

Caring for the Caregivers: Somatic Experiencing Treatment with Social Service Workers
Following Hurricanes Katrina/Rita

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Abstract

In a disaster social service workers are often survivors themselves. This study examines whether Trauma First Aide®, a brief (one to two session) stabilization model derived from Somatic Experiencing®, can reduce the post-disaster symptoms of social service workers involved in post-disaster service delivery. The study was implemented with a non-random sample of 142 social service workers who were survivors of Hurricanes Katrina/Rita in Baton Rouge and New Orleans, Louisiana 2-3 months after the disaster. Ninety-one participants received SE/TFA and were compared with a matched comparison group of 51, using propensity score matching. All participants first received group psychoeducation. Results support the benefits of Somatic Experiencing's brief Trauma First Aide® model. The treatment group showed statistically significant gains in resiliency indicators and decreases in PTSD symptoms. While psychological symptoms increased in both groups at the 3 to 4 month follow-up, the treatment group's psychological symptoms were statistically lower than those of the comparison group.

153 words

In August and September of 2006 Hurricanes Katrina and Rita inflicted a devastating toll on Gulf State communities, leaving in the aftermath vast numbers of suffering adults and children. Disasters like these that cause massive devastation and prolonged community and economic disruption have been termed “atypically strong disasters”. Such strong disasters are frequently characterized by severe to very severe impairment of individual victims and survivors (Norris, 2001).

In response to the devastation caused by the hurricanes, in October 2006 the administrators for a nationally-based social service organization requested help from the Foundation for Human Enrichment (FHE) in treating the disaster-related and vicarious trauma their staff had experienced as a result of these disasters. Agency administrators were concerned about the post-disaster symptoms they were seeing in themselves and their staff. Many staff had fled Louisiana, leaving the agency short-handed to face mounting needs. Most of the agency staff from New Orleans were relocated to trailers in Baton Rouge, where they then often conducted their work out of their cars or local restaurants.

In New Orleans the hurricanes and resulting levee breaks caused widespread destruction of personal residences and property that included the agency field offices in New Orleans. There were long delays for FEMA trailers. Telephone lines and cell towers were downed. Records were soaked and mold-covered. In Baton Rouge residents received primarily wind damage from the hurricane. However, another challenging issue faced by residents of Baton Rouge was their burgeoning population with people that had fled New Orleans and other coastal towns. The population of Baton Rouge tripled in a matter of days.

As a result of the tremendous population increase, Baton Rouge agency staff confronted long lines of suffering individuals and families, as well as exposure to the traumatic stories of the clients that had fled New Orleans. The New Orleans and Baton Rouge staff were faced with the daunting task of both caring for themselves and their families, and attempting to meet the burgeoning recovery needs of their communities. Thus, many staff experienced direct stress from their own exposure and losses as well as vicarious stress through their work with clients who were survivors.

Untreated Caregivers

Social service providers and other professional helpers are often thought to be immune from typical traumatic responses that characterize “ordinary people” (Bamber, 1994). However, even when an individual has not experienced trauma directly, listening to the emotional aftereffects of traumatic events as described by clients can result in what is commonly referred to as “vicarious or secondary traumatization” (Blair & Ramones, 1996; Schauben & Frazier, 1995; Sexton, 1999), and can in some instances result in traumatic stress (Lerner, 2005) and the development of PTSD (Zimering, Gulliver, Knight, Munroe & Keane., 2006). A study by Luce, Firth-Cozens, Midgley, & Burges (2002) found that individuals that experience a trauma both as a civilian and as a professional have higher levels of symptomatology than those that experience the traumatic event solely as a civilian or as a professional. The traumatic stress reactions that often follow a catastrophic event can hinder the ability of local caregivers to function at pre-disaster levels with their constituencies.

Effects of disasters and trauma

Carr, Lewin, Webster, Kennedy Hazell & Carter (1997) describe two sets of psychological consequences that arise from a disaster: “threat effects” (those occurring in the immediate aftermath) and “disruption effects”(those extending weeks, months and sometimes years beyond the disaster). Disruption effects included constant exposure to debris, disillusionment with governmental agencies, long delays for FEMA trailers, fear of the next hurricane season, property loss, displacement, fragmentation of families, and financial stress. The Carr, et.al. study highlights the fact that natural disasters are not circumscribed events with a defined endpoint.

When left untreated, traumatic stress reactions have been found to lead to long-term negative mental-health effects (Bower & Sivers, 1998; Brady, Killeen, Brewenton & Lucerini, 2000; Mayou, Bryant & Ehlers, 2001). Further, symptoms from a traumatic event can still be present after many years and may not spontaneously remit (Kessler, Sonnega, Bromet, Hughes and Nelson, 1995). Levels of symptoms found early in the post-disaster period have been found to be strong prognosticators of later symptomatology (Norris, 2001).

Trauma treatment

Both the duration and level of psychological symptoms can often be shortened for survivors if appropriate mental health treatment is provided after a traumatic event (Harvey, Bryant, & Tarrier, (2003). The most widely practiced and studied form of treatment following trauma is Cognitive Behavioral Therapy (CBT) (Ellis, 1977). CBT is a therapeutic intervention which focuses on helping individuals gain personal control over negative, internal thought processes. CBT studies using 3-10 session interventions have the greatest empirical support as measured by decreases in PTSD sequelae according to Gibson's (2005) review of empirical studies. Bradley, Greene, Russ, Dutra, & Westen's (2005) meta-analysis of psychotherapy outcome studies on PTSD found that more than half the patients who completed treatment with various forms of cognitive behavior therapy improved.

Eye Movement Desensitization and Reprocessing (EMDR), an intervention which uses bilateral stimulation linked with cognitions and emotions, has also shown positive effects with trauma survivors. Grainger, Levin, Allen-Byrd, Doctor & Lee (1997) assessed the benefits of EMDR several months after Hurricane Andrew. Recipients of EMDR had greater reductions in PTSD symptoms compared to a waitlisted control group. However, Devilly and Spence's (1999) study with adults who had experienced several traumas comparing CBT and EMDR found the CBT intervention to be more effective at reducing symptoms of PTSD. Gibson's (2005) review of the trauma intervention literature indicates that no intervention has been demonstrated to consistently be effective. CBT and EMDR appear to have the most success thus far.

The body and trauma

There is substantial evidence that in addition to psychological trauma, survivors of trauma also suffer significant and often debilitating physical or somatic symptoms resulting from their experience. Thus, traumatic stress causes both "mental health" problems and a variety of serious somatic symptoms, including loss of bowel and bladder control (Solomon, Laor & McFarlane, 1996); shaking, trembling, and increased heart rate (Bernat, Ronfeldt & Calhoun, 1998; Shalev et al., 1998); myofascial pain (Scaer, 2006); diabetes (Golden, Williams & Ford, 2004); heart disease (Musselman & Nemeroff, 2000), and a continuum of stress-related diseases (Green, Grace & Glessner, 1985; Scaer, 2006).

Knowledge of biological responses to fear and helplessness has been incorporated into trauma intervention strategies by such interventions as Eye Movement Desensitization and

Reprocessing (EMDR), Cognitive Behavioral Therapy (CBT), and other exposure therapies. However, the trauma field is now seeing the arrival of body-focused interventions such as the one used in this study, Somatic Experiencing/Trauma First Aide (SE/TFA), that put their *primary* emphasis on traumatic symptoms as patterns of dysregulation in the nervous system rather than on cognitions and emotions. Patterns of dysregulation increase the risk of physical and psychological illnesses such as immune-system disorders, depression, anxiety, and cognitive impairment (Gunnar & Vazquez, 2001; McEwen, 1998; Sapolsky, 1994). Studies such as these highlight the importance of using interventions that target the autonomic nervous system's responses to trauma. Integrative interventions specifically target the way posttraumatic responses have been stored or patterned in the body, in addition to working with cognitions and emotions (Levine, 1997; Ogden & Minton, 2000; Rothschild, 2000).

There is research to support the role the nervous system plays in traumatic symptomatology. Studies using physiological monitoring are contributing to awareness of autonomic nervous system responses to traumatic events (Bryant, Harvey, Guthrie & Moulds, 2000; Griffin, Resick & Mechanic, 1997). The Griffin et.al. study found that when highly dissociative rape victims were verbally describing their rapes, there was a significant suppression of autonomic reactivity. In a study of assault victims, Bryant et.al. found that elevated sympathetic nervous system activation was associated with later development of PTSD.

SE/TFA: an integrative approach

Somatic Experiencing (SE) is an integrative (mind-body) approach developed by Peter A. Levine which focuses on the biological basis of trauma and the resolution of post-traumatic stress activation through the principles of biological completion and self-regulation (Levine, 1996). Trauma First Aide (TFA) is the brief, early intervention form inspired by SE, used for stabilization in disaster and emergency settings (Miller-Karas & Everett, 2005). SE/TFA emphasizes that human responses to threat are primarily instinctive and biological and only secondarily are cognitive and psychological. SE/TFA treatment focuses on identifying and restructuring motoric and other psychophysiological patterns that underlie a wide variety of traumatic responses. The focus of treatment is on unlocking the somatized "stress memories" and movement impulses that remain bound in the body and restoring balance to the nervous system (Levine, 2005) by working with small gradations of traumatic activation alternated with the use of somatic resources. Working with small increments of traumatic material is a key component

of SE/TFA treatment as is the development of somatic resources. Together they reduce the likelihood of escalation of arousal, flooding and/or retraumatization and help develop a sense of mastery and self-management over intense somatic states. Cognitions and emotions are addressed in SE/TFA but are not the primary focus of intervention.

SE/TFA is designed to be used in settings where brief treatment is appropriate. In many emergency settings, including natural disasters, clinicians may have only brief access to survivors. As survivors attempt to recover from the event they may change jobs, relocate, or be so consumed with gathering the pieces of their lives back together that they do not continue in treatment or cannot be located. Interventions that are effective in one to two sessions seem well-suited in such circumstances.

This paper describes the evaluation of a project to provide Somatic Experiencing/Trauma First Aide (SE/TFA) to a group of social service agency staff in New Orleans and Baton Rouge, Louisiana in the aftermath of hurricane Katrina.

Methods

Participants

Participants in the present study were 142 staff from a social service agency who volunteered to attend the SE/TFA psychoeducational groups in the Baton Rouge and New Orleans offices and field sites. Staff at every level of the agency participated, including support and maintenance staff, paraprofessionals and professionals. Agency administrators wanted treatment to be available to any staff member who felt they could benefit. Of the 272 staff that participated in the group sessions, 110 (40%) chose to participate in 1-2 individual SE/TFA treatment sessions. Of these, 19 had missing data on pre-treatment variables and thus were removed from the sample, leaving a total of 91 in the treatment group, and 51 selected for the comparison sample. Informed consent was obtained from all participants prior to participation in psychoeducational groups.

Because each social service staff member chose whether to receive treatment, assignment to the treatment and no-treatment conditions was non-random. To correct for potential sample selection bias due to non-random assignment, and to obtain unbiased estimates of the treatment effect, propensity score matching was used to create matched treatment and comparison groups. Propensity score matching is designed to find the best multivariate match for every treatment

case from the available pool of comparison cases. For this study, each person who chose treatment was matched with a person who did not choose treatment (i.e., had received only the psychoeducational group session), based on a propensity score calculated from nine variables (gender, ethnicity, education level, and city, coping, physical and psychological symptoms, PTSD symptoms and resiliency). Table 1 shows descriptive statistics for the study participants, as well as the variables we sought to control for and that were included in the propensity score matching procedure. The propensity score matching procedure was performed using Painter's adaptation of Levesque's propensity matching code (Painter, 2004).

Procedure

Individuals who selected to participate in the psychoeducation group were first consented orally and in writing, followed by the baseline assessment. Those who chose to continue with the individual treatment attended 1-2 SE/TFA sessions during a 1-2 week period of time. The psychoeducational groups and the SE/TFA sessions were all conducted in November and December 2005. The follow-up assessment for both the treatment and comparison groups was collected three to four months after the psychoeducational group session, and was self-administered by participants or completed in telephone interviews with trained volunteers.

Treatment

The 90-minute psychoeducational groups consisted of 8 to 12 agency staff and 2 SE/TFA team leaders. The groups provided information about normal responses to disaster and coping strategies. All participants in the current study participated in the groups.

For the treatment group, individual SE/TFA sessions were held in diverse settings such as food warehouses, walk-in clinics, and offices. The goal was to be as accessible as possible for the agency staff who requested individual treatment. Participants were offered one to two individual sessions lasting from 40 to 60 minutes at no cost. The agency provided employees with release time to attend the sessions.

The individual sessions utilized SE/TFA, a protocol with a manual (Miller-Karas & Everett, 2005) providing specific interventions which focus primarily on self-regulation (i.e., restoring equilibrium to the nervous system) and secondarily on working with associated emotions and cognitions. SE/TFA offers concrete skills to reduce hyperarousal and dysregulation including: (a) tracking shifts in the nervous system by observing breath (rapid, shallow, panting); heart rate (increase, decrease); muscle tension, shifts in posture, changes in skin color, and

involuntary body movements (eyes, head, neck, shoulders, hands, legs); (b) resource utilization (internal and external); (c) grounding techniques; (d) pendulation (moving between states of relative organization and disorganization within the nervous system); and (e) titration (the process of gradually accessing somatic activation, body sensations, feelings, and thoughts associated with the traumatic experience so that the nervous system can adjust to each increment without becoming overwhelmed (Levine, 1997; Miller-Karas & Everett, 2005). Participants who receive individual SE/TFA sessions are encouraged to use the concrete skills they have experienced in the session on their own after treatment.

Clinicians

Thirty-five SE-trained volunteer clinicians from the U.S. and Canada provided the psychoeducational groups and individual SE/TFA treatment. All the clinicians had completed a minimum of 2 years of the three-year SE training, including the required hours of their own individual SE treatment and case consultation. Case consultations were provided by each team's SE/TFA clinical supervisor while in the field. Clinicians completed a check-list after each individual SE/TFA session detailing the SE/TFA interventions used. All team members were given an orientation which included information about the stages of disaster, details about the local context, team-building, roles and responsibilities, and self-care.

Measures

The instruments collected basic demographic information as well as information about participant coping, symptomatology and resiliency. Coping was assessed utilizing a 4-item scale adapted from a scale used by the agencies (alpha 0.79) that asked participants to rate how the hurricanes had affected their ability to handle stressful situations, care of their physical health, ability to carry out daily tasks to their usual standards, and relationships with family, friends and community. Symptomatology was assessed utilizing a 19-item scale based on items from the SCL-90-R (Derogatis, 1994). The 19 items were selected to reflect the symptoms expected to be most responsive to SE/TFA treatment. Principal component analyses revealed two factors (physical and psychological) within this 19-item scale. Groupings of physical symptoms (6 items) and psychological symptoms (7 items) were identified and two scales were created based on these groupings (alphas were 0.70 for the physical symptom scale and .80 for the psychological symptom scale). Post-traumatic stress disorder was assessed utilizing the 17-item PCL-Civilian version inventory (alpha 0.92) (Weathers, Huska & Keane, 1991; Weathers, Litz,

Herman, Huska & Keane, 1993). Resiliency was measured with a 7-item scale developed in-house (alpha 0.85) that included frequency of experiencing sense of humor, relaxed breathing, feeling hopeful, feeling peaceful, being well-rested, a positive mood, and smiling.

Data Analysis

Data analyses were conducted to determine if: 1) the treatment and comparison groups were statistically similar at intake; 2) there were significant differences between the treatment and comparison groups at follow-up in self-reported levels of coping, physical and psychological symptoms, PTSD symptoms and resiliency; and 3) significant treatment effects differed by demographic group.

To test whether the propensity score matching procedure successfully identified a statistically similar comparison group at intake, one-way ANOVAs and Chi-Square analyses were performed. To determine if there were significant differences between the treatment and comparison groups at follow-up, change scores representing the difference in reported symptoms from baseline to follow-up were calculated for each participant for the coping, physical and psychological symptoms, PTSD symptom and resiliency measures. These scores were calculated by subtracting the baseline scores from the follow-up scores. One-way ANOVAs were then performed to determine if treatment and comparison group change scores differed significantly at follow-up in average levels of reported coping, physical and psychological symptoms, PTSD symptoms, and resiliency. Multiple post-hoc comparisons were performed using the Tukey procedure (Linton & Gallo, 1975) to explore whether significant ANOVA findings varied by demographic group.

Results

Results from the one-way ANOVA and chi-square analyses show that the propensity score matching method successfully removed any significant observable differences in the intake measures between the treatment and non-treatment groups, with the exception of some significant age differences between groups. As expected, no significant differences at intake were found between the treatment and comparison groups in average levels of reported change in coping, $F(1,140) = 1.19, p = 0.28$, physical symptoms, $F(1,140) = 0.42, p = 0.52$, psychological symptoms, $F(1,140) = 2.11, p = 0.15$, PTSD symptoms, $F(1,140) = 0.35, p = 0.56$, or resiliency $F(1,132) = 0.61, p = 0.44$.

Also as expected, results from the chi-square analyses showed no significant baseline differences between the treatment and comparison groups for site, $\chi^2(1, N = 132) = 0.47, p = 0.50$, gender, $\chi^2(1, N = 132) = 0.47, p = 0.50$, ethnicity $\chi^2(1, N = 139) = 0.70, p = 0.40$ or education, $\chi^2(3, N = 139) = 0.51, p = 0.92$. A significant difference was found between the treatment and comparison groups for age, $\chi^2(2, N = 139) = 7.98, p = 0.02$. Examination of the cell frequencies showed that among participants ages 40 to 54, about 78% were in the treatment group while only 22% were in the comparison group, while the percentage of treated participants in the younger (ages 22 to 39) and older age groups (ages 55 and older) ranged from 45% to 55%.

Significant differences between the treatment and comparison group were found for PTSD symptoms (PCL-Civilian), psychological distress factor of the SCL-90, and resiliency, but not for coping or the physical symptoms factor of the SCL-90 (see Table 2). Both the treatment and comparison groups reported increased levels of psychological symptoms at follow-up, indicating their symptoms had worsened over the 3-4 month period between intake and follow-up. However, the psychological symptoms of the treatment group increased, or worsened, significantly less than the symptoms reported by the comparison group. Both the treatment and comparison groups reported decreased PTSD symptoms at follow-up. However, the treatment group PTSD symptoms decreased significantly more than the comparison group PTSD symptoms between intake and follow-up. With regard to resiliency, the treatment group improved significantly more than the comparison group. Specifically, the treatment group reported improved resiliency, while the comparison group worsened, reporting lower resiliency at follow-up than at intake.

Multiple post-hoc comparisons among the 91 participants that received treatment showed that PTSD change scores at follow-up were found to be significantly different across age groups, $F(2,87) = 4.07, p = 0.02$. The two youngest age groups ($M = -.57, SD = 0.68, N = 24$; $M = -0.56, SD = 0.67, N = 42$) showed significantly more improvement (lower symptom levels) at follow-up in reported PTSD symptoms than the oldest age group ($M = -0.12, SD = 0.46, N = 22$). No significant post-hoc differences were found between people who received 1 individual SE/TFA treatment session and 2 individual SE/TFA treatment sessions in change scores at follow-up in psychological symptoms, PTSD or resiliency.

Discussion

Hurricanes Katrina/Rita caused extreme suffering to the Baton Rouge and New Orleans communities and the individuals delivering post-disaster services. As the literature indicates, individuals who experience a trauma both as a civilian and as a professional are likely to have higher levels of symptomatology than those experiencing trauma solely as a civilian or a professional (Luce, et.al., 2002). Furthermore, in large-scale natural disasters the effects are not circumscribed to a brief period following the event; disruption effects can go on for months and years contributing to further traumatic stress (Kessler, et.al.,1995). Early mental health treatment has been found to shorten the period of suffering (Harvey, Bryant & Tarrier, 2003). The goal of this project was to address the traumatic stress symptoms and promote resiliency of the staff in New Orleans and Baton Rouge two months following the hurricanes and to evaluate the effectiveness of a brief (1-2 session) mind-body treatment, SE/TFA, in a matched comparison study.

The results, while tentative because this was not a randomized controlled trial, do suggest that SE/TFA was effective in attenuating the observed emergence of PTSD symptoms and promoted resiliency. While both groups showed an increase in and psychological distress at follow-up, the SE/TFA treatment group reported significantly less severe psychological distress, and increased resiliency, relative to the comparison group (whose resiliency scores had decreased at follow-up). The increase in symptoms was not unexpected, given “disruption trauma” in the months (and even years) following a disaster of the scale of Katrina/Rita. However, the treatment group increases were significantly lower than those of the comparison group. No differences were found between groups for physical symptoms of distress or coping.

The promising results of this study raise the interesting question of whether there may be a “window of opportunity” in which an integrative, low-dosage intervention such as SE/TFA can promote stability shortly after a disaster. There is considerable debate about when it is appropriate for mental health interventions to be initiated following catastrophic events. An early intervention, stabilization model such as SE/TFA appears to be effective at relieving distress and PTSD symptoms and increasing resiliency in the early stages of post-disaster response when it is often difficult, if not impossible, to provide more than one or two sessions.

Trauma studies seldom assess resiliency data, even though increased resiliency is likely to be an implicit goal of many interventions. SE/TFA includes a treatment focus on internal and

external resources, and the findings suggest that the intervention did indeed bolster resiliency. Resiliency is likely to be an important contributor to on-going stabilization and future adaptation to individual change in the post-disaster phase. More research is needed on the factors that promote resiliency and ways to incorporate these factors into treatment models.

The lack of significant difference in coping scores between treatments and controls is somewhat puzzling given the significant increase in the treatment group's resiliency scores at follow-up. It may be that the psychoeducational group that was provided to both treatment participants and the comparison group offered enough information on ways to cope with the aftermath of disaster that the two groups remained similar in reported coping abilities at the follow-up point. Alternatively, the on-going disruption trauma (such as constant exposure to debris, disillusionment with governmental agencies at all levels, long delays for FEMA trailers, and fear of the next hurricane season) may have taxed individuals' coping abilities regardless of their resiliency.

We were also surprised by the lack of finding for physical symptoms, which are targeted in SE/TFA treatment. Integrative models such as SE/TFA focus on treating both psychological and physical symptoms. It is possible that trauma-related physical symptoms from the hurricanes cannot be expected to remit in 1-2 sessions. However, the unexpected finding raises several questions. Do trauma-related physical symptoms require lengthier treatment than psychological symptoms? If so, how many more treatments are needed? Which physical symptoms are most amenable to brief treatment? Future studies of the effectiveness of SE/TFA and other integrative approaches to trauma could benefit from the collection of physiological indicators (e.g., heart rate, skin conductance) pre and post treatment to help close the gap in knowledge as to how arousal in the autonomic nervous system is linked to physical, psychological and cognitive symptoms.

The major limitation of the current study is that it was not a randomized controlled trial. The project was first and foremost a service-delivery project, designed in accordance with the requests of the agency administrators, who requested that psychoeducational groups and SE/TFA treatment be available to all staff. The participants therefore self-selected into the project. All volunteered to attend the psychoeducation group, and then self-selected into either the treatment condition or no further treatment. The implications of this are significant: it is likely that those who requested further treatment were highly motivated to learn and apply coping skills and to

reduce their symptoms. The use of propensity score matching, while helping to ensure that treatment and comparison groups are similar on measured covariates, does not ensure that group differences on unmeasured covariates are not present. Future randomized controlled studies are therefore needed to confirm the outcome findings of this study.

It is also noteworthy that all participants in the study were employed, which sets them apart from many disaster survivors and limits generalization to the broader population of disaster survivors. It can be inferred that participants' employment status means they are likely to be a more stable group overall despite high levels of symptoms at baseline.

The modification of the SCL-90-R may have also limited the study findings by making comparisons with other studies that use the measure impossible. The inventory as a whole is too lengthy for use in a disaster setting but has items well-suited to this study. The items selected were those expected to be most responsive to SE/TFA; but it is possible that other items may have been better indicators of treatment effect, particularly items related to physical symptoms. Fortunately, the alphas for the psychological and physical symptom categories indicated that both categories had acceptable reliability (alphas of .70 and .80, respectively), and provided us the ability to examine psychological and physical distress symptoms separately.

In summary, the study results suggest that integrative models such as SE/TFA that incorporate "bottom-up," self-regulatory approaches to trauma, have promise. These treatment models, oriented as they are to instinctive and biological responses to threat, may be potent additions to the field of disaster treatment. While our study suggests that an early intervention such as SE/TFA can attenuate PTSD symptoms and distress, future studies may find that they also improve survivors' abilities to advocate for themselves, stabilize family and community relationships, and reduce the hopelessness that often characterizes the months, and sometimes years, following a disaster. This is especially important for those in our community who are both responders and victims of the disaster.

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Table 1.

Descriptive Statistics for Measures Used in Propensity Score Matching

| Measure | Category | N | % |
|------------|------------------|-----|------|
| Site | New Orleans | 104 | 73.2 |
| TOTALS 142 | Baton Rouge | 38 | 26.8 |
| Gender | Female | 113 | 85.6 |
| TOTALS 132 | Male | 19 | 14.4 |
| Age | 22 to 39 | 45 | 32.4 |
| TOTALS 139 | 40 to 54 | 54 | 38.8 |
| | 55 and Older | 40 | 28.8 |
| Ethnicity | African American | 47 | 33.8 |
| TOTALS 139 | White and Other | 92 | 66.2 |
| Education | High School | 11 | 7.9 |
| TOTALS 139 | Some College | 31 | 22.3 |
| | College Graduate | 44 | 31.7 |
| | Graduate Degree | 53 | 38.1 |

| Measure | Mean | SD | Range |
|------------------------|-------|-------|---------|
| Coping | 2.95 | 1.00 | 1 – 5.0 |
| Physical symptoms | 0.57 | 0.62 | 0 - 3.5 |
| Psychological Symptoms | 1.34 | 0.99 | 0 - 4.0 |
| PTSD | 30.73 | 11.68 | 17 - 66 |
| Resiliency | 3.18 | 0.79 | 1 - 5.0 |

Table 2.

ANOVA Results Showing Post-Treatment Differences Between Treatment and Comparison Groups

| Descriptive measure | <i>df</i> | <i>F</i> | <i>M Intake</i> | <i>M Follow-up</i> | <i>M Change</i> | <i>SD</i> | <i>p</i> | <i>Eta Sq</i> |
|------------------------|-----------|----------|-----------------|--------------------|-----------------|-----------|----------|---------------|
| Coping | 141 | 0.45 | | | | | 0.51 | 0.003 |
| Treatment (n=91) | | | 3.01 | 2.21 | -0.81 | 1.04 | | |
| Comparison (n=51) | | | 2.82 | 2.14 | -0.69 | 1.00 | | |
| Physical Symptoms | 141 | 0.02 | | | | | 0.89 | <.000 |
| Treatment | | | 0.59 | 1.20 | 0.61 | 0.65 | | |
| Comparison | | | 0.52 | 1.14 | 0.62 | 0.54 | | |
| Psychological Symptoms | 141 | 5.13* | | | | | 0.03 | 0.035 |
| Treatment | | | 1.43 | 1.52 | 0.10 | 1.06 | | |
| Comparison | | | 1.18 | 1.67 | 0.50 | 0.90 | | |
| PTSD Symptoms | 141 | 11.20** | | | | | 0.001 | 0.074 |
| Treatment | | | 31.16 | 23.48 | -7.68 | 11.01 | | |
| Comparison | | | 29.96 | 28.99 | -1.08 | 11.75 | | |
| Resiliency | 133 | 25.77** | | | | | <0.001 | 0.163 |
| Treatment | | | 3.14 | 3.84 | 0.69 | 1.02 | | |
| Comparison | | | 3.25 | 2.98 | -0.26 | 1.12 | | |

* $p < .05$. ** $p < .01$.

