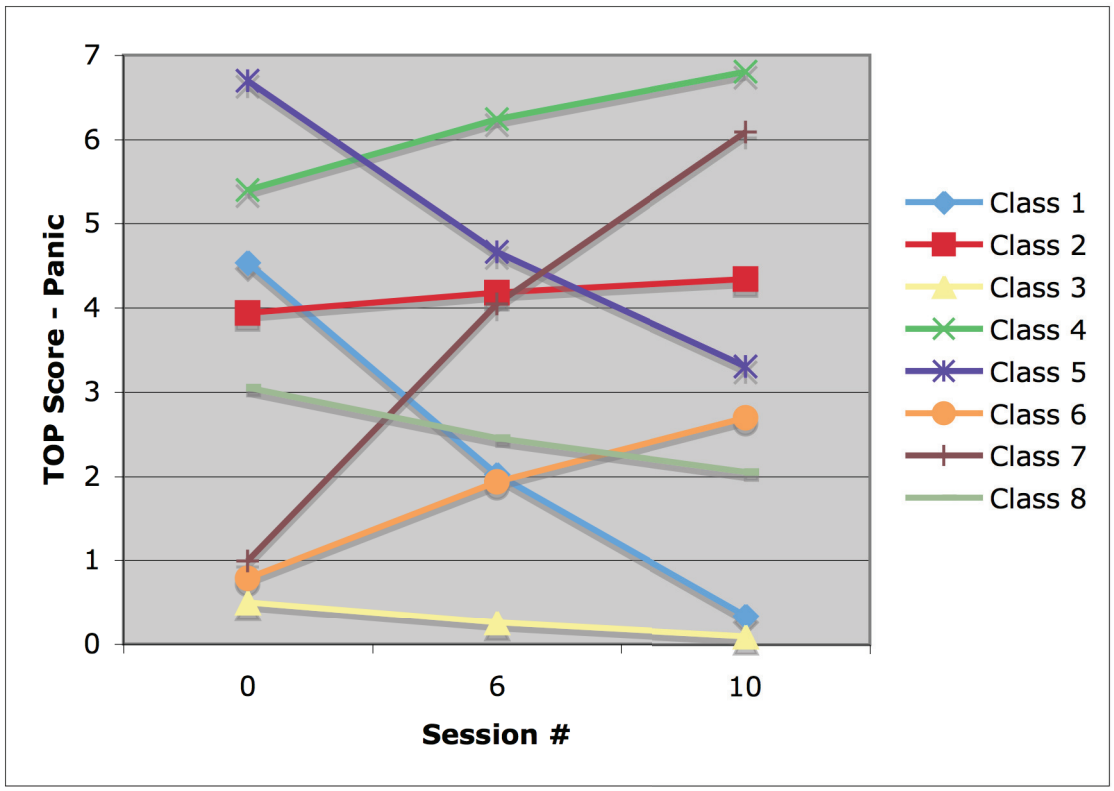

Figure 8. Caucasian Panic Model. Eight-Class Model with Class 1: Moderate Symptom, Rapid Responding (n = 119); Class 2: Moderate Symptom, Non-Responding (n = 132); Class 3: Low Symptom, Non-Responding (n = 1005); Class 4: High Symptom, Worsening (n = 17); Class 5: High Symptom, Rapid Responding (n = 53); Class 6: Low Symptom, Worsening (n = 210); Class 7: Low Symptom, Rapid Worsening (n = 18); Class 8: Moderate Symptom, Responding (n = 323).

APPENDIX

TREATMENT OUTCOME PACKAGE – CLINICAL SCALES

Indicate how much of the time during the past <u>two weeks</u> you have . . .

	All	Most	A lot	Some	A little	None
been satisfied with your relationships with others						
been satisfied with your daily responsibilities						
been satisfied with your general mood and feelings						
been satisfied with your life in general						
felt too much conflict with someone						
been emotionally hurt by someone						
felt someone else had too much control over your life						
had trouble falling asleep						
had nightmares						
awakened frequently during the night						
had trouble returning to sleep after awakening in the night						
had a paying job						
had conflicts with others at work or school regardless of fault						
missed work or school for any reason						
not been acknowledged for your accomplishments						
had your performance criticized						
not been excited about your work or school work						
physically hurt someone else or an animal						
had desires to seriously hurt someone						
had thoughts of killing someone else						
felt that you were going to act on violent thoughts						
felt no desire for, or pleasure in, sex						
felt sexually incompatible with your partner or frustrated by the lack of a partner						
felt emotional or physical pain during sex						
had trouble functioning sexually (having orgasms, ...)						
had a racing heart						
felt light-headed						
had shortness of breath						
had a dry mouth or trouble swallowing ("a lump in your throat")						
had sweaty hands (clammy) or cold hands or feet						
had to do something to avoid anxiety or fear (washing hands, ...)						
avoided certain situations due to fear or panic						
felt panic in places that would be hard to leave if necessary						
felt down or depressed						
felt little or no interest in most things						
felt guilty						
felt restless						
felt worthless						
felt tired, slowed down, or had little energy						
worried about things						
had trouble concentrating or making decisions						
noticed your thoughts racing ahead						

inflicted pain on yourself
felt rested after only a few hours of sleep
thought about killing yourself or wished you were dead
planned or tried to kill yourself
felt you were better than other people
felt on top of the world
worried that someone might hurt you
had unwanted thoughts or images
seen or heard something that was not really there
felt someone or something was controlling your mind
spent more time drinking or using drugs than you intended
neglected school, work, or other responsibilities because of using alcohol or drugs
felt you wanted or needed to cut down on your drinking or drug use
had your family, a friend, or anyone else tell you they objected to your alcohol or drug use
found yourself thinking about a drink or getting high
used alcohol or drugs to relieve uncomfortable feelings, such as sadness, anger, or boredom

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