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Treating ethnic minority adults with anxiety disorders: Current status and future recommendations☆

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Abstract

The past three decades have witnessed an increase in the number of empirical investigations examining the phenomenology of anxiety and related conditions. There has also been an increase in efforts to understand differences that may exist between ethnic groups in the expression of the anxiety disorders. In addition, there is now substantial evidence that a variety of treatment approaches (most notably behavioral and cognitive behavioral) are efficacious in remediating anxiety. However, there continues to be comparatively few treatment outcome studies investigating the efficacy of anxiety treatments among minority populations. In this paper, we review the extant treatment outcome research for African American, Hispanic/Latino[a] American, Asian American, and Native Americans suffering with one of the anxiety disorders. We discuss some of the specific problems with the research in this area, and then provide specific recommendations for conducting treatment outcome research with minority populations in the future.

Keywords

African American; Asian American; Hispanic/Latino[a] American; Native American; Anxiety Disorders; Treatment Outcome

1. Introduction

The last three decades have witnessed a dramatic growth in the number of treatment outcome studies for the variety of anxiety disorders (McManus, Grey, & Shafran, 2008). Of particular importance, the field has gathered sufficient evidence to establish certain approaches for anxiety disorders as effective in significantly reducing anxious symptomatology over the course of treatment (Anthony, 2010). Specifically, there are evidence-based approaches established for exposure treatments for Obsessive Compulsive Disorder (Abramowitz, Foa, & Frankiln, 2003), social skills training and cognitive behavioral group treatment for social anxiety disorder (Heimberg, Salzman, Holt, & Blendell, 1993; Herbert et al., 2005), cognitive behavioral therapy for panic disorder

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(McHugh, Smits, & Otto, 2009), prolonged exposure for PTSD (Foa, Hembree, & Rothbaum, 2007), exposure for specific phobia (Emmelkamp, Bowman, & Scholing, 1995), and more recently for the approach of mindfulness for generalized anxiety (Vollestad, Sivertsen, & Nielson, 2011). Additionally, Curkowicz et al. (2011) found evidence that shifting to empirically supported treatments in a training clinic led to significant improvements in patient outcomes that was maintained for a period up to 10 years (Curkowicz et al., 2011).

Despite available evidence suggesting that behavioral and cognitive behavioral approaches are particularly effective in the treatment of anxiety, the treatment outcome literature examining (a) the impact of ethnic minority group membership on outcome; (b) the impact of tailoring treatment; or (c) developing new treatments for ethnic minorities has been comparatively slow in coming and is relatively sparse. The purpose of this review is to examine the current state of the treatment outcome literature for ethnic minorities suffering with one of the anxiety disorders defined in the DSM (APA, 2000). As such we will review the available treatment outcome literature for African American, Hispanic/Latino[a] American, Asian American, and Native American adults. We have limited our review to these groups for two reasons. First, the aforementioned groups represent the largest minority groups in this country (U.S. Bureau of the Census, 2010). And second, because most of the treatment outcome research has been conducted with these populations. In this review we include all available treatment outcome studies. This includes well controlled studies that have incorporated random assignment and use of treatment control groups, those that simply report on a specific treatment approach with no treatment control condition, and case studies with single or multiple participants. We have chosen to be broad in our inclusion of studies to be as comprehensive as possible and because the treatment outcome literature in this area is limited. Our review will cover the treatment outcome studies for each of the ethnic minority groups listed above. For each group, we will review the extant literature, summarize the findings, and discuss possible future directions. We begin with a review of the treatment outcome literature for African Americans as this group has received the largest attention in the empirical literature for treating anxiety disorders among minority populations.

2. African Americans

African Americans constitute the second largest minority group in the United States (U.S. Bureau of the Census, 2010). Additionally, extant data continues to show that a larger percentage of this group live below the poverty line compared to European Americans. In 2007, the U.S. Census bureau reported that 24.5% of African-Americans in comparison to 8.2% of non-Hispanic Whites were living at the poverty level. In 2007, the unemployment rate for Blacks was twice that for non-Hispanic Whites (8% and 4%, respectively) (DeNavas-Walt, Proctor, & Smith, 2008),

Consequently, African Americans are exposed to higher levels of stress from economic and social stressors (Clark, Anderson, Clark, & Williams, 1999). While the increased level of stress has led some to postulate that African Americans may have higher rates of anxiety disorders, most available evidence indicates that African Americans have a lower prevalence rate for most anxiety disorders (Himle, Baser, Taylor, Campbell, & Jackson, 2009). The exception is a higher rate of posttraumatic traumatic stress disorder among African Americans compared to European Americans (Breslau et al, 2005; Himle et al., 2009). The decreased rates of most anxiety disorders have been linked to resiliency (Neal-Barnett & Turner, 1991) and religiosity (Taylor, Chatters, & Jackson, 2007), while the elevated rates of PTSD have been linked to exposure to high-trauma environments (Carter, Sbrocco, & Carter, 1996).

Available evidence of treatment utilization is mixed. Studies indicate that African Americans use mental health services less than European Americans (Wang et al., 2005) and that utilization rates may depend on the disorder being examined (Chen & Rizzo, 2010). There is also evidence that African Americans compared to European Americans drop out of treatment with greater frequency (Sue, Zane, & Young, 1994). Lester, Resick, Young-Xu, and Arts (2010), for example, found in their examination of data from 2 randomized controlled trials that African American participants who were survivors of physical or sexual trauma were more likely to drop out prior to starting treatment than European Americans (21% versus 7%) or be partial completers (34% versus 18%). As well, the evidence of treatment efficacy for African Americans is mixed. As indicated by Sbrocco et al. (2005), poorer adherence and outcomes may be related to program content or delivery (e.g., therapist's level of cultural competency) rather than participant characteristics.

2.1. African American treatment outcome studies

2.1.1. Panic disorder—The first study examining the treatment outcome of African Americans with panic disorder was conducted by Friedman and Paradis (1991). In this study the authors compared the symptom severity and treatment response of 15 African American and 15 European American patients with panic disorder and agoraphobia. Treatment consisted of in vivo exposure and tricyclic antidepressants. It was noted that there were no differences between groups at the start of treatment in terms of age of onset or symptom severity. However, at post-treatment it was noted that 84% of European Americans were rated as moderately or significantly improved with only 16% rated as slightly improved or were early dropouts. Conversely, only 33% of the African American group were rated as moderately or significantly improved with 66% rated as slightly improved or were early dropouts. From this early investigation, it became apparent that African Americans may have a different response to treatment than European Americans. It could not be determined however, if the poorer results for African Americans was the result of a specific component of therapy (i.e., use of medication among African Americans), lack of cultural sensitivity, or other more pragmatic factors (e.g., cost, time, transportation). Nonetheless, this study served as the starting point for subsequent investigations in this area (see Table 1 for a summary of African American treatment outcome studies).

Chambliss and Williams (1995) compared the treatment response of 18 African Americans to that of 57 European Americans. Treatment consisted of 10–20 session of therapist-assisted in vivo exposure. The samples were comparable on fear of fear, panic frequency, and depression at post-treatment. The African American group, however, was rated more phobic at the start of treatment than the European American sample. From pretest to post-test, both groups evidenced significant improvement in measures of anxiety and avoidance, although African Americans did not improve in panic frequency. Comparisons between groups indicated that African Americans continued to be more severe on their primary phobia, anxiety, and avoidance. These differences continued at the 6 month follow-up assessment. The reason for the comparatively poorer performance of African Americans in behavior therapy is difficult to explain. As noted by the authors, it is possibly related to severity of illness, the addition of racial stress, low SES (possibly resulting in difficulty in attending sessions), or the therapeutic approach itself. It may be that that a standard behavioral treatment does not allow for the systematic management of cultural variables in the course of treatment. More recent applications of cognitive behavioral treatment have produced somewhat stronger effects in the treatment of panic disorder.

Carter, Sbrocco, Gore, Marin, and Lewis (2003) conducted one of the only randomized control trials of the treatment of African Americans with panic disorder. In this investigation, the authors randomly assigned panic patients to either 11 sessions of cognitive

behavioral treatment (CBT) or a wait-list condition. All participants were diagnosed with moderately severe panic disorder with agoraphobia. It was noted that participants in the treatment group experienced a significant reduction in panic frequency, avoidance behavior, state and trait anxiety and anxiety sensitivity. There was also a trend for the treatment group to report a significant decrease in associated depressive symptoms. There were no changes noted among the wait-list condition. Of some import, the authors further reported that 54% of the sample was classified as recovered, and 17% classified as improved but not recovered, and a strong overall effect size. Comparatively, 95% of participants in the wait-list condition remained unimproved. While the results from this investigation are promising, it should be noted that the percentage of high endstate functioners (those who score within normal limits on all measures at the end of treatment) is considerably lower than the percentage reported in studies with predominantly European American participants. Of particular note in this study is that an African American therapist was used, treatment was tailored to prompt discussion of cultural issues (e.g., anxiety from being African American in a European American workplace), and the sample was mid- to upper Socio Economic Status and well educated.

Friedman, Braunstein, and Halpern (2006) compared the efficacy of CBT in treating panic disorder with or without agoraphobia in a sample of 24 African American and 16 European American patients residing in an urban setting. All participants were rated as moderately severe at the start of treatment. Treatment consisted of approximately 16 individual sessions of standard CBT. The authors noted that treatment was associated with significant reductions in avoidance and panic symptomatology. There were no significant ethnic differences between groups at posttreatment on anxiety related measures. There was, however, evidence that African Americans experienced less improvement in depressive symptoms than European Americans. While this study represents additional evidence that CBT can be effective with African Americans with panic disorder, the authors note that clinicians had considerable experience in treating anxiety among a variety of ethnic groups. This may indicate some level of cultural sensitivity. And while there was no systematic examination of cultural issues, it is likely that discussion of such issues occurred and were managed over the course of treatment. Specifically, Friedman et al. (2006) report that they commonly extended the psychoeducation phase of treatment, emphasized in vivo exposure, and were aware that many African American patients may have greater fear of mental illness. These and related impromptu changes may have altered the outcome and produced findings similar to Carter et al. (2003).

At least in the treatment of panic there is evidence that exposure and CBT are effective treatment approaches with African Americans. It must be noted, though, that each of these studies implemented changes that rendered the overall approach more culturally appropriate. There has yet to be an investigation that has relied entirely on a standard treatment protocol.

2.1.2. Post-traumatic stress disorder (PTSD)—Our review of the treatment literature of PTSD among African Americans is somewhat less consistent. One investigation found ethnic differences in treatment outcome while others did not. Frueh, Turner, Beidel, Mirabella, and Jones (1996) evaluated a multi-component treatment for PTSD among a small sample of African Americans and European Americans. Treatment included psychoeducation, exposure, anger management, and social skills training. They noted that both groups improved significantly over the course of treatment, but that the European American group evidence improvement on more measures than the African American group.

Conversely, Rosenheck, Fontana, and Cottrol (1995) reported on the treatment outcome of a large sample of African American and European American veterans receiving treatment for

PTSD. They noted that after controlling for SES there were no differences in treatment response by ethnicity. However, it was noted that matching African American patients with European American clinicians was associated with lower program participation. Following up on earlier work, Rosenheck and Fontana (1996) compared the treatment outcome of combat related PTSD among African American and European American veterans. While the type of treatment was not specified, the authors reported that both groups of participants experienced comparable improvement across treatment and that the improvement was maintained over a 12-month follow-up period.

Similarly, Zoellner, Feeny, Fitzgibbons, and Foa (1999) investigated the efficacy of CBT in the treatment of PTSD among African American and European American women. Participants in this study were victims of sexual and nonsexual assault randomly assigned to either CBT or a wait-list control. Treatment consisted of 9 twice weekly individual sessions of stress inoculation training, exposure, or a combination of the two. At pretreatment there were no differences between ethnic groups on measures of anxiety, anger, depression, or negative cognitions. There were also no ethnic differences in the dropout rate or the percentage of those approaching non-disordered (both groups approximately 45%). Importantly, there was a comparable reduction for both ethnic groups in PTSD and associated symptoms from pre- to posttreatment that was maintained at 12 month follow-up. The findings suggest that CBT for PTSD is equally effective between ethnic groups. One notable finding was that following the assault, European American women reported a decrease in their view of the world as benevolent, while no such shift was found among African American participants. The authors suggest that this finding may reflect a cognitive flexibility among African Americans that may allow African Americans to assimilate negative information into existing schemas more easily. It is also possible that African American women did not see the world as benevolent to begin with and therefore this worldview was not impacted by their trauma.

Feske (2001) reported on an uncontrolled case study series of prolonged exposure with 10 African American women diagnosed with PTSD in response to sexual and/or physical abuse. They report 5 of the 10 women prematurely terminated treatment for a variety of reasons, largely focusing on interpersonal issues and anxiety about the therapeutic approach. For the treatment completers, the author noted that participants experienced a significant reduction in general anxiety, depression and symptoms of PTSD.

More recently, Lester et al. (2010) examined the impact of race on early termination and treatment outcome among a sample of African American and European American female victims of interpersonal violence. These researchers combined the results from two studies. One compared cognitive processing therapy to prolonged exposure and a delayed treatment condition. The other study compared cognitive processing therapy with its various components. Participants met criteria for PTSD at the time of enrollment and were at 3 months past trauma. Comparisons at pretreatment indicated that African Americans had greater expectations for treatment success, and higher exposure to physical and sexual abuse. Analyses of treatment outcome data indicated that African Americans and European Americans experienced comparable reductions in PTSD symptoms across active treatment. The one ethnic difference that appeared was that African Americans were more likely than European Americans to drop out of treatment and attend fewer sessions. Overall, African Americans completed 53% of the sessions compared to 81% for European Americans. Interestingly, although African Americans dropped out of treatment more frequently, they reported greater improvement than European Americans who discontinued treatment. This suggests that factors other than lack of improvement may underlie treatment completion for African Americans. It may be, for example, that the stigma of being in treatment causes early termination among African Americans, or that there is a tendency for African

Americans to derive an early benefit from treatment, and thereby see less of a need to continue therapy beyond the point of improvement. Nonetheless, this study provided additional evidence that a cognitive approach is beneficial in treatment of PTSD among African Americans.

Therefore, the literature on the treatment of PTSD with African Americans suggests a standard protocol of cognitive therapies is effective. The one consistent trend associated with ethnicity is that African Americans show a tendency to drop out of therapy earlier than European Americans. The problem in this area appears to be one of increased attrition and indicates that special attention should be given to factors that might be contributing to elevated rates of attrition and to tailoring treatment to be more acceptable to African Americans.

2.1.3. Obsessive Compulsive Disorder (OCD)—In 1991, Neal and Turner reported a complete absence of empirical treatment outcome studies of OCD among African Americans. Since that time, there have been two case reports and one treatment outcome study of the treatment of OCD in African Americans. Therefore, despite evidence that the lifetime prevalence rate for OCD is comparable to other groups of individuals (Himle et al, 2008), there are relatively few treatment outcome studies of OCD with African Americans. Hatch, Friedman, and Paradis (1996) discuss the application of in vivo exposure with response prevention (ERP) to 13 cases of African Americans suffering with OCD. Patients were seen twice a week for 90 min sessions. The investigators report that treatment was effective (although specific information about the rate or degree of change was not provided). Similarly, Williams, Chambliss, and Steketee (1998) reported on 2 case of African Americans with OCD treated with ERP. Both cases made dramatic improvements over the course of 16 weeks of treatment.

Friedman et al. (2003) conducted the only comparative treatment outcome study of OCD with African Americans. In this study, the researchers compared 26 African or Caribbean American participants with 36 European Americans. All participants received twice weekly exposure with response prevention. At the start of treatment, both ethnic groups were comparable in terms of symptom severity. At post-treatment there were no interactions or main effects involving ethnicity, but there was a main effect for treatment. This indicates that both ethnic groups made comparable gains across treatment, although both groups evidenced significant residual symptoms at the conclusion of treatment. It seems then that for OCD, the scant literature suggests comparable responses can be expected between African Americans and European Americans in the treatment of OCD. However, clearly more research is needed.

2.1.4. Social phobia—The only study on social phobia in African Americans is a case study conducted by Fink (1996). This case study employed social effectiveness treatment (SET) in the treatment of an African American female with social phobia generalized type. Treatment included 12 weekly sessions of imaginal and in vivo exposure to fearful social situations. Each session was terminated following a 50% reduction in within-session reactivity (monitored thru SUDS and physiological monitoring). Importantly, the exposure program included exposure to racially relevant cues, such as the patient introducing herself to unfamiliar European American medical professionals. At the conclusion of treatment there was improvement in subjective reports and physiological responsivity to problematic situations. The gains were maintained at a 4 month follow-up period. Therefore, there is evidence that including cultural factors in treatment is effective for the single case of an African American woman with social phobia.

3. African American summary

The scant literature on the treatment of African Americans with anxiety disorders has typically shown at least comparable therapeutic benefit (as compared to European Americans) from traditional treatment approaches. Nonetheless, there is much that can be done to more fully examine the treatment of anxiety among African Americans. For example, at least a few of the studies reported having made changes to the standard treatment model that were thought to make treatment more culturally sensitive and relevant (e.g., Carter et al., 2003). It is impossible to determine from the literature if a standard protocol is more or less effective than a protocol with ethnic-specific changes. To date, no study has compared a standard treatment package with one that has been modified to be more culturally sensitive. As well, there have been no studies that compare individual versus group treatment for anxiety among African Americans. This will be an important avenue of research in the future given theory which posits African Americans are a more group/collectivistic culture. It would seem that a group approach would be particularly beneficial in the treatment of anxiety for this population.

An option to standard treatment packages is to utilize approaches that are more ethnocentric. For example, Neal-Barnett et al. (2011) conducted a focus group examining the possible utility of “sister circles” in the treatment of panic related issues. Sister circles are support groups that originated in African American churches and are designed to provide a safe, culturally appropriate strategy for addressing a variety of issues (e.g., physical health). While they are largely educational, Neal-Barnett and colleagues found African American women willing to use sister circles as a potential mechanism to learn about anxiety and to receive empirically supported strategies for managing anxiety. Participants specifically reported that a sister circle would help reduce the stigma associated with standard mental health services and that it was consistent with African American culture. Potential problems noted included use of homework and confidentiality. This and similar approaches could provide a novel treatment option that is culturally consistent and potentially valuable in managing anxiety among African Americans. Similarly, there have been no investigations involving the utilization of extended family members either directly in treatment as has been done with European Americans (Carter, Turovsky, Sbrocco, Meadows, & Barlow, 1995; Gore & Carter, 2001) or as a support system.

While there have been several treatment studies conducted with African Americans, the empirical work in this area has been slow in coming and still constitutes a miniscule percentage of the treatment outcome studies conducted to date. In fact there are anxiety disorders for which there are indications of cross-ethnic differences that have received no attention in the treatment outcome literature. For example, there is evidence of ethnic differences in the prevalence of generalized anxiety disorder (Breslau et al., 2005), as well as the content of the worries (Carter et al., 2005; Scott, Eng, & Heimberg, 2002). However, there have been no treatment outcome studies with African Americans with generalized anxiety disorder. There are a multitude of reasons for the absence of research in this area. First might be a simple lack of interest. While the American Psychological Association has emphasized the need to develop cultural expertise at the level of graduate training and the continuing education of professional psychologists, this focus has not found its way to researchers. It may be that the underlying assumption is that all groups should respond similarly to the treatment approaches developed for and by European Americans. Additionally, treatment outcome studies with African Americans may be more difficult to conduct for a variety of reasons. There are clear problems in measurement, with several studies reporting that measures standardized with European Americans are psychometrically different when utilized with African Americans (Carter, Miller, Sbrocco, Suchday, & Lewis, 1999; Carter et al, 2005). There are also issues in the measurement of acculturation. African

Americans have varying levels of acculturation to Western culture, and as such research must attend to this issue in treatment outcome studies. As African Americans are overrepresented in the lower SES, there are additional barriers to their seeking treatment including finances and additional stress (Davis, Ressler, Schwartz, Stephens, & Bradley, 2008). Finally, there is also the stress that is associated with being a member of an underrepresented minority group that must be attended to in the context of treatment. Soto, Dawson-Andoh, and BeLue (2011), for example, found evidence that experiencing racial discrimination was associated with significantly higher odds of experiencing lifetime generalized anxiety disorder among African Americans compared to Afro-Caribbeans and European Americans. Exploration of such factors will be important as we move forward to more thoroughly examine the treatment response of African Americans across the anxiety disorders.

4. Asian Americans

Asian Americans comprise a heterogeneous group that includes individuals that have origins in the Far East (China, Japan, Taiwan), Southeast Asia (Vietnam, Cambodia, Laos, Burma, Thailand, Philippines), the Indian subcontinent (India, Bangladesh, Nepal) and the Pacific Islands and comprise about 5% of the U.S. populations (U.S. Bureau of the Census, 2010). Many, but not all, Asian Americans hold religious beliefs or worldviews quite different than traditional U.S. Judeao-Christian heritage and include Buddhism, Hinduism, Taoism, Daoism, and Islam/Muslim beliefs and practices. With these differing practices come differing explanations and treatments for “mental” diseases that often have a foundation in traditional Chinese medicine or Ayurvedic medicine. In Chinese traditional medicine, illnesses are caused by imbalances in Yin and Yang, which can be result from a variety of internal and external conditions that block the circulation of vital energy (chi) or blood. Illnesses from humeral imbalance come from Ayurvedic medicine in India and Southeast Asia and its use of five basic elements – ether, wind, water, earth and fire to regulate bodily functions. According to Ayurvedic thought, illness occurs when the homeostatic condition of the humors is upset. These explanations and practices are often quite different than the foundation for Western psychotherapies, but when understood by treating clinicians have the potential to be integrated into existing treatments (e.g., Otto & Hinton, 2006).

Each Asian groups not only has a different country of origin, culture, and language, but there are wide variations in their generational immigrant statuses (e.g., first or second generation) in the United States, circumstances under which they migrated (e.g., refugee status), level of acculturation, and social class and social backgrounds (Lee et al., 2001). Overall, 12.5% of Asian Americans live in poverty, but this statistic varies tremendously by community with rates exceeding one-third in some large urban centers (U.S. Bureau of the Census, 2010). In addition, due to U.S. refugee resettlement policies, Asian Americans can be found throughout the U.S. including rural communities. The number and variability among Asians makes research with this population difficult. Consequently, most research to date has used the broad term Asian American and has sampled from a mix of many of these ethnic groups. This type of convenience sampling eases the burden on researchers, but makes generalization difficult and conclusions hard to reach. In our review of the sparse extant literature we attempt to separate groups when possible and to note specific differences where they exist. We have also noted specific treatment studies conducted in countries of origin that may bear relevance to work with Asian Americans.

Historically, the Asian American community has long been considered by mental health professionals to be a well adjusted and mentally stable population due to its comparatively high education and income levels, and low divorce and criminal activity rates (Sue, Sue, Sue, &Takeuchi, 1995). However, research clearly indicates this population experiences

pathological levels of anxiety comparable to other minority groups and sometimes higher than those found in European Americans (Okazaki, 1997; Okazaki, Liu, Longworth, & Minn, 2002). For example, Okazaki et al. (2002) found that in comparison to European Americans, Asian Americans report higher levels of social anxiety. It has been suggested that an interdependent self-construal commonly found among Asian Americans may lead to a general sociotropic cognition in which their relationships to others are emphasized (Mak, Law, & Teng, 2011). This particular cognitive style may explain why Asian Americans may experience more social anxiety than their European American peers who typically endorse an independent self-construal and cognitive style. Additionally, the level of racial identity has been found to be a significant predictor of anxiety in Asian Americans (Kohatsu, 1993). Furthermore, it has been suggested by Lee, Lei, and Sue (2001) that the incorrect perception of Asian Americans as a model, non-pathological group may serve as an explanation for the paucity of research examining the phenomenology and effective treatment outcome of anxiety disorders with this population. Despite evidence of symptomatic differences between Asians and other populations, the treatment outcome literature with anxiety disorders is relatively sparse.

4.1. Asian American treatment outcome studies

4.1.1. Post traumatic stress disorder (PTSD)—Most of the work examining PTSD in Asian Americans has focused on immigrants and refugees of Southeast Asia, specifically Cambodia and Vietnam. This focus may be the result of the experience of these largely refugee populations. Over the past 50 years these countries have been greatly affected by war, and thus may have higher rates of PTSD than in many other regions. Comparative studies have examined the influence of socio-cultural factors on the expression of PTSD (Kinzie, Boehnlein, Leung, & Moore, 1990; Matkin, Nickles, Demos, & Demos, 1996). Research has also focused on PTSD among Asian American Vietnam veterans, with some of the focus being on the co-occurrence of negative race-related events and PTSD (Loo et al., 2001). Loo, Fairbank, and Chemtob (2005) found that among a large sample of Asian American Vietnam veterans, the majority had experienced one or more negative race-related events, and that these events met DSM-IV-TR criterion A for traumatic events (APA, 2000). Among this group, 36% of these veterans met criteria for PTSD (see Table 2 for a summary of Asian American treatment outcome studies).

With respect to treatment outcome, Hinton, Otto and colleagues (e.g., Otto & Hinton, 2006) have conducted programmatic work in adapting CBT treatment for PTSD for two Southeast immigrant groups, Cambodian refugees and Vietnamese immigrants. Their work provides examples of the kind of detailed clinical science that must be undertaken to reach heretofore relatively ignored groups of individuals suffering greatly. See Otto and Hinton (2006) for an overview of the challenges in adapting CBT to an essentially illiterate non-English speaking population who were fearful of an educational type format. They describe the adaptation process for the Cambodian refugees, which included changes in treatment setting (Buddhist temple), use of interpreters with mental health experience, working with a very somatic based conceptualization of anxiety based on cultural beliefs about the cause of illness, and the use of metaphors to foster good communication. For example, neck pain and other somatic complaints were of great concern because of the belief that this represented blocked wind (or chi). The therapists used interoceptive exposure to induce these somatic symptoms, akin to the use of this technique to remedy catastrophic misinterpretations of symptoms in panic disorder, regardless of their source (Carter & Barlow, 1993).

This adapted treatment for CBT has been used in a series of treatment outcome studies. Otto et al. (2003) found that Khmer-speaking Cambodian refugees with a diagnosis of PTSD who received a combination of CBT and pharmacotherapy improved more than those who

received pharmacotherapy only. Their culturally specific CBT was particular effective in reducing somatic complaints related to blocked or trapped wind. The efficacy of pharmacotherapy in conduction with CBT provided some of the first indications that CBT may not only be an effective treatment with this population on its own, but may also be helpful in combination with other forms of treatment.

Much of the PTSD treatment outcome research with Asian American populations examines treatment for refugees with PTSD and co-morbid panic attacks. In contrast to European Americans who commonly express heart-focused panic attacks, these refugee populations more often express a somatic focused panic attacks due to catastrophic cognitions related to beliefs regarding the flow of wind in the body and the belief that these symptoms represent blocked wind and may signal great harm or even death (Hinton, Safren, Pollack, & Tran, 2006). Hinton et al. (2004) treated Vietnamese refugees who presented with treatment-resistant PTSD and co-morbid panic attacks with a combination of mindfulness and culturally adaptive cognitive behavioral techniques including muscle relaxation, diaphragmatic breathing techniques, culturally appropriate visualization paired with neck muscle rotation (imaging a lotus blossom that rotates in the wind on top of a stem, which incorporates a Asian cultural value of flexibility), cognitive restructuring, interoceptive exposure, and emotional processing. They theorized that mindfulness shares many of the same core philosophical principles as Buddhism, which many of these refugees practice, and thus they would be more responsive to mindfulness techniques in their treatment. After 11 weeks of treatment the authors found significant improvement of symptoms.

Hinton et al. (2005) applied the culturally adapted CBT to an additional sample of Cambodians with treatment resistant PTSD and panic attacks to determine broader generalization to an Asian American population effected by PTSD. Among the small sample, they found symptom improvement after 3 weeks of treatment. When replicating the study with a larger sample of Cambodian refugees, they found that participants improved on all measures including somatic sensations, PTSD severity, neck and orthostasis-related panic attacks, flashbacks, and distress.

Hinton, Pich, Chhean, Safren, and Pollack (2006) investigated CBT for a small sample of Vietnamese refugees with PTSD and panic attacks. Their treatment protocol included the same culturally adaptive CBT techniques as used before, including education about PTSD and panic, diaphragmatic breathing, exposure, culturally adaptive visualization and neck rotation, interoceptive exposure, mindfulness relaxation, narrative exposure, examining the roots of neck and orthostatic panic, cognitive flexibility, and emotional processing. They found that participants had a significant decrease in their headache and orthostasis-related panic attacks and had a reduction in PTSD symptomatology. The authors assert that culturally adaptive treatment for this population should include: identifying distress patterns, determining origins of distress patterns, examining fear networks, and creating specific treatments for the previously identified distress. They also found that to reduce drop-out rates, to increase understanding of the treatment, to foster remembrance, and to avoid corrective interpretation, one must make the treatment culturally consistent.

An additional study by Hinton, Safren, et al. (2006) with a similar population of Cambodian refugees (PTSD and co-morbid neck-focused panic attacks) evaluated the efficacy of somatic-focused CBT. The sensation reprocessing therapy utilized the same culturally adaptive CBT procedures used in the previous studies, with the addition of techniques that have an increased focus on identifying sore-neck-associated trauma, exposure to sore neck sensations, identifying positive neck associations, desensitization and re-association of neck sensations, causing neck sensations that result in relaxation, and exploration of recent life situations associated with the neck, all in a culturally adaptive framework. They found

treatment-related improvement including reduction in panic attacks and associated flashbacks. It appears then, that culturally tailored CBT for PTSD is effective in alleviating PTSD symptoms among some Asian populations. These populations could likely be conceptualized as largely unacculturated to U.S. culture. The challenges faced by the clinicians were great, but were overcome through thoughtful adaptations. Hinton and Otto's work stands as an example for how to adapt CBT. More acculturated Asian populations would likely require different or less adaptations to the standard CBT protocol. Additionally, the extant literature has been limited to a very specific segment of the Asian population.

Kubany, Hill, and Owens (2003) examined treatment outcome with Cognitive Trauma Therapy (CTT) in battered women with PTSD. They studied an ethnically diverse sample of women in Hawaii including 10 Asian and 6 Pacific Islanders with a treatment course of 8–11 weeks. CTT consists of psychoeducation about PTSD, learned helplessness, stress management, negative self-talk, detailed trauma history, exposure, and progressive muscle relaxation. In addition to these tools CTT was modified in this study to make it more applicable to battered women and included therapy for trauma related guilt, self-advocacy, and empowerment. The authors found that among their small sample there were no differences across ethnic groups in terms of efficacy and that 94% of subjects no longer met criteria for PTSD at 3 month follow-up. The authors theorize that this may be due to the universality of domestic violence and PTSD. This does provide tentative evidence that Asian Americans who have PTSD as a result of domestic abuse may benefit, but given the small sample size only minimal conclusions can be drawn.

4.1.2. Specific phobia—Similar to the findings in PTSD literature, Pan, Huey, and Hernandez (2011) found that when treating Asian Americans with specific phobias, a culturally adaptive exposure treatment, compared to a standard exposure treatment, showed a greater reduction in catastrophic thinking and general fear. The culturally adapted exposure treatment involved identifying and addressing cultural background and acculturation through interviews and assessments, assessing the individual's explanatory model, normalizing the target problem, working on emotional control and the vertical relationship between client and therapist, and, finally, psychoeducation. Interestingly, acculturation was found to moderate treatment outcome. Those low in acculturation to the “mainstream” culture found more benefit from the culturally adaptive exposure treatment than those higher in acculturation. This study highlights the importance of taking not only ethnic background into account when designing a culturally adaptive treatment protocol, but also assessing acculturation. Further, this study provides preliminary evidence that a culturally adaptive treatment protocol may be more effective with a less acculturated Asian American ethnic group than with a more acculturated one.

4.1.3. Generalized anxiety disorder and anxiety treatment among Asians in Asia—There are no studies of GAD among Asian Americans. However, there are several studies in Asian countries that adapt Western protocols for treating anxiety. These studies may have some relevance for treating Asian Americans, particularly those that are less acculturated and, consequently, we address several of them next. In a study of individuals with generalized anxiety disorder in urban China, Zhang et al. (2002) compared treatment with benzodiazepines (BDZ) to Chinese Taoist Cognitive Psychotherapy (CTCP). CTCP incorporates principles of Taoism into Cognitive Therapy. Zhang et al. (2002) describe Taoism as being the basis of the Chinese way of life for many centuries and providing coping mechanisms and ways of relating to thoughts for modern Chinese culture. This therapeutic approach focuses on identifying actual stressors, evaluating the subject's belief, value system, conflict, and coping style. Next, central to this therapeutic model, the therapist provides 5 h of largely didactic explanation of the 32-character Taoist formula. The first 8 characters are interpreted as “benefiting without hurting others and acting without striving,”

the 2nd 8 characters are interpreted as “restricting selfish desires, learning how to be content, and learning to let go,” the 3rd 8 characters are interpreted as “harmony with others and being humble, using softness to defeat hardness,” and, finally, the 4th 8 characters indicate “a person should maintain tranquility, act less, and follow the laws of nature” (Zhang et al, 2002, p. 128). After completion of this stage, treatment effectiveness is assessed and reinforced.

Zhang et al. (2002) randomly assigned 143 urban Chinese individuals diagnosed with GAD to one of three treatment conditions: benzodiazepines (BDZ) only, CTCP alone, and BDZ plus CTCP. Patients met weekly for 1 month followed by twice per month for 5 months. They examined these groups after 1 and 6 months of treatment and found that all the groups showed symptom improvement, but that the BDZ only group evidenced rapid symptom reduction that dissipated after 6 months. The CTCP only group evidenced gradual improvement but symptom reduction was maintained through the 6 month follow-up period. The combination group demonstrated fast and lasting symptom reduction. Further, it was found that unlike BDZ, CTCP reduced type A symptoms including at least 6 months of excessive anxiety and worry (APA, 2000). These results indicate that this particular culturally adaptive treatment is more effective in the long term than BDZ. Although this study was done with a Chinese sample and not a Chinese American one, it is important to consider its possible implications for the Chinese American population, particularly those who are 1st generation, those who are less acculturated, or who may be more likely to be familiar or identify with Taoism.

4.1.4. Additional anxiety treatment outcome studies—Geiger et al. (1994) examined several different ethnic minority groups, including Asian Americans, in their study examining treatment outcome for anxiety in minority populations. They compared ethnic matching of the client and therapist versus non-ethnic matching. Asian Americans were the only minority group for which ethnic matching provided significant benefit over a 5 year period, as measured by number of treatment session and dropout rate. This provides tentative evidence that, as compared to other minority groups, Asian Americans may find increased benefits from treatment with therapists whose ethnic background match there own.

Several studies in Japan have shown that CBT may be an effective treatment for anxiety disorders. Kobayashi et al. (2005) and Sakai et al. (2006) found that a CBT treatment protocol reduced symptoms in Japanese individuals suffering from panic disorder. When using group CBT as a treatment for panic disorder, Nakano et al. (2008) found only a 20% dropout rate. Similarly, Furukawa, Watanabe, and Churchill (2006) found that group CBT as a treatment for social anxiety had only a 12.3% dropout rate. As previously stated, despite this Japanese population not being an Asian American population, this may show preliminary evidence that similar treatment protocols may be effective with a Japanese American population as well.

5. Asian American summary

As previously mentioned, there has been a dearth of studies examining treatment outcomes in Asian Americans with anxiety disorders. Similar to African Americans, treatment outcome studies to date show that Asian Americans respond to standard treatment protocols, but that they receive increased benefit and reduction in symptom severity from culturally adaptive ones (e.g., Hinton et al, 2004, 2005; Hinton, Pich, et al, 2006; Hinton, Safren, et al., 2006; Pan et al, 2011). It is important to further study and manualize culturally adaptive treatments for different Asian Americans ethnic groups based on their particular needs and diagnosis. Future research will need to distinguish between different ethnic groups within

the Asian American populations, rather than developing umbrella culturally adaptive treatments in order to try to serve them as one group with one ethnic background.

Of some importance, when matched with therapists of the same ethnic background, Asian Americans have been shown to have a significant decrease in therapy dropout rates and number of sessions, as compared to European Americans, African Americans, and Mexican Americans (Geiger, 1994). Based on these preliminary findings it is important that future research examine therapists' ethnic matching with Asian Americans in order to examine specific anxiety disorders, different Asian ethnicities, varying levels of acculturation, and generational status.

To the best of the authors' knowledge, to date no research has compared group therapy and treatment of anxiety disorders with individual treatment in Asian American populations. The purpose of examining group versus individual treatment is based on Mak et al.'s (2011) theory that higher anxiety levels in Asian Americans may be the result of an interdependent self-construal. Thus, since many Asian Americans see themselves as interdependent in a greater community, treating those with anxiety disorders in a group may show more symptom reduction as compared to treating them individually because they may be more likely to identify with the success of others in the group and to extrapolate that success to their own treatment.

Given the high levels of anxiety in Asian American populations due to complications of immigration, adjustment, acculturation (Lee et al., 2001), it is clear that more research is needed in order to determine the best treatment for these individuals and their specific needs. There is clearly a need to expand the treatment outcome research in this area, and specifically to focus on the anxiety disorders whose prevalence rates are high in Asian Americans, such as social phobia.

6. Hispanic/Latino[a] Americans

Hispanic/Latino[a] Americans comprise the largest and fastest growing ethnic minority group in this country constituting approximately 16% of the U.S. population (U.S. Bureau of the Census, 2010) and almost 22% live in poverty. Here, too, is a panethnic term that according to the Office of Management and Budget includes any ‘person of Mexican, Puerto Rican, Cuban, Central and South American, and other Spanish culture or origin, regardless of race (Humes, Jones, & Ramirez, 2011). Given the size and breath of this group or groups, it is surprising that they have received very little empirical attention in the treatment outcome literature. While there are a multitude of studies on the epidemiology, phenomenology, and treatment of depression (e.g., Cummings & Druss, 2011; Foster, 2007; Hahn, Kim, & Chiriboga, 2011; Yang, Cazorla-Lancaster, & Jones, 2008) among a variety of Hispanic/Latino[a] groups, research on the treatment of anxiety has not followed suit. This is particularly problematic given that some epidemiological data suggest that Hispanics/Latinos(as) have up to a 22.6% prevalence rate of anxiety disorders compared to other groups (Karno et al, 1989). More recently, Asnaani, Richey, Dimaite, Hinton, and Hofman (2010) found lifetime prevalence rates for Hispanics/Latinos(as) to be 8.2% for social anxiety, 5.8% for generalized anxiety disorder, 5.6% for posttraumatic stress disorder, and 4.1% for panic disorder. The prevalence rates for anxious pathology noted in the literature indicates that anxiety is a problem for Hispanic/Latino[a] Americans.

Furthermore, there is ample evidence that the expression of anxiety may be different for some Hispanic/Latino[a] groups. In particular, is the experience of *ataques de nervios* and *susto*. The experience of *ataques de nervios* (characterized as dramatic episodes of anxiety that may include shouting, aggression, and dissociative experiences) occurred in

approximately 7–15% of the Latino sample (N = 2554) of the National Latino and Asian American Study (NLAAS) (Guarnaccia et al., 2010). Further, *ataques* has been linked, although appear to be experientially and conceptually distinct, to the experience of panic among mainland Puerto Ricans (Cintron, Carter, & Sbrocco, 2005) and Hispanic/Latino[a] college students (Keough, Timpano, & Schmidt, 2009). *Susto* is a related condition characterized as "fright" and includes symptoms such as restless sleep, listlessness, and depression. At least one investigation found that the prevalence rate in a sample from Guadalajara Mexico was 47.7% for both conditions, indicating and overlap between the disorders (Weller, Baer, Garcia, & Rocha, 2008).

Given the prevalence rates and expression of culture-specific anxiety, it is not surprising that some common measures of anxious pathology may not accurately assess anxiety among Hispanic/Latino[a] Americans. Hirai, Stanley, and Novy (2006), for example, evaluated the psychometric properties of the Beck Anxiety Inventory (BAI), Penn State Worry Questionnaire (PSWQ), Anxiety Sensitivity Index, Worry Scale, Body Sensations Questionnaire, and Trait Anxiety Scale in a sample of Hispanics/Latinos[as] (including Mexican, Puerto Rican, Cuban, and Central and South American) with generalized anxiety disorder (GAD). They noted that a factor analysis of all scales resulted in a two-factor solution (physiological sensations and worry). However, the best predictor of severity of GAD was the BAI. They suggested that worry may have a strong physiological component among Hispanics/Latinos[as] and that typical screening tools for GAD such as the PSWQ that are more cognitively based may provide an incomplete picture of worry and GAD compared to that found among European Americans. Despite evidence of symptom and disorder differences between Hispanic/Latino[a] Americans and European Americans, there have been few treatment outcome studies with Hispanics.

6.1. Hispanic/Latino[a] American treatment outcome studies

6.1.1. Panic disorder—To date there is only one uncontrolled trial examining treatment efficacy for panic disorder among Hispanics/Latinos[as]. Alfonso and Dziegielewski (2001) conducted a single case study of a self-directed treatment for panic disorder. This study was based on a self-help approach that consisted of 9 weeks of a cognitive behavioral based treatment consisting of psychoeducation, panic exercises, positive affirmations, and cognitive restructuring. In addition, the patient attended a support group for panic patients held at a local hospital. It was reported that the patient experienced a significant reduction in anxiety over the treatment phase that was maintained over a brief 7 day follow-up period (see Table 3 for a summary of Hispanic/Latino[a] treatment outcome studies). While suggestive of treatment efficacy, obviously a single case study precludes any conclusions regarding the efficacy of treatment for panic disorder. Given evidence of *ataques* and *susto* and available empirical literature on ethnic differences in the psychometric properties of scales designed to assess panic related pathology, the area of panic would be an important area to start evaluating treatment with Hispanic/Latino[a] Americans.

6.1.2. Posttraumatic stress disorder (PTSD)—There is a similar paucity of treatment outcome data for the treatment of PTSD among Hispanics/Latinos[as]. In one study Rosenheck and Fontana (2002) reviewed the treatment outcome data from a large national sample of the treatment of PTSD in the Veterans Administration System. Treatment was described as intensive where patients participated either in a short-term inpatient, day hospital program, or a residential halfway house program. In this large scale review, it was noted there were no differences on the majority of treatment process variables among African American, European American, and Hispanic/Latino[a] American patients. Hispanic/Latino[a] patients were more satisfied with their treatment than European Americans. Furthermore, the authors reported that there was little evidence for ethnic

differences in overall outcomes for veterans suffering with PTSD. It should be noted, that in this study there was no clear description of the treatments used or discussion of measures of treatment adherence. Therefore it is impossible to conclude “no differences” with any degree of certainty.

A second study conducted by Amaro et al. (2007) included a trauma-informed services component in their treatment of an ethnically diverse sample of substance abusing women who had experienced physical or sexual abuse. Treatment consisted of either standard substance abuse treatment or standard treatment with 25 sessions of the Trauma Recovery and Empowerment Model. The results indicated that the “intervention” was superior to the control condition in the reduction of substance abuse and PTSD symptoms. Furthermore, there were no ethnic differences noted in the intervention group. While informative, this study was primarily focused on substance abusing women and did not require participants to be experiencing full criteria for PTSD for admission into the study. So again, we are limited in the conclusions that can be drawn.

6.1.3. Obsessive Compulsive Disorder (OCD)—There are currently no treatment outcome studies of Hispanics/Latinos[as] with OCD. In fact, there is evidence that this group is particularly underrepresented in treatment outcome research on OCD. Williams, Powers, Yun, and Foa (2010) conducted a review of the randomized controlled treatment trials conducted with OCD patients from 1989 to 2009 and reported that of the 3777 patients treated, 91.5% were European American, 1.6% were Asian, 1.3% were African American, and only 1% were Hispanic/Latino[a] American. While studies reported ethnic composition, none of them examined their data by ethnicity, likely due to the very small sample sizes.

6.1.4. Additional anxiety outcome studies—There is a larger body of treatment outcome literature with Hispanic/Latino[a] Americans suffering from depression. (Schraufnagel, Wagner, Miranda, & Roy-Burne, 2006). In these studies there is clear evidence of the effectiveness of CBT in the treatment of depression among Hispanics/Latinos[as]. For example, Foster (2007) reported that CBT produced a substantial reduction in depressive symptoms that was maintained over a 4 month follow-up period. Further, Interian, Allen, Gara, and Escobar (2008) applied a cultural adaptation to standard CBT in the treatment of Hispanics with depression. Specifically, they provided treatment in Spanish, discussed migration experiences, location of family, and emphasized warmth and positive interactions. It was noted that 67% of participants experienced a significant reduction in depressive symptomatology that was maintained at 6-month follow-up. Miranda, Azocar, Organista, Dwyer, and Areane (2003) found no difference across ethnic groups in response to CBT for depression.

There is also evidence of treatment efficacy in the treatment of anxiety disorders among Hispanic/Latino[a] youth. For example, Pina, Silverman, Fuentes, Kurtines, and Weems (2003) compared the treatment response of Hispanic/Latino[a] versus European American youth with phobic and anxiety disorders from two clinical treatment outcome studies. Treatment was exposure-based, offered primarily in English, and lasted 10–12 sessions. It was found that the proportion of both groups that evidenced clinically significant change was comparable (84.2% for Hispanic/Latino[a] Americans and 83.9% for European Americans). There were also no ethnic differences in child- and parent-completed measures of pathology. Furthermore, these gains were maintained up to 12-months follow-up. Similarly, Saavedra and Silverman (2002) report on a case study that indicates exposure therapy is successful in the treatment of a Hispanic/Latino boy with a specific phobia of buttons. While the results from literature on the treatment of depression and anxiety among children indicates that cognitive and behavioral approaches are effective with Hispanics/

Latinos[as], there is some caution in assuming the results with similar approaches will be successful in the treatment of anxiety among adult Hispanic/Latino[a] Americans.

7. Hispanic/Latino[a] summary

The treatment outcome literature for Hispanics/Latinos[as] with anxiety disorders is sorely lacking. Despite the exponential growth of this segment of the population in the last decade, the inclusion of Hispanic/Latino[a] Americans in treatment outcome studies has been lacking, and very few of those have examined ethnic differences with this population. There are several issues that may account in part for the absence of literature on Hispanics/Latinos[as]. One is that of language. There is evidence that many Hispanics/Latinos[as] continue to speak Spanish at home or as their primary language (DuBard & Gizlice, 2008). As such, there maybe language barrier that prevents utilization of mental health services or contributes to early attrition from therapy (Aguilera, Garza, & Munoz, 2010). A second issue is that of the variety of cultures that are Hispanic/Latino[a]. The many countries and cultures of origin that in the United States we consider together as “Hispanic/Latino[a]” can be associated with a different culture that partly dictates the perception of psychological illnesses as well as what is considered a reasonable option for management of those issues. In the area of body image and eating disorders, there is at least one investigation that found differences in body dissatisfaction by country of origin (George, Erb, Harris, & Casazza, 2007). However, the development of culturally specific interventions for each culture will take time and therefore is impractical. As such, it has been suggested that we may benefit from starting with valid approaches for non-minorities and then making changes consistent with the culture from that framework (Interian & Diaz-Martinez, 2007). Along these lines, future studies will need to be certain in their sampling and reporting to be specific about which Hispanic/Latino[a] groups are included in their sample, and to at least attempt to gather data on potential differences that might exist between the various groups Hispanics/Latinos[as].

Additional considerations in the treatment of Hispanics/Latinos[as] include evaluating ethnic matching between patient and therapist. Flicker, Waldron, Turner, Brody, and Hops (2008), for example, evaluated treatment response in a sample of Hispanic/Latino[a] American and European American substance abusing adolescents. In this study, it was noted that while ethnic match was not related to treatment outcome for European Americans, it was related to significant reduction in substance use for Hispanics/Latinos[as]. We can also improve the numbers of Hispanics/Latinos[as] receiving treatment by making psychotherapeutic services more accessible. It has been suggested that since Hispanics/Latinos[as] may present more to primary care settings, that some attempt is made to either recruit or provide services in those settings (Interian & Diaz-Martinez, 2007). While some progress has been made in treatment of anxiety with Hispanics/Latinos[as], it is imperative to move to the next phase and evaluate treatments in a controlled fashion and to make comparisons to standard and novel treatments if we are to continue to progress in our understanding of what works for Hispanic/Latino[a] Americans.

8. Native Americans

While there is at least some evidence of beneficial treatment approaches for the previously discussed groups of minorities, there is virtually no evidence on the effective treatment of anxiety disorders among Native Americans. Gone and Alcantara (2007) noted in their review of treatment outcome studies including Native American participants that the number of Natives included in these studies was very small and that the extant studies typically did not directly address outcomes for Native Americans. Of the few controlled trials addressing treatment outcome for Native Americans reported, none of them investigated treatment for

anxiety disorders. At the time of this review we located very few uncontrolled trials addressing this topic. This is unfortunate given that some estimate that the rate of psychological conditions such as anxiety and depression is greater than 50% among Native American adults (McNeil, Porter, Zvolensky, Chaney, & Kee, 2000) and a lifetime prevalence rate of PTSD estimated to be 16.1% among Southwest and Northern Plains tribes (Beals et al., 2005).

The paucity of work in this area is likely due to three specific factors. First is the size of the population. Native Americans constitute approximately 1.5% of the population in the United States (U.S. Bureau of the Census, 2010). As such, they will be less likely to be included in a randomly sampled segment of the general population. Second, despite being the smallest minority group reviewed, they are by far the most varied. Specifically, it is frequently reported that there are greater than 500 federally recognized tribes and Alaskan Native village groups (Bureau of Indian Affairs, 2000). As such, the potential exists for a large number of smaller separate cultures within the broader Native American culture, which further reduces the numbers available for any single trial. Consequently, it has been suggested that small sample studies are indicated for this population (Morsette et al., 2009). And, third, is that it has been estimated that approximately 1/3 of Native Americans live on or near reservations or similar areas (U.S. Bureau of the Census, 2010), which can be very closed communities. In addition, based on the 2010 Census 24.2% of this population lives in poverty, most in rural communities, and 31.7% do not have health insurance. Thus, lack of provider/researcher expertise and lack of community access may make recruiting the variety of indigenous people difficult at best. Nonetheless, there are some initial reports addressing the management of anxiety disorders.

8.1. Native American treatment outcome studies

8.1.1. Posttraumatic stress disorder (PTSD)—Scurfield (1995) compared the treatment response of a cohort of all Native American patients with PTSD to a cohort of 50% Native American patient sample with PTSD. Treatment for both groups consisted of psychosocial education and processing war trauma. The all Native American group also received additional modifications to standard treatment that included use of a sweat lodge, POW-WOWs, and use of a spiritual consultant. It should be noted that the 50% Native American group also had access to these culture-specific activities, but they were not a systematic part of the program. While there were no direct comparisons between treatment groups made, it was reported that participants in both groups improved and that there was a significant increase in community involvement compared to previous groups. The authors conclude that the availability of culturally consistent treatment strategies is beneficial to Native Americans and appeared to be appreciated by non-Native Americans as well (see Table 4 for a summary of Native American outcome studies).

Of note, there is evidence of the effectiveness of treating PTSD with Native American children. Morsette et al. (2009) conducted the only investigation of CBT for trauma in a sample of Native Americans school children. Using manualized CBT, the authors reported that following 10 weeks of treatment participants evidenced a significant reduction in PTSD and depressive symptoms. It should be noted that the sample was small ($n = 7$) and only 4 of those starting treatment completed the course of CBT. The reason for discontinuation of treatment was not assessed but may have included a cultural disconnect between therapist and patients, or between patient and the CBT approach. Similarly, Goodkind, LaNoue, and Milford (2010) evaluated a culturally adapted CBT for trauma in schools. Specifically, they applied surface structure changes by removing Eurocentric examples of cognitive restructuring that may have been offensive and deep structure changes by using stories based Native American cultural teachings. The authors report a significant reduction in anxiety and

PTSD symptoms and a moderate improvement in depression. Therefore, there appears to be some evidence for a standardized approach among children and a culture-specific approach among children and adults. The absence of studies, however, makes drawing conclusions impossible. However, it has been suggested that a cognitive behavioral approach might be quite effective with a Native American population since it can address situation-specific behavior changes (Coteau, Anderson, & Hope, 2006; Zappert & Westrup, 2008). Specific recommendations for treatment adaptations for anxiety disorders have been suggested by Coteau et al. (2006), and Willmon-Haque and Bigfoot (2008). These recommendations include the need to incorporate a Native American worldview into the treatment conceptualization, which includes the origins and meanings of symptoms. For trauma related work, it is important to consider that the impact of traumatic personal events experienced by Native Americans (e.g., forced boarding schools, forced relocations) can impact several generations. Although none of the recommendations have been tested to date, they provide important insights and guidance in moving forward to develop appropriate treatments.

8.1.2. Alternative culture-specific approaches—While there are no investigations of traditional psychotherapy in the treatment of anxiety disorders among Native Americans, there are a few investigations of alternative treatments that are more consistent with Native American culture and may be effective in the treatment of anxiety. For example, Obenchain and Silver (1992) utilized a “welcome home” ceremony in the treatment of PTSD. This treatment incorporated an appreciation of the individual's sacrifices, framing the experiences as a positive aspect of honor and one that provided the patient important life lessons and wisdom not available to others. It is suspected that this allowed the returning veteran to assume a unique or special position within the larger society or culture. The results indicated more of a willingness of the patient to discuss and express anger and a reduction in PTSD symptoms. Tolman and Reedy (1998) reported that the use of a traditional sweat lodge on the grounds of a hospital increased utilization of hospital services, increased satisfaction, improved health care, and reduced length of stay.

Alternatively, Gone (2009) has suggested applying a “discovery-oriented” method in the development of a cross-cultural treatment. As a specific example, he conducted interviews with administrators, counselors, and patients with Historical Trauma (distress associated with the experiences of colonization). He noted that the occurrence of specific themes such as emotional burdens, emotional disclosure, and impact of colonization can be used to develop a culture specific treatment that would more holistically address the concerns of Native Americans.

9. Native American summary

Despite the absence of empirical studies on the treatment of anxiety disorders among Native Americans, it is typically recommended to use culturally appropriate methods with this population. For example, Gone (2004) suggests that when working with Native Americans one be aware of culture and the meaningful nature of human experience and to develop and evaluate therapy collaboratively with medicine persons, or ritual leaders. Importantly, it is also recommended to process outcomes more comprehensively. That is, not just assessing the change in anxious symptoms across treatment, but also attending to and understanding any obstacles encountered (e.g., breakdowns, miscommunications) in the context of therapy.

The scant amount of literature in this area clearly indicates that any research on the expression and treatment of anxiety among Native Americans is warranted. It may be that small, single case studies are a good starting point. Eventually, we need to move towards evaluating the effectiveness of currently recommended treatment strategies for anxiety with this group while we simultaneously evaluate the more culturally specific treatment

strategies. A major hurdle, however, is the number of tribes available for investigation. As noted above, it is quite possible that many of the tribes will represent different cultures. Each may have differing policies for gaining access to members of the tribe and require a different approach to recruitment. Beyond this issue, we need to continue to explore which tribes share similar beliefs and traditions and to the extent that we can collapse overall sample sizes in future treatment outcome studies. Of course, the communities should be involved to make these determinations. Additionally, there is a need for studies addressing the expression and measurement of anxiety among Natives as that will aid in accurately measuring outcome.

10. Conclusion

Minorities represent the fastest growing segment of the U.S. population and suffer from anxiety disorders. Further, we do not have health care providers or researchers from these groups in representative numbers. Consequently, it is our collective responsibility to develop competency, gain experience, and work to better the lives of these groups. Several issues are clearly brought to the forefront in our review of the extant treatment literature for ethnic minorities suffering with anxiety disorders. First, there is a paucity of treatment outcome studies with all of these populations. This is particularly evident in our review of the literature on Native Americans. This is problematic given the extent of research on at least one type of therapy, CBT for anxiety disorders, which also represents the forefront in the movement to identify empirically supported treatments (Voss Horrell, 2008). For the field to continue to grow and develop the most effective treatments for certain conditions, we must continue to evaluate the ability of treatments to produce beneficial results for all possible consumers. Particularly since the percentage of potential minority patients is on the rise. Along these lines, we must strive to assess minority patients' level of acculturation since it has been suggested that this variable may play an important role not just in the expression of anxious symptomatology, but also in terms of treatment selection and treatment outcome (Carter et al., 1996). We must also realize that when compared to non-Hispanic European Americans these groups disproportionately suffer greater poverty, are less likely to have health insurance, and may come to health care (or not come) with significant mistrust and different beliefs about the origin of mental illness and the meaning of their symptomatology. We are also obligated to continue to evaluate the psychometric properties of measures of pathology. Future research must strive to include validated measures wherever possible so that any results noted can be evaluated in the correct context.

We also need to continue to evaluate the influence of therapist cultural sensitivity on treatment outcome. There is evidence from several of the reviewed studies that tailoring treatment to the culture is an effective treatment strategy. What is missing from this literature is whether inclusion of cultural adaptations (or the use of a culturally sensitive therapist) of treatment is more beneficial in the treatment of anxiety disorders than utilization of standard protocols. Future research could extend our knowledge about treating minorities by making comparisons between these two approaches. Furthermore, it will be important to evaluate the components of the various cultural adaptations. This requires we begin to propose the specific mechanisms of action that underlie some of the adaptations implemented in future research. For example, it has been proposed that use of a sweat lodge may be beneficial in the treatment of Native Americans with PTSD. However, there is not a clearly articulated explanation of how a sweat lodge would produce an effect on anxiety symptoms. This will inherently require the development of testable theoretical frameworks for the populations discussed that is developed from and based in the culture of the population of interest. This was done with African Americans initially by Neal-Barnett and Turner (1991), revised and extended by Carter et al. (1996), and most recently expanded by Hunter and Schmidt (2010). With each revision, theorists in this area have used the extant

literature to frame the major cultural issues influencing the development, expression, and possible treatment response for African Americans. This has in turn provided treatment outcome researchers a testable theoretical framework from which they can evaluate the benefit of standard care practices as well as investigate more culture specific approaches to the treatment of a variety of conditions. This is beginning to occur for Asian Americans and some conceptual work has been done for both Hispanic and Native Americans. We believe this may be a necessary step to continue to grow the literature on the treatment of anxiety among ethnic minorities.

Specific issues that need to be explored in the treatment of minorities might include an evaluation of existing evidence based practices for each anxiety disorder. That will require an increased effort to recruit minorities in treatment outcome studies as well as an effort on the part of researchers to evaluate their data by ethnicity. Further, future studies will need to examine the various components of these treatment packages to evaluate if specific facets of treatment are more or less effective with various minority groups. There is also a need to continue to evaluate cultural modifications to empirically supported treatments. There is some evidence that modifications ranging from minor (e.g., ethnic matching, use of a culturally sensitive therapist, or use of culturally appropriate examples) to major (utilization of strategies rooted in the culture; e.g., sweat lodges, eastern philosophy, incorporation of extended family) can produce beneficial effects. There have been few comparisons, however, between traditional and culture specific treatments. What does seem clear from our review of the extant literature is that an overall approach based in cognitive theory may be beneficial for the groups reviewed. However, the amount of modifications required to make these treatments effective is unknown. While we have gathered some evidence over the past 20 years, there is much that is unknown about the treatment of anxiety among ethnic minorities. It is important to remember that our therapies and research are conducted from a Eurocentric worldview. We need to acknowledge and value what we can learn from other groups to improve our existing treatments for nonminority groups as well versus assuming our models are always superior. We are hopeful that research on this increasingly important topic will continue and increase in the years to come.

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Table 1

African American treatment outcome studies.

Author	Sample	Diagnosis	Treatment	Control (Y/N?)	Outcome
Friedman and Paradis (1991)	15 African American 15 European American	PDA	In vivo exposure Tricyclic antidepressants	No	Fewer African Americans (33%) rated as improved compared European Americans (84%).
Chambliss and Williams (1995)	18 African American 57 European American	PDA	In vivo exposure	No	African Americans more symptomatic at post-test and follow-up.
Carter et al. (2003)	25 African American women	PDA	CBT	Wait list	71% improved or recovered.
Friedman et al. (2006)	24 African American 16 European American	PDA	CBT	No	Moderate improvement for both groups. Less improvement in depression for African Americans.
Rosenheck et al. (1995)	910 African American 3816 European American veterans	PTSD	Unspecified	No	Equal benefit for both groups. African Americans matched to European American therapists had lower program participation.
Frueh et al. (1996)	4 African Americans 7 European Americans	PTSD	Multi-component	No	European Americans improved slightly more.
Rosenheck and Fontana(1996)	122 African American 403 European Americans	PTSD	Unspecified	No	Equal benefit for both groups.
Zoellner et al. (1999)	35 African American 60 European Americans	PTSD	CBT	Wait list	Equal benefit for both groups.
Feske(2001)	10 African American women	PTSD	Exposure	No	Treatment was successful for the 5 completers.
Lester et al. (2010)	94 African Americans; 214 European Americans	PTSD	CBT	Wait list	Equal benefit for both groups. African Americans dropped out earlier.
Hatch et al. (1996)	13 African Americans	OCD	ERP	No	Treatment was effective.
Williams et al. (1998)	2 African Americans	OCD	ERP	No	Treatment was effective.
Friedman et al. (2003)	26 African Americans 36 European Americans	OCD	ERP	No	Equal benefit for both groups.
Fink (1996)	1 African American female	Social phobia	Culturally modified exposure	No	Culturally modified treatment was effective.

Table 2

Asian American treatment outcome studies.

Author	Sample	Diagnosis	Treatment	Control (Y/N?)	Outcome
Geiger (1994)	214 Asian Americans	None	Ethnic matching of therapist and client	Yes	Ethnic matching reduced drop out.
Pan et al. (2011)	30 Asian Americans	Specific phobia	Culturally adaptive CBT	Yes	Treatment was effective. Acculturation moderated treatment outcomes.
Otto et al. (2003)	10 female Cambodian refugees	PTSD	CBT combined with Sertraline	Yes	Both groups improved. Combined treatment improved slightly more.
Kubany et al. (2003)	32 ethnically diverse women 10 Asian Americans 6 Pacific Islanders	PTSD	Cognitive Trauma Therapy	No	Equal benefit across ethnic groups.
Hinton et al. (2004)	12 Vietnamese refugees	PTSD and panic attacks	Culturally adaptive CBT	No	Treatment was effective.
Hinton et al. (2005)	40 Cambodian refugees	PTSD and panic attacks	Culturally adaptive CBT	No	Treatment was effective.
Hinton, Pich, et al. (2006)	3 Vietnamese refugees	PTSD and panic attacks	Culturally adaptive CBT	No	Treatment was effective.
Hinton, Safren, et al. (2006)	3 Cambodian refugees	PTSD	Somatic-focused CBT	No	Treatment was effective.
Zhang et al. (2002)	143 urban Chinese	GAD	Chinese Taoist Cognitive psychotherapy (CTCP) combined with benzodiazepines	Yes	Both groups improved. CTCP associated with reduced relapse rate.

Table 3

Hispanic/Latino[a] American treatment outcome studies.

Author	Sample	Diagnosis	Treatment	Control (Y/N?)	Outcome
Alfonso and Dziegielewski (2001)	1 Hispanic/Latino[a]	PDA	Self-directed CBT	No	Significant reduction in anxiety.
Rosenheck and Fontana(2002)	Hispanic/Latino[a], African American, European American veterans	PTSD	Intensive in- or out-patient treatment	No	Equal benefit across ethnic groups.
Amaro et al. (2007)	57 Hispanic/Latino[a] 48 non-Hispanic European Americans 68 African American	Substance abuse with abuse history	Trauma Recovery Model plus standard substance abuse treatment; standard substance abuse treatment	Yes	Addition of trauma recovery superior to standard substance treatment. Equal benefit across ethnic groups.

Table 4

Native American treatment outcome studies.

Author	Sample	Diagnosis	Treatment	Control (Y/N?)	Outcome
Obenchain and Silver (1992)	Native American veterans	PTSD	“Welcome home” ceremony	No	Increased willingness to express anger and reduction in PTSD.
Scurfield (1995)	50% Native American versus 100% Native American groups	PTSD	Culture-specific versus standard care with optional cultural activities available	Yes	Equal benefit across ethnic groups.