DIFFUSION OF INNOVATIVE PANIC DISORDER TREATMENT STRATEGIES IN A COMMUNITY MENTAL HEALTH AGENCY

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I HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER MY SUPERVISION BY **WHITNEY N. PIERCE** ENTITLED **DIFFUSION OF INNOVATIVE PANIC DISORDER TREATMENT STRATEGIES IN A COMMUNITY MENTAL HEALTH AGENCY** BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PSYCHOLOGY.

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Abstract

This translational research piece involved collaborating with a local community mental health agency to examine knowledge, skills, attitudes, practices, and outcomes for panic disorder treatments. The project included designing and administering an online survey to client care personnel including psychologists, counselors, social workers, nurses, and psychiatrists. Additionally, a database review was utilized to obtain information about treatment modalities, duration, and outcomes. Survey results were analyzed using goodness of fit statistics to show differences between attitudes of participants by discipline regarding the safety and effectiveness of panic disorder treatments. The database analysis of pre and post GAF scores revealed comparable outcomes for therapy alone and therapy and medication treatment groups. Additionally, clients receiving therapy and medication for panic disorder were shown to have had significantly longer treatment duration on average than those in therapy only. These findings were discussed in terms of existing literature on panic disorder treatment and organizational change to make recommendations for the participating agency and others like it.

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Dedication

This dissertation is dedicated to the long line of strong women in my family. From my grandmother, mother, aunts, sister, and down to my niece, I am inspired by your grace and grateful for your support.

Diffusion of Innovative Panic Disorder Treatment Strategies in a Community Mental Health Agency

Summary of Problem

The following dissertation has been developed in response to obstacles encountered in implementing standardized panic disorder treatment protocols in a large metropolitan community mental health agency. A large number of studies have been conducted that appear to support the efficacy of Cognitive-Behavioral Therapy (CBT) for managing the symptoms of panic disorder and decreasing dependency on psychotropic medications for the treatment of anxiety (Gould, Otto, & Pollack, 1995; Otto et al., 1993; Spiegel, Bruce, Gregg, & Nuzzarello, 1994). However, there seems to be a dearth of translational research that could aid community mental health agencies in understanding the procedures of successfully navigating the process of implementing an innovative program for addressing the need for a balanced practice to treatment of anxiety disorders in a real practice setting.

Panic disorder, an anxiety diagnosis that is characterized by recurrent unexpected panic attacks, is one of the most commonly treated mental health issues (American Psychiatric Association, 2000; Kessler, Berglund, Demler, Jin, & Walters, 2005; World Health Organization, 1998). Although community population samples have been found to have lifetime prevalence rates of between one and two percent for this diagnosis, clinical populations report a much higher rate of about 10 percent lifetime prevalence. Additionally, Kessler and colleagues' National Comorbidity Survey Replication (NCS-

R), which reported prevalence findings based on symptom report as opposed to diagnosis, revealed a higher rate of 4.7 percent lifetime prevalence for the general U.S. population.

Individuals with anxiety disorders frequently exhibit the mental and physiological reactions associated with fear in response to non-threatening stimuli and situations (American Psychiatric Association, 2000; World Health Organization, 1998). This is particularly common for individuals with panic disorder, whose fear of recurrent panic attacks can lead to restrictive behavioral patterns. These individuals may also develop symptoms of agoraphobia, a fear of going outside or being among crowds of people, due to apprehension about being in public settings where they cannot escape or control a possible panic attack. Consequently, they often develop avoidance strategies that interfere with social and occupational functioning. The course of panic disorder may be either constant or episodic, but it is almost always chronic. Therefore, it requires treatment methods that can deliver sustainable improvement.

Current recommended treatment practices for panic disorder include pharmacological treatments, behavioral health interventions, or a combination of these modalities (American Psychiatric Association, 2009; World Health Organization, 1998). Pharmacological intervention generally includes the use of benzodiazepine, Selective Serotonin Reuptake Inhibitor (SSRI), Serotonin-Norepinephrine Reuptake Inhibitor (SNRI), or Tricyclic Antidepressant (TCA) prescriptions for the management of panic attack symptoms. Behavioral healthcare interventions designed for the treatment of panic disorder include CBT with exposure techniques, Panic Focused Psychodynamic Psychotherapy (PFPP), and Emotion-Focused Psychotherapy for Panic Disorder

(EFPPD) (Barlow, 2002; Milrod, Busch, Cooper, & Shapiro, 1997; Milrod et al., 2007; Shear, Houck, Greeno, & Masters, 2001).

Antidepressant medications such as TCAs (imipramine and clomipramine), SSRIs (fluoxetine, sertraline, escitalopram, fluvoxamine, and paroxetine), and SNRIs (venlafaxine) have generally received favorable reviews in clinical trials for the treatment of panic disorder. A number of studies using a variety of antidepressants have found a decrease in the rates of panic attacks for participants when compared to those given a placebo, and these findings appear to be sustained for the duration of the pharmacological treatment (Hoehn-Saric, McLeod, & Hipsley, 1993; Pollack et al., 2007; Sheikh, Londborg, Clary, & Fayyad, R. 2000). However, it appears that troublesome side effects such as those related to sexual dysfunction or weight gain may lead to premature and abrupt termination of antidepressant treatments (American Psychiatric Association, 2009). Cessation of the antidepressant medication is usually associated with a return of panic attacks, as well as bothersome discontinuation syndrome symptoms including gastrointestinal and sleep disturbances in the case of abrupt termination of pharmacological treatment. Additionally, some research suggests that the use of an antidepressant medication treatment regimen may lead to an increase in the risk for suicide and self-harm, and the potential benefits and risks should be evaluated by considering all of the above factors (Fergusson et al., 2005; Gunnell, Saperia, & Ashby, 2005).

The use of benzodiazepines such as lorazepam (Ativan), clonazepam (Klonopin), and alprazolam (Xanax) to treat panic disorder appears to be an effective treatment strategy so long as the client continues to take the medication as prescribed; however,

discontinuation often leads to relapse and bothersome symptoms of withdrawal in cases of abrupt cessation (American Psychiatric Association, 2009; Otto, Smits, & Reese, 2006). Several possible problems have been identified related to the use of benzodiazepines for the treatment of panic disorder. For example, some studies have shown that benzodiazepines can interfere with the effectiveness of Cognitive-Behavioral Therapy (Barlow, 2002; Barlow, Gorman, Shear, & Woods, 2000). Specifically, it is theorized that they superficially attenuate feelings of anxiety and impede clients from benefiting from exposure based treatment interventions that require that the aversive reactions be fully experienced in order to truly extinguish that response. Additionally, other safety concerns that must be considered include the development of physical dependence and abuse of the medication, increased health and safety risks for elderly clients, and potentially life-threatening drug or alcohol interactions (American Psychiatric Association, 2009; Ciraulo, & Nace, 2000; Ciraulo, Sands, & Shader, 1988; French et al., 2005; Kelly, Darke, & Ross, 2004; Landi et al., 2005)

Behavioral health interventions that have been developed for the treatment of anxiety include: CBT with exposure techniques, PFPP, and EFPPD (Barlow, 2002; Milrod, Busch, Cooper, & Shapiro, 1997; Milrod et al., 2007; Shear, Houck, Greeno, & Masters, 2001). There is little research regarding the efficacy of the supportive form of counseling utilized in EFPPD. Preliminary findings appear to indicate that it is not as effective as treatment with pharmacological intervention or CBT treatment strategies in reducing incidence of panic attacks; however, it appears to be superior to pharmacological intervention in treatment retention rates (Shear, Houck, Greeno, & Masters, 2001). PFPP emphasizes the importance of articulation of the relationship

between the therapist and client, and of understanding the psychological significance of panic and phobic avoidance (Milrod, Busch, Cooper, & Shapiro, 1997; Milrod et al., 2007). This method of treatment has demonstrated preliminary comparable efficacy in the treatment of panic disorder as CBT. CBT treatment of panic disorder is generally highly structured and usually includes homework that utilizes exposure exercises involving anxiety provoking stimuli to promote eventual extinction of the panic response (Barlow, 2002; Barlow, Gorman, Shear, & Woods, 2000). There is significant evidence that CBT is a more tolerable treatment compared to medications that frequently have bothersome side effects, and it is more cost-effective when the long-term outcomes such as strong relapse-prevention effects are considered (American Psychiatric Association, 2009; Barlow, 2002; Barlow, Gorman, Shear, & Woods, 2000).

Despite the above cited evidence for the effectiveness of behavioral treatment methods, the community mental health agency being examined in this study has reported an alarming rate of ongoing benzodiazepine prescriptions. This is not necessarily unique to this agency, which is generally a very strong community mental health center. The extensive use of benzodiazepine prescriptions nationally in both primary care and in agency settings has drawn growing attention (Bruce, Vasile, & Goisman, 2003; Smith, Sketris, Cooke, Gardner, Kisely, & Tett, 2008). This agency is being used in essence as a "case in point" for the study of current practice and the potential for systemic change in future practice. Within this treatment agency, possible issues that have been identified related to the use of benzodiazepines for the treatment of panic disorders include: interference with behavioral treatment interventions, the development of physical dependence, the possibility of abuse or sale of the medication, increased health and safety

risk for elderly clients, potentially life-threatening drug or alcohol interactions, and wasted clinic resources due to an increased rate of no show/cancellations for therapy sessions. Therefore, this study has been approved by the agency to elucidate the potential benefits and dilemmas for implementing innovative best practice standards for the treatment of panic disorder.

Aim and Purpose

The aim of this study was to collect a profile of knowledge, skills, attitudes, and current practices within a large community mental health agency in order to examine the potential options and dilemmas involved in implementing innovative or best practice guidelines for the treatment of panic disorder. This study utilized methods including database analysis and record review to formulate an accurate profile of the agency's current treatment practices. Additionally, a computerized survey with categorical and Likert type scaled items was administered to key subgroups that influence client care. The resulting data were used to provide information regarding the organization's view of the potential need for innovative panic disorder treatment practices and possible obstacles or impediments for implementing changes in treatment standards. Specifically, the information gathered through these methods was used to formulate answers for three research questions: (a) To what extent are there differences in current recommendations, reported practices, and reported knowledge or skills for the treatment of panic disorder at the community mental health agency being studied? (b) To what extent are there differences between or within agency cohorts defined by professional affiliation and educational attainment level as it relates to knowledge, practices, and attitudes regarding

the treatment of panic disorder? (c) To what extent are treatment outcome variables related to the type of panic disorder treatment that clients receive?

Successive chapters present a review of the current literature base regarding the nature of panic disorder with a critical evaluation of current best practice standards for treatment. The next chapter is devoted to the examination of literature related to organizational change models with a focus on diffusion of innovations and successful program implementation in community mental health settings. A chapter that details the current study includes a description of the institution being studied, the resources utilized for this research, and the methods of investigation. Finally, qualitative and quantitative results are discussed in light of organizational change literature and what current results imply regarding successful treatment strategies for panic disorder in a community mental health setting.

Literature Review

Panic Disorder

Panic disorder is a condition characterized by recurrent unexpected panic attacks that are not due to the direct physiological effects of a substance or a general medical condition (American Psychiatric Association, 2000; World Health Organization, 1998). A panic attack is defined as an episode of intense fear or discomfort in the absence of real danger that is accompanied by physical symptoms. Examples of these somatic symptoms are tightness or pain in the chest, shortness of breath, pounding or racing heart, sweating, shaking, nausea, dizziness, or bodily sensations such as tingling, numbness, or hot or cold flushes. The current diagnostic criteria specify that the individual has had at least two attacks, and one of those attacks must have resulted in at least a month of persistent cognitive or behavioral disturbance due to anxiety regarding the experience. Panic attacks also commonly occur with other anxiety disorders; however, those attacks occur primarily in response to a feared situation or stimuli. Panic attacks that occur during the course of panic disorder are described as unexpected, meaning that the individual cannot readily identify an associated situational trigger. For persons with panic disorder, the anxiety provoking stimuli are the psychological, physical, and feared consequences of the attacks themselves.

The psychological experiences of impending doom, loss of control, and going crazy that accompany panic attacks can lead to persistent and disruptive worry about experiencing another episode (American Psychiatric Association, 2000; World Health

Organization, 1998). This may lead to a catastrophic misinterpretation bias that can cause individuals with panic disorder to perceive benign bodily sensations such as increased respirations or heart rate as signs that they are experiencing a heart attack or some other life threatening ailment (American Psychiatric Association, 2000; Rosmarin, Bourque, Antony, & McCabe, 2009). Some individuals may become convinced that the somatic sensations associated with the attacks are signs of an undiagnosed medical condition and repeatedly seek confirmation of these fears by consulting physicians for testing. Additionally, the unexpected and intense somatic sensations and cognitive activation associated with panic attacks may cause individuals to feel as though they are losing control or going crazy, and many individuals with panic disorder report a fear that they may vomit, faint, or experience an incontinent episode in public as a result of an attack. Although at least one study has shown that these events rarely actually occur with panic attacks, the catastrophic fears of public humiliation can be powerful and debilitating for individuals with panic disorder (Green, Antony, McCabe, & Watling, 2007).

Behavioral changes associated with the diagnosis of panic disorder are typically the result of attempts to avoid future attacks and public embarrassment (American Psychiatric Association, 2000; Batelaan, Graaf, Penninx, Balkom, Vollebergh, & Beekman, 2009). Unfortunately, individuals that restrict physical exertion, social contact, and exposure to anxiety provoking situations to reduce the risk of experiencing another panic attack are also likely to experience disruptions in their occupational, educational, or familial functioning. The resulting interpersonal relationship difficulties likely contribute to the increased incidence of comorbidities including major depressive

disorder, substance abuse, and other anxiety disorders for individuals with panic disorder. Additionally, if this anxiety leads to avoidance of many situations and severely effects day-to-day life, panic disorder with agoraphobia may be diagnosed. About one-third to one-half of persons diagnosed with panic disorder in community samples met criteria for agoraphobia, but the numbers for clinical sample are believed to be much higher.

Overall, the prognosis for individuals diagnosed with panic disorder appears to vary greatly depending on factors such as severity and frequency of attacks, educational level, and presence of comorbid conditions (American Psychiatric Association, 2000; Batelaan, Graaf, Penninx, Balkom, Vollebergh, & Beekman, 2009). Most longitudinal research has been conducted in tertiary care settings and indicates that the usual course is chronic, with either continuous symptom presentation, or discrete periods of remission and recurrence (American Psychiatric Association, 2000; Goodwin et al., 2005; Pollack and Smoller, 1995). However, studies that have focused on general population samples have shown greater variations in the course of the disorder and better overall prognosis (Batelaan, Graaf, Penninx, Balkom, Vollebergh, & Beekman, 2009; Eaton et al., 1998).

Treatments

Treatment recommendations for panic disorder generally include either the use of behavioral health interventions such as therapy or pharmacological treatment in the form of benzodiazepine or antidepressant medications (American Psychiatric Association, 2009; World Health Organization, 1998). Additionally, there is an ongoing debate in the mental health field about the usefulness of combining pharmacological and behavioral health strategies in an attempt to capitalize on potential benefits of both treatment modalities (Barlow et al., 2000; Westra and Stewart, 1998; Uhlenhuth et al., 1999).

However, there is an apparent lack of consensus or precise guidelines to clarify the decision making process of choosing the best method of treatment for individuals with panic disorder (Starcevic, Linden, Uhlenhuth, Kolar, & Latas, 2004; Beamish, Granello, & Belcastro, 2002; Pollack, 2006). Therefore, the potential benefits and risks of each treatment option must be considered with respect the individual client's situation and needs.

Pharmacological interventions. Medications from several different classes have been used to stop or reduce the frequency of panic attacks for over 40 years, and current practice guidelines in pharmacological intervention recommend the use of antidepressants or benzodiazepine prescriptions for the management of panic disorder symptoms (American Psychiatric Association, 2009; World Health Organization, 1998). Specifically, benzodiazepines and antidepressant drugs are the currently most commonly prescribed anxiolytic agents. Antihypertensive, anticonvulsant, antipsychotic, and older generation antidepressant medications such as Monoamine Oxidase Inhibitors (MAOIs) have also been used by some practitioners for the treatment of panic related symptoms; however, research regarding these medications has shown the potential for serious medical side effects such as liver failure. The addition of limited favorable research results and the existence of contradictory findings have caused the American Psychiatric Association (2009) to not recommend such off-label prescription practices. Therefore, the focus of this literature review will be limited to the risks and benefits of Selective Serotonin Reuptake Inhibitor (SSRI), Serotonin-Norepinephrine Reuptake Inhibitor (SNRI), Tricyclic Antidepressant (TCA), and benzodiazepine medications for the treatment of panic disorder.

Antidepressants. Antidepressant medications have shown clinical efficacy in the reduction of number and severity of reported panic attacks, and they have the added benefit of offering pharmacological coverage for symptoms associated with mood disorder comorbidities without concerns about dependency or liability for abuse (American Psychiatric Association, 2009; Pollack, 2006). Three types of antidepressants are currently recommended as first-line pharmacological treatment options for panic disorder. Those medication classes are referred to as TCAs, SSRIs, and SNRIs.

The use of TCAs for the management of panic attacks dates back to 1964, when a trial by Klein (1964) showed that imipramine (Tofranil) was superior to placebo for reducing panic symptoms. Multiple studies have replicated these findings (Barlow, Gorman, Shear, & Woods, 2000; Mavissakalian & Perel, 1985; Pollack, Otto, Sachs, Leon, Shear, Deltito, Keller, & Rosenbaum, 1994; Uhlenhuth, Matuzas, Glass, & Easton, 1998). The results from these studies have shown that after treatment with imipramine 45%-70% of patients were found to be panic free, compared to 15%–50% of those receiving placebo. Additional findings included that patients with panic disorder who were treated with imipramine appeared to exhibit less agoraphobic avoidance and anticipatory anxiety than those receiving placebo.

A number of studies that have utilized placebo-controlled randomized trials support the acute and long-term efficacy of clomipramine (Anafranil) for the management of panic disorder symptoms (Bakker, van Dyck, Spinhoven, & van Balkom,1999; Fahy, O'Rourke, Brophy, Schazmann, & Sciascia, 1992; Johnston, Troyer, Whitsett, & Dalby, 1995). In fact, research appears to suggest that clomipramine is at least as effective as imipramine and possibly superior in preventing panic attacks

(Cassano, Petracca, Perugi, Nisita, Musetti, Mengali, & McNair, 1988; Modigh, Westberg, & Eriksson,1992). Moreover, most placebo-controlled studies comparing clomipramine to Selective Serotonin Inhibitors also demonstrate equivalent efficacy in treating panic disorder; however, there appears to be a less favorable side effect profile for the TCAs when compared to SSRIs (American Psychiatric Association, 2009; Bakker, van Dyck, Spinhoven, & van Balkom,1999).

Many side effects of TCAs such as dry mouth, dry nose, blurry vision, constipation, urinary retention, memory impairment, and increased body temperature are likely related to their effect on acetylcholine receptors (Physician's Desk Reference, 2007). Other side effects may include drowsiness, anxiety, anhedonia, confusion, restlessness, dizziness, changes in appetite and weight, sweating, sexual dysfunction, weakness, nausea and vomiting, hypotension, tachycardia, and rarely, irregular heart rhythms. Unfortunately, side effects are relatively common especially during the first few weeks of treatment (Pollack, 2006). Although dosage of the medication can be titrated up to a therapeutic level in an attempt to stem these effects, this also has the effect of delaying treatment benefits. Mavissakalian and Perel (1997) reported that due to these bothersome side effects they found a higher dropout rate when higher doses of TCAs were prescribed in their study. However, such abrupt cessation of TCAs is generally discouraged because it can result in discontinuation syndrome symptoms such as anxiety, insomnia, headache, nausea, malaise, or motor disturbance (American Psychiatric Association, 2009; Physician's Desk Reference, 2007).

Numerous large clinical trials have indicated that SSRIs including sertraline (Zoloft), fluoxetine (Prozac), paroxetine (Paxil), fluvoxamine (Luvox), citalopram

(Celexa), and escitalopram (Lexapro) are all effective for the acute and long-term management of panic disorder (Hoehn-Saric, McLeod, & Hipsley, 1993; Leinonen et al., 2000; Lepola et al., 1998; Michelson et al., 2001; Michelson et al., 1999; Pohl, Wolkow, & Clary, 1998; Pollack et al., 2007; Sheikh, Londborg, Clary, & Fayyad 2000; Stahl, Gergel, & Li, 2003). Although an early meta-analysis by Boyer (1995) suggested that improvement with SSRIs treatment for panic disorder was significantly greater than for alprazolam or imipramine, a subsequent meta-analysis incorporating a larger number of studies showed comparable efficacy for the SSRIs and TCAs (Otto, Tuby, Gould, McLean, & Pollack, 2001). However, this later study showed mixed results regarding the question of whether dropout rates were lower in studies in which patients received SSRIs versus TCAs. Taken together, this research suggests that SSRIs are likely at least as effective as TCAs and benzodiazepines in the treatment of panic disorder with possibly fewer associated side effects.

Venlafaxine extended release (Effexor) is the only SNRI that has met the criteria by the American Psychiatric Association (2009) for recommendation as a treatment of panic disorder symptoms. Numerous studies have shown it to be as effective as other antidepressant medications in treating panic disorder Symptoms. For example, Bradwejn, Ahokas, Stein, Salinas, Emilien, and Whitaker (2005) conducted a large multicenter study of individuals with panic disorder that demonstrated that a 10-week course of venlafaxine ER (extended release) resulted in a significantly greater reduction in frequency of panic attacks than placebo.

Another large multicenter trial included a comparison of the effectiveness of venlafaxine ER, paroxetine (Paxil), and placebo for the treatment of panic disorder

without co-occurring depression (Pollack, Lepola, Koponen, Simon, Worthington, Emilien, Tzanis, Salinas, Whitaker, & Gao, 2007). The results of this study showed both paroxetine and venlafaxine were significantly more effective than placebo in reducing the number of panic attacks experienced by participants. Additionally, there were no significant differences between the venlafaxine ER or paroxetine treatment groups in terms of efficacy or reported side effects with the exception of somewhat less sedation reported by the venlafaxine ER than paroxetine treatment group.

Although venlafaxine is the only Serotonin Norepinephrine class medication currently recommended for the treatment of panic disorder, duloxetine (Cymbalta) is similar to venlafaxine in its chemical mechanism of action and is currently being investigated as another potential anxiolytic (American Psychiatric Association, 2009). It has shown comparable results in preliminary research for its use in the treatment of panic disorder (Serretti, Chiesa, Calati, Perna, Bellodi, & De Ronchi, 2010). However, further research is needed to replicate these preliminary findings before it can be deemed a safe and effective pharmacological treatment option.

The use of serotonergic antidepressants can result in several bothersome side effects (Physician's Desk Reference, 2007; Pollack, 2006). These symptoms may include, but are not limited to, dizziness, headache, apathy, sexual dysfunction, weight gain, nausea, as well as disturbances in appetite and sleep. Side effects are most commonly reported in the first few weeks of treatment, and some individuals also report an exacerbation in jitteriness and anxiety during that period. To counteract these concerns, dosage is usually started at a lower rate and then titrated up to the therapeutic level. However, these medications are slow acting to begin with, usually taking between

6 to 8 weeks to reach effectiveness, and this process may prolong the time it takes for individuals to start feeling some relief from their panic symptoms. Additionally, if troublesome side effects or impatience lead to premature termination of antidepressant treatments, a discontinuation syndrome and return of the panic attack may result (American Psychiatric Association, 2009). For example, studies show that abrupt discontinuation of antidepressants can result in withdrawal symptoms such as incoordination, headache, irritability, and nausea from participants (Shelton, 2006; Schatzberg, Blier, Delgado, Fava, Haddad, & Shelton, 2006). Additionally, research suggests that the use of antidepressants may lead to an increased risk for suicide and self harm is another important factor to consider in recommending a treatment for individuals with panic disorder (Fergusson et al., 2005; Gunnell, Saperia, & Ashby, 2005).

Another concern regarding the use of antidepressants for the treatment of panic disorder is that few data suggest an optimum length of treatment following reduction in symptoms (American Psychiatric Association, 2009). Studies using varying antidepressant agents have shown that relapse is more common after discontinuation of the medication when comparing continued medication treatment groups and those tapered with placebo. Thus, it appears that antidepressants are effective for the management of panic disorder symptoms only as long as the medication is continued.

Benzodiazepines. Alprazolam (Xanax) has been FDA approved for the treatment of panic disorder, and it has been studied more extensively than any other benzodiazepine. In numerous studies alprazolam has been shown to be superior to placebo in reducing frequency and severity of panic attacks (Dunner, Ishiki, Avery, Wilson, & Hyde, 1986; Chouinard, Annable, Fontaine, & Solyom, 1982; Tesar et al.,

1991). Specifically, the studies indicated that about 55% to 75% of participants treated with alprazolam reported a reduction in panic levels versus about 15% to 50% for the placebo group participants. In another study alprazolam demonstrated comparable results in alleviating panic symptoms with lower treatment dropout rates when compared to the TCA imipramine (Tofranil) (Charney et al., 1986). Additionally, numerous studies supporting the short-term efficacy of other benzodiazepines such as clonazepam (Klonopin), diazepam (Valium), and lorazepam (Ativan) have also been published (Dunner, Ishiki, Avery, Wilson, & Hyde,1986; Charney, & Woods, 1989; Tesar et al. 1991; Schweizer, Pohl, Balon, Fox, Rickels, & Yeragani, 1990). These studies generally showed a consensus that various benzodiazepine agents demonstrated comparable levels of symptom reduction rates to those attained by participants treated with alprazolam or imipramine.

Although consideration of comorbidities is an important step in selecting a pharmacological agent for the treatment of clients with panic disorder, most of the above studies excluded participants with a history of diagnosed mood disorders. Benzodiazepines appear to be ineffective for treatment of mood disorders and may exacerbate symptoms of depression (Pollack, 2006). However, despite recommendations from clinical practice guidelines to use antidepressants as first-line pharmacotherapy for panic disorder, data from the prospective longitudinal Harvard/Brown Anxiety Research Project showed that most patients treated for panic disorder were still receiving benzodiazepines (Bruce, Vasile, & Goisman, 2003).

Commonly reported side effects of benzodiazepines include sedation, fatigue, ataxia, slurred speech, memory impairment, and weakness (Physician's Desk Reference,

2007). Research has also suggested that individuals treated with benzodiazepines may be at risks for increased incidence of motor vehicle accidents and a heightened risk of falls and fractures for geriatric clients (French, et al., 2005; Kelly, Darke, & Ross, 2004; Landi, et al., 2005). Additionally, the administration of benzodiazepines for more than 2 to 3 weeks results in physiologic dependence, and withdrawal symptoms such as insomnia, gastrointestinal problems, tremors, agitation, fearfulness, and muscle spasms often occur in the case of discontinuation (Physician's Desk Reference, 2007; Pollack, 2006). Moreover, abrupt cessation of benzodiazepines can result in dangerous side effects including depression, suicidal behavior, psychosis, seizures, and delirium tremens; therefore, a physician managed gradual taper is recommended. Due to issues related to withdrawal symptoms and rebound panic symptoms individuals often experience difficulty discontinuing benzodiazepines (Klein, Colin, Stolk, & Lenox, 1994; Roy-Byrne, et al., 2003). Specifically, a study by Fava and colleagues (1995) found that about 30% of participants that received benzodiazepines as part of their treatment regimen were unable to completely taper off of benzodiazepines use during the treatment period.

Taken together, this literature review yields important information about the effectiveness and general recommendations regarding pharmacological treatment of panic disorder. Although antidepressants and benzodiazepines appear to be effective in reducing panic symptoms, both of these classes of medication are also associated with specific side effects, safety concerns, and limitations in post treatment response durability. Specifically, whereas antidepressants offer pharmacological coverage for symptoms associated with mood disorder comorbidities without concerns about dependency or liability for abuse, benzodiazepines appear to be ineffective for treatment

of comorbid mood disorders and may actually exacerbate symptoms of depression (American Psychiatric Association, 2009; Pollack, 2006). On the other hand, antidepressants appear to take longer to achieve symptom reduction, have less tolerable preliminary side effect profiles, and they may cause an initial exacerbation in anxiety levels. Moreover, cessation of either benzodiazepines or antidepressants has been shown to result in the development of a discontinuation syndrome that could further complicate treatment regimens that incorporate the use of these anxiolytic agents. Therefore, it is recommended that all of these factors be considered when formulating an individualized treatment plan for clients with panic disorder. Interestingly, despite current clinical practice guideline recommendations that indicate the use antidepressants as first-line pharmacotherapy for panic disorder, recent longitudinal research revealed that most patients treated for panic disorder were still receiving benzodiazepines (Bruce, Vasile, & Goisman, 2003).

Behavioral health interventions. Most research that has been conducted on the implementation of behavioral health interventions for the treatment of panic disorder has focused specifically on Cognitive-Behavioral Therapy (CBT) (American Psychiatric Association, 2009). Although there is a relative dearth of research with respect to alternative behavioral health interventions for the treatment of panic disorder, some other therapeutic approaches that have been investigated include Panic Focused Psychodynamic Psychotherapy (PFPP) and Emotion-Focused Psychotherapy for Panic Disorder (EFPPD). The state of research reviewed on PFPP and EFPPD has been described as preliminary at best; however, a brief examination of the literature regarding

the practices and outcomes these two modalities of therapy can provide an informative point of comparison for considering the use of CBT techniques.

Cognitive-Behavioral Therapy. In terms of CBT, panic disorder is conceptualized as a maladaptive pattern of thoughts and behaviors that initiate, sustain, or exacerbate panic symptoms (Sokol, Beck, Greenberg, Wright, & Berchick, 1989). Thus, the goal is to reduce the fear and avoidance of external and internal cues that have become associated with panic attacks. This is typically accomplished through a combination of cognitive restructuring and exposure techniques. Cognitive restructuring usually focuses on correcting tendencies to catastrophize situations or sensations. Additionally, behavioral techniques such as interoceptive exposure or inducing of somatic sensations associated with panic attacks, as well as situational exteroceptive exposure are used to desensitize clients to panic symptoms. The standard recommended CBT treatment regimen consists of 12 weekly sessions; however, the American Psychiatric Association (2009) notes that time saving alternative intervention methods such as telephone or computer assisted therapy are possible avenues that merit further research.

Numerous studies have demonstrated the efficacy of using CBT for the treatment of panic disorder (Barlow, Gorman, Shear, & Woods, 2000; Barlow, Craske, Cerney, & Klosko, 1989; Clark, Salkovskis, Hackmann, Middleton, Anastasiades, & Gelder, 1994; Craske, Brown & Barlow, 1991; Craske, DeCola, Sachs, & Pontillo, 2003; Craske, Lang, Aikins, & Mystkowski, 2005; Telch, Lucas, Schmidt, Hanna, LaNae, & Lucas 1993). Additionally, several meta-analyses of clinical trials have also supported the use of CBT for panic disorder (Gould, Otto, & Pollack, 1995; Butler, Chapman, Forman, & Beck,

2006; Mitte, 2005). Barlow et al. (2000) conducted the largest of these trials which included 312 individuals who had been diagnosed with panic disorder. They compared treatment groups that received CBT, imipramine (Tofranil), CBT and imipramine, CBT and placebo, and placebo. They found that CBT was superior to placebo and comparable to imipramine alone and CBT with imipramine combination intervention in reducing panic symptoms at the end of the acute phase of treatment. After a 6-month maintenance phase of continued medication and monthly CBT booster sessions, CBT alone was again found to be superior to placebo and equivalent to imipramine. The combination of CBT and imipramine treatment was found to be significantly superior to all other treatment conditions at the end of this phase of the study. However, at the end of a 6-month follow-up phase after termination of all treatments the CBT and CBT plus placebo were the only two treatment conditions that remained superior to placebo. Thus, this study demonstrated the short and long-term efficacy of CBT for the treatment of panic disorder, and it suggests that CBT without adjunctive pharmacological treatment is most likely to produce durable reduction in panic symptoms. Additionally, this finding of sustained beneficial effects for individuals who showed reduced panic symptoms as a result of treatment with CBT has been replicated in other studies (Brown & Barlow, 1995; Craske, Brown, & Barlow, 1991; Fava, Zielezny, Savron, Grandi, 1995).

Psychodynamic Psychotherapy. Aside from the numerous studies concerning the use of CBT techniques, there has been relatively little research conducted regarding the effectiveness of other behavioral health interventions (American Psychiatric Association, 2009). One exception is a study that appears to support the effectiveness of PFPP for the treatment of panic disorder (Milrod et al., 2007). PFPP is a brief panic focused

psychodynamic intervention model that consists of 24 bi-weekly sessions. During the first phase of PFPP, the client and therapist work to uncover the unconscious meanings behind panic symptoms in order to achieve a reduction in panic attacks and agoraphobia. The second phase focuses on deepening the understanding of core unconscious conflicts and altering these beliefs through techniques such as analysis of transference. Finally, in the third phase the client's reaction to termination issues allows them to re-experience conflicts related to separation and anger. Although a resurgence of panic symptoms may appear during this phase of treatment, articulating underlying feelings with the therapist is theorized to help clients identify new abilities to manage these emotions and promote autonomy. In a randomized controlled trial Milrod et al. (2007) compared the effectiveness of PFPP and a manualized Behavioral Therapy program consisting of applied relaxation with exposure training for the treatment of panic disorder. These authors found that 73% of participants that were treated with the PFPP techniques reported a significant reduction in panic symptoms versus 39% of those that were in the applied relaxation treatment group. Although this is only a single study, the author proposed that these preliminary promising findings suggest that further research should explore whether PFPP could be a efficacious alternative to CBT in the treatment of panic disorder.

Emotion-Focused Psychotherapy for Panic Disorder. Another possible therapeutic treatment modality that has been investigated is EFPPD (Shear et al, 2001). EFPPD was described as a brief treatment consisting of empathic listening and supportive strategies that aim to help clients identify and manage painful emotions and troubling life situations. These authors compared the outcomes for participants who participated in

EFPPD to treatment groups who received CBT, imipramine (Tofranil) prescription, or placebo. The response rate for imipramine and CBT treatment groups, 93% and 82% respectively, showed comparable reductions in reports of panic symptoms. Additionally, they found that the response rate for participants who received EFPPD was more similar to that of the placebo treatment group, at 52% and 63%. One interesting caveat to this study was that despite the demonstrated superior effectiveness of CBT and imipramine in treating panic symptoms, treatment retention rates were highest for the EFPPD group. Specifically, the acute and maintenance treatment was completed by 60% of participant receiving EFPPD, 47% of those receiving CBT, 38% of those receiving placebo, and 13% receiving imipramine. It is not possible to determine if the differences in drop-out rates were due to drug side-effects, dissatisfaction with treatment results, or other factors related to treatment tolerability. However, the authors of this study suggested that the lower attrition rate in conjunction with poorer response to treatment may actually be related to avoidant and separation-anxiety tendencies commonly encountered when treating individuals with panic disorder. They concluded that practitioners should closely monitor effectiveness of the treatments they offer, and consider using CBT techniques in order to safeguard against colluding with possible avoidant behavior.

Combination pharmacological and therapy intervention. As detailed above both pharmacological and behavioral health interventions have demonstrated efficacy in reducing the symptoms associated with panic disorder. It is not surprising then, that many mental health professionals advocate a treatment approach that combines the use of pharmacological and therapy interventions (Pollack, 2006). Specifically, many mental health professionals and clients have sought to couple the fast relief of panic symptoms

brought on by benzodiazepines with the sustainable treatment gains that have become associated with CBT. *However, research suggests that combining these treatment modalities does not necessarily result in a beneficial additive effect*. Instead, findings indicate that CBT for the treatment of panic disorder with or without pharmacotherapy yields similar results (Barlow, Gorman, Shear, & Woods, 2000; Schmidt, & Smith, 2005; Westra, Stewart, and Conrad, 2002). Furthermore, there is also research that suggests that the concurrent use of benzodiazepines with CBT actually results in fewer long-term treatment gains (Brown & Barlow, 1995; Fava, et al., 1995; Westra, et al., 2004). Westra and colleagues' study found that participants from the combined benzodiazepine and CBT treatment group retained about 20% less of the presented psychoeducational material than their nonmedicated counterparts. Further, they found that chronicity and frequency of use were not related to memory, but that greater time from peak blood-drug concentration during the encoding task was associated with better recall. This evidence is counter to beliefs that memory deficits associated with benzodiazepine use fade as physiological tolerance is established. Additionally, Otto, Smits, and Reese (2006) asserted that a combination antidepressant and CBT approaches for individuals with panic disorder does not appear to have significant benefits over CBT alone, and CBT shows superior long-term effectiveness when compared to antidepressant medication and combined treatment groups. In conclusion, it appears that combination therapy may significantly increase the cost, risks, and resources associated with treating pure panic disorders without substantial evidence that of superior acute or maintenance efficacy and limit the long-term gains.

Organizational Change

According to Rogers (2003) an organization is "a stable system of individuals who work together to achieve common goals through a hierarchy of ranks and a division of labor" (p. 433). Predetermined goals, prescribed roles, rules, regulations, interactional patterns, and configuration of authority are collectively known as the organizational structure. This structure provides stability to the organization by encouraging individual members to behave in a predictable and acceptable manner. However, the ability to cope with innovation or change such as restructuring, outsourcing, or incorporating the use of new techniques or technology, must also be a part of any viable organizational model (Prochaska, Levesque, Prochaska, Dewart, & Wing, 2001). Since one of the aims of this dissertation is to function as a translational research piece that promotes agency change, a brief review of literature on diffusion of innovations and organizational change will be helpful in understanding the methods and goals of this project.

Transtheoretical Model of Change. The Transtheoretical Model of Change has its roots in research that addresses evaluating and affecting change readiness for individuals with addictive behavior problems, but it has more recently evolved into a popular integrative approach used to describe and promote individual and organizational change (Prochaska & DiClemente, 1983; Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997). Its most recent version integrates a variety of existing theoretical concepts including stage of change, decisional balance, self-efficacy, and processes of change (Bandura, 1977; Janis & Mann, 1977; Prochaska & DiClemente, 1983; Prochaska & Velicer,1997). The first core construct, Prochaska and Diclemente's (1983) stage of change model, theorizes that people move through five distinct stages

when they modify behaviors. These stages include: (a) The Precontemplation Stage, which is characterized by the individual not intending to proceed with an action for the foreseeable future (at least 6 months), (b) The Contemplation Stage that is described as the period when people have an intention to take action within the next 6 months, (c) The Preparation Stage, which is characterized by the intent to take action in the near future (next 30 days), (d) The Action Stage, which is defined as the first six months of change implementation, and (e) The Maintenance Stage which involves the ongoing process of sustaining changes and preventing relapse. Research regarding a range of behaviors has shown that the majority of individuals, typically about 80%, are in the precomtemplative and contemplative stages (Laforge, Velicer, Richmond, & Owen, 1999; Velicer, et al., 1995). Forced implementation of change during the contemplative and precontemplative stages may lead to poor outcomes. Specifically, when organizational initiatives are not stage-matched, they can create reactions such as resistance and defensiveness from employees that are not ready for that level of change. This common scenario has been cited as an important contributing factor in explaining why most organizational change initiatives fail (Levesque, Prochaska, & Prochaska, 1999).

The concept of a decisional balance, which compares the pros and cons of change, was originally proposed by Janis and Mann (1977). According to Prochaska and Diclemente (1983), the construct of decisional balance is likely an underlying factor that affects the level of intention that is classified by stage of change. It is theorized that higher stages of change are characterized by a greater pro to con ratio; thus, Transtheoretical Model of Change programs seek to increase the pros of changing while decreasing the cons. Additionally, another factor that appears to correlate with stage of

change is the concept of self-efficacy. Bandura (1977) described self-efficacy as the degree to which people believed they had the capacity to attain a desired goal. Self-efficacy can influence an individual's readiness for change by affecting their levels of motivation and persistence (Levesque, Prochaska, & Prochaska, 1999). Moreover, higher levels of self-efficacy appear to promote durability of change and safeguard against relapse.

Prochaska and Diclemente (1984) identified 10 fundamental patterns of activity that promote change readiness and action known as processes of change. These processes of change include: consciousness raising, dramatic relief, self-reevaluation, self-liberation, environmental reevaluation, reinforcement management, counter-conditioning, helping relationships, stimulus control, and social liberation. Research suggests that people in earlier stages of change, such as precontemplative and contemplative levels, rely more on consciousness raising, dramatic relief, and environmental reevaluation processes (Prochaska, Diclemente, & Norcross, 1992). Individuals in the preparation stage are more influenced by self-evaluation and self-liberation techniques, and persons who reached the action and maintenance phases relied more heavily on reinforcement management, helping relationships, counter-conditioning, and stimulus control processes in order to complete and sustain change. Although the activities described above are part of the natural process that individuals may go through when considering change, these processes may also be used by change agents in order to encourage or elicit behaviors that promote a desired organizational change. Levesque, Prochaska, and Prochaska (1999) proposed that interventions should be individualized by matching and the organizational members' readiness to change with the indicated process

of change. For example, if the organization has determined that the majority of its members are in the contemplative and precontemplative stages of readiness for change, the organization might utilize consciousness raising techniques such as sending out newsletters or memos that can increase the awareness of the proposed change and its benefits. By utilizing this type of stage-matched intervention, the researchers claimed that the organization can reduce resistance, stress, and time needed to implement a desired change by superficially accelerating the natural movement toward the action phase. Conversely, they suggest that using a change process that is too advanced for the individual members' readiness is likely to result in increased resistance and resentment. Thus, appropriately matching the stage and process of change is important in order to optimize the conditions for change and maximize the chances of implementing a successful and durable change within organizations.

Diffusion of Innovation Model. Innovations are ideas that are perceived as new and different, and diffusion is the process by which innovative ideas spread through a social system over time, via various communication channels (Rogers, 2004). The Diffusion of Innovation Model was developed in the 1950s in response to agricultural research regarding the dissemination of knowledge and usage of new heartier and high yield hybrid corn seeds in Iowa (Rogers, 2004; Rogers, 2003; Ryan & Gross, 1943). The Iowa hybrid seed corn study showed that earlier adopters of the innovative farming techniques shared some important characteristics. These farmers were generally found to have larger farms, higher incomes, and more education. Additionally, early adopters made more frequent trips to Des Moines, and they were more likely to have a neighbor who was using the hybrid seed method. The findings from this and subsequent

agricultural research studies revealed an information-exchange process that was central to the diffusion of innovations. Specifically, it was theorized that early adopting farmers had more opportunities for exposure to communication that could increase awareness and knowledge of potential benefits for using the new corn planting method.

Rogers (2004; 2003) continued the work related to studying agricultural diffusion for his dissertation in 1957. However, as he encountered similarities in literature related to the process of implementing change in other types of systems such as schools, he became convinced that he had discovered a more generalizable model of change. In 1962, he introduced the idea of a general diffusion model in his book, *Diffusion of Innovations*. To date, five subsequent editions of the book have been published, and research based on this model has been produced by marketing scholars, public health researchers, political scientists, and anthropologists.

According to Rogers (2003), decisions about whether or not an individual or organization will adopt a potential innovative practice is a process that occurs over time and can be understood as a series of stages. The first stage, knowledge, occurs when the decision making unit gains awareness of an innovation's existence and an understanding of how it functions. This may be preceded by the identification of a specific need that the innovation addresses, or exposure to the innovation may promote a desire to adopt it such as is common with consumer goods. During the next stage, persuasion, a favorable or unfavorable impression regarding the innovation is formed. This stage is characterized by active engagement and knowledge seeking in order to evaluate the innovation's potential advantage, compatibility, and complexity for the potential adopter. The third stage, decision, is characterized by engagement in activities that lead to a choice to adopt

or reject the innovation. For example, the potential adopter may try the innovation on a partial or trial basis in order to facilitate this step in the process. Implementation, the fourth stage, occurs when the system puts a new idea into action. This is typically a tenuous part in the process since implementers generally continue to have apprehension about potential consequences at this stage. Change agents may help to facilitate the implementation of innovations by offering information and technical assistance. The final stage, confirmation, takes place when the decision making unit seeks reinforcement of the innovation-decision. If exposed to conflicting messages about the innovation, the decision making unit may reverse the previous innovation-decision. Additionally, it is important to note that each stage is a potential point for rejection or re-invention of the proposed innovation. Re-invention, or modification of the innovation by adopters, is not necessarily a bad thing. It can actually lead to beneficial customization and a greater sense of personal investment that may help to encourage a stakeholder mentality among individual group members.

Although the Diffusion of Innovations Model was originally designed as a generalization about the spread of new ideas among individuals, it has also been adapted to serve as a template for innovating in organizations (Rogers, 2004). As previously mentioned, an organization is a system of individuals who work together via prescribed roles, rules, and division of labor in order to achieve predetermined common goals (Roger, 2003). Depending on the structure of the organization and the nature of the proposed new idea, innovation decisions fall into three categories: optional innovation-decisions, collective innovation-decisions, and authority innovation-decisions. An optional innovation-decision can be made by individuals within an organization

regardless of decisions made by other members. A collective innovation-decision is made by a majority of a system, but compliance is mandatory for all members once the innovation is adopted. An authority innovation-decision is made by relatively few high powered organization members, but it is mandatory for all organization members.

The innovation process for organizations also consists of five stages: agenda-setting, matching, redefining/restructuring, clarifying, and routinizing (Rogers, 2003). The first stage, agenda-setting, is a constant process of defining and prioritizing problems that need to be addressed within an organization. Matching, the second stage, happens when an innovation is identified that will be used to address the problem. The next stage, redefining/restructuring, occurs when the innovative idea and the organization's structure are both modified to ensure that there is a good fit between innovation and organization. The fourth stage, clarifying, allows members of an organization to construct their own meaning and understanding of the innovation through widespread implementation. In the final stage, routinizing, the innovation loses its separate identity and becomes an accepted regular function of the organization.

According to Rogers (2003), the innovation process for organizations is much more complex than that for individuals. This is in part due to the sheer number of individuals within the larger system who may have an active role in the innovation-decision and implementation processes. Individuals who have earned and maintained a high degree of technical competence, social accessibility, and conformity to the system's norms are more likely to be opinion leaders. These persons are frequently able to influence the attitudes and behaviors of others by acting as social models or using well developed communication skills. An individual that represents a change agency external

to the organization is known as a change agent. Change agents provide an important communication link between a resource system and a client system. Examples of change agents are teachers, public health workers, agricultural extension agents, salespeople, and development workers. Change agents seek to influence the client's innovation-decisions toward the change agency's desired outcome, and they often attempt to recruit opinion leaders to further their cause. When a charismatic person within the organization endeavors to promote the adoption of new ideas they are referred to as an innovation champion. Innovation champions contribute the likelihood of success of an innovation within the organizational setting by addressing indifference and resistance among their peers.

Organizational change in community mental health settings. There has been little research published specifically regarding the implementation of change in community mental health settings. However, Schulz and Greenberg (1995) proposed one theory and framework for evaluating the implementation of change related to their innovative project aimed at the improvement of the quality of life for persons with severe and persistent mental illnesses. They posited that environmental, organizational, and change agent characteristics are all forces that interact and influence change to varying extents. Additionally, they suggested that these forces also interact with the innovation and change itself in a multidirectional manner.

The environmental factors that are likely to impact the change process are the culture, stability, and structure of the environment (Schulz & Greenberg, 1995). The broader culture in which a community mental health clinic is embedded influences the diagnosis, care, and acceptance of mental illness for the client population that the agency

serves. The relative structure and stability within which an agency operates will also likely affect the likelihood of promoting or resisting change. For example, a community that values formality and stability is more likely to resist change than one with informal structure that is used to implementing changes.

Organizational aspects proposed to influence implementation of change are culture, stability, structure, resources, and interest groups (Schulz & Greenberg, 1995). The organizational culture, or the shared values and mission of an agency, is likely to impact the way that staff regard proposed changes to client care. Additionally, the stability and structure of the organization can also impede or promote innovation. The availability of agency resources such as travel and time for further training could be another factor that may influence the adoption or rejection of a proposed change within the community mental health setting. Finally, Schulz and Greenberg (1995) also suggested that key interest groups such as unions or members of different professions were likely to have different perceptions of the change and its potential benefits and consequences. Thus, these groups may either advocate for or resist change based on their unique perspectives.

Schulz and Greenberg (1995) also proposed that change agents' personal characteristics, influence and resources, strategies used, and manner of assisting the organization in implementing change are important in effecting successful change. These authors asserted that personal characteristics like vision for the agency, motivation to affect change, and the ability to influence others are essential ingredients in promoting adoption of an innovation. Another key consideration is the change agent's ability to gain control over resources needed for the implementation of the proposed innovation;

therefore, support from the executive levels of an organization were found to be highly beneficial. Additionally, it is important that the change agent has an implementation strategy that incorporated knowledge about the agency's and the community's cultural factors to decrease the chances of resistance and rejection of the change. Some change agents may also influence the likelihood of successful adoption of innovations by assisting those in the organization who are responsible for directly implement those changes.

The above outlined theories of change and innovation have significant overlap; therefore, for the purposes of this dissertation project, they will be used in an integrative manner. For example, Rogers (2003) asserted that his five stages of the innovation-decision process can be thought to correspond directly to five phases in Prochaska and Diclemente's (1983) stages of change model. By utilizing information from both of these models, individualized stage-matched interventions can be identified and utilized in this translation research. Additionally, Schulz and Greenberg's (1995) framework will be used to add in considerations that are specific to the organizational structure and purpose of community mental health agencies.

Overview

Although it is evident from the preceding literature review that there has been a considerable amount of research devoted to the exploration of effective treatments for panic disorders, it is also notable that there is a dearth of translational research regarding this topic. Most research has been conducted in highly controlled settings with rigorously screened client populations; however, conditions are typically much more complex in real life settings such as community mental health agencies. Furthermore, longitudinal

studies have shown that despite recommendations to the contrary, benzodiazepines continue to be prescribed more often than other pharmacological or behavioral treatment methods. Thus, there is a clear need for further translational research that takes into consideration factors related to implementing innovative best practice recommendations for treating panic disorder in organizations.

This dissertation also explored the diffusion of innovations regarding the treatment of panic disorder in a community mental health agency. Specifically, this study captured a profile of current knowledge, skills, attitudes, and practices within a large metropolitan community mental health agency, and examined potential options and dilemmas involved in implementing innovative or best practice guidelines for the treatment of panic disorder. The project utilized methods including database analysis and record review to formulate an accurate profile of the agency's current treatment practices. Additionally, a survey of key personnel that influence client care was used to generate information that provided information regarding the organization's view of the potential need for innovative panic disorder treatment practices and possible obstacles or impediments for implementing changes in treatment standards. The results of this investigation are discussed in light of organizational change literature and what current results imply regarding successful treatment strategies for panic disorder in a community mental health setting. The findings from this study also were used to produce a report for the participating agency that included a detailed summary of their current panic disorder treatment practices and a clear profile of knowledge, skills, and attitudes regarding the management of panic disorders held by different key agency sub-groups. These findings also are compared to the existing literature base on organizational change in community

mental health systems to generate possible implications for future action and recommendations.

Methods

In order to capture a profile of the knowledge, skills, attitudes, and practices within a large metropolitan community mental health agency, and examine potential options and dilemmas involved in implementing innovative or best practice guidelines for the treatment of panic disorder, this project utilized two types of information gathering techniques. The first method included a survey of client care providers at the participating agency, and the second involved a database analysis of client demographic and outcome figures. The methods and participants of these information gathering strategies are explained below.

Phase One Method: Panic Disorder Treatment Survey

First, an online survey (Appendix A) was designed and administered to key personnel that influence client care. The survey was used to provide an overview of the knowledge, skills, and attitudes of treatment providers at the participating agency. Additionally, it generated information regarding the organization's view of the potential need for innovative panic disorder treatment practices and possible obstacles or impediments for implementing changes in treatment standards.

Participants. In total, 46 client care personnel and administrators completed the survey. The total number of administration and client care employees available to take the survey was 170; thus, a response rate of 27% was achieved. The majority of participants (78%) were female (36 females, eight males, and two undisclosed). Similarly, the agency reported that majority of the employees (85%) at their agency that

were eligible to complete the survey were female (145 females and 25 males). Age was reported via response to a multiple choice question with 10 year increments on the survey, and participants' reported ages ranged from 20s to 60s. Slightly greater than a third of the respondents indicated their age was in the 31-40 years old age range (n=16). However, the rest of the participants were relatively evenly distributed among the 21-30 (n=9), 41-50 (n=5), 51-60 (n=11), and 61-70 (n=5) age ranges. It appears that the ages of survey participants was a good representation of client care population at the participating agency which was also relatively evenly distributed among the 21-30 (n=39), 31-40 (n=47), 41-50 (n=38), 51-60 (n=30), and 61-70 (n=16) year age ranges.

Approximately 61% (n=28) of the respondents indicated their highest completed educational degree as a master's degree compared to 55% (n=94) of the total client care population that the participating agency. The remaining participants indicated educational attainment levels of associates, bachelors, and doctorate degrees, and each of these degreed groups represented 13% (n=6) of the total participants surveyed. Likewise, the agency reported a much lower number of employees with highest educational attainment levels of associates (n=30), bachelors (n=32), and doctorate (n=14) degrees than master's degree employees (n=94). The sample consisted of respondents from disciplines including counseling (n=19), social work (n=13), nursing (n=7), psychology (n=6), and medicine (n=4). Two participants indicated "other" as their professional discipline (see Figure 1). This number is identical to that of respondents indicating that their practice area was administration without client care; therefore, these respondents are likely professionals from disciplines related to business operations. The agency also provided

similar data on the number of staff by discipline for counseling (n=80), social work (n=52), nursing (n=10), psychology (n=9), psychiatry (n=10), and administration (n=9).

Overall, the demographic data provided by the survey respondents indicated that a representative sample of the key personnel that influence client care at the participating agency had been reached. Thus, data collected from survey questions regarding knowledge, attitudes, skills, and practice should be useful for in creating an overall agency profile, and also for examining similarities and differences between subgroups of client care personnel such as by discipline, practice area, sex, or educational level of agency employee.

Instrument. The online survey was designed and administered utilizing the SurveyMonkey web-service. The survey was a 50-item instrument that included questions with yes/no, multiple choice, and 4 point Likert type answers. The instrument included questions regarding demographic information such as age, sex, gender, educational level, and clinical practice area. Additionally, the survey asked participants to indicate their level of training and clinical experience with treating individuals with panic disorder. Additionally, client care personnel were asked to provide their opinions about the level of safety and effectiveness for different types and combinations of therapy and pharmacological interventions for panic disorder. Specifically, the therapy treatment modalities rated included behavioral exposure, cognitive behavioral therapy, panic focused psychodynamic psychotherapy, and emotion-focus psychotherapy for panic disorder. The psychopharmacological interventions considered were antidepressants (Prozac, Lexapro, Effexor, etc.) and benzodiazepines (Xanax, Ativan, Klonopin, etc.).

The survey instrument also included a section that explored knowledge and attitudes regarding the nature, course, prognosis, and treatment considerations for individuals with panic disorder. In this section, the participants were asked to rate their own level of knowledge and training related to treating clients with panic disorder as well as agency practices of referral and treatment. The respondents were also asked to indicate their agreement with statements concerning likelihood of client motivation, compliance, and relapse in response to different treatments. Moreover, these items explored attitudes and knowledge regarding potential treatment issues related to tolerance for psychotherapeutic intervention and drug dependence or abuse.

Procedure. The participating agency asked its client care employees to complete the online survey. Administration and department managers utilized a script that was designed by the researcher and agency officials (and approved by the agency's quality department and the researcher's university) to explain the survey portion of this research through emails and department meetings. This script can be found in Appendix B. The web address and hyperlink to the survey was provided in the email sent out to all eligible client care employees. The agency personnel were allowed to complete the survey over a 1- month time span at their convenience on any available computer. The agency's administrators and managers decided to encourage all of their employees to participate in the survey so that they could gain information about panic disorder treatment opinions and practices among their employees. Thus, an incentive was offered in the way of a drawing for one of four $50.00 Amazon.com gift cards. The survey included an item allowing employees to voluntarily consent or refuse the use of their survey answers for this research and potential publication. The survey responses were then filtered by the

answer to the consent item, and only those respondents that consented to have their answers used for research were used for this dissertation project. Thus, the 46 participants of this research project refers to the individuals that agreed to allow their answers to be used for research and publication purposes from the total 52 survey respondents. As an incentive for participation in this research project, individuals were given the ability to follow a hyperlink that was embedded in the online survey in order to register for a chance at one of four $50 gift certificates. These certificates were awarded to individuals through a random drawing.

Data Analysis. After the responses were collected and filtered by consent to participate in this research project, the resulting data were downloaded and analyzed using the NCSS, 2007 Edition statistical software. Additionally, charts and tables were constructed utilizing Microsoft Excel tools. Both one-way analysis of variance (ANOVA) and goodness-of-fit (chi-squared) statistical analysis were used to summarize findings and describe the relationships between demographic variables and knowledge, attitude, skills, and practices.

Phase Two Method: Database Review

This project also utilized a database analysis of client diagnostic, treatment modalities and duration, as well as pre and post functional ability scores to formulate an accurate profile of the agency's current treatment practices and outcomes. A formal plan (Appendix C) for collecting and aggregating this information from client electronic charting records was devised with a representative from the agency's quality department and approved by the participating agency and the researcher's university for this

dissertation project. The resulting summary data were used to gain a better understanding of current panic disorder treatment practices.

Participants. The total number of active and terminated cases reviewed for possible inclusion in this database summary was 7,828 (active n=3,884; terminated n=3,944). The time period sampled included 3 years prior to the current study. In order to decrease the number of diagnostic and treatment variables considered for this project, only client records with panic disorder only (with or without agoraphobia) were included in the database review for this project. Of those potential cases, 248 records showed a diagnosis of panic disorder and 139 records indicated a diagnosis of only panic disorder. It is the practice standard of the participating agency not to provide medication services to clients who are not concurrently enrolled in therapy. Therefore, the treatment conditions that were identified were therapy only and therapy with benzodiazepine medication services. Of the panic disorder only cases, 19 received therapy only, while 119 received a combination of benzodiazepine medication and therapy. This sample was further refined to include only clients who had terminated during the 3-year time period reviewed in order to assess treatment outcomes such as differences in pre and post GAF scores and duration of treatment in months. The total number of participants in the therapy and benzodiazepine medication group was 20, while only five cases received therapy alone for panic disorder.

Procedure. Three years of client electronic charting information was sanitized of identifying information and compiled into summary reports according to treatment modality. In order to create a data summary that could be compared to current best

practice standards, the diagnostic and treatment variables outline above were used to refine the database search.

Data Analysis. After the database summary was compiled and sanitized of patient identifying information by the agency representative, the resulting data were analyzed by again utilizing NCSS, 2007 Edition statistical software. Descriptive statistical analysis was completed to summarize and compare diagnostic and treatment information with outcomes and duration of treatment. The findings of this database review were compared to literature regarding best practices to generate inferences about effectiveness of the agency's current practices and produce recommendations for potential future directions.

In sum, the methods outlined above were designed to capture an accurate profile of the knowledge, skills, attitudes, and practices related to the treatment of individuals with panic disorder at the participating agency. However, the collection of data in this project was meant to represent a "case in point," and the information gathered from the participating agency was compared with existing research about best practices for treating panic disorder. Furthermore, classic organizational change literature and research regarding program change within community mental health organizations was helpful in formulating inferences about and implications of the data collected in this project. Finally, it is the researcher and participating agency's wish that the findings produced by the extensive methods outlined above will contribute to the current dearth of translational research regarding panic disorder treatment and outcomes in a real world clinical setting.

Results

The data resulting from the two phases of investigation in this study were analyzed with the use of NCSS statistical software in order to test the significance of findings for the key variables of interest. For the purposes of this study, differences were determined to be significant if they reached the .05 level of significance ($p < .05$). In the first phase of this study, the agency survey on panic disorder treatment knowledge, skills, and attitudes, was analyzed to determine the presence of any significant differences among client care cohorts. A chi-squared (χ^2) goodness of fit test was performed on the categorical data collected from the survey, and one-way analysis of variance (ANOVA) was used for the Likert scored data. A Tukey-Kramer post-hoc test was also utilized during analysis in order to adjust for potential sources of error such as unobservable latent variables when examining variance between groups. This step was useful in describing the direction and strength of the relationships between the multiple variables being analyzed in this study. Additionally, tables and figures such as box plot graphs with indicated means, ranges, and outliers, were utilized to visually represent results. Cohorts that were examined in this study included groups that varied by discipline, highest educational level, age, and reported extent of panic disorder specific training.

The second phase of investigation included the collection of client treatment data, which were analyzed for differences between pre- and post-treatment among clients receiving therapy alone and those receiving a combination of therapy and benzodiazepine

medication for the treatment of panic disorder. Pairwise differences for these two treatment groups were analyzed using t-tests.

Phase One Results: Panic Disorder Treatment Survey

During the initial analysis of the survey responses, the overall results were considered to identify areas of participant agreement and potential themes (Appendix D). For example, the majority of participants surveyed indicated that they had received training in treating panic disorder through readings (n=32, 71.1%), coursework (n=28, 62.2%), and supervision (n=23, 51.1%), while slightly fewer had participated in training workshops (n=22, 48.9%) on the topic. There was also considerable agreement among participants about the percentage of clients from their case loads that had only a diagnosis of panic disorder, with the majority indicating that only 0-5% (n=29, 65.9%) or 5-10% (n=6, 13.6%) of their clients fit that description. Additionally, most respondents indicated some level of agreement (a combination of *strongly agree* and *somewhat agree* figures responses) that they felt they had enough knowledge/training about panic disorder treatment (n=39, 84.7%), and they thought their own and the agency's practices were safe and effective (n=41, 93.2% and n=42, 93.3% respectively). The majority of participants (n=36, 78.3%) also indicated agreement with the following statement: "clients presenting with panic disorder should be referred for psychotherapy before being referred for medication."

Overall results of items that asked about the safety and effectiveness of different therapy treatment approaches for panic disorder revealed several areas of general consensus among participants. When asked which therapy approach was *safest* and *most effective*, most participants chose cognitive-behavioral therapy (n=23, 79.3% and n=18,

60% respectively). The majority of participants also indicated that cognitive-behavioral therapy was the *most similar* therapy approach to their own (n=25, 83.3%) and the one with which they had the *most training* and experience (n=25, 83.3%). Most participants were *least familiar* with panic focused psychodynamic psychotherapy (n=23, 76.7%). The majority of respondents indicated they thought panic focused psychotherapy (n=13, 46.4%) and emotion-focused psychotherapy for panic disorder (n=11, 39.3%) were the *least effective* therapy approaches. However, behavioral therapy (n=12, 46.2%) was selected by more participants as the *least safe* approach, compared to panic focused psychotherapy (n=10, 38.5%) and emotion-focused psychotherapy for panic disorder (n=4, 15.4%).

There was also agreement found among many of the participants for items regarding medication treatment for panic disorder. For example, most survey respondents indicated that they thought antidepressants (n=31, 81.1%) were the safest medication for treating the panic disorder, and benzodiazepines (n=33, 86.8%) were the *least safe* medication treatment. Additionally, more respondents chose antidepressants (n= 17, 45.9%) over benzodiazepines (n=11, 29.7%) as the *most effective* medication for treating panic disorder. Most respondents also indicated agreement (strongly agree and somewhat agree response figures collapsed) with the following statements about potential issues with benzodiazepine prescriptions: "benzodiazepines build dependency" (n=42, 91.3%); "some clients may abuse or sell their benzodiazepine prescription medications" (n=43, 93.4%); and "clients prescribed benzodiazepine medications for their panic disorder, may not attend psychotherapy appointments regularly" (n=35, 76.1%).

On survey items about combination therapy and medication approaches, participants were asked to consider treatment options including therapy alone, medication alone, a combination of therapy and benzodiazepine medication, and a combination of therapy and antidepressant medication. Most participants favored antidepressant medication with therapy for the treatment of panic disorder in regards to safety (n=30, 78.9%) and effectiveness (n=22, 57.9%). Medication alone was indicated as the *least safe* (n=24, 63.2%) and *least effective* (n=23, 60.5%) of the approaches outlined.

However, many items that did not yield a consensus opinion, and examination of the overall results leads to a hypothesis that differences may exist between specific participant cohort groups. Thus, further statistical analysis of the responses collected from the 46 client care and administrative personnel participants who completed the panic disorder treatment survey focused mainly on identifying differences between cohorts in answering questions regarding knowledge, skills and attitudes on the treatment of panic disorder. Participant cohorts that were explored in this study were defined by variables including highest educational level attainment, discipline, practice area, and types of professional training they had received in treating panic disorder.

Discipline. The first cohort variable was that of professional discipline. The survey respondents included 10 social workers, 18 counselors, seven nurses, four psychiatrists, and five psychologists. Two participants could not be included in the analysis by discipline because they chose not to answer this survey item. Due to the small number of participants who identified as nurses and psychiatrists, these respondents were collapsed into a single discipline variable that will be referred to as "medical" in order to improve the statistical accuracy of analysis. Combining these groups of

respondents makes sense since the psychiatric nurses at this agency work closely with the psychiatrists surveyed and their job duties include monitoring, and in the case of the nurse practitioners, prescribing psychotropic medications. When survey responses were analyzed by discipline, several significant findings emerged. The breakdown of respondents by discipline is shown in the Figure 1:

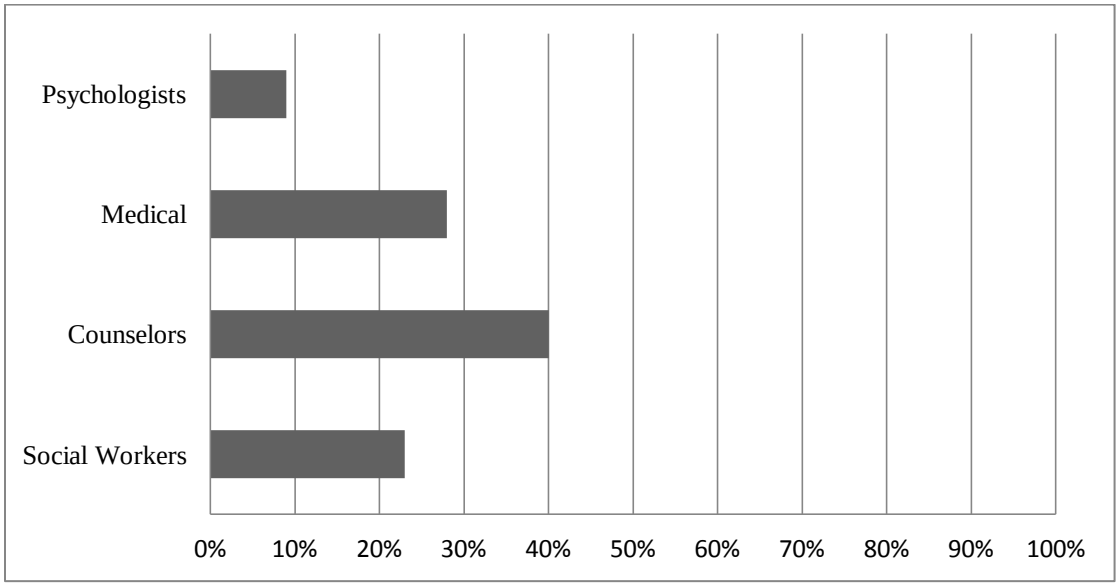

Figure 1. Percentages of Participants by Discipline.

For survey items regarding the perceived safety and effectiveness of different types of treatment for panic disorder there were two significant finding of difference among the discipline groups identified. For example, the one-way analysis of variance (ANOVA) comparing discipline with judged safety and effectiveness of antidepressant medications for the treatment of panic disorder, showed significant differences between disciplines, $F(3,32) = 2.93$, $p = .048$. A Tukey-Kramer post-hoc comparison of the four groups showed that the psychologists ($M = 2.4$) indicated significantly less agreement

with the survey item positing the safety and effectiveness of antidepressant medications for the treatment of panic disorder, than the counseling and medical groups respectively (*Ms* =1.67 and 1.4). The result of this first analysis appears in the Table 1 and Figure 2:

Table 1

Statistical Analysis of Responses to Item: Regarding the treatment of panic disorder, I believe antidepressant medications are safe and effective.

Analysis of Variance

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	3.372	3	1.124	2.93	0.048
Within	12.267	32	0.383	-----	-----
Total	15.639	35	-----	-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Social Worker	6	1.667	-----
Counseling	15	1.667	-----
Medicine	10	1.4	Psychologist
Psychologist	5	2.4	Medicine

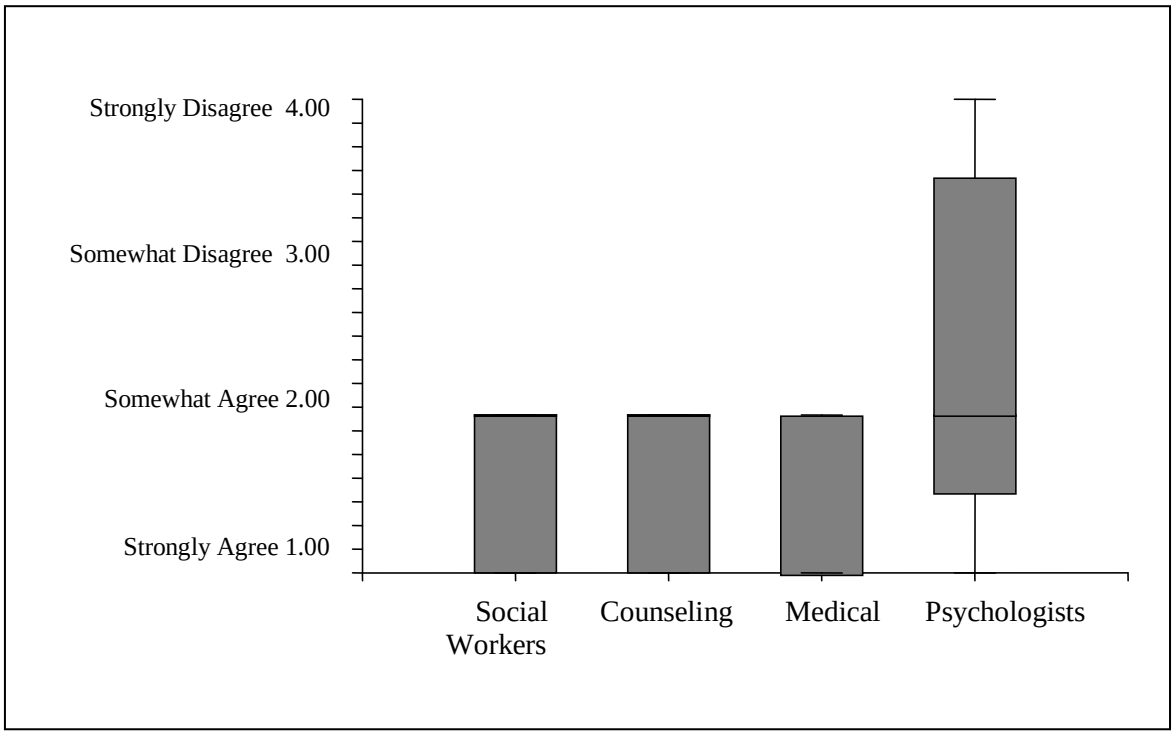

Figure 2. Response to item: "Regarding the treatment of panic disorder, I believe antidepressant medications are safe and effective."

Turning to the next tabled analysis shown in Table 2 and Figure 3, one can see that there was also a significant difference in agreement among disciplines on the survey item stating that therapy alone is a *safe and effective* treatment for panic disorder, $F(3, 32)$, $p = .017$. On this item, Tukey-Kramer post-hoc analysis revealed that the psychologist group ($M = 1.2$) indicated a significantly higher level of agreement than the social workers, counselors, and medical groups respectively ($Ms = 2.127$, 2.4, and 2.3).

Table 2

Statistical Analysis of Responses to Item: Regarding the treatment of panic disorder, I believe therapy alone is safe and effective.

Analysis of Variance Table

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	5.667	3	1.889	3.94	0.017
Within	15.333	32	0.479	-----	-----
Total		35	-----	-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Social Worker	6	2.167	-----
Counseling	15	2.4	Psychologist
Medicine	10	2.3	Psychologist
Psychologist	5	1.2	Counseling, Medical

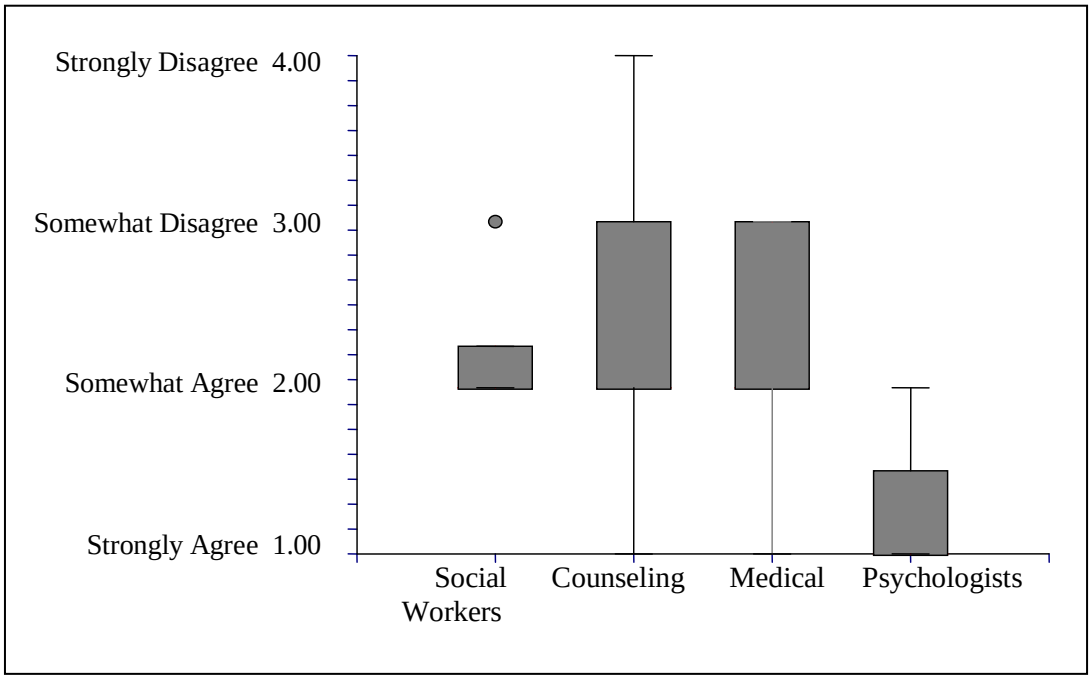

Figure 3. Responses to item: Regarding the treatment of panic disorder, I believe therapy alone is safe and effective.

In a somewhat related item, discipline was associated with a highly significant degree of difference, F(3. 32), p = .005, regarding the statement: "When psychotherapy has been effective for patients with panic, they will not tend to relapse." Again, post hoc analysis revealed that the variance was accounted for by differences between the psychologist group (M = 1.8) and the medical and social worker groups (Ms = 2.727 and 2.9).

Table 3

Statistical Analysis of Responses to Item: When psychotherapy has been effective for patients with panic, they will not tend to relapse.

Analysis of Variance Table

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	5.118	3	1.706	4.92	0.005
Within	13.882	40	0.347	-----	-----
Total	19	43		-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Social Worker	10	2.9	Psychologist
Counseling	18	2.333	-----
Medicine	11	2.727	Psychologist
Psychologist	5	1.8	Social Worker, Medicine

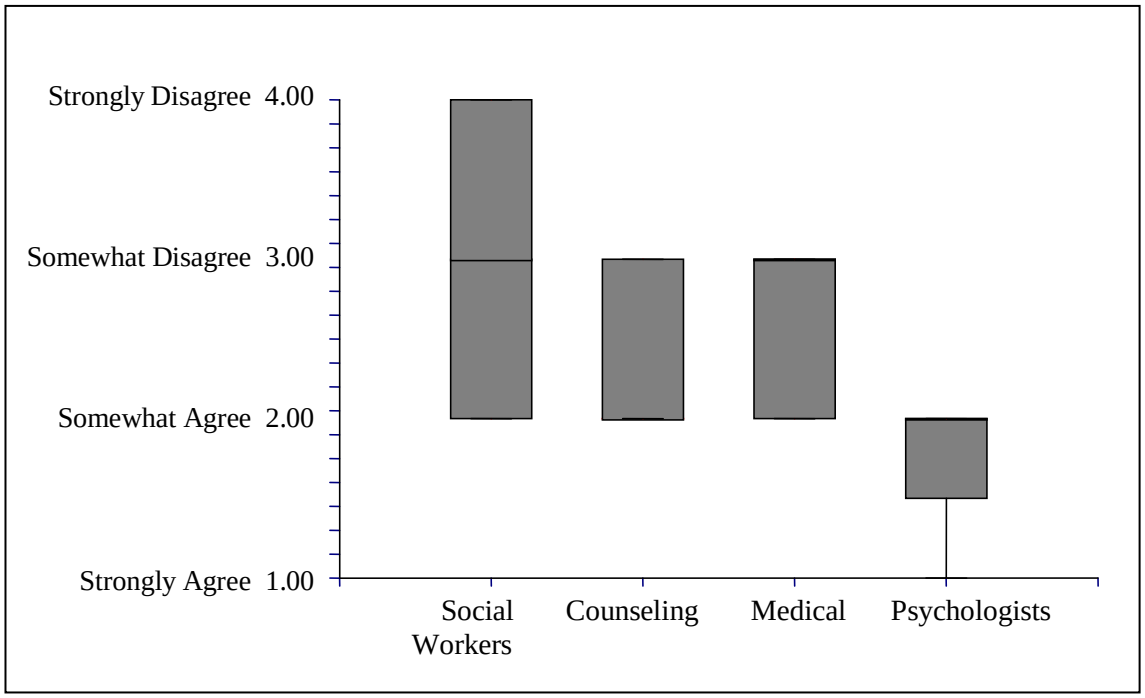

Figure 4. Responses to Item: When psychotherapy has been effective for patients with panic, they will not tend to relapse.

As seen in the next results table, analysis of the level of agreement among discipline cohorts with another statement: "Benzodiazepine medications interfere with successful psychotherapy," also demonstrated a highly significant level of difference, $F(3.32)$, $p = .008$ among disciplines. Post-hoc analysis showed that the psychologist group ($M = 1.4$) indicated a significantly greater level of agreement with that statement than did the social worker, medical, and counseling groups ($Ms = 2.8, 2.727, 2.667$).

Table 4

Statistical Analysis of Responses to Item Stating: Benzodiazepine medications interfere with successful psychotherapy.

Analysis of Variance Table

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	7.814	3	2.605	4.53	0.851
Within	22.982	40	0.575	-----	-----
Total	30.795	43		-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Social Worker	10	2.8	Psychologist
Counseling	18	2.667	Psychologist
Medicine	11	2.727	Psychologist
Psychologist	5	1.4	Social Worker, Counseling, Medicine

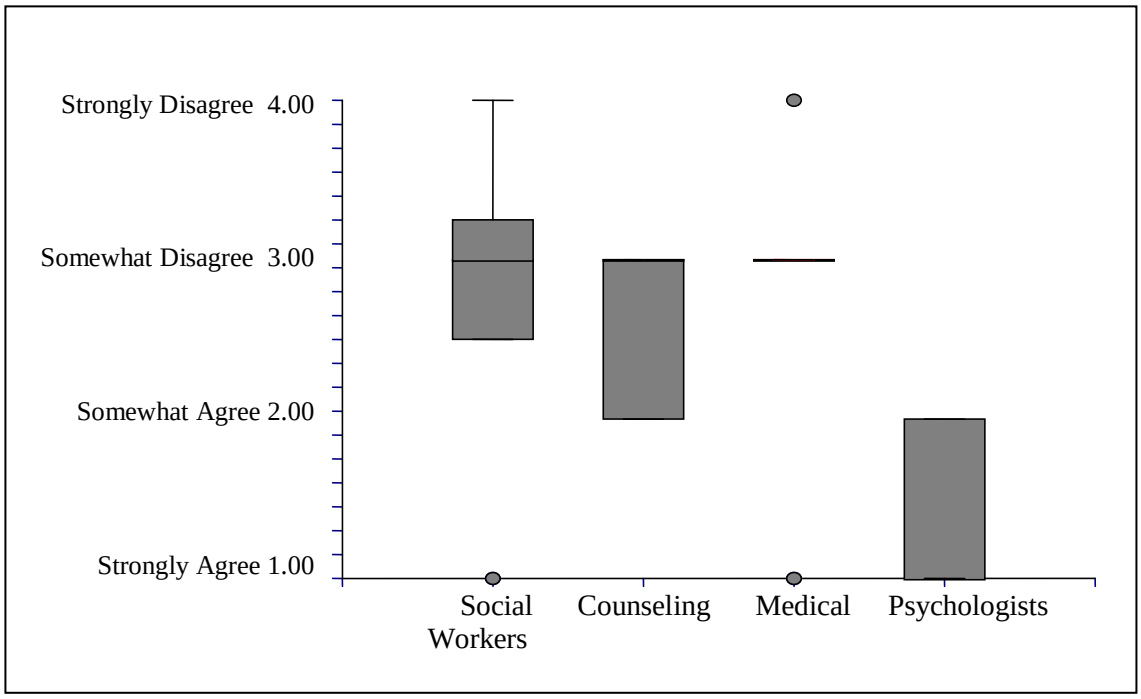

Figure 5. Responses to Item Stating: Benzodiazepine Medications interfere with successful psychotherapy.

Regarding the statement: "Clients prescribed benzodiazepine medications for their panic disorder may not attend psychotherapy appointments regularly," a one-way analysis of variance revealed another significant difference among discipline groups, $F(3, 32)$, $p = .038$. The Tukey-Kramer's post-hoc analysis of this item revealed that the significant variance was accounted for between the psychologists ($M = 1.2$), who indicated a much higher level of agreement with that statement, and the social worker group ($M = 2.4$) who did not indicate as much agreement with it.

Table 5

Statistical Analysis of Responses to Item Stating: Clients prescribed benzodiazepine medication for their panic disorder may not attend psychotherapy appointments regularly.

Analysis of Variance Table

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	5.414	3	1.805	3.09	0.678
Within	23.382	40	0.585	-----	-----
Total	28.795	43		-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Social Worker	10	2.4	Psychologist
Counseling	18	2	-----
Medicine	11	1.727	-----
Psychologist	5	1.2	Social Worker

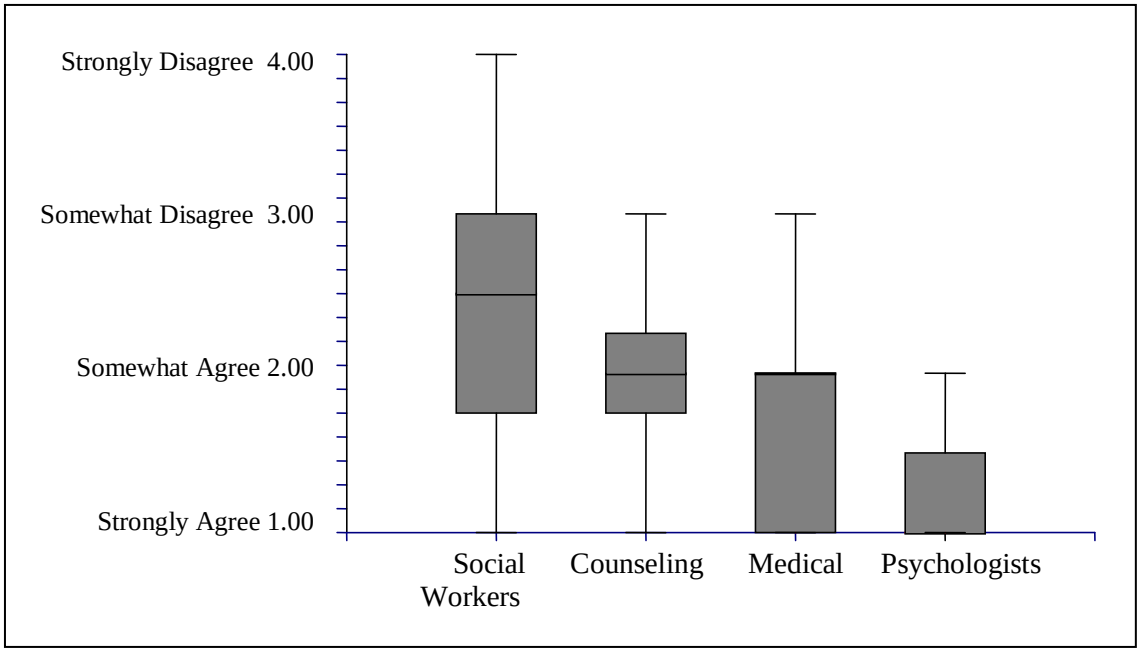

Figure 6. Responses to Item Stating: Clients prescribed benzodiazepine medication for their panic disorder may not attend Psychotherapy appointments regularly.

Turning from the Likert scaled items to the categorical response items, the results of the chi-square test of goodness-of-fit analysis on the question of whether the participants thought either benzodiazepines or antidepressants were safer for treating panic disorder appears below. Ratings for safety for the two medications were not equally distributed in the population, χ^2 (6, N = 36) = 13.543, p = .035, and there appears to a significant relationship between discipline and perceived safety of different classes of medications. While most participants (87%) from the social worker, counseling, and medical disciplines appeared to favor antidepressant medications in regards to safety, over half (60%) of the participants from the psychologist group endorsed neither medication as the safest approach for treating panic disorder.

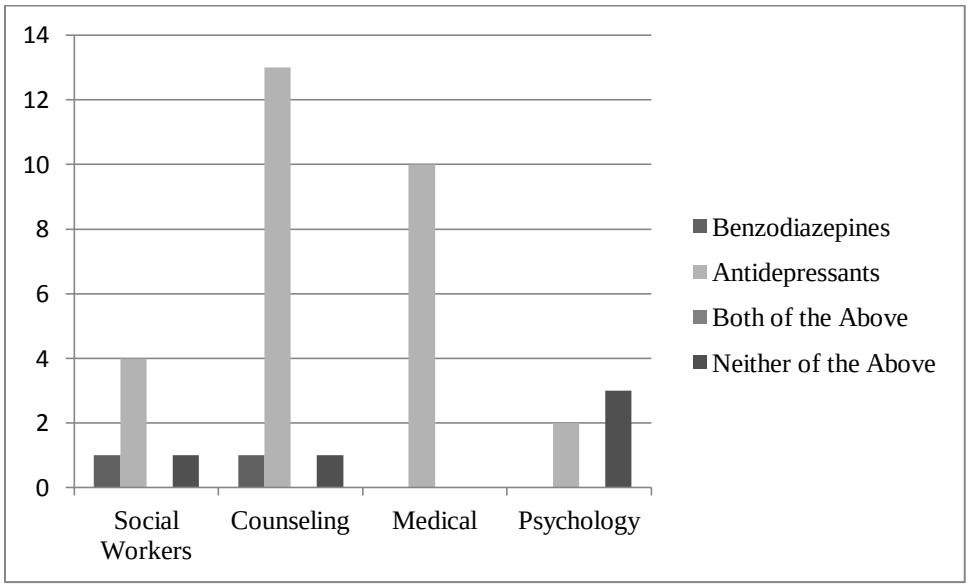

Figure 7. Responses to Item: Regarding the treatment of panic disorder, I believe the following medications are safe and effective.

In another item that was analyzed using the chi-squared test, participants were asked to indicate which therapy approach they thought was safest: behavioral therapy, cognitive-behavioral therapy, panic focused psychodynamic psychotherapy, or emotion focused therapy. Participants' endorsements for safest therapy was not equally distributed among disciplines, χ^2 (9, N = 29) = 17.068, p = .047, and there appears to a significant relationship between discipline and perceived safety of different therapy approaches. Specifically, although the majority of participants from the social worker (83%), counseling (75%), and psychology (100%) groups endorsed cognitive-behavioral therapy as the *most safe and effective* therapy approach, half (50%) of the respondents from the medical group favored panic focused psychodynamic psychotherapy.

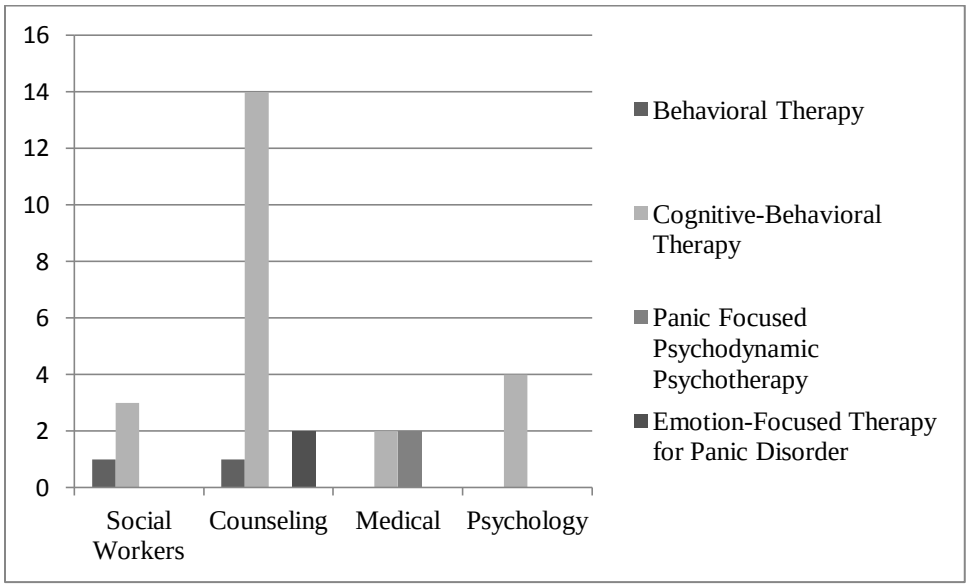

Figure 8. Response to item: "Regarding the treatment of panic disorder, I believe the following therapies are safe and effective."

Two other items that resulted in significant chi-square results involved familiarity with different combinations of medications and therapy for the treatment of panic disorder. Potential responses included therapy only, medication only, therapy and benzodiazepine, therapy and antidepressant, all of the above, or none of the above. The first item that indicated a highly significant level of difference, χ^2 (15, N = 36) = 34.269, p = .003, among discipline cohorts, asked participants to indicate the approach with which they were *most familiar*. Most disciplines appeared to be *most familiar* with therapy and medication or all of the combination treatments, while the majority of the psychologist group cohort was *most familiar* with a therapy only approach to treating panic disorder.

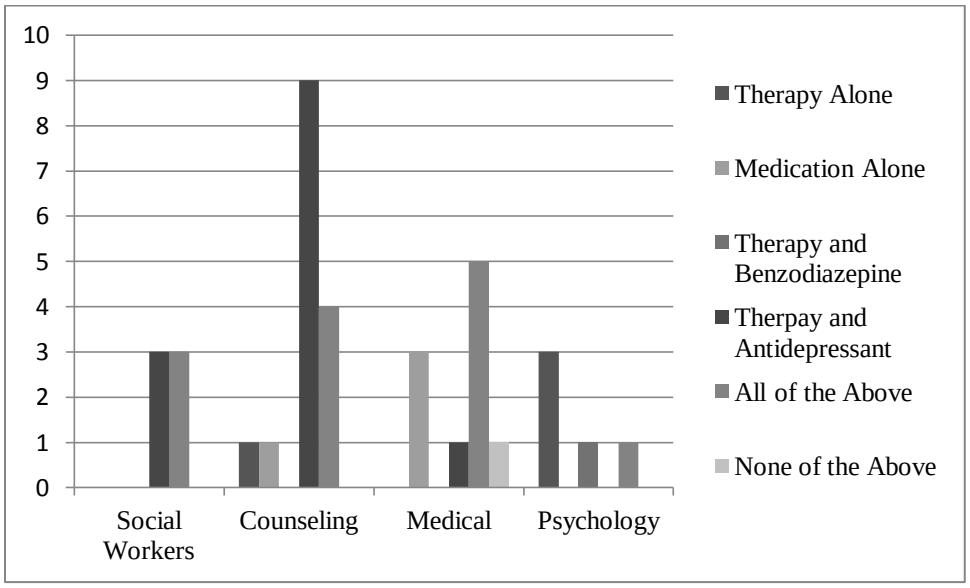

Figure 91. Responses to the Item: With which of these approaches are you most familiar?

The item regarding the *least* familiar combination of treatments offered the same potential responses, and a goodness-of-fit test was also highly significant, χ^2 (15, N = 36) = 33.527, p = .004. On this item the medical cohort group appears to differ most from the other disciplines. The medicine group indicated *least* familiarity with the therapy only approach, while the psychology and counseling groups appeared to be the *least familiar* with a medication only approach.

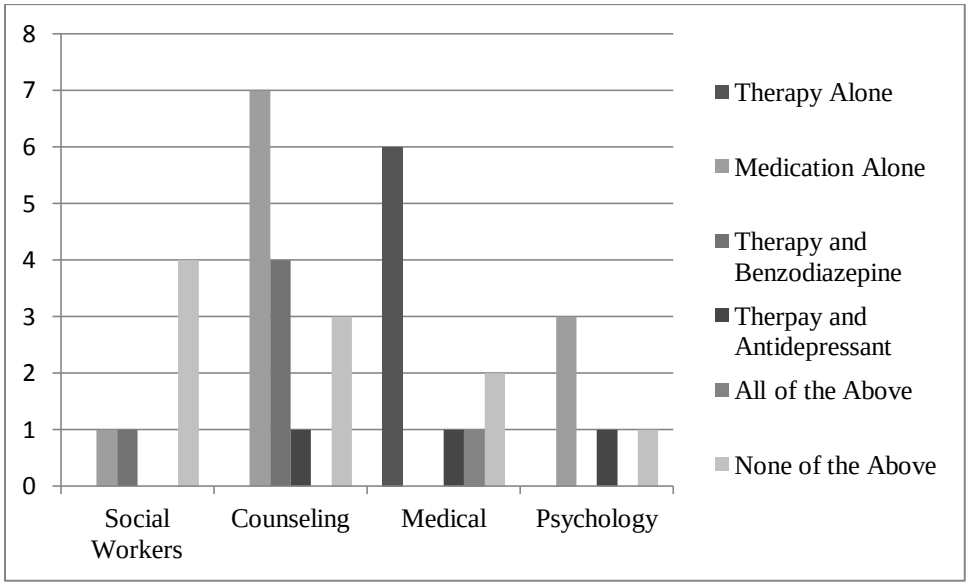

Figure 2. Responses to the Item: With which of these combined approaches are you least familiar?

Educational Level. The second variable by which cohorts were grouped was educational level. Survey participants were asked to indicate their highest level of education completed or degree attained. Responses ranged from Associate's degree to Doctoral Degree. Specifically, participants included six individuals with an associate's degree, six with a bachelor's degree, 28 with a master's degree, and six who had

completed a doctoral degree. When the data for survey participants was analyzed by cohorts, several significant differences in reported knowledge skills, and attitudes emerged. The distribution of participants is presented in the Figure 11:

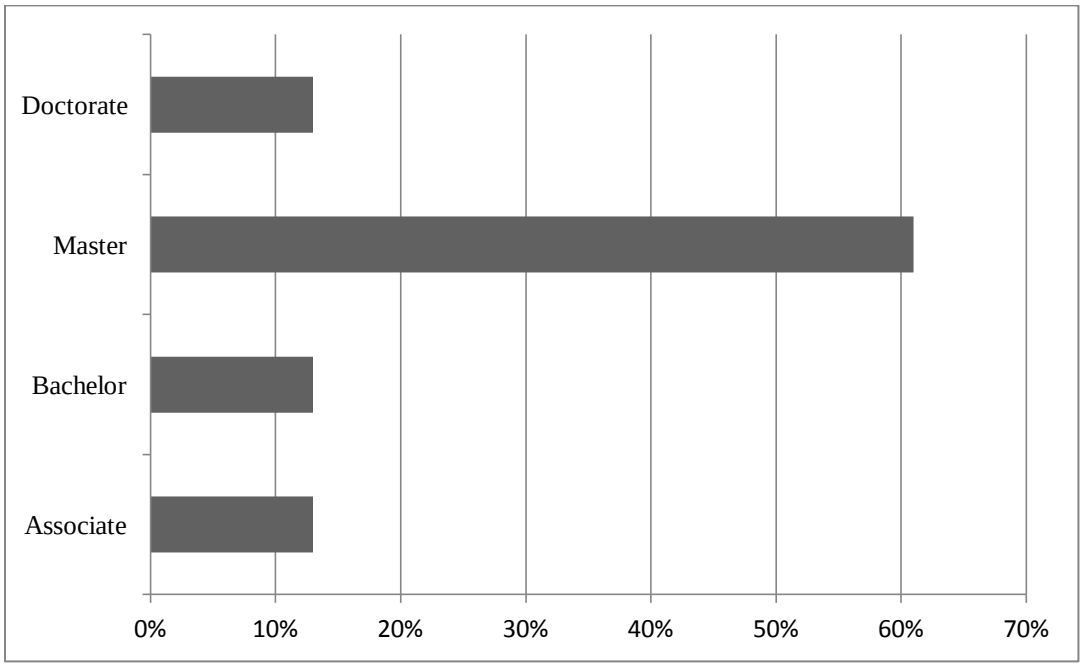

Figure 3. Percentages of participants by highest earned educational degree.

For survey items regarding the perceived safety and effectiveness of different types of treatment for panic disorder, there were several significant findings when participants' responses were analyzed by educational attainment cohorts. For example, a chi-squared goodness-of-fit test showed a significant difference, χ^2 (6, N = 28) = 15.605, p = .016, among cohorts when asked to choose the *least effective* therapy approach from a list including: behavioral therapy, cognitive-behavioral therapy, panic focused psychodynamic psychotherapy, and emotion-focused psychotherapy for panic disorder. Although participants from the doctorate and master level cohorts seemed to lack

confidence in panic focused psychodynamic and emotion-focused psychotherapies, responses from the master's degree group also indicated doubts about the effectiveness of behavioral therapy. The bachelor's degree cohort responses were evenly distributed between cognitive-behavioral and emotion-focused therapy approaches.

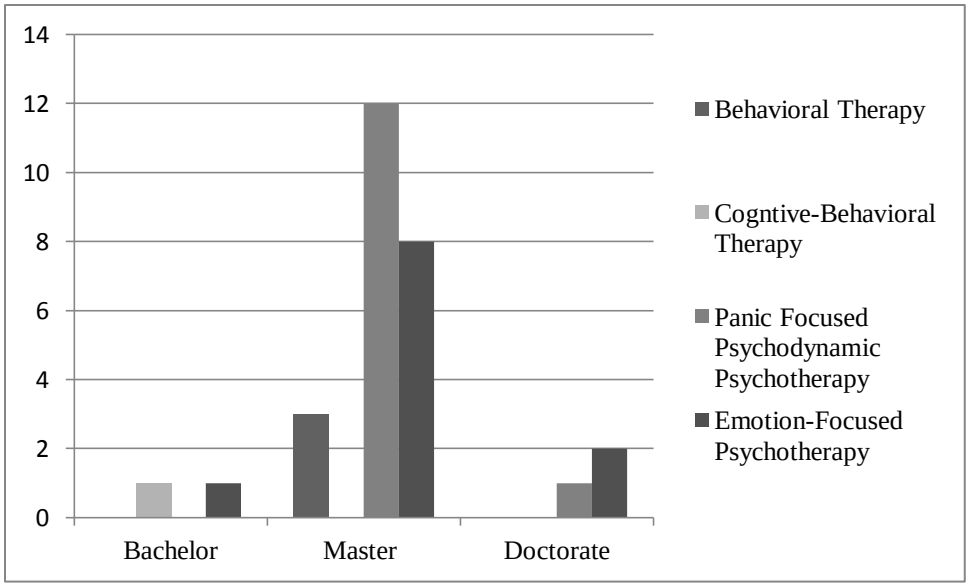

Figure 4. Responses for the item regarding the least effective therapy approach for the treatment of panic disorder.

When educational cohort response regarding the "*least safe therapy approach*" for treating panic disorder was analyzed for goodness-of-fit, another significant difference was found, χ^2 (6, N = 27) = 14.25, p = .027. Again the master's degree cohort appears to differ most from the other educational cohorts. Half of the respondents from that group indicated they believed behavioral therapy is the *least safe* approach, and another 41% chose panic focused psychodynamic psychotherapy. The bachelor's degree cohort unanimously chose emotion-focused psychotherapy for panic disorder as the *least*

safe therapy approach, and answers from the doctorate level respondents were split evenly among emotion-focused psychotherapy, panic focused psychodynamic psychotherapy, and behavioral therapy approaches.

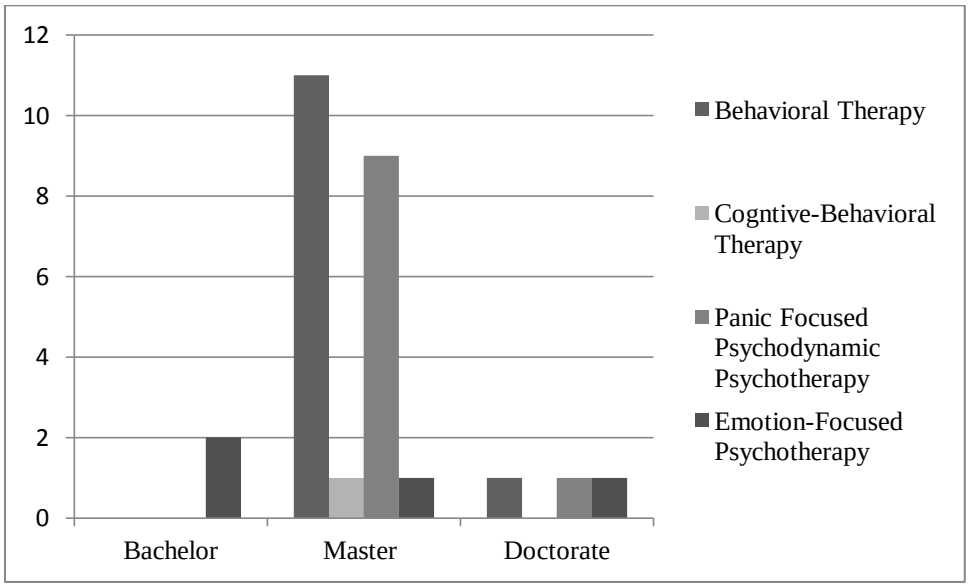

Figure 53. Responses to the item regarding the least safe therapy approach for the treatment of panic disorder.

For a survey item regarding the perceived safety and effectiveness of antidepressant medications for panic disorder, there was also a significant finding of difference among the educational level groups identified. The one-way analysis of variance (ANOVA) comparing educational level with judged safety and effectiveness of antidepressant medications for the treatment of panic disorder, showed significant differences between groups, $F(3,34)$, $p = .013$. A Tukey-Kramer post-hoc comparison of the four groups showed that the bachelor's degree cohort ($M = 2.5$) indicated significantly less agreement with the survey item positing the safety and effectiveness of

antidepressant medications for the treatment of panic disorder, than the associate's, master's, and doctorate degree groups respectively (*Ms* = 1.5, 1.68 and 1.67). The result of this first analysis appears in the Table 6 and Figure 14.

Table 6

Statistical Analysis of Responses to Item Regarding the Perceived Safety and Effectiveness of Antidepressant Medications for Panic Disorder

Analysis of Variance Table

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	4.447	3	1.482	4.16	0.013
Within	12.106	34	0.356	-----	-----
Total	16.553	37		-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Associate	6	1.5	-----
Bachelor	4	2.5	Doctorate
Master	22	1.682	-----
Doctorate	6	1.167	Bachelor

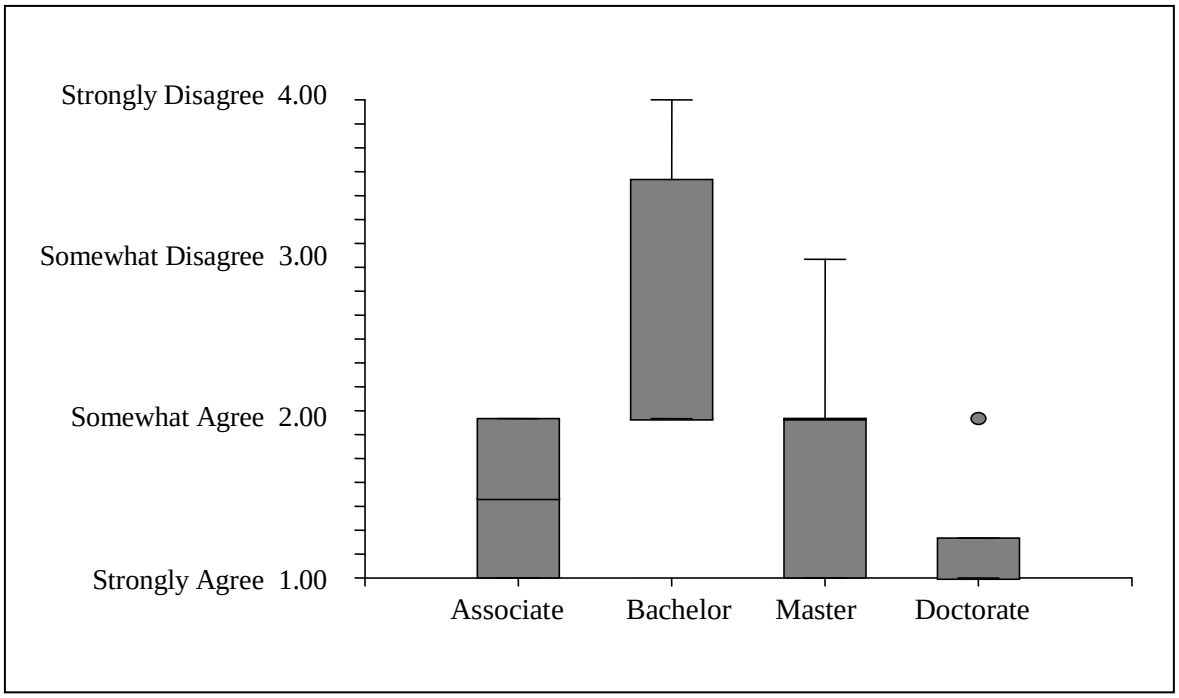

Figure 14. Educational Cohort responses for survey item stating antidepressants are safe and effective for the treatment of panic disorder.

A one-way analysis of variance (ANOVA) also revealed a significant difference, $F(3,34)$, $p = .02$, among educational groups in their level of agreement with the statement: "Medication alone is a *safe and effective* treatment for panic disorder." The Tukey-Kramer post-hoc comparison indicated that the doctorate group ($M = 2.33$) indicated a significantly higher level of agreement with this item than the master's degree cohort ($M = 3.27$). The difference between the bachelor ($M = 3$) and associate ($M = 2.67$) level cohorts was not significant. The result of this analysis is presented in Table 7 and Figure 15.

Table 7

Statistical Analysis of Responses to Item Stating: Medication Alone Is a Safe and Effective Treatment for Panic Disorder

Analysis of Variance Table

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	4.967	3	1.657	3.75	0.020
Within	15.030	34	0.442	-----	-----
Total		37		-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Associate	6	2.667	-----
Bachelor	4	3	-----
Master	22	3.273	Doctorate
Doctorate	6	2.333	Master

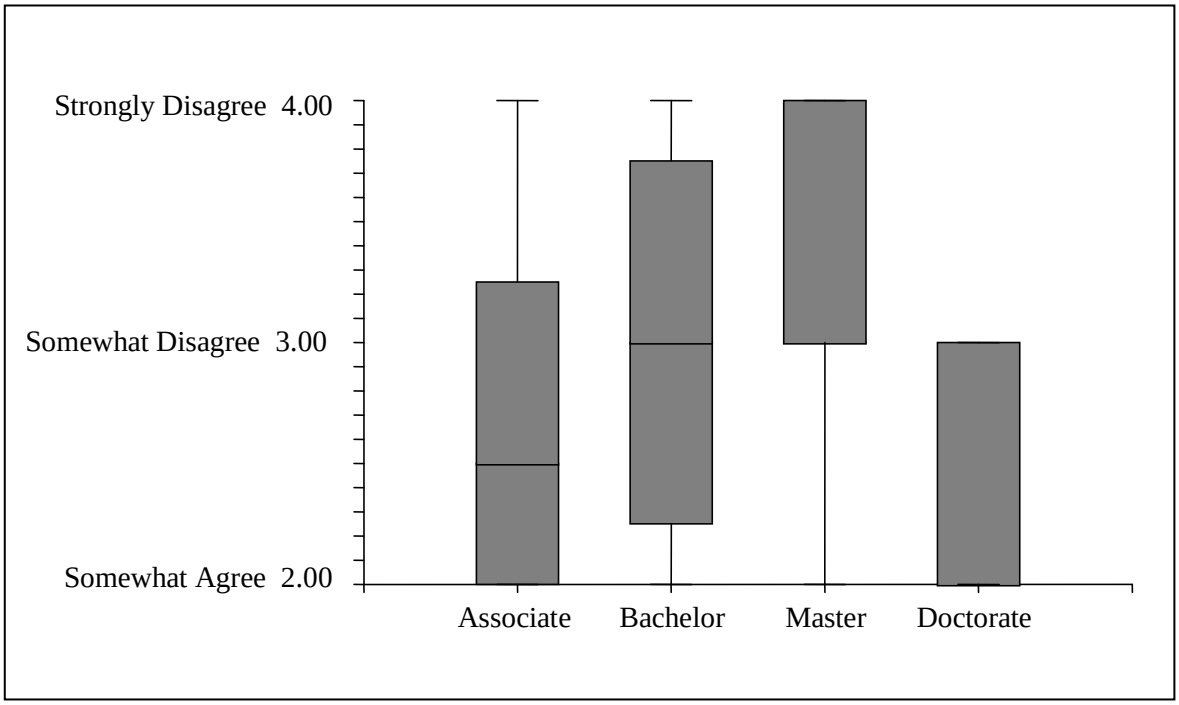

Figure 6. Educational cohort responses for survey item stating medication alone is a safe and effective treatment for panic disorder.

Regarding the statement: "I feel that I have the knowledge/training to effectively help clients with panic disorder," a one-way analysis of variance revealed another significant difference among educational level groups, F(3,42), p = .024. The Tukey-Kramer's post-hoc analysis of this item revealed that the doctorate and master's level groups (Ms = 1.5 and 1.82 respectively) indicated a significantly higher level of agreement with the survey item, than bachelor's and associate's degree groups (Ms = 2.67 and 2 respectively).

Table 8

Statistical Analysis of Responses to the Item Stating: I feel that I have the knowledge/training to effectively help clients with panic disorder

Analysis of Variance Table

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	4.712	3	1.571	3.48	0.240
Within	18.940	42	0.451	-----	-----
Total	23.652	45		-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Associate	6	2	-----
Bachelor	6	2.667	Master, Doctorate
Master	28	1.821	Bachelor
Doctorate	6	1.5	Bachelor

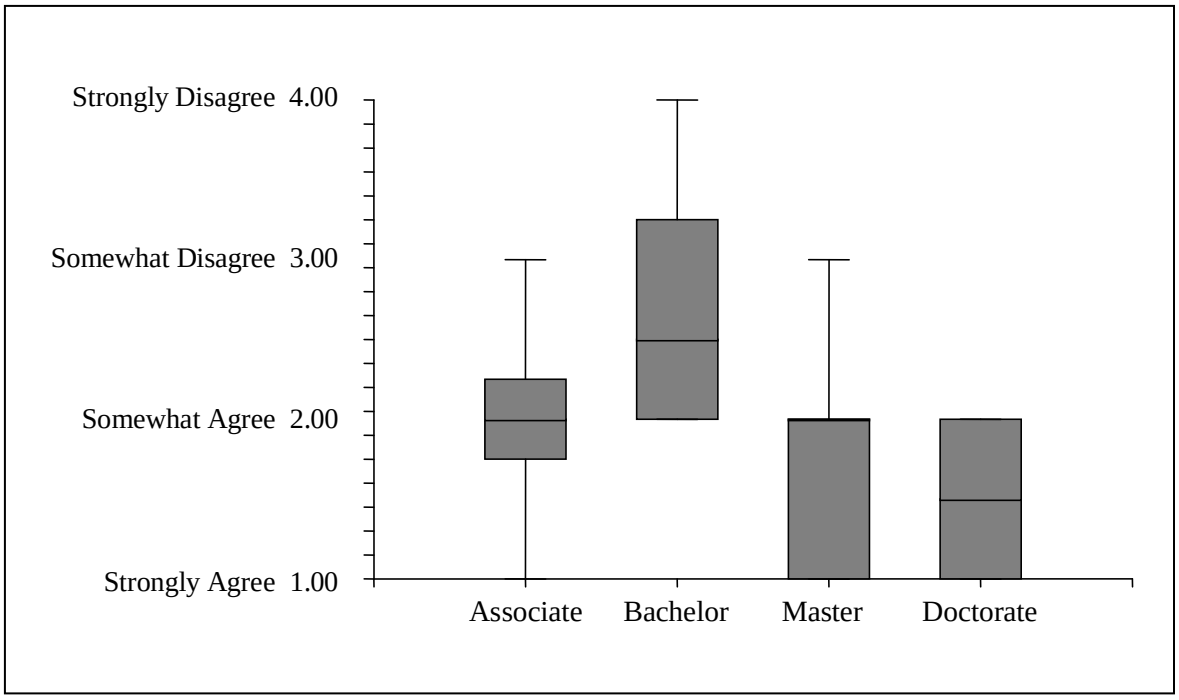

Figure 7. Responses to Item Stating "I feel that I have the knowledge/training to effectively help clients with panic disorder."

As seen in the Table 9 and Figure 17, one-way analysis (ANOVA) of the level of agreement among educational level cohorts with another statement: "Our center needs to revise its approach to treating panic disorder," also demonstrated a significant level of difference, $F(3,41)$, $p = .021$. Post-hoc analysis (Tukey-Kramer's Test) showed that the bachelor's degree group ($M = 1.833$) indicated a significantly greater level of agreement with that statement than did the doctorate, master's or associate's degree cohorts, ($Ms = 2.33, 2.74, 3.167$).

Table 9

Statistical Analysis of Responses to Item Stating: Our center needs to revise its approach to treating panic disorder

Analysis of Variance Table

	Sum of Squares	Df	Mean Square	F-Ratio	Probability Level
Between	6.392	3	2.131	3.61	0.021
Within	24.185	41	0.590	-----	-----
Total	30.578	44		-----	-----

Tukey-Kramer Multiple-Comparison Test

Group	Count	Mean	Different from Groups
Associate	6	3.167	Bachelor
Bachelor	6	1.833	Associate
Master	27	2.741	-----
Doctorate	6	2.333	-----

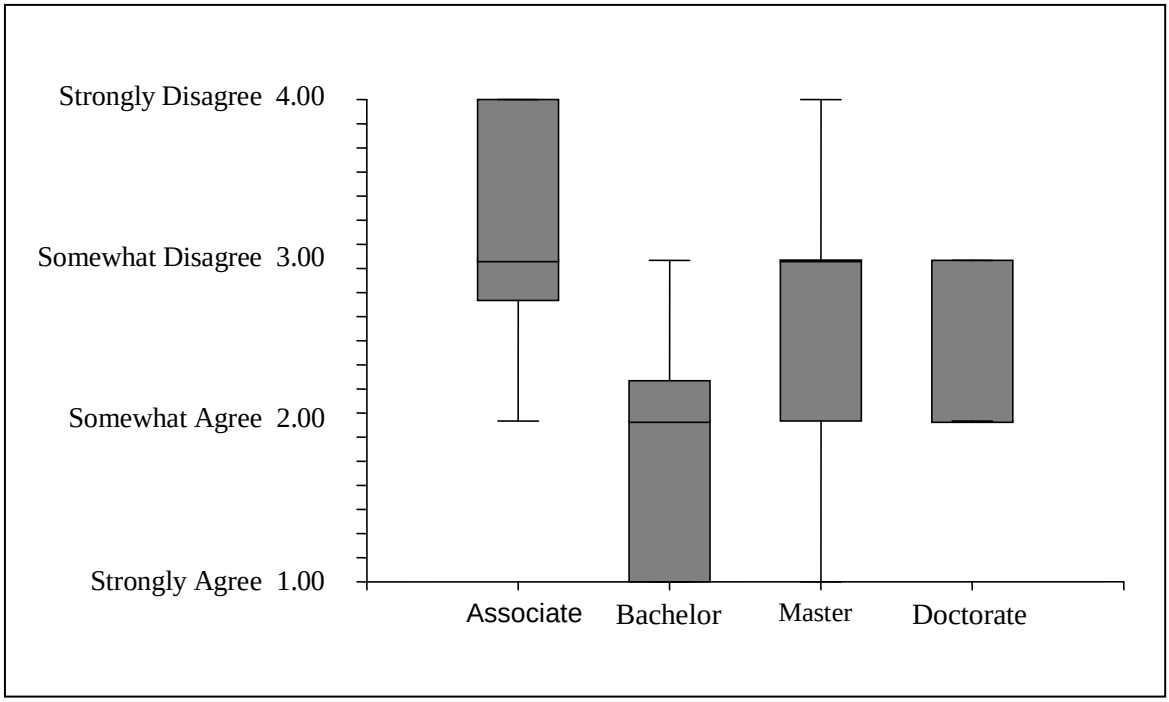

Figure 8. Responses for survey item stating, "Our center needs to revise its approach to treating panic disorder."

There were no other significant differences found across the remaining items in relation to discipline or educational level. Although one-way analysis of variance (ANOVA) and goodness-of-fit tests (chi-squared) were also used to examine potential differences related to extent of panic disorder specific training and age of participant, there were no other significant findings for the survey data analyzed.

Phase Two Results: Database Review

The second phase of this study involved analyzing a 3-year sample of client outcomes and duration data that was provided by the participating agency. Although the parameters of this database review were narrowed to only include clients with "pure" panic disorder (with or without agoraphobia) diagnoses, the agency was able to provide figures on 138 records of applicable clients. The treatment conditions that were identified in order to analyze the client outcome and duration were therapy only and therapy with medication services. Of the panic disorder only cases, 19 received therapy only, while 119 received a combination of medication and therapy. Since an admission and termination date are requisite in order to calculate duration, and the participating agency records GAF scores only at initial assessment and termination, only data from clients who had terminated treatment during the three year sampling period could be used for this analysis (n = 25). Although the sample was collected from a 3-year period, the total number of clients that met the criteria of panic disorder only was very small. Additionally, only five of the clients included in the sample were in the therapy only treatment group, and 20 received therapy and benzodiazepine medication for the treatment of panic disorder. These small subsample groups mean that this study has low statistical power, and a type II error, or failure to detect differences when they exist, is

more likely to occur (Cleophas, Zwinderman, Cleophas, Cleophas, & Cleophas-Allers, 2012). This limitation should be remembered when considering the results from the database review analysis.

Outcomes. Client GAF scores for the two treatment groups. Admission GAF scores ranged from 36 to 53 with a mean of 50.6, and termination scores had a range of 43 to 60 with a mean of 58.04. An independent-samples t-test was used to analyze for difference in pre and post GAF scores for the two treatment groups described above. The results of this analysis showed no significant difference in the scores for the therapy and benzodiazepine medication (M = 7.55, SD = 2.31) and the therapy only (M = 7, SD = 1.87) treatment group conditions; t(23) = -0.492, p = .627. The result of this analysis is presented in the Figure 18.

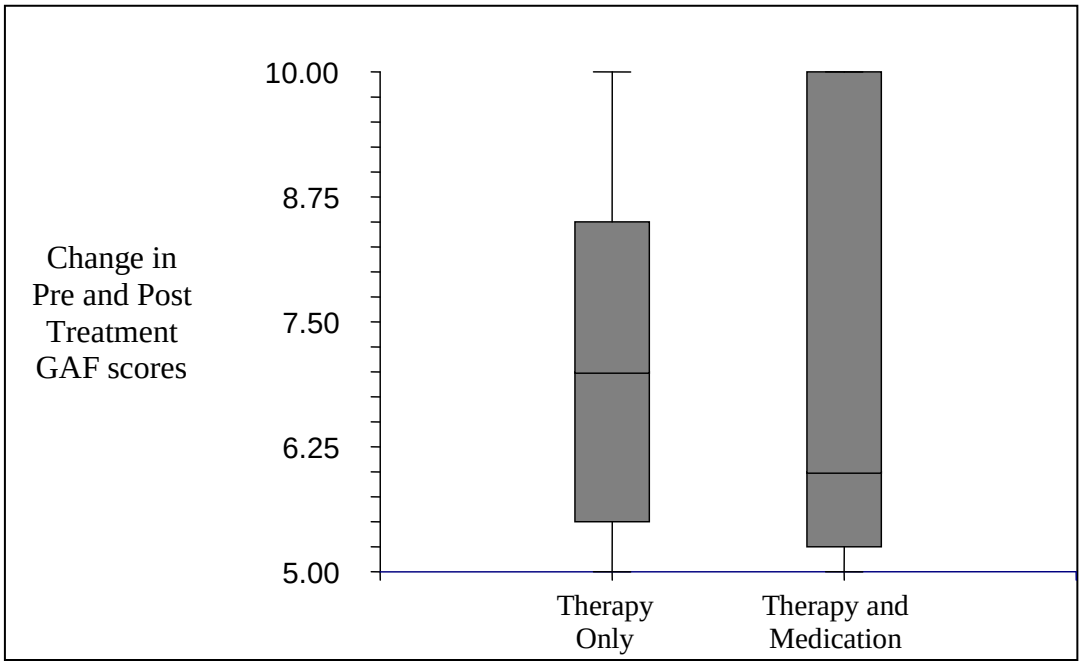

Figure 9. Comparison of change in GAF scores for therapy only and medication and therapy treatment groups.

Duration. The other variable from the client record database that was analyzed for difference between treatment groups was duration. Treatment duration was measured in months, and the 25 cases used for comparison ranged from 5 to 37 months with a mean treatment period of 27.88 months. An independent-samples t-test was used to analyze for difference in treatment duration between the therapy only and therapy and medication treatment groups. The results of this analysis showed a highly significant difference in the duration of treatment between groups $t(23) = -2.518$, $p = .019$. Specifically, the therapy and medication group ($M = 29.95$, $SD = 6.72$) had a significantly longer treatment duration, than the therapy only ($M = 19.6$, $SD = 13.20$) treatment condition. This result is presented in Figure 19.

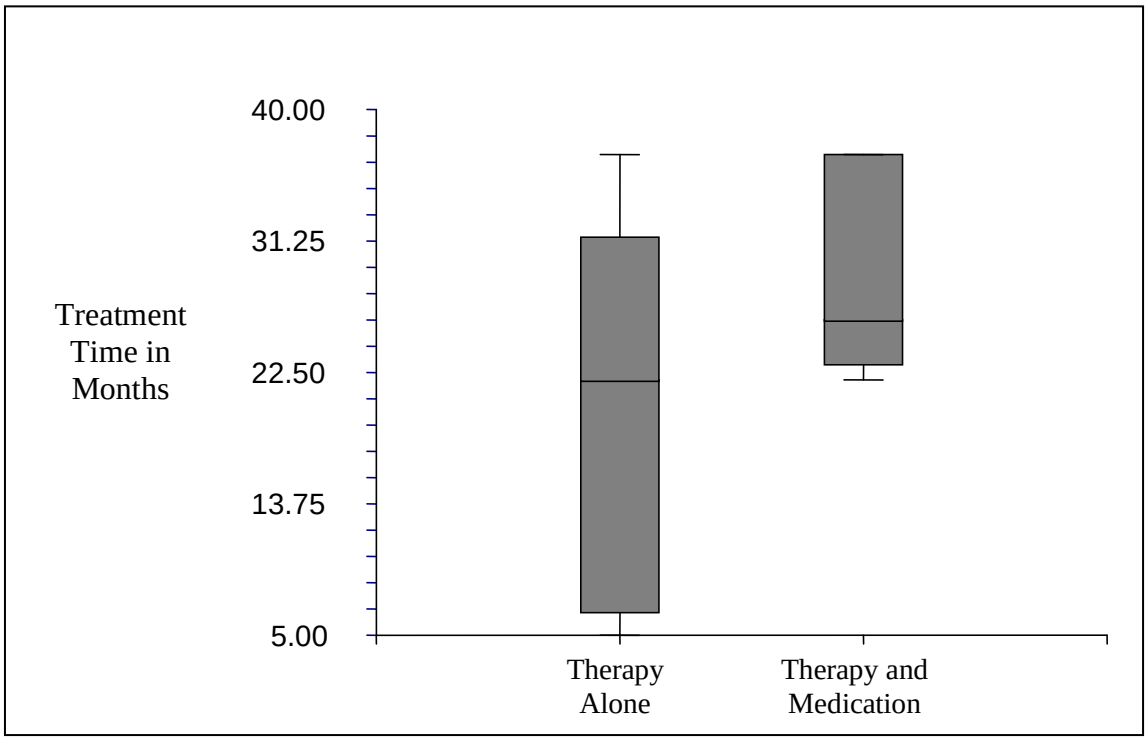

Figure 19. Comparison of duration of treatment for therapy alone versus therapy and medication groups.

Discussion

This study of knowledge, skills, attitudes, and current practices within a large community mental health agency was a case in point. The purpose was to examine the potential options and dilemmas involved in implementing innovative or best practice guidelines for the treatment of panic disorder. An accurate appraisal of current treatment practices was accomplished through record review and data analysis. Additionally, a computerized survey with Likert type scaled items along with some categorical items was administered to key subgroups that influence client care in order to generate further data about organizational members' knowledge, skills, and attitudes regarding the treatment of panic disorder. Those findings were also used to generate information regarding the organization's climate of change, readiness, and potential change process issues (Bouckenooghe, Devos, & Van Den Broeck, 2009). Specifically, individual and systemic perceptions of the potential need for innovative panic disorder treatment practices and possible obstacles or impediments for implementing changes in treatment standards were identified. The data generated from the record review and survey were reviewed in relation to the three research questions that were formulated at the outset of this study which included the following: a) To what extent are there differences in current recommendations, reported practices, and reported knowledge or skills for the treatment of panic disorder at the community mental health agency being studied? b) To what extent are there differences between or within agency cohorts relative to their knowledge, practices, and attitudes regarding the treatment of panic disorder? c) To what extent are

treatment outcome variables related to the type of panic disorder treatment that clients receive?

Phase One Discussion: Panic Disorder Treatment Survey

The panic disorder treatment survey was a computerized questionnaire about knowledge, skills, attitudes, and practices that was given to direct client care and their administrators at the participating agency. Survey responses were analyzed for themes of overall agreement and between cohort differences. Several significant differences were found between participant cohorts that were grouped according to demographic variables including educational attainment and discipline. The discussion of this study's findings are presented below in reference to items regarding medication for the treatment of panic disorder, therapy approaches, and general opinions items.

Medications. For items regarding the treatment of panic disorder with medications there were several items on which most survey respondents agreed. For example, the majority of participants indicated that they thought antidepressants (n=31, 81.1%) were the safest medication treatment option for treating panic disorder. The participants confidence in the safety of antidepressants is in accord with research that shows that antidepressants are clinically efficacious in reducing the number and severity of reported panic attacks, while having the benefit of offering pharmacological coverage for symptoms associated with mood disorder comorbidities and presenting limited concerns about dependency or liability for abuse (American Psychiatric Association, 2009; Pollack, 2006). However, it should also be noted that research indicates that antidepressants can result in several bothersome side effects (Physician's Desk Reference, 2007; Pollack, 2006). Additionally, since side effects are most likely to occur

during the first few weeks of treatment, dosage is usually started at a lower rate and gradually titrated up to the therapeutic level. These medications commonly take 6 to 8 weeks to reach effectiveness; thus, there may be a prolonged period before clients can expect symptom reduction from antidepressants. If clients choose to discontinue antidepressant treatments prematurely due to side effects or impatience, a discontinuation syndrome and return of the panic attack is likely to result (American Psychiatric Association, 2009; Shelton, 2006; Schatzberg, Blier, Delgado, Fava, Haddad, & Shelton, 2006). However, the biggest safety concern related to the use of antidepressants is related to research that suggests they may lead to an increased risk for suicide and self-harm (Fergusson et al., 2005; Gunnell, Saperia, & Ashby, 2005). Ultimately, although many factors must be considered such as potential presence of co-morbid mood disorder, as well as the client's tolerance for potential side effects and long-term commitment to psychotropic intervention, antidepressants should not be consider a treatment option that is free of risk (American Psychiatric Association, 2009).

In regards to benzodiazepines, most survey participants (n=33, 86.8%) rated it as the *least safe* medication for treating panic disorder. Additionally, most respondents also indicated agreement (*strongly agree* and *somewhat agree* response figures collapsed) that benzodiazepines build dependency (n=42, 91.3%), that some clients may abuse or sell their benzodiazepine prescription medications (n=43, 93.4%), and that clients prescribed benzodiazepine medications for their panic disorder may not attend psychotherapy appointments regularly" (n=35, 76.1%). Although providing a measurement of the number of clients selling prescription benzodiazepines or missing therapy sessions was outside of the scope of this study, the respondents' level of agreement on these statements

clarifies several perceived risks associated with benzodiazepines. Their concerns related to substance dependency, decreased therapy attendance, and the potential for clients to sell that medication also appeared to highlight a potential need for adjustments in agency treatment guidelines related to prescribing benzodiazepines for panic disorder. For example the agency may consider having clients start with psychotherapy services only instead of starting with a combined therapy and pharmacological modality. Additionally, if it is determined that a client might benefit from adjunctive pharmacological treatment, practitioners should consider prescribing SSRIs or SNRIs as first line medications instead of benzodiazepines as suggested by the American Psychiatric Association's Panic Disorder Treatment Guidelines (American Psychiatric Association, 2009).

Furthermore, concerns about the safety of benzodiazepines are supported by research that shows individuals that are taking benzodiazepines are at an elevated risk for motor vehicle accidents, and in the case of geriatric clients, falls and fractures (French, et al., 2005; Kelly, Darke, & Ross, 2004; Landi, et al., 2005). These safety issues are likely related to the commonly reported side effects of benzodiazepines, which include sedation, fatigue, ataxia, slurred speech, memory impairment, and weakness (Physician's Desk Reference, 2007). Additionally, the use of benzodiazepines for more than 2 to 3 weeks results in physiologic dependence, and abrupt cessation of benzodiazepines can lead to dangerous side effects including depression, suicidal behavior, psychosis, seizures, and delirium tremens. Although a physician managed gradual taper is recommended, clients often have great difficulty discontinuing benzodiazepine medications due to withdrawal and rebound panic symptoms (Fava, Zielezny, Savron, & Grandi, 1995; Klein, Colin, Stolk, & Lenox, 1994; Roy-Byrne, et al., 2003). In sum, the

concerns of this study's participants about the safety of prescribing benzodiazepines for the treatment of panic disorder appear to be well founded.

Overall, more respondents chose antidepressants (n= 17, 45.9%) over benzodiazepines (n=11, 29.7%) as the *most effective* medication for treating panic disorder. However, ratings for safety for the two medications were not equally distributed in the population when analyzed by discipline cohorts, and there was a significant ($p = .035$) relationship between discipline and perceived *safety* of different classes of medications. While most participants (87%) from the social worker, counseling, and medical disciplines appeared to favor antidepressant medications in regards to *safety*, over half (60%) of the participants from the psychologist group endorsed neither medication as the *safest* approach for treating panic disorder. This finding suggests that, unlike the other cohorts, the psychologists did not believe psychotropic medications are a safe treatment intervention for panic disorder, and their preferences will be better clarified by in the discussion of therapy approaches.

On a related item asking if participants agreed that antidepressants were *safe and effective* for treating panic disorder, there were significant differences between discipline ($p=.048$) and educational level groups ($p=.013$). Specifically, participants with an associate, master, or doctorate degree, indicated more agreement with that item than those with a bachelor's degree, and the counseling and medical groups indicated a greater degree of agreement than the psychologists. Psychologists also differed significantly ($p. = .008$) from all other discipline cohorts in their greater level of agreement with the statement, "benzodiazepine medications interfere with successful psychotherapy."

Therapies. Overall results of items that asked about different therapy treatment approaches for panic disorder revealed a strong preference for cognitive behavioral therapy among most participants. For example, when asked which therapy approach was *safest* and which was *most effective*, the majority of participants chose cognitive-behavioral therapy, over behavioral therapy, panic focused psychodynamic psychotherapy, and emotion-focused psychotherapy. Research supports the participants' views that cognitive-behavioral therapy is a safe and effective treatment for panic disorder; however, it also suggests that behavioral therapy and panic focused psychodynamic psychotherapy are safe and effective treatment options as well. Most respondents also indicated that cognitive-behavioral therapy was the *most similar* therapy approach to their own, and the one with which they had the *most training* and experience. Panic focused psychodynamic psychotherapy was the *least familiar* approach for most survey participants, and more respondents also chose it as the *least effective* therapy approach for treating panic disorder. Taken together, these findings seem to indicate that the amount of knowledge, training, and experience that a clinician has is likely to affect the perceived safety and effectiveness of that approach.

Upon further examination, when participant responses for the *safest and most effective* therapy were analyzed by discipline there was a significant difference ($p = .047$) found between cohorts. Specifically, the endorsements of participants from the medical group were divided equally between panic focused psychodynamic psychotherapy and cognitive behavioral therapy, while participants from the other discipline cohorts showed a stronger preference for cognitive-behavioral therapy in regard to safety. When it is considered that medical training models are more likely to ascribe to psychodynamic

psychotherapy approaches, this finding appears to provide further support to the previously stated interpretation that there is a relationship between training/familiarity and perceived safety and effectiveness of a therapy approach.

Another highly significant difference ($p = .005$) among disciplines was found regarding the statement: "When psychotherapy has been effective for patients with panic, they will not tend to relapse." The psychologist group, who likely has the most training and familiarity with therapy, was significantly more likely to agree with this statement than the medical and social work groups. Again, this finding appears to support a link between familiarity and perceived efficacy. Additionally, it should be noted that research suggests that although individuals with panic disorder are likely to experience recurring cycles of symptom exacerbation, it is a very treatable and manageable mental health issue (American Psychiatric Association, 2000; World Health Organization, 1998). Thus, there may be some misconceptions about the nature of panic disorder among other disciplines, and future agency trainings should address any knowledge gaps about the treatability of panic disorder. This agency may also want to consider responding to the needs of clients with panic disorder with an "episodes of care" approach as opposed to a continuous care model, by predicting chances for symptom re-emergence and encouraging clients to return for refresher sessions during periods of symptom exacerbation.

Regarding behavioral therapy that emphasizes exposure and desensitization, an interesting difference was noted in the perceived *safety* and *effectiveness* of that approach among the survey respondents. The vast majority (93. 4%) of participants indicated at least some level of agreement with the statement: "behavioral therapy is a *safe and effective* approach for treating panic disorder." More specific items revealed that about

23.3% of respondents ranked behavioral therapy as the *most effective* therapy approach; however, behavioral therapy was also selected by more participants (46.2%) as the *least safe* of therapy approaches. This appears to imply a perception that behavioral therapy interventions including exposure and desensitization are effective, but not necessarily safe. These findings are at odds with current literature on treating panic disorder that indicates progress in managing panic attacks is actually attributable to exposure and tolerance building, whether in a behavioral or cognitive behavioral model (Arch, Ayers, Baker, Almklov, Dean, & Craske, 2013; Craske, & Vervliet, 2013). One possible explanation for the concerns about safety expressed by participants in this study may be due to their own discomfort with encouraging clients to participate in exposure techniques that can be distressing initially. Although both therapists and clients may be reluctant to engage in behavioral therapy interventions initially, there is no evidence of that these practices are unsafe, and much evidence that it is ultimately highly beneficial in building tolerance and decreasing panic.

Combination Treatments. The next section of survey response pertained to the combination treatments versus therapy or medication alone for the treatment of panic disorder. On these survey items most participants favored an antidepressant and therapy combination for the treatment of panic disorder in regards to *safety* and *effectiveness* (78.9% and 57.9% respectively). Additionally, the majority of respondents selected medication alone as the *least safe* (63.2%) and *least effective* (60.5%) of the approaches outlined. Although the participants of this study conveyed a common sentiment in their marked preference for a combination of medication and therapy for the treatment of panic disorder, research does not support an advantage to this approach. Studies have

repeatedly demonstrated that cognitive-behavioral therapy alone has comparable efficacy to cognitive-behavioral therapy with an antidepressant for the treatment of panic disorder (Brown & Barlow, 1995; Barlow, Gorman, Shear, & Woods, 2000 ; Craske, Brown, & Barlow, 1991; Fava, Zielezny, Savron, Grandi, 1995). Furthermore, it also suggests that cognitive-behavioral therapy without adjunctive pharmacological treatment is most likely to produce durable reduction in panic symptoms. Additionally, Milrod et al. (2007) demonstrated promising preliminary findings with their use of panic-focused psychodynamic psychotherapy.

The responses for *least familiar* and *most familiar* combination of treatments differed significantly ($p = .004$ and $p = .003$ respectively) between disciplines. While the other disciplines appeared to be *most familiar* with therapy and medication or all of the combination treatments, the psychologists were most familiar with a therapy only approach. Similarly, the medicine group indicated *least* familiarity with the therapy only approach, while the psychology and counseling groups appeared to be the *least familiar* with a medication only approach. The participants from the psychology group also differed significantly ($p = .017$) from the other discipline groups by indicating a stronger level of agreement with an item stating that therapy alone is a *safe and effective* treatment approach for panic disorder.

The differences among disciplines outlined above may just be another example of how individuals will tend to look more favorably on innovations with which they have the most exposure and experience (Rogers, 2003). Psychologist are likely to have the most experience and training in therapy, while the medical group (psychiatrists and nurses) are more likely to have the most experience in working with clients who receive

medications for their symptoms. This difference in job responsibilities may also allow psychologists to see more gains from therapy due to their primary role as therapy providers. Furthermore, the literature appears to support the notions that therapy alone can produce comparable initial results and superior long-term results in the treatment of panic disorder (Otto, Smits, & Reese 2006).

General Opinions. The general opinion items on the survey indicated that the majority of participants felt well-trained and competent t in their panic disorder treatment practices. For example, the majority of participants surveyed indicated that they had received training in treating panic disorder through readings (71.1%), coursework (62.2%), and supervision (51.1%). Additionally, most also felt they had enough knowledge and training about panic disorder treatment (84.7%) and thought their own and the agency's treatment practices were safe and effective (93.2% and 93.3% respectively). It should be noted that a limitation to the survey method used assess the participants' knowledge base was that it involved self-report, and not an actual test of competency for panic disorder treatment strategies. Therefore, there is a possibility that the respondents may have felt a desire to present favorably or believed that they were better informed than they actually were. Thus, this finding should be interpreted with those potential sources of bias in mind.

However, many participants also indicated areas of training and treatment practices that might benefit from improvement. For example, participants with an associate or bachelor's degree were significantly less likely to indicate that they felt they had the knowledge and training that they needed to help clients with panic disorder ($p = .024$), than those from higher educational attainment cohorts. This finding suggests there

might be an opportunity for more expert clinicians within the organization to share their knowledge about panic disorder treatments with those who are expressing further training needs. Participants with a bachelor degree were also significantly ($p = .021$) more likely to agree with the item stating: "Our center needs to revise its approach to treating panic disorder." Specifically, one potential change in treatment guidelines that garnered support from the majority of overall respondents (78.3%) was that the agency should refer clients with panic disorder for psychotherapy prior to considering them for referral for medication.

Phase Two Discussion: Database Review

The second phase of this study consisted of analyzing 3 years of client data in order to gain insight into the agency's current treatment practices and related client outcomes. Despite current clinical practice guidelines that recommend antidepressants be used as the first-line medication for the treatment of panic disorder, of the 138 clients identified as having pure panic disorder, 119 were receiving a combination of benzodiazepines and therapy services (American Psychiatric Association, 2009). This incongruence in treatment guidelines and actual practices was consistent with a longitudinal study that suggested most patients treated for panic disorder were still receiving benzodiazepines (Bruce, Vasile, & Goisman, 2003).

As previously mentioned, the necessity of an admission and termination date in order to calculate duration of treatment and differences in pre and post treatment GAF scores, led to a small sample size (n=25). Of these participants, five included in the sample were in the therapy only treatment group, and 20 received therapy and benzodiazepine medication for the treatment of panic disorder. The small subsample

groups in this study decreases its statistical power, and a type II error, or failure to detect differences when they exist, may be more likely to occur (Cleophas,Zwinderman, Cleophas, Cleophas, & Cleophas-Allers, 2012). This limitation should be kept in mind when considering the discussion below that explores differences and similarities between treatment groups related to outcome variables including outcome scores and treatment duration.

Outcomes. The mean difference in pre and post GAF scores for the therapy only and the combination therapy and benzodiazepine medication treatment groups were very similar (Ms = 7 and 7.5 respectively), and statistical analysis (independent t-test) revealed no significant ($p = .627$) difference between the two groups on this outcome variable. This is consistent with research showing that therapy alone is comparable to therapy with medication for treating panic disorder (Barlow, Gorman, Shear, & Woods, 2000; Schmidt, & Smith, 2005; Westra, Stewart, & Conrad, 2002). Since there is no apparent benefit to adding benzodiazepine medication to therapy when treating panic disorder, the participating agency should consider whether combination treatment is merited for most panic disorder only cases considering the added costs and safety risks that come with prescribing medications.

A limitation to this study is the lack of measurement for maintenance of progress after treatment has ceased. It would be interesting to see if there were any differences in the durability of treatment gains at a 1-year follow up. Previous researches have suggested that the concurrent use of benzodiazepines with therapy can decrease long-term treatment gains and maintenance (Barlow, Gorman, Shear, & Woods, 2000; Brown & Barlow, 1995; Craske, Brown, & Barlow, 1991; Craske, & Vervliet, 2013; Fava, et al.,

1995; Westra, et al., 2004). Differences in treatment durability have been attributed to interference of benzodiazepines with the consolidation of learned psychoeducational material and rebound panic symptoms in the cases of clients who cease medication. Since these and other factors may affect long-term maintenance of treatment progress the participating agency may want to consider using a follow up outcome measure for clients periodically after termination.

Duration. The next outcome variable that was analyzed for differences between the combination therapy and benzodiazepine medication versus the therapy only treatment group was duration of treatment in months. There was a significant ($p = .019$) difference between groups on this variable, and the combination group clients were in treatment many more months than the therapy only group on average (Ms=29.95 and 19.6 respectively). This difference suggests that benzodiazepine medication may be slowing clients' progress. This finding could be related to previously mentioned research that indicates that benzodiazepine medication interferes with recall of psychoeducational material that is helpful in decreasing symptoms of panic disorder (Westra, et al., 2004). It may also suggest that benzodiazepines interfere with psychotherapy by decreasing symptoms during in vivo experiences of anxiety and panic, thus decreasing the client's ability to build tolerance for these symptoms through unfiltered exposure.

Additionally, it may be that clients attribute progress to the benzodiazepine medication, thus missing potential opportunities to build self-efficacy in managing their panic disorder and reach therapeutic goals.

A limitation for this study is the lack of related treatment information from which to draw inferences about this significant difference in treatment duration. For example,

factors such as number of sessions, type of therapy provided, or patient demographic variables may also co-vary with the treatment modality to affect duration. Additionally, this agency only had initial and termination GAF scores for clients who had already terminated treatment. Therefore, both groups of clients may be making the same amount of progress in the same amount of time, but those in the combination group may be continuing treatment longer for other reasons such as continued medication prescriptions or to support a disability claim. Future researchers may want to design studies that have more points of measurement for outcome than just pre and post treatment and condition specific inventories such as a Beck Anxiety Inventory (BAI; Beck, & Steer, 1993) or Panic Disorder Severity Scale (PDSS; Shear et al., 1997; Shear & Maser, 1994) in order to clarify the nature of potential treatment duration differences. Additionally, the participating agency may wish to increase frequency of assessing treatment outcomes and share information with clients about progress in order to foster efficiency for the agency and feelings of self-efficacy and hope for clients. In addition to a GAF score, which may have limited utility and poor inter-rater reliability, they should consider utilizing an outcome measure that can provide more information on treatment progress such as the Outcome Questionnaire-45 (OQ-45; Lambert et al., 2004) or the Brief Symptoms Inventory (BSI; Derogatis, 1993)

Overall, the results of the survey and database review for this study were consistent with many of the potential issues identified at the outset of this project. For example, survey participants voiced concerns about safety and dependency issues related to benzodiazepine prescription for panic disorder. Additionally, the respondents indicated concerns about therapy attendance rates for clients receiving those medications, and they

appeared to favor a shift in agency referral practices that would have clients enroll in therapy services prior to consideration for treatment with medication. These findings suggest an identified problem at the participating agency, and client care personnel are likely to be receptive to information about innovative practices to address these dilemmas (Rogers, 2003). As Schulz and Greenberg (1995) suggested, the key groups at this agency including discipline and educational level cohorts had somewhat different perceptions of current practices and possible innovations in regard to potential benefits and consequences. Thus, it will be important to encourage adoption of change within these groups in a manner that suits the unique perspectives they revealed in their survey responses. Due to the different interests and opinions expressed between groups, it will be especially important to identify innovation champions within each subgroup (Rogers 2003:2004). Innovation champions are charismatic individuals that can address the resistance among their peers and increase the likelihood of success of a proposed innovation. Due to their attractive interpersonal styles they are also key individuals through which to disseminate knowledge and information about the various innovative treatment options that might be beneficial for this agency. Further specific recommendations for this agency and other like it will be discussed in the concluding section about clinical implications.

Clinical Implications

This study is a case in point of one agency's knowledge, skills, attitudes, and practices regarding the treatment of panic disorder. Specifically, it showed that although differences in beliefs about the effectiveness and safety of treatments were often seen among providers from different disciplines, differences in client outcomes due to treatment practices where minimal. It provided support for the existing literature base on panic disorder, and raised further concerns about the potential drawbacks of adjunctive psychotropic interventions for panic disorder, including the possibility of prolonged treatment duration. It is a translational research piece that adds to the existing literature on panic disorder treatment by presenting findings from a multidisciplinary community mental health setting. From its inception, it was intended that the findings from this study be both useful for the participating agency and generalizable to other organizations hoping to implement best practice standards for treating panic disorder.

The theme of comfort and confidence in the treatment practices which were most familiar presents an opportunity for consciousness raising work within the participating agency (Prockaska & Diclemente, 1984). The goals of this consciousness raising should be to increase self-efficacy in applying innovative panic disorder treatment practices, as well as shifting the decisional balance by increasing perceived positive outcomes for learning and applying those strategies (Bandura, 1977; Janis and Mann, 1977). Consciousness raising strategies can promote motivation and persistence for change, and safeguard against resistance or relapse (Levesque, Prochaska, & Prochaska, 1999). One

example of how this strategy could be applied at the participating agency would include offering information about the current research and treatment standards that are not currently being met. Additionally, the client care employees would also likely benefit from hearing more about the variety of empirically validated treatment strategies that are available for treating panic disorder such as cognitive behavioral therapy, exposure-based behavioral therapy, and panic focused psychodynamic psychotherapy.

The review of professional practice standards and agency treatment regarding psychotropic interventions for the treatment of panic disorder should address the two specific problems identified: (a) The number of benzodiazepine prescriptions for panic disorder appears to be inconsistent with current professional treatment standards, and clinicians should consider ways of helping clients taper off those medications. Some may benefit from a different medication if mood issues are present, and others may benefit from gaining better control of symptoms and increased tolerance through therapeutic change. (b) The process for referral in the participating agency should help clients and clinicians capture opportunities for therapeutic change prior to adding a medication. Specifically, clients should be given the opportunity to benefit from therapy before being referred for medication. By applying a least invasive intervention approach, risks, expenses, and potential side effects can be avoided for many clients who would receive comparable treatment benefits from therapy alone.

It appears that the survey participants already have some awareness of the agency's current needs with regard to adopting more innovative panic disorder treatment strategies, and Roger's (2003; 2004) work on diffusion of innovations suggests that they can be assisted in working through the first stage of diffusion by the change agents within

their organization. If change agents such as team leaders can help others increase knowledge and exposure to other therapeutic strategies, they may make them more comfortable with adopting those new strategies and recruit more stakeholders in promoting change. Specifically, this agency and others like it should consider offering training opportunities such as in-services, sponsored convention attendance, or continuing education courses regarding a variety of effective treatment approaches such as cognitive-behavioral therapy, panic focused psychodynamic psychotherapy, and behavioral therapy. A few influential team members could be given "advanced training in treating panic disorder." When the advantages of their newly learned skills are shared with others at the agency, others will be more likely to consider adopting innovative treatment strategies and become future stakeholders in this change process.

This dissertation was a translational research piece that was developed to compare professional treatment standards with actual practices at a large metropolitan community mental health agency. It was designed in hopes of clarifying potential obstacles and dilemmas in implementing innovative and best practice treatment standards in a real world setting. A database review confirmed high rates of benzodiazepine prescriptions for clients with panic disorder. Analysis revealed that, consistent with previous research, clients receiving a combination of benzodiazepines and therapy did not have improved outcomes. Furthermore, the results of this study showed a trend of prolonged treatment duration for clients prescribed benzodiazepines for panic disorder. A survey also provided insight into the current knowledge, skills and attitudes of client care personnel at the participating agency regarding panic disorder treatment. The results of this survey indicated that clinicians have identified problems with agency treatment practices related

to the prescription of benzodiazepines for panic disorder treatment, and they would likely be open to receiving more information about potential innovative solutions to those issues. Survey results also showed there is an opportunity to increase the knowledge base within this agency regarding the variety of efficacious therapy approaches for treating panic disorder. Specifically, due to the findings of this current study and review of literature regarding the treatment of panic disorder, emphasis on the effectiveness and durability of therapy only approaches should be emphasized in applying these results to the participating agency and other like.

Appendix A: Phase One, Panic Disorder Treatment Survey

Panic Disorder Treatment Survey

_____ is interested in learning about current panic disorder practices. In order to create an accurate understanding of knowledge, skills, and attitudes about working with anxiety and panic, we are asking you to share your views. Please take 15-20 minutes to complete this survey by indicating your level of agreement with the statements below.

Demographics

Age:

Gender:

What is the highest level of school you have completed or the highest degree you have received?

Discipline (check all that apply):

- ☐ Social Work
- ☐ Counseling
- ☐ Nursing
- ☐ Medicine
- ☐ Psychology
- ☐ Other

Training and Practice

I have previously participated in the following types of training for treating panic disorder (check all that apply):

- ☐ Readings
- ☐ Workshops
- ☐ Coursework
- ☐ Supervision

Practice Area (check all that apply):

- ☐ Care Link
- ☐ Nursing
- ☐ Psychiatry
- ☐ Outpatient Therapy
- ☐ Administration with Client Care
- ☐ Administration without Client Care
- ☐ IDDT
- ☐ Youth Hospitalization
- ☐ Doctoral Student or Intern
- ☐ Masters Student or Intern
- ☐ Case Management

I am involved in treating clients from the following age groups (check all that apply):

- [ ] Child (5-12 years old)
- [ ] Adolescent (13-18 years old)
- [ ] Adult (19-64 years old)
- [ ] Geriatric (65+ years old)

I would estimate ___ percent of my case load involves working with clients that have panic disorder only.

I would estimate ___ percent of my case load involves working with clients that have panic disorder and some other mental health diagnosis.

On a scale of 1 to 5, with 1 being very little and 5 being extensive, I would rate my knowledge of anti-anxiety medications as a ___.

Is providing psychotherapy part of your job description?

Panic Disorder Intervention Strategies

The following questions will ask for your opinion about the safety and effectiveness of different types of treatment for panic disorder.

Therapy Interventions

For the items below please consider the following issues with regard to safety and effectiveness. For your ratings, please use the definitions below for the terms, "safe" and "effective:"

Effective- reduces the severity and/or frequency of symptoms

Safe- does not cause an increased risk for harm, new symptoms, and/or create destabilization or dependence

Regarding the treatment of panic disorder, I believe the following therapies are safe and effective.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
Behavioral Therapy that emphasizes exposure and desensitization.	◯	◯	◯	◯
Cognitive-Behavior Therapy that emphasizes monitoring thoughts and learning behavioral skills.	◯	◯	◯	◯
Panic Focused Psychodynamic Psychotherapy that emphasizes the therapist-client relationship and understanding the underlying significance of panic avoidance.	◯	◯	◯	◯
Emotion-Focused Psychotherapy for Panic Disorder that emphasizes empathic support and supportive strategies.	◯	◯	◯	◯

Which of the above therapy approaches is closest to your own approach to treatment?

In which of the above approaches have you had the most training and experience?

With which of the above approaches are you least familiar?

Which of the above four approaches do you feel is most effective?

Which of the above approaches do you feel is least effective?

Which of the above approaches do you feel is safest?

Which of the above approaches do you feel is least safe?

Do you work with clients who are prescribed medications and received psychotherapy for the treatment of panic disorder?

Medical Interventions

For the items below please consider the following issues with regard to safety and effectiveness. For your ratings, please use the definitions below for the terms, "safe" and "effective:"

Effective- reduces the severity and/or frequency of symptoms

Safe- does not cause an increased risk for harm, new symptoms, and/or create destabilization or dependence.

Regarding the treatment of panic disorder, I believe following medications are safe and effective.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
Benzodiazepines (Ativan, Xanax, Klonopin, e.g.)	◯	◯	◯	◯
Antidepressants (Prozac, Lexapro, Effexor, e.g.)	◯	◯	◯	◯

With which of the above medications have you had the most training and experience?

With which of the above approaches are you least familiar?

Which of the above approaches do you feel is most effective?

Which of the above approaches do you feel is least effective?

Which of the above approaches do you feel is safest?

Which of the above approaches do you feel is least safe?

Combination Intervention

For the items below please consider the following issues with regard to safety and effectiveness. For your ratings, please use the definitions below for the terms, "safe" and "effective:"

Effective- reduces the severity and frequency of symptoms. They enhance symptom treatment and collaborative care, rather than neutralize or counteract one another, and/or create conflicts in multidisciplinary care collaboration

Safe- does not cause an increased risk for harm, new symptoms, and/or create destabilization or dependence.

Regarding the treatment of panic disorder, I believe following options are safe and effective.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
Therapy alone	◯	◯	◯	◯
Medication alone	◯	◯	◯	◯
A combination of therapy and benzodiazepine medication	◯	◯	◯	◯
A combination of therapy and antidepressant medication	◯	◯	◯	◯

In which of the above combined approaches have you had the most training and experience?

With which of the above combined approaches are you least familiar?

Which of the above combined approaches do you feel is most effective?

Which of the above combined approaches do you feel is least effective?

Which of the above combined approaches do you feel is safest?

Which of the above combined approaches do you feel is least safe?

General Opinion Questions

Please indicate your level of agreement with the statements below.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
Panic disorder is a chronic problem that will need ongoing treatment.	◯	◯	◯	◯
Panic disorder is not usually a client's only mental health problem.	◯	◯	◯	◯
Clients presenting with panic disorder should be referred for psychotherapy before being referred for medication.	◯	◯	◯	◯
I feel that I have the knowledge/training to effectively help clients with panic disorder.	◯	◯	◯	◯
I feel that my panic disorder treatment practices are safe and effective.	◯	◯	◯	◯
I feel that ____ 's overall approach to panic disorder treatment practices are safe and effective.	◯	◯	◯	◯
Our center needs to revise its approach to treating panic disorder.	◯	◯	◯	◯

Please indicate your level of agreement with the statements below.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
When psychotherapy has been effective for clients with panic, they will not tend to relapse.	◯	◯	◯	◯
Benzodiazepine medications build dependency.	◯	◯	◯	◯
Benzodiazepine medications interfere with successful psychotherapy.	◯	◯	◯	◯
Clients won't stay with anxiety provoking experiences long enough to benefit from psychotherapy.	◯	◯	◯	◯
Some clients may abuse or sell their benzodiazepine prescription medications.	◯	◯	◯	◯
Clients prescribed benzodiazepine medications for their panic disorder may not attend psychotherapy appointments regularly.	◯	◯	◯	◯
Clients tend to stop taking antidepressants that have been prescribed for panic disorder due to unwanted side effects.	◯	◯	◯	◯
Clients will tend to drop out of all treatment if denied medication for panic disorder.	◯	◯	◯	◯

Please share any final comments on your views of the most effective and safest approaches to treating panic disorder at _____ :

Appendix B: Sanitized Survey Recruitment Script

Script for Introducing Panic Disorder Survey

Please use the following narrative for emails and announcements to introduce and encourage employees at XXXXXXXXXXXX. to participate in the online survey for this study.

As many of you may know, *XXXXXXXXXXXX* has been examining issues related to the treatment of panic disorder for several years now. In order to gain a better understanding of the knowledge, skills, practices, and attitudes regarding the treatment of panic disorder among client care employees at South, we have agreed to partner with a local researcher. As an employee you are being encouraged to participate in this study and share your experiences and opinions in an online survey. The survey will take about 5-15 minutes to complete, and it includes questions about the treatment of clients with panic disorder. Although *XXXXXXXXXXXX* will receive a summary report of the findings from all of responses to this survey, we will not be given information about any one individual's responses in order to protect your anonymity. As a participant you will be given the opportunity to contribute information that is useful for *XXXXXXXXXXXX* and other community mental health agencies in understanding potential options and dilemmas related to framing treatment guidelines for clients with panic disorder. Additionally, if you agree to allow your survey responses to be used for research and publication, you will be given the opportunity to be entered in a drawing for one of four $50 Amazon.com gift certificates. The details on how to take this survey will be given to you soon at one of your team meetings. Thanks in advance for your input into this useful survey.

Appendix C: Record Review Plan

Clients with PD Treatment Record Review

Looking at cases from the past 36 months

Overall agency figures to be obtained from database:

- Total number clients with panic disorder only diagnosis (this will likely be a very small number)
- Total number of client with panic disorder primary or secondary diagnosis
- Total number of client receiving therapy only for the treatment of panic disorder
- Total number of clients with benzodiazepine medication prescription and therapy for the treatment of panic disorder

For clients with panic disorder only and receiving therapy services only:

- What's the average duration of treatment for those clients?
- What was the average difference in pre and post-treatment GAF?
- What was the average difference in pre and post-treatment outcome scale scores?

For clients with panic disorder only and receiving a benzodiazepine prescription and therapy:

- What's the average duration of treatment for those clients?
- What was the average difference in pre and post-treatment GAF?
- What was the average difference in pre and post-treatment outcome scale scores?

Appendix D: Overall Results of Phase One Survey

1. Age:

	Response Percent	Response Count
20 - 30	19.6%	9
31 - 40	**34.8%**	**16**
41 - 50	10.9%	5
51 - 60	23.9%	11
61 - 70	10.9%	5
71 - 80	0.0%	0
	answered question	**46**
	skipped question	**0**

2. Gender:

	Response Percent	Response Count
Male	18.2%	8
Female	**81.8%**	**36**
Transgender	0.0%	0
	answered question	**44**
	skipped question	**2**

3. What is the highest level of school you have completed or the highest degree you have received?

	Response Percent	Response Count
Less than high school degree	0.0%	0
High school degree or equivalent (e.g., GED)	0.0%	0
Some college but no degree	0.0%	0
Associate degree	13.0%	6
Bachelor degree	13.0%	6
Master degree	**60.9%**	**28**
Doctorate degree	13.0%	6
	answered question	**46**
	skipped question	**0**

4. Discipline (check all that apply):

	Response Percent	Response Count
Social Work	28.3%	13
Counseling	**41.3%**	**19**
Nursing	15.2%	7
Medicine	8.7%	4
Psychology	13.0%	6
Other	4.3%	2
	answered question	**46**
	skipped question	**0**

5. I have previously participated in the following types of training for treating panic disorder (check all that apply):

	Response Percent	Response Count
Readings	**71.1%**	**32**
Workshops	48.9%	22
Coursework	62.2%	28
Supervision	51.1%	23
	answered question	**45**
	skipped question	**1**

6. Practice Area (check all that apply):

	Response Percent	Response Count
Care Link	2.2%	1
Nursing	10.9%	5
Psychiatry	17.4%	8
Outpatient Therapy	**43.5%**	**20**
Administration with Client Care	15.2%	7
Administration without Client Care	4.3%	2
ACT & IDDT	15.2%	7
Youth Partial Hospitalization	15.2%	7
Doctoral Student or Intern	4.3%	2
Masters Student or Intern	6.5%	3
Case Management	21.7%	10
	answered question	**46**
	skipped question	**0**

7. I am involved in treating clients from the following age groups (check all that apply):			
		Response Percent	Response Count
Child (5-12 years old)		56.8%	25
Adolescent (13-18 years old)		**72.7%**	**32**
Adult (19-64 years old)		59.1%	26
Geriatric (65+ years old)		27.3%	12
		answered question	**44**
		skipped question	**2**

8. I would estimate ___ percent of my case load involves working with clients that have panic disorder only.

	Response Percent	Response Count
0-5	65.9%	29
5-10	13.6%	6
10-15	4.5%	2
15-20	4.5%	2
20-25	2.3%	1
25-30	2.3%	1
30-35	0.0%	0
35-40	0.0%	0
40-45	0.0%	0
45-50	0.0%	0
50-55	0.0%	0
55-60	0.0%	0
60-65	2.3%	1
65-70	0.0%	0
70-75	4.5%	2
75-80	0.0%	0
80-85	0.0%	0
85-90	0.0%	0
90-95	0.0%	0
95-100	0.0%	0
	answered question	44
	skipped question	2

9. I would estimate ___ percent of my case load involves working with clients that have panic disorder and some other mental health diagnosis.

	Response Percent	Response Count
0-5	20.5%	9
5-10	**22.7%**	**10**
10-15	4.5%	2
15-20	11.4%	5
20-25	4.5%	2
25-30	6.8%	3
30-35	6.8%	3
35-40	2.3%	1
40-45	2.3%	1
45-50	4.5%	2
50-55	2.3%	1
55-60	2.3%	1
60-65	2.3%	1
65-70	0.0%	0
70-75	2.3%	1
75-80	0.0%	0
80-85	0.0%	0
85-90	2.3%	1
90-95	2.3%	1
95-100	0.0%	0
	answered question	**44**
	skipped question	**2**

10. On a scale of 1 to 5, with 1 being very little and 5 being extensive, I would rate my knowledge of anti-anxiety medications as a ____.

	Response Percent	Response Count
1	0.0%	0
2	18.2%	8
3	**38.6%**	**17**
4	29.5%	13
5	13.6%	6
	answered question	**44**
	skipped question	**2**

11. Is providing psychotherapy part of your job description?

	Response Percent	Response Count
Yes	**68.2%**	**30**
No	31.8%	14
	answered question	**44**
	skipped question	**2**

12. Regarding the treatment of panic disorder, I believe the following therapies are safe and effective.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Response Count
Behavioral Therapy that emphasizes exposure and desensitization.	**46.7% (14)**	**46.7% (14)**	6.7% (2)	0.0% (0)	30
Cognitive-Behavior Therapy that emphasizes monitoring thoughts and learning behavioral skills.	**83.3% (25)**	16.7% (5)	0.0% (0)	0.0% (0)	30
Panic Focused Psychodynamic Psychotherapy that emphasizes the therapist-client relationship and understanding the underlying significance of panic avoidance.	16.7% (5)	**50.0% (15)**	30.0% (9)	3.3% (1)	30
Emotion-Focused Psychotherapy for Panic Disorder that emphasizes empathic support and supportive strategies.	33.3% (10)	**40.0% (12)**	26.7% (8)	0.0% (0)	30
				answered question	**30**
				skipped question	**16**

13. Which of the above therapy approaches is closest to your own approach to treatment?

		Response Percent	Response Count
Behavioral Therapy		3.3%	1
Cognitive-Behavior Therapy		**83.3%**	**25**
Panic Focused Psychodynamic Psychotherapy		3.3%	1
Emotion-Focused Psychotherapy		10.0%	3
		answered question	**30**
		skipped question	**16**

14. In which of the above approaches have you had the most training and experience?

	Response Percent	Response Count
Behavioral Therapy	6.7%	2
Cognitive-Behavior Therapy	**83.3%**	**25**
Panic Focused Psychodynamic Psychotherapy	3.3%	1
Emotion-Focused Psychotherapy	6.7%	2
	answered question	**30**
	skipped question	**16**

15. With which of the above approaches are you least familiar?

	Response Percent	Response Count
Behavioral Therapy	6.7%	2
Cognitive-Behavior Therapy	3.3%	1
Panic Focused Psychodynamic Psychotherapy	**76.7%**	**23**
Emotion-Focused Psychotherapy	13.3%	4
	answered question	**30**
	skipped question	**16**

16. Which of the above four approaches do you feel is most effective?

	Response Percent	Response Count
Behavioral Therapy	23.3%	7
Cognitive-Behavior Therapy	**60.0%**	**18**
Panic Focused Psychodynamic Psychotherapy	6.7%	2
Emotion-Focused Psychotherapy	10.0%	3
	answered question	**30**
	skipped question	**16**

17. Which of the above approaches do you feel is least effective?

	Response Percent	Response Count
Behavioral Therapy	10.7%	3
Cognitive-Behavior Therapy	3.6%	1
Panic Focused Psychodynamic Psychotherapy	**46.4%**	**13**
Emotion-Focused Psychotherapy	39.3%	11
	answered question	**28**
	skipped question	**18**

18. Which of the above approaches do you feel is safest?

	Response Percent	Response Count
Behavioral Therapy	6.9%	2
Cognitive-Behavior Therapy	**79.3%**	**23**
Panic Focused Psychodynamic Psychotherapy	6.9%	2
Emotion-Focused Psychotherapy	6.9%	2
	answered question	**29**
	skipped question	**17**

19. Which of the above approaches do you feel is least safe?

	Response Percent	Response Count
Behavioral Therapy	**46.2%**	**12**
Cognitive-Behavior Therapy	0.0%	0
Panic Focused Psychodynamic Psychotherapy	38.5%	10
Emotion-Focused Psychotherapy	15.4%	4
	answered question	**26**
	skipped question	**20**

20. Do you work with clients who are prescribed medications and received psychotherapy for the treatment of panic disorder?

	Response Percent	Response Count
Yes	**86.4%**	**38**
No	13.6%	6
	answered question	**44**
	skipped question	**2**

21. Regarding the treatment of panic disorder, I believe following medications are safe and effective.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Response Count
Benzodiazepines (Ativan, Xanax, Klonopin, e.g.)	10.5% (4)	**44.7% (17)**	13.2% (5)	31.6% (12)	38
Antidepressants (Prozac, Lexapro, Effexor, e.g.)	42.1% (16)	**52.6% (20)**	2.6% (1)	2.6% (1)	38
				answered question	**38**
				skipped question	**8**

22. With which of the above medications have you had the most training and experience?

	Response Percent	Response Count
Benzodiazepines	7.9%	3
Antidepressants	28.9%	11
Both	**57.9%**	**22**
Neither	5.3%	2
	answered question	**38**
	skipped question	**8**

23. With which of the above approaches are you least familiar?

	Response Percent	Response Count
Benzodiazepines	21.1%	8
Antidepressants	10.5%	4
Both	7.9%	3
Neither	**60.5%**	**23**
	answered question	**38**
	skipped question	**8**

24. Which of the above approaches do you feel is most effective?

	Response Percent	Response Count
Benzodiazepines	29.7%	11
Antidepressants	**45.9%**	**17**
Both	18.9%	7
Neither	5.4%	2
	answered question	**37**
	skipped question	**9**

25. Which of the above approaches do you feel is least effective?

	Response Percent	Response Count
Benzodiazepines	28.9%	11
Antidepressants	26.3%	10
Both	2.6%	1
Neither	**42.1%**	**16**
	answered question	**38**
	skipped question	**8**

26. Which of the above approaches do you feel is safest?

	Response Percent	Response Count
Benzodiazepines	5.3%	2
Antidepressants	**81.6%**	**31**
Both	0.0%	0
Neither	13.2%	5
	answered question	**38**
	skipped question	**8**

27. Which of the above approaches do you feel is least safe?

		Response Percent	Response Count
Benzodiazepines		**86.8%**	**33**
Antidepressants		0.0%	0
Both		2.6%	1
Neither		10.5%	4
		answered question	**38**
		skipped question	**8**

28. Regarding the treatment of panic disorder, I believe following options are safe and effective.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Response Count
Therapy alone	15.8% (6)	**55.3% (21)**	26.3% (10)	2.6% (1)	38
Medication alone	0.0% (0)	26.3% (10)	**50.0% (19)**	23.7% (9)	38
A combination of therapy and benzodiazepine medication	28.9% (11)	**34.2% (13)**	26.3% (10)	10.5% (4)	38
A combination of therapy and antidepressant medication	**73.7% (28)**	21.1% (8)	5.3% (2)	0.0% (0)	38
				answered question	**38**
				skipped question	**8**

29. In which of the above combined approaches have you had the most training and experience?

	Response Percent	Response Count
Therapy alone	10.5%	4
Medication alone	10.5%	4
Therapy and benzodiazepine medication	5.3%	2
Therapy and antidepressant medication	**36.8%**	**14**
All of the above	**36.8%**	**14**
None of the above	0.0%	0
	answered question	**38**
	skipped question	**8**

30. With which of the above combined approaches are you least familiar?

	Response Percent	Response Count
Therapy alone	15.8%	6
Medication alone	28.9%	11
Therapy and benzodiazepine medication	15.8%	6
Therapy and antidepressant medication	5.3%	2
All of the above	2.6%	1
None of the above	**31.6%**	**12**
	answered question	**38**
	skipped question	**8**

31. Which of the above combined approaches do you feel is most effective?

	Response Percent	Response Count
Therapy alone	5.3%	2
Medication alone	0.0%	0
Therapy and benzodiazepine medication	21.1%	8
Therapy and antidepressant medication	**57.9%**	**22**
All of the above	13.2%	5
None of the above	2.6%	1
	answered question	**38**
	skipped question	**8**

33. Which of the above combined approaches do you feel is safest?

	Response Percent	Response Count
Therapy alone	13.2%	5
Medication alone	0.0%	0
Therapy and benzodiazepine medication	0.0%	0
Therapy and antidepressant medication	**78.9%**	**30**
All of the above	5.3%	2
None of the above	2.6%	1
	answered question	**38**
	skipped question	**8**

34. Which of the above combined approaches do you feel is least safe?

	Response Percent	Response Count
Therapy alone	2.6%	1
Medication alone	**63.2%**	**24**
Therapy and benzodiazepine medication	15.8%	6
Therapy and antidepressant medication	0.0%	0
All of the above	0.0%	0
None of the above	18.4%	7
	answered question	**38**
	skipped question	**8**

35. Please indicate your level of agreement with the statements below.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Response Count
Panic disorder is a chronic problem that will need ongoing treatment.	21.7% (10)	**54.3% (25)**	15.2% (7)	8.7% (4)	46
Panic disorder is not usually a client's only mental health problem.	39.1% (18)	**43.5% (20)**	10.9% (5)	6.5% (3)	46
Clients presenting with panic disorder should be referred for psychotherapy before being referred for medication.	32.6% (15)	**45.7% (21)**	19.6% (9)	2.2% (1)	46
I feel that I have the knowledge/training to effectively help clients with panic disorder.	30.4% (14)	**54.3% (25)**	15.2% (7)	0.0% (0)	46
I feel that my panic disorder treatment practices are safe and effective.	45.5% (20)	**47.7% (21)**	4.5% (2)	2.3% (1)	44
I feel that South's overall approach to panic disorder treatment practices are safe and effective.	42.2% (19)	**51.1% (23)**	2.2% (1)	4.4% (2)	45
Our center needs to revise its approach to treating panic disorder.	6.7% (3)	35.6% (16)	**46.7% (21)**	11.1% (5)	45
				answered question	**46**
				skipped question	**0**

36. Please indicate your level of agreement with the statements below.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Response Count
When psychotherapy has been effective for clients with panic, they will not tend to relapse.	2.2% (1)	**52.2% (24)**	37.0% (17)	8.7% (4)	46
Benzodiazepine medications build dependency.	**50.0% (23)**	41.3% (19)	4.3% (2)	4.3% (2)	46
Benzodiazepine medications interfere with successful psychotherapy.	19.6% (9)	17.4% (8)	**56.5% (26)**	6.5% (3)	46
Clients won't stay with anxiety provoking experiences long enough to benefit from psychotherapy.	0.0% (0)	28.3% (13)	**65.2% (30)**	6.5% (3)	46
Some clients may abuse or sell their benzodiazepine prescription medications.	**54.3% (25)**	39.1% (18)	6.5% (3)	0.0% (0)	46
Clients prescribed benzodiazepine medications for their panic disorder may not attend psychotherapy appointments regularly.	34.8% (16)	**41.3% (19)**	21.7% (10)	2.2% (1)	46
Clients tend to stop taking antidepressants that have been prescribed for panic disorder due to unwanted side effects.	8.7% (4)	**54.3% (25)**	37.0% (17)	0.0% (0)	46
Clients will tend to drop out of all treatment if denied medication for panic disorder.	10.9% (5)	**52.2% (24)**	32.6% (15)	4.3% (2)	46
				answered question	**46**
				skipped question	**0**

37. Please share any final comments on your views of the most effective and safest approaches to treating panic disorder at South Community:

	Response Count
	10
answered question	**10**
skipped question	**36**

38. Study Title: Diffusion of Innovative Panic Disorder Treatment Strategies in a Community Mental Health Agency Researchers: Whitney N. Pierce, Psy.M. and J. Scott Fraser, Ph.D. Sponsor: Wright State University and South Community Incorporated This is a consent to use the above responses for research purposes. The information below explains what to expect if I decide to allow my survey answers to be used for this study. I have been informed that participation is voluntary and will consider the information provided below carefully before making my decision. If I decide to participate, I will be asked to indicate my consent and print a copy of this page for my records. Purpose: The purpose of this study is to create a profile of knowledge, skills, attitudes, and current practices within a large community mental health agency in order to examine the options and dilemmas involved in forming practice guidelines for the treatment of panic disorder. South Community Inc. has agreed to partner in exploring these issues. I am being invited to participate in this study because I am an employee at South Community Inc., and by sharing my experiences and opinions I can contribute to the understanding of issues related to panic disorder treatment in South Community Inc. and other community mental health agencies. Procedures: Participation will involve allowing the use of my responses from this completed online survey for this research study. Benefits/Risks: There are no anticipated risks associated with my participation in this research study. The potential benefit for me is that I may contribute information that is useful for South Community Inc. and other community mental health agencies in framing treatment guidelines for helping clients with panic disorder. Remuneration: I will be given the opportunity to be entered in a drawing for one of four $50 Amazon.com gift certificates (it is anticipated that approximately 150 employees will participate in this survey) in return for my participation in this research study. A drawing will take place to award these gift certificates after the survey response collection period has ended, and I will receive my gift certificate via email if I win. Confidentiality: Any information about me obtained from this study will be kept strictly confidential. My online survey responses and study-related materials will be stored in an electronic password protected format, or kept under lock and key in locked offices. Questionnaire responses will be aggregated and will not be linked to my identity. South Community will receive a summary report of the findings from all of responses to this survey in order to help them gain a better understanding of issues related to panic disorder treatment for client care employees at their agency. In order to protect my anonymity, information about my individual responses set will not be released. If I consent to participate in the research study, my responses may also be used in a report or publication of this research study. Contacts and Questions: If I have questions about this research study, or have a research-related injury to report, I can contact the researcher Whitney Pierce at (937) 775-4300. If I have general questions about giving consent or my rights as a research participant in this research study, I can call the Wright State University Institutional Review Board at 937-775-4462. Participants' Rights: I may refuse to participate in this study without penalty or loss of

benefits to which I am otherwise entitled. By indicating my consent, I do not give up any personal legal rights I may have as a participant in this study.

	Response Percent	Response Count
I have read the above information, and I agree to allow my survey responses to be used in this research study.	100.0%	46
I do not wish to participate in the above described research study.	0.0%	0
answered question		46
skipped question		0

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