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A randomized, controlled, pilot study of a single session psychoeducation treatment for urban, culturally diverse, trauma-exposed adults

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Abstract

This randomized pilot study aimed to determine whether a single session of psychoeducation improved mental health outcomes, attitudes towards treatment, and service engagement among urban, impoverished, culturally diverse, trauma exposed adults. Sixty-seven individuals were randomly assigned to a single session psychoeducation treatment or a delayed treatment comparison control group. The control group was found to be superior to the treatment group at post-test with respect to symptoms of PTSD, anxiety, occupational and family disability. At follow-up all participants had completed the psychoeducation treatment, and a mixed effects model indicated significant improvements over time in symptoms of PTSD, anxiety, depression, somatization, and attitudes towards treatment. Ninety-eight percent of the participants reported the psychoeducation was helpful at follow-up. Participants also reported a 19.1% increase in mental health service utilization at follow-up compared to baseline. Implications for treatment and future research are discussed.

Keywords

Trauma; Single session; Urban; Culturally diverse; randomized controlled trial

Exposure to trauma and violence is highly prevalent among urban, low-income adults (Alim et al., 2008; Breslau et al., 1998; Ghafoori, Barragan, Tohidian, & Palinkas, 2012; Gillespie et al., 2009). Research suggests culturally diverse and impoverished communities may experience more chronic and uncontrollable life events and traumas than the general population (e.g. Ennis, Hobfoll, & Shroder, 2000), and these traumas may be related to poor mental health and functioning (Santiago, Kaltman, & Miranda, 2013). In addition to exposure to trauma and violence, common stressors encountered by low-income individuals include conflict among family members, frequent moves and transitions, exposure to discrimination, and economic hardships (Santiago et al., 2013). A large body of evidence

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has documented increased risk for difficulties such as posttraumatic stress disorder (PTSD), depression, and anxiety as well as functional disability in trauma survivors, particularly those who are low-income (Breslau, 2002; Breslau, Davis, & Schultz, 2003; Koenen, Stellman, Sommer, & Stellman, 2008; Mezuk et al., 2010; Santiago et al., 2013; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011). Increased susceptibility to mental health and functional problems among trauma-exposed, impoverished residents of urban, economically disadvantaged communities may be best addressed by provision of trauma-focused mental health services, however, studies have shown underutilization of mental health care relative to need (Amaya-Jackson, et al., 1999; Jaycox, Marshall, & Schell, 2004). A continuing challenge is to develop and evaluate innovative strategies to improve mental health service engagement and outcomes in low-income trauma-exposed adults (Gavrilovic, Schützwohl, Fazel & Priebe, 2005; Jaycox et al., 2004; Kelly, Merrill, Shumway, Alvidrez, & Boccellari, 2010). The aim of the current investigation is to assess the utility of a single session of psychoeducation offered in a community health clinic as a means to improve mental health outcomes, attitudes towards seeking treatment, and mental health treatment engagement among a vulnerable group: urban, impoverished, culturally diverse, trauma-exposed adults.

Psychoeducation is featured in most evidence-based therapies for PTSD (Foa, Keane, Friedman, & Cohen, 2009). It consists of increasing understanding of common reactions to traumatic stress and adjustment difficulties, normalizing experiences, and identification of symptoms, coping skills, and questions that may impact treatment or create barriers to treatment (Mendenhall, Fristad, & Early, 2009; Wessely et al., 2008). The goal of psychoeducation is to improve knowledge, attitudes toward treatment, and perceived need (Mendenhall et al., 2009). Typically, psychoeducation is included at the start of evidence-based treatment protocols such as Exposure Therapy (ET), Eye Movement Desensitization and Reprocessing (EMDR), and cognitive behavioral therapies (Foa et al., 2009). Little research exists on the specific effects of psychoeducation (Ehlers et al., 2003; Yeomans, Forman, Herbert, & Yuen, 2010) to decrease symptoms of PTSD and other common trauma related symptoms.

Preliminary studies investigating the specific effects of psychoeducation for reducing distress in trauma-exposed adults (Ehlers et al., 2003; Yeomans et al., 2010) have yielded inconsistent results. One study suggests a single session of psychoeducation may reduce PTSD symptoms (Resnick et al., 2007). Other studies indicate that psychoeducation may not improve PTSD symptoms compared to other treatments (Neuner, Schauer, Klaschik, Karunakara, & Elbert, 2004; Yeomans et al., 2010). The study by Neuner and colleagues (2004) involved a single session of psychoeducation, and the study by Yeomans and colleagues (2010) offered three sessions of psychoeducation. In the Yeomans study (2010) discussed above, an alternative treatment was provided which included interpersonal dialogue, and it is unclear whether the addition of interpersonal dialogue was more helpful than psychoeducation. In an uncontrolled open-label pilot study of inpatients with PTSD and substance use disorders, a single session psychoeducation intervention significantly decreased PTSD symptoms severity from baseline to 1-week follow up, and again between 1-week and 3-month follow-ups, however the participants still continued to meet diagnostic criteria for PTSD (Mills et al., 2014). Although a single session of psychoeducation has been found to be helpful in decreasing symptoms of mental health conditions such as anxiety,

depression, and substance abuse in non trauma exposed samples (Lee et al., 2014), additional research is necessary to further understand whether psychoeducation alone may decrease PTSD or other common types of psychological distress among survivors of traumatic events.

Studies examining the impact of psychoeducation on improving attitudes towards seeking psychological help or treatment engagement are sparse. A few studies in the wider mental health literature have indicated that educational treatments have resulted in more positive opinions about seeking treatment (Esters, Cooker, & Ittenbach, 1998; Morgan Owusu, 2003). One study has also shown that an 8 week psychoeducational group for adolescents exposed to violence and abuse significantly increased knowledge and more adaptive attitudes towards care (Glodich, 2000). Our previous study (Ghafoori et al., 2014) suggested that negative attitudes towards treatment engagement may reflect a lack of perceived need and may be amenable to change with appropriate psychoeducation. No study to date has examined whether a single session of psychoeducational treatment will improve attitudes towards seeking psychological help or increase treatment engagement among vulnerable trauma survivors.

The present study aimed at assessing the effects of a single session of psychoeducation in vulnerable trauma survivors identified in a community health clinic by means of a pilot randomized controlled trial (RCT). Based on existing empirical evidence in the wider mental health literature, we tested the following hypothesis: 1) relative to a delayed treatment comparison control group psychoeducation treatment would result in decreased traumatic stress symptoms, specifically PTSD, anxiety, depression, somatization, and functional disability; and 2) relative to the delayed treatment comparison control group psychoeducation treatment would result in improved attitudes towards seeking treatment in trauma-exposed adults. We also explored the following questions: 1) would psychoeducation treatment improve traumatic stress symptoms, disability, and attitudes towards seeking treatment over time; 2) would psychoeducation treatment result in a perception that mental health treatment is helpful at follow-up; and 3) would psychoeducation treatment result in an increase in mental health service engagement at follow-up?

Methods

Participants and Procedures

Participants were recruited from an urban community health clinic offering no-cost health services in southern California. This study was part of a larger study focusing on treatment utilization for urban, low-income, culturally diverse trauma survivors (Ghafoori, Fisher, Koresteleva, & Hong, 2014). Between August, 2011- May, 2012 every adult seeking health related services at the clinic was offered a flyer upon check-in at the clinic that briefly described the study. If the individual was interested in knowing more about the study, front office personnel referred the prospective participant to a research staff member who first screened the individual for possible inclusion in the study using a script developed to screen individuals for inclusion/exclusion criteria. All eligible participants met the criteria for the Expanded Behavioral Model of Health Service Use Among Vulnerable Populations (EBMVP) definition of a vulnerable population, meaning they self-identified as one or more

of the following: an immigrant, an individual with a history of mental illness, or a victim of violence (Gelberg, Andersen, & Leake, 2000). Moreover, all participants in this study reported an income level at or below the United States Census Bureau (2013) guidelines for poverty level. Eligible participants were at least 18 years of age, English speaking, and had experienced or witnessed any lifetime traumatic event that involved actual or threatened death or serious injury or threat to the physical integrity of others. To be considered for the study, the individuals must have experienced a traumatic event and responded to the traumatic event with fear, helplessness, or horror (*Diagnostic and Statistical Manual of Mental Disorders IV-R [DSM IV-R]* Criterion A1 and A2 of PTSD; American Psychiatric Association [APA], 1994). Individuals were excluded from study participation if they did not have a positive trauma history, were medicated for bipolar disorder, had received a diagnosis of schizophrenia, had suicidal or homicidal ideation within one year of study participation, had been hospitalized in the previous year for psychiatric issues, had issues with substance abuse or dependence within three months of study participation, or reported cognitive impairment. The rationale for the inclusion and exclusion criteria was based on previous studies of traumatized samples (Rothbaum et al., 2008) that utilized these criteria to ensure patient safety. Specifically, we included individuals that may have benefitted from trauma-focused treatment and may not be harmed by a single session of psychoeducation. Of the 291 people who were approached and expressed interest for the study, 155 did not meet inclusion/exclusion criteria for the study and did not participate. Reasons for not meeting inclusion/exclusion criteria included: no trauma-exposure, diagnosis of bipolar disorder, diagnosis of schizophrenia, suicidal or homicidal ideation, substance abuse within the past three months, mental health hospitalization within the prior year, and did not wish to participate. The final sample size ($N = 136$) was determined by the scheduled date of closure of data collection.

One hundred and thirty six individuals (46.7%) met eligibility criteria and consented to complete baseline questionnaires (Figure 1) as part of an initial study assessing factors associated with mental health service use (Ghafoori et al., 2014). The participants ($n = 136$) were initially assessed by a baseline set of questionnaires that took approximately 45 minutes to complete. Participant recruitment has been described in a different study (Ghafoori et al., 2014). The 136 individuals who completed the initial study were subsequently invited to participate in the RCT portion of the study. Individuals who agreed to participate in the RCT portion of the study were randomized to receive a single session psychoeducation treatment or participate in a delayed treatment control group according to a predetermined, computer-generated, randomization list, which was developed by the statistician of the study (O.K.). Fifty individuals declined participation in the RCT for the following reasons: no distressing symptoms/participant did not feel they needed psychoeducation ($n = 26$); not interested or seemed too time consuming ($n = 24$).

We randomized the remaining 86 participants, who had all completed a baseline set of questionnaires at Time 0 (T0) to one of two conditions: immediate single session psychoeducation treatment group or 1-month delayed treatment control group (see Figure 1). We limited the duration of the delayed treatment control group to 1 month as it seemed ethically problematic to ask individuals with trauma-related distress and were eager to learn more about common reactions to trauma and treatment options to wait more than 1 month.

For the treatment group who received the psychoeducation treatment on the same day they completed the baseline set of questionnaires the participants completed a post-therapy set of questionnaires upon completion of the treatment (Time 1; T1) and were invited to return in 1 month for a follow-up assessment (Time 2; T2). After completion of the baseline assessment, the control group participants were told they would be contacted to return in 1 month. When the control group participants returned, they were immediately given a set of questionnaires to complete prior to receiving any psychoeducation treatment (T1). After completion of the questionnaires the control group participants were crossed over to the single session psychoeducation treatment and received the treatment. They were then told they would be invited to return in 1 month for a follow-up assessment. Therefore, the control group participants completed questionnaires at baseline (T0), prior to receiving the psychoeducation (T1), immediately after receiving the psychoeducation treatment, and at 1-month follow-up after receiving the psychoeducation treatment (T2).

Of the 86 participants, 18 individuals who were randomized to the control arm of the study did not return for additional assessment. One person randomized to the treatment condition withdrew in the middle of the treatment due to misunderstanding the amount of time the treatment would take. Thus, 67 individuals completed both the pre (T0) and post (T1) assessments (37 psychoeducation treatment, 30 control) and of those individuals 50 completed follow up assessments (T2) after receiving the psychoeducation treatment (29 psychoeducation treatment, 21 control). A \$5.00 non-cash incentive (gift card to local retail store) was given to participants for completion of the baseline set of questionnaires, a \$10.00 non-cash incentive for completion of post-session questionnaires, and a \$20.00 non-cash incentive for completion of follow-up questionnaires.

Measures

A history form was used to obtain demographic information including age, gender, race/ethnicity (Black, White, Hispanic, Other), level of education (No high school diploma, high school graduate, more than high school diploma), years in the United States (U.S.), health insurance coverage (any, none), household income (less than \$6,000.00/year, \$6,000.00-\$11,999.99/year, \$12,000.00-35,999.99/year), social support (friend, spouse/partner, family, other, none; this was dichotomized to any or none), and receipt of public benefits (Medicare, Medicaid, other government program, none; this was dichotomized to any or none). The use of mental health care services was assessed at baseline assessment with the following question: "Are you receiving counseling/mental health treatment at this time?" (yes/no).

The Life Events Checklist (LEC; Gray, Litz, Hsu, & Lombardo, 2004) is a 17-item scale assessing exposure to various types of common traumatic events. The utility of the LEC in assessing exposure to trauma has been previously demonstrated (Gray et al., 2004). Participants reported whether or not they had experienced the traumatic event (0="happened to me", 1="witnessed it", 2="learned about it", 3="not sure", 4="does not apply"). The traumatic events assessed were further categorized as assaultive traumas or non-assaultive traumas (per Glover, Olsson, Gameroff, & Neria, 2010). The following three questions on the LEC were used to create an "assault" variable: lifetime history of physical assault, assault with a weapon, sexual assault (Glover et al., 2010). If a participant endorsed any of

these three questions with a positive response of “[It] happened to me” or “[I] witnessed it” he or she was considered to have a lifetime history of assaultive trauma. Lifetime history of non-assaultive trauma was determined if a participant endorsed any of the following questions with a positive response of “[It] happened to me” or “[I] witnessed it”: natural disaster; fire or explosion, serious accident at work, home, or during recreational activity; exposure to toxic substance; other unwanted or uncomfortable sexual experience; combat exposure; captivity; life threatening illness or injury; life threatening illness or injury of a family member living with you; sudden violent death; sudden unexpected death of someone close to you; serious injury, harm, or death you caused to someone else; other transportation accident; any other very stressful event or exposure. For this study, we identified the mean number of assaultive and non-assaultive traumas reported by the participant for seventeen events.

The PTSD Checklist-Civilian version (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item self-report PTSD symptom instrument that has been shown to have good internal consistency, strong correlations with other PTSD scales, and high diagnostic efficiency (Weathers et al., 1993). Respondents were asked to reflect on their most distressing traumatic event and rate the extent to which they have been bothered by each symptom using a 5-point Likert scale (1 = *not at all* to 5 = *extremely*). Items were summed to yield a total score that serves as a measure of PTSD symptom severity (Cronbach's $\alpha = 0.93$). In addition, following Blanchard, Jones-Alexander, Buckley, and Forneris (1996), we used a cut off score of 44 and over to define probable PTSD in our sample.

The Brief Symptom Inventory-18 (BSI-18; Derogatis, 2001) is a self-report measure of psychological distress that has been widely used as a psychiatric screening tool in clinical settings and epidemiological studies. Respondents reported how much each symptom or problem distressed or bothered them during the past two weeks on a 5-point scale from not at all (0) to extremely (4). Scores were obtained for the two dimensions of depression (anhedonia, sad affect), and anxiety (nervousness, apprehension, tension). In the current analysis, raw scores were converted to T scores using normative data from community samples (Cronbach's $\alpha = 0.87$ for T scores).

The Sheehan Disability Scale (SDS; Sheehan, 1983; Leon, Shear, Portera, & Klerman, 1992) is a self-report measure of functional impairment/disability. It includes three 10-point subscales (with one question per subscale) that measure disability in the following areas of a patient's life: occupational, social, and family functioning. Respondents demarcate their functioning on a 10-point scale (0=*not at all* to 10=*extremely*) with higher scores reflecting increased disability. The SDS has been shown to have good internal consistency ($\alpha = 0.89$) and mental disorder diagnoses are consistently associated with higher SDS scores (Leon et al., 1992). For this study, we reported the three scores: occupational disability, social disability, and family disability. The SDS was administered at baseline/pre-treatment, at post-treatment, and at follow-up.

The Attitudes Toward Seeking Professional Psychological Help-Short Form (ATSPPH-SF; Fischer & Farina, 1995) is a 10-item self-report survey of attitudes toward seeking mental health treatment. Participants rate their attitudes on each item by responding 0 (*disagree*) to

3 (*agree*). Criterion validity has been demonstrated, and internal consistency ranges from 0.77 to 0.84 with college students and medical patients (Elhai, Schweinle, & Anderson, 2005; Fischer & Farina, 1995). The total score was derived by summing items (reverse scoring 5 items) with higher scores indicate a more positive attitude toward treatment (Cronbach's $\alpha = 0.68$).

At follow-up after treatment the participants who received the treatment were asked the following questions in a structured interview format: 1) Did you feel the education you received helped you (dichotomized to yes/no); 2) Have you been able to make an appointment to see a mental health professional (dichotomized to yes/no).

Treatment

Treatment was delivered individually by two graduate student clinicians pursuing masters degrees in counseling and marriage and family therapy. Psychoeducation included a 90-minute discussion that included the following components: 1) Education about common reactions to traumatic events and discussion of what reactions the participant may currently be experiencing; 2) Discussion of prolonged exposure (PE) therapy focused on reduction of fear and avoidance; 3) Discussion with participant about beginning treatment, including specific cultural or other barriers they may perceive related to pursuing or receiving treatment; 4) Referral to community providers of mental health treatment.

The graduate student clinicians received training in the delivery of the single session psychoeducation treatment at the commencement of the project, and a handout was taken into each session to ensure that all components of the protocol were covered. Components one (education about common reactions to trauma), two (discussion of PE therapy), and four (referrals to community providers) were discussed with all participants according to the handout and protocol, however, component three (perceived barriers to treatment) was customized to meet the individualized needs of the participant. Session checklists were completed at the end of each session and monitored during weekly supervision to ensure the clinicians covered the components of psychoeducation. Review of session checklists indicated that all components of the psychoeducation treatment were completed with all participants in the study.

Analytic Strategy

The data were analyzed using the statistical package SAS Version 9.3. Both *t*-test and chi-square analyses were conducted to compare groups on demographic characteristics and pretreatment levels of all outcome measures. In order to test for differential treatment effects (hypothesis 1 and 2), analyses of covariance (ANCOVA) of post-test by treatment condition were computed with pre-test as the covariate, group membership as the independent variable, and post-treatment scores as the dependent variable (hypothesis one dependent variable = attitudes toward seeking help; hypothesis two dependent variables = PTSD, anxiety, depression, somatization, and functional disability scores). Cohen's *d* values (Cohen, 1988) estimated the magnitude of within-group pre- to-post change and between-group differences in pre- to-post change and were calculated as the difference between the two group means divided by the pooled standard deviation of the groups. To study the

influence of the treatment over time for the entire sample of individuals who completed treatment (exploratory question 1), a mixed-effect model was fit for symptoms, disability, and attitudes towards seeking professional psychological help. In this model, Group was a fixed-effect factor, while Time had both fixed and random effects. Frequencies of perceptions of whether psychoeducation helped and whether the psychoeducation led to mental health service use at follow-up were calculated (exploratory questions 2 and 3).

Results

Demographic Characteristics and Baseline Assessment

No significant between-group baseline differences were found between the treatment and control groups across gender, age, race/ethnicity, education level, years in the U.S., insurance, income, or trauma characteristics (see Table 1). Most of the participants in the sample experienced multiple traumas ($M = 8.3$, $SD = 3.6$) over the course of their lives, with most participants reporting experiencing more non-assaultive traumas compared to assaultive traumas (Table 1). At T0 the two groups significantly differed in anxiety symptoms ($t(65) = -2.3$, $p = 0.03$) and somatization symptoms ($t(65) = -2.9$, $p = 0.01$), with the control group demonstrating significantly lower anxiety and somatization symptoms compared to the treatment group (Table 2). No significant differences were found with respect to the other symptoms measured, disability, or attitudes towards seeking help. At T0 73.5% ($n = 50$) of the participants met cut-off criteria for probable PTSD, and 26.5% ($n = 18$) of participants did not meet the cut-off criteria.

Comparison of Treatment Effects: Baseline (T0) to Post-test (T1)

Table 3 reports the between-group comparison of post-test scores using ANCOVA (hypotheses 1 and 2). The dependent variables were scores at post-test, the fixed factor was group, and the covariate was pre-test scores. Effect sizes (Cohen d) are also given in Table 3. ANCOVA revealed that participants in the psychoeducation treatment group showed significant improvements of small effect size from T0 to T1 in comparison with the control group on depression symptoms, $F(1, 63) = 4.62$, Cohen's $d = -.09$ and somatization symptoms, $F(1, 63) = 8.69$, Cohen's $d = -.16$. Participants in the control group showed significant improvements of small effect sizes in PTSD symptoms (Cohen's $d = .10$, $p < .001$), anxiety symptoms (Cohen's $d = .02$, $p < .001$), and family disability (Cohen's $d = .35$, $p < .05$) and of moderate effect sizes in occupational disability symptoms (Cohen's $d = .55$, $p < .05$) from T0 to T1 in comparison to the treatment group. The change in scores from T0 to T1 for social disability and attitudes towards seeking help were not significant.

Psychoeducation Treatment Effects: Baseline (T0) to Follow-Up (T2)

All of the control group participants were offered treatment at one month. Therefore, 29 individuals randomized to the psychoeducation treatment and 21 individuals randomized to the delayed treatment control group completed pre (T0), post (T1), and follow up (T2) assessments after completing the psychoeducation treatment. To explore the timeline of changes after receipt of the psychoeducation treatment, a mixed-effect model was fit to the data (exploratory question 1; Table 4). There were significant differences between scores on PTSD, anxiety, depression, somatization, and attitudes towards seeking help at T2. No

significant differences were found with respect to disability measures at T2 when compared to T0 assessment. There was no significant difference in the change of scores between the two groups, except for in the anxiety and somatization variables, with the control group demonstrating significantly lower anxiety and somatization symptoms at T2 compared to the treatment group.

Perceived Usefulness of the Treatment and Treatment Utilization

Ninety eight percent (n = 49) of the 50 participants who completed T2 questionnaires reported that they perceived the psychoeducation was useful at T2 (exploratory question 2). At T0, 20.9% (n = 14) of the original 67 participants in this study were using mental health services whereas 79.1% (n = 53) of the participants stated they were not using mental health services. By T2, 20 of the 50 participants (40%) who completed follow-up assessments reported they had made an appointment with a mental health provider, indicating a 19.1% increase (from 20.9% baseline to 40%) in reported mental health service engagement from T0 to T2 (exploratory question 3).

Discussion

The current study aimed to assess the effects of a single session of psychoeducation in vulnerable trauma survivors by means of a pilot randomized controlled trial (RCT). To our knowledge, this is the first study to examine the effectiveness of this type of treatment for traumatized, culturally diverse, low-income clients seeking health related services at a community health clinic. Contrary to our hypotheses, we found effects for depression and somatization, but were unable to demonstrate the effect of psychoeducation on reducing symptoms related to PTSD, anxiety, disability, or on improving attitudes towards seeking professional psychological help. For mental health outcome measures the between group effect sizes were small to medium at post-treatment, slightly favoring the control condition with respect to symptoms of PTSD, anxiety, occupational disability, and family disability, and slightly favoring the psychoeducation treatment condition with respect to depression and somatization symptoms. Although this partially contradicts our hypotheses it is in line with past studies (Rose, Bisson, Churchill, & Wessely, 2008). It should be noted that the control group had lower baseline mean scores of PTSD, anxiety, and depression symptoms and more positive attitudes towards seeking help compared to the treatment group, and the control group had significantly lower anxiety and somatization symptoms at baseline suggesting the control group may have been less distressed at baseline. By follow-up, which occurred after a one month time delay and after both groups received the psychoeducation treatment, significant improvements were found from receiving psychoeducation in comparison to baseline scores in symptoms of PTSD, anxiety, depression, and somatization as well as attitudes towards seeking help. Before discussing the implications of the findings, several limitations should be noted. First, the small sample size and setting limit our ability to draw inferences from the study to the broader population of treatment seeking individuals who have experienced a traumatic event. It is possible that we did not have enough power to detect statistically significant differences at post-treatment; therefore, our discussion of any significant differences at post-treatment between our control and treatment groups must be interpreted with caution. We did not have a control group to compare results to by follow up

assessment, which precludes our ability to attribute the changes observed over time to the single session psychoeducation treatment. It is important to point out that we found no evidence of harmful effects of our single session psychoeducation treatment. In fact, most participants in the study reported a perception that the single session of psychoeducation was helpful at follow-up and mental health service engagement increased in our sample by 19.1% by follow-up.

Several reasons may have contributed to the inefficiency of the single session of psychoeducation at post-treatment. First, considering the control group had their post-treatment assessment one month after the baseline assessment, whereas the treatment group had their post-treatment assessment the same day as their baseline assessment, it is possible that natural coping mechanisms may have facilitated healing in the control group (Zehnder, Meuli, & Landolt, 2010). Second, the contact with the mental health professional and the highly structured assessment at baseline may have been therapeutic in itself due to possible acknowledgement, validating, and normalizing of symptoms (Zehnder et al, 2010). Third, the intervention may have been too brief, and research suggests multiple sessions may be necessary to reduce symptoms in trauma survivors (Ehlers and Clark, 2003). The literature remains unclear with respect to how many psychotherapy sessions are needed to reduce trauma symptoms, although manualized PTSD treatments often emphasize nine to twelve therapy sessions (Galovski et al., 2012). Fourth, it is possible that the discussion about cultural barriers, which was tailored to the needs of the individual participants in our study, served as a source of discussion or interpersonal dialogue similar to the study by Yeomans and colleagues (2010). Therefore, we are unable to assess if the discussion that individuals in our control group experienced may have contributed to the findings. It remains unclear whether our findings reflect insufficiently potent methods to address distress and attitudes towards help seeking, natural healing, an atypical reduction in distress and increase in attitudes towards help seeking for the control group, or another factor. Further research is needed before conclusions can be drawn regarding the efficacy of a single session of psychoeducation.

In spite of the limitations of our study, our findings contribute to the current knowledge base regarding the provision of psychoeducation to low-income, culturally diverse adults who have experienced a traumatic event. There is currently a dearth of knowledge with respect to how to improve attitudes and treatment engagement among urban, impoverished, culturally diverse, trauma exposed adults. Moreover, it is often assumed that intensive, long-term treatment is needed to produce symptom improvement in individuals with complex and chronic trauma histories (Back, Waldrop, Brady, & Hien, 2006). This study suggests that a single session of psychoeducation may be valuable in meeting some of the needs of vulnerable trauma survivors, although it may not be sufficient for decreasing mental health symptoms for individuals who have chronic or complex trauma histories who may have PTSD and other trauma related disorders. The psychoeducation treatment was not associated with significant change in most outcomes measured relative to the waitlist control, except it did significantly decrease symptoms of depression and somatization at post-treatment. Although there are few studies to directly compare our results, our results seem consistent with a small body of literature that indicates psychoeducation treatments may be a beneficial treatment for symptoms of depression (Miranda et al., 2003) and somatization, particularly

among ethnic and racial minorities who may have illness beliefs that may link mental and physical health (Eisenman et al., 2008). A recent study examining symptoms of distress in culturally diverse trauma survivors suggests sadness and somatic symptoms may be prevalent and viewed as related to trauma and its consequences (Eisenman et al., 2008). One possible explanation for the decrease in depression and somatization symptoms in our treatment group may be that mental health literacy may have improved and contributed to a decrease in distress related to trauma (Ghafoori et al., 2014). It is possible that the single session of psychoeducation provided in our study allowed the individuals in our sample to understand how the symptoms and distress they were experiencing, including the depression and somatization symptoms, was related to the trauma they experienced, and this may have contributed to a the trend of decreasing symptoms by post-session.

Without a control group with which to compare the results from the total sample that had completed the psychoeducation treatment at follow-up, the improvements observed cannot be ascribed to the provision of a single session of psychoeducation. Significant reductions in PTSD, anxiety, and depression symptoms after the psychoeducation treatment as well as significantly more positive attitudes towards seeking professional psychological help may be associated with expectancies, as Yeomans (2010) suggested. Our diverse sample of trauma survivors may have expected to feel better after talking to someone about the trauma they experienced. Alternatively, it is possible that the psychoeducation they received allowed them to find meaning, knowledge, or hope in recovering from the distress related to trauma (Ghafoori et al., 2014; Yeomans et al., 2010). It is interesting that a decrease in symptoms was observed after a time-delay, which is consistent with literature that suggests multiple contacts may be necessary to enhance trust and cultural sensitivity in low-income and ethnic minority patients (Santiago et al., 2012). Indeed a body of literature has noted a relationship between low socioeconomic status, racial/ethnic minority status, and engagement with healthcare providers, and suggests low SES and diverse individuals often report feeling better after perceiving a sense of relational engagement (Moser et al., 2015; Santiago et al., 2012). It is unclear whether expectancies, meaning making, or knowledge may have impacted the potential efficacy of the single session of psychoeducation treatment, and further research is required to examine these relationships.

Interestingly, the psychoeducation treatment did not improve social, family, or occupational disability in our sample. Psychosocial problems, particularly unemployment and family stress, are prominent among low-income adults (Silverstein et al., 2008). There is likely a more complex interaction between psychosocial difficulties and the receipt of psychoeducation. Additional studies are necessary to replicate and further understand these findings.

Our study suggests a brief psychoeducation treatment may be particularly helpful for symptoms of depression and somatization and may be a useful step or component of the treatment process. Our results seem to suggest a benefit of multiple contacts. Although we do not have a control group with which to compare our findings at follow up, and we cannot be certain that the improvements in both symptoms and attitudes towards treatment seeking were not due to natural recovery or other factors outside of the psychoeducation, we believe it is likely the psychoeducation treatment may have contributed to our findings. Our findings

appear consistent with the broader literature on mental health comorbidities indicating mental health gains can potentially be made with minimal treatments (Kay-Lambkin et al., 2009; Mills et al., 2014). It is important to note that the majority of participants in our study continued to have high levels of PTSD, anxiety, and depression symptoms throughout the study and even at follow-up. Consequently, our results also suggest further treatment is necessary to produce shifts in diagnosis (Foa et al., 1999). Future research is necessary to understand the role of psychoeducation in the treatment of trauma survivors.

An important finding from this trial was that that most individuals who received the psychoeducation perceived it as useful, and we found a 19.1% increase in treatment engagement from baseline to follow-up. Considering the fact that most vulnerable trauma survivors do not seek or access mental health services, we consider this an important finding. It is possible that the single session psychoeducation treatment improved perception of usefulness of treatment (Mendenhall et al., 2009). Alternatively, the psychoeducation treatment may have increased mental health literacy among participants, which allowed for a more positive perception of the usefulness of treatment as well as knowledge regarding how to access treatment. As has been suggested by Eisenman and colleagues (2008), educating culturally and racially diverse groups on understanding traumatic distress, including how symptoms may impact family, work, and social functioning, may make treatment appear more useful to patients. This explanation is consistent with past research that indicates fear and lack of knowledge of treatment options often inhibit help seeking among low-income trauma survivors (Ghafoori et al, 2014). Without a control group to compare the results at follow-up, the increase in treatment engagement cannot be ascribed to the provision of a single session of psychoeducation in this help-seeking sample.

Several limitations exist in the current study. The small sample size prohibits analyses of possible mediators of treatment outcome, which may have included different experiences during treatment. Future research is needed to test the efficacy of a single session of psychoeducation in a larger study with adequate statistical power. Psychiatric issues were assessed by self-report screening instruments rather than a clinical interview; therefore, the external validity of our results may be limited. Also, the population in this study may not represent the broad population of urban, culturally diverse, low-income trauma survivors, which limits the generalizability of our results. Our results indicate the need for further and more sophisticated explorations of the effectiveness of a single session of psychoeducation as well as mediators of treatment response, which may include different experiences during treatment which may have led to different patterns of response. Furthermore, investigations of subpopulations are also recommended, given that various cultural and racial groups may respond to psychoeducation differently. These efforts will allow for the development of treatments tailored to the needs of select populations, especially those most resistant to accessing mental health treatment.

Clinical Implications

Our findings suggest approaching traumatized low-income and culturally diverse trauma survivors at community health clinics may be a promising step in facilitating service provision. Past studies of low-income, trauma-exposed groups suggests this group may be

reluctant to seek mental health care, and an educational session may be a key for engagement (Miranda et al., 2002; Santiago et al., 2013). The control group in our study tended to improve more than our treatment group, suggesting an educational session may not be sufficient to decrease symptoms and improve functioning in low-income trauma-exposed individuals. More research is necessary to understand the potential benefits of a single session of psychoeducation for low-income individuals with chronic and complex trauma histories who may also be dealing with poverty related stressors. For trauma victims with less psychological distress, psychological interventions may not be necessary, and clinical monitoring may be a sufficient strategy. In addition to the assessment and treatment of PTSD, anxiety, depression and somatization symptoms seem to be prominent in low-income, culturally diverse trauma survivors and should be assessed and treated. Future research on the effectiveness of psychoeducation offered in health care settings has the potential to generate cost savings as psychoeducation may be a means to get more individuals who are in need of mental health services to get care. A single session of psychoeducation may be a promising “stepping stone” to additional trauma treatment. Future research examining a single session of psychoeducation in the context of stepped-care approaches is recommended.

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References

- Alim TN, Feder A, Graves RE, Wang Y, Weaver J, Westphal M, Charney DS. Trauma, resilience, and recovery in a high-risk African-American population. *The American Journal of Psychiatry*. 2008; 165(12):1566–1575. DOI: 10.1176/appi.ajp.2008.07121939 [PubMed: 19015233]
- Amaya-Jackson L, Davidson JR, Hughes DC, Swartz M, Reynolds V, George LK, Blazer DG. Functional impairment and utilization of services associated with posttraumatic stress in the community. *Journal of Traumatic Stress*. 1999; 12(4):709–724. DOI: 10.1023/A:1024781504756 [PubMed: 10646189]
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th. Washington, DC; Author; 2000. text rev.
- Back SE, Waldrop AE, Brady KT, Hien D. Evidence-based time-limited treatment of co-occurring substance-use disorders and civilian-related posttraumatic stress disorder. *Brief Treatment And Crisis Intervention*. 2006; 6(4):283–294. DOI: 10.1093/brief-treatment/mhl013
- Blanchard EB, Jones-Alexander J, Buckley TC, Forneris CA. Psychometric properties of the PTSD Checklist (PCL). *Behaviour Research And Therapy*. 1996; 34(8)(96):669–673. 00033–2. DOI: 10.1016/0005-7967 [PubMed: 8870294]
- Breslau N. Epidemiologic studies of trauma, posttraumatic stress disorder, and other psychiatric disorders. *The Canadian Journal of Psychiatry / La Revue Canadienne De Psychiatrie*. 2002; 47(10): 923–929.
- Breslau N, Davis GC, Schultz LR. Posttraumatic stress disorder and the incidence of nicotine, alcohol, and other drug disorders in persons who have experienced trauma. *Archives of General Psychiatry*. 2003; 60(3):289–294. DOI: 10.1001/archpsyc.60.3.289 [PubMed: 12622662]
- Breslau N, Kessler RC, Chilcoat HD, Schultz LR, Davis GC, Andreski P. Trauma and posttraumatic stress disorder in the community: The 1996 Detroit area survey of trauma. *Archives of General Psychiatry*. 1998; 55(7):626–632. DOI: 10.1001/archpsyc.55.7.626 [PubMed: 9672053]
- Chapman C, Mills K, Slade T, McFarlane AC, Bryant RA, Creamer M, Teesson M. Remission from post-traumatic stress disorder in the general population. *Psychological Medicine*. 2012; 42(8):1695–1703. DOI: 10.1017/S0033291711002856 [PubMed: 22166813]

- Cohen, J. Statistical power analysis for the behavioral sciences (2nd edition). Hillsdale, NJ: Lawrence Earlbaum Associates; 1988.
- Derogatis, LR. Brief Symptom Inventory-18 Administration, scoring, and procedures manual. Minneapolis, MN: NCS Assessments; 2001.
- Ehlers A, Clark DM, Hackmann A, McManus F, Fennell M, Herbert C, Mayou R. A randomized controlled trial of cognitive therapy, a self-help booklet, and repeated assessments as early interventions for posttraumatic stress disorder. *Archives of General Psychiatry*. 2003; 60(10): 1024–1032. DOI: 10.1001/archpsyc.60.10.1024 [PubMed: 14557148]
- Ennis NE, Hobfoll SE, Schröder KE. Money doesn't talk, it swears: How economic stress and resistance resources impact inner-city women's depressive mood. *American Journal Of Community Psychology*. 2000; 28(2):149–173. DOI: 10.1023/A:1005183100610 [PubMed: 10836089]
- Eisenman DP, Meredith LS, Rhodes H, Green BL, Kaltman S, Cassells A, Tobin JN. PTSD in Latino patients: Illness beliefs, treatment preferences, and implications for care. *Journal Of General Internal Medicine*. 2008; 23(9):1386–1392. DOI: 10.1007/s11606-008-0677-y [PubMed: 18587619]
- Elhai JD, Schweinle W, Anderson SM. Reliability and validity of the attitudes toward seeking professional psychological help scale-short form. *Psychiatry Research*. 2008; 159(3):320–329. DOI: 10.1016/j.psychres.2007.04.020 [PubMed: 18433879]
- Esters IG, Cooker PG, Ittenbach RF. Effects of a unit of instruction in mental health on rural adolescents' conceptions of mental illness and attitudes about seeking help. *Adolescence*. 1998; 33(130):469–476. [PubMed: 9706332]
- Fischer EH, Farina A. Attitudes toward seeking professional psychological help: A shortened form and considerations for research. *Journal of College Student Development*. 1995; 36(4):368–373.
- Foa EB, Dancu CV, Hembree EA, Jaycox LH, Meadows EA, Street GP. A comparison of exposure therapy, stress inoculation training, and their combination for reducing posttraumatic stress disorder in female assault victims. *Journal Of Consulting And Clinical Psychology*. 1999; 67(2): 194–200. DOI: 10.1037/0022-006X.67.2.194 [PubMed: 10224729]
- Foa, EB.; Keane, TM.; Friedman, MJ.; Cohen, JA. Effective treatments for PTSD: Practice guidelines from the international society for traumatic stress studies. 2nd. Foa, EB.; Keane, TM.; Friedman, MJ.; Cohen, JA., editors. New York, NY US: Guilford Press; 2009.
- Galovski TE, Blain LM, Mott JM, Elwood L, Houle T. Manualized therapy for PTSD: Flexing the structure of cognitive processing therapy. *Journal Of Consulting And Clinical Psychology*. 2012; 80(6):968–981. DOI: 10.1037/a0030600 [PubMed: 23106761]
- Gavrilovic JJ, Schützwohl M, Fazel M, Priebe S. Who seeks treatment after a traumatic event and who does not? A review of findings on mental health service utilization. *Journal of Traumatic Stress*. 2005; 18(6):595–605. DOI: 10.1002/jts.20068 [PubMed: 16382432]
- Gelberg L, Andersen RM, Leake BD. The behavioral model for vulnerable populations: Applications to medical care use and outcomes for homeless people. *Health Services Research*. 2000; 34(6): 1273–1301. [PubMed: 10654830]
- Ghafoori B, Barragan B, Palinkas L. Mental health service use among trauma-exposed adults: a mixed-methods study. *Journal of Nervous and Mental Disease*. 2014; 202(3):239–246. DOI: 10.1097/NMD.000000000000108 [PubMed: 24566510]
- Ghafoori B, Barragan B, Tohidian N, Palinkas L. Racial and ethnic differences in symptom severity of PTSD, GAD, and depression in trauma-exposed, urban, treatment-seeking adults. *Journal of Traumatic Stress*. 2012; 25(1):106–110. DOI: 10.1002/jts.21663 [PubMed: 22354513]
- Ghafoori B, Fisher DG, Koresteleva O, Hong M. Factors associated with mental health service use in urban, impoverished, trauma-exposed adults. *Psychological Services*. 2014; 11(4):451–459. DOI: 10.1037/a0036954 [PubMed: 25383997]
- Gillespie CF, Bradley B, Mercer K, Smith AK, Conneely K, Gapen M, Ressler KJ. Trauma exposure and stress-related disorders in inner city primary care patients. *General Hospital Psychiatry*. 2009; 31(6):505–514. DOI: 10.1016/j.genhosppsych.2009.05.003 [PubMed: 19892208]

- Glodich A. Psychoeducational groups for adolescents exposed to violence and abuse: Assessing the effectiveness of increasing knowledge of trauma to avert reenactment and risk-taking behaviors. Dissertation Abstracts International Section A. 2000 Mar.60
- Glover K, Olfson M, Gameroff MJ, Neria Y. Assault and mental disorders: A cross-sectional study of urban adult primary care patients. *Psychiatric Services*. 2010; 61(10):1018–1023. DOI: 10.1176/appi.ps.61.10.1018 [PubMed: 20889641]
- Gray MJ, Litz BT, Hsu JL, Lombardo TW. Psychometric properties of the life events checklist. Assessment. 2004; 11(4):330–341. DOI: 10.1177/1073191104269954 [PubMed: 15486169]
- Jaycox LH, Marshall GN, Schell T. Use of mental health services by men injured through community violence. *Psychiatric Services*. 2004; 55(4):415–420. DOI: 10.1176/appi.ps.55.4.415 [PubMed: 15067154]
- Kay-Lambkin FJ, Baker AL, Lewin TJ, Carr VJ. Computer-based psychological treatment for comorbid depression and problematic alcohol and/or cannabis use: A randomized controlled trial of clinical efficacy. *Addiction*. 2009; 104(3):378–388. DOI: 10.1111/j.1360-0443.2008.02444.x [PubMed: 19207345]
- Kelly VG, Merrill GS, Shumway M, Alvidrez J, Boccellari A. Outreach, engagement, and practical assistance: Essential aspects of PTSD care for urban victims of violent crime. *Trauma, Violence, & Abuse*. 2010; 11(3):144–156. DOI: 10.1177/1524838010374481
- Koenen KC, Stellman SD, Sommer JF Jr, Stellman JM. Persisting posttraumatic stress disorder symptoms and their relationship to functioning in Vietnam veterans: A 14-year follow-up. *Journal of Traumatic Stress*. 2008; 21(1):49–57. doi:10.1002/jts.20304; 10.1002/jts.20304. [PubMed: 18302174]
- Lee J, Park HY, Jung D, Moon M, Keam B, Hahm B. Effect of brief psychoeducation using a tablet PC on distress and quality of life in cancer patients undergoing chemotherapy: A pilot study. *Psycho-Oncology*. 2014; 23(8):928–935. DOI: 10.1002/pon.3503 [PubMed: 24535848]
- Leon AC, Shear MK, Portera L, Klerman GL. Assessing impairment in patients with panic disorder: The Sheehan disability scale. *Social Psychiatry and Psychiatric Epidemiology*. 1992; 27(2):78–82. DOI: 10.1007/BF00788510 [PubMed: 1594977]
- Mendenhall AN, Fristad MA, Early TJ. Factors influencing service utilization and mood symptom severity in children with mood disorders: Effects of multifamily psychoeducation groups (MFPGs). *Journal of Consulting and Clinical Psychology*. 2009; 77(3):463–473. doi:10.1037/a0014527; 10.1037/a0014527. [PubMed: 19485588]
- Mezuk B, Rafferty JA, Kershaw KN, Hudson D, Abdou CM, Lee H, Jackson JS. Reconsidering the role of social disadvantage in physical and mental health: Stressful life events, health behaviors, race, and depression. *American Journal of Epidemiology*. 2010; 172(11):1238–1249. doi: 10.1093/aje/kwq283; 10.1093/aje/kwq283. [PubMed: 20884682]
- Mills KL, Ewer P, Dore G, Teesson M, Baker A, Kay-Lambkin F, Sannibale C. The feasibility and acceptability of a brief intervention for clients of substance use services experiencing symptoms of post traumatic stress disorder. *Addictive Behaviors*. 2014; 39(6):1094–1099. DOI: 10.1016/j.addbeh.2014.03.013 [PubMed: 24657001]
- Miranda J, Chung JY, Green BL, Krupnick J, Siddique J, Revicki DA, Belin T. Treating Depression in Predominantly Low-Income Young Minority Women: A Randomized Controlled Trial. *JAMA: Journal Of The American Medical Association*. 2003; 290(1):57–65. DOI: 10.1001/jama.290.1.57 [PubMed: 12837712]
- Morgan Owusu D. A psycho-educational program about mental illness on the help-seeking attitudes of black college students. Dissertation Abstracts International. 2003 May.63
- Neuner F, Schauer M, Klaschik C, Karunakara U, Elbert T. A comparison of narrative exposure therapy, supportive counseling, and psychoeducation for treating posttraumatic stress disorder in an African refugee settlement. *Journal of Consulting and Clinical Psychology*. 2004; 72(4):579–587. DOI: 10.1037/0022-006X.72.4.579 [PubMed: 15301642]
- Resnick H, Acierno R, Waldrop AE, King L, King D, Danielson C, Kilpatrick D. Randomized controlled evaluation of an early intervention to prevent post-rape psychopathology. *Behaviour Research and Therapy*. 2007; 45(10):2432–2447. DOI: 10.1016/j.brat.2007.05.002 [PubMed: 17585872]

- Roberts AL, Gilman SE, Breslau J, Breslau N, Koenen KC. Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment seeking for post-traumatic stress disorder in the United States. *Psychological Medicine*. 2011; 41(1):71–83. DOI: 10.1017/S0033291710000401 [PubMed: 20346193]
- Rose S, Bisson J, Churchill R, Wessely S. Psychological debriefing for preventing post traumatic stress disorder (PTSD). *Cochrane Database of Systematic Reviews*. 2008; 1
- Rothbaum BO, Houry D, Heekin D, Heekin M, Leiner AS, Daugherty J, Smith LS, Gerardi M. A pilot study of an exposure-based intervention in the ED to prevent posttraumatic stress disorder. *The American Journal of Emergency Medicine*. 2008; 26:326–330. DOI: 10.1016/jajem.2007.07.006 [PubMed: 18358945]
- Santiago CD, Kaltman S, Miranda J. Poverty and mental health: How do low-income adults and children fare in psychotherapy? *Journal Of Clinical Psychology*. 2013; 69(2):115–126. DOI: 10.1002/jclp.21951 [PubMed: 23280880]
- Sheehan, DV. Sheehan Disability Scale. In: Rush, AJ.; First, AJ.; Blacker, D., editors. *Handbook of Psychiatric Measures*. 2nd. Washington DC: American Psychiatric Publication; 1983. p. 100-102.
- Silverstein M, Lamberto J, DePeau K, Grossman DC. ‘You get what you get’: Unexpected findings about low-income parents' negative experiences with community resources. *Pediatrics*. 2008; 122(6):e1141–e1148. DOI: 10.1542/peds.2007-3587 [PubMed: 19047215]
- U.S. Census Bureau. Poverty thresholds for 2013 by size of family and number of related children under 18 years. 2013. Retrieved March 10, 2014, from <https://www.census.gov/hhes/www/poverty/data/threshld/>
- Weathers, F.; Litz, B.; Herman, D.; Huska, J.; Keane, T. The PTSD Checklist (PCL): Reliability, Validity, and Diagnostic Utility. Paper presented at the Annual Convention of the International Society for Traumatic Stress Studies; San Antonio, TX. Oct. 1993
- Wessely S, Bryant RA, Greenberg N, Earnshaw M, Sharpley J, Hughes JH. Does psychoeducation help prevent posttraumatic psychological distress? *Psychiatry*. 2008; 71(4):287–302. doi:10.1521/psyc.2008.71.4.287; 10.1521/psyc.2008.71.4.287. [PubMed: 19152276]
- Yeomans PD, Forman EM, Herbert JD, Yuen E. A randomized trial of a reconciliation workshop with and without PTSD psychoeducation in Burundian sample. *Journal of Traumatic Stress*. 2010; 23(3):305–312. doi:10.1002/jts.20531; 10.1002/jts.20531. [PubMed: 20564362]
- Zehnder D, Meuli M, Landolt MA. Effectiveness of a single-session early psychological intervention for children after road traffic accidents: A randomized controlled trial. *Child And Adolescent Psychiatry And Mental Health*. 2010; 4doi: 10.1186/1753-2000-4-7

Figure 1. Enrollment Flowchart

Table 1
Background Characteristics for the Treatment and Waitlist Control Groups

Characteristic	Treatment		Control		<i>t</i>	<i>df</i>	<i>p</i>
	% (<i>n</i> = 37)	% (<i>n</i> = 30)	% (<i>n</i> = 30)	% (<i>n</i> = 30)			
Gender					2.88	1.0	.09
Female	54.0 (20)	33.3 (10)					
Male	46.0 (17)	66.7 (20)					
Race/Ethnicity					1.22	3.0	.75
Black (Non-Hispanic)	46.0 (17)	53.3 (16)					
White	29.7 (11)	23.3 (7)					
Hispanic	18.9 (7)	13.3 (4)					
Other	5.4 (2)	10.0 (3)					
Education					1.51	2.0	.47
No High School Diploma	27.0 (10)	36.7 (11)					
High School Graduate	40.5 (15)	26.7 (8)					
Some College or More	32.4 (12)	36.7 (11)					
Years in U.S, <i>M</i> ± <i>SD</i> ^a	40.8 ± 11.3	44.3 ± 10.3			1.30	64.0	.20
Attitude Towards Seeking Help (<i>M</i> ± <i>SD</i>) ^b	17.0 ± 3.1	18.6 ± 4.5			1.67	49.2	.10
Health Insurance					1.00	1.0	.31
Some Type of Insurance	62.2 (23)	50.0 (18)					
No Insurance	37.8 (14)	50.0 (15)					
Annual Household Income					.30	2.0	.86
< \$6,000	56.8 (21)	60.0 (18)					
\$6,000-\$11,999	32.4 (12)	26.7 (8)					
\$12,000-\$35,999	10.8 (4)	13.3 (4)					
Social Support					.72	1.0	.40
Some Type of Support	73.0 (27)	63.3 (19)					
No Support	27.0 (10)	36.7 (11)					
Receipt of Public Benefits					2.01	1.0	.16
Program	54.1 (20)	36.7 (11)					
None	45.9 (17)	63.3 (19)					

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Characteristic	Treatment		Control		t	df	p
	% (n = 37)	% (n = 30)	% (n = 37)	% (n = 30)			
Assaultive traumas ^a , M ± SD	2.1 ± 1.0	2.2 ± 1.0			.46	61.0	.65
Non-assaultive traumas ^a , M ± SD	6.1 ± 3.2	6.3 ± 2.9			.11	62.8	.91
Number of traumas ^a , M ± SD	8.3 ± 4.0	8.2 ± 3.1			.06	64.0	.95

^aTraumatic event exposure was positive if the event “happened to me” or “[I] witnessed it.”

Table 2 Baseline (Time 0; T0) Means and Standard Deviations Across Outcomes for Both the Treatment and Waitlist Control Groups

Outcome Measure	Treatment (<i>n</i> =37)		Control (<i>n</i> =30)		<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
PTSD	56.6	14.4	51.2	13.2	-1.60	.12
Anxiety	68.4	9.6	62.2	12.7	-2.30*	.03*
Depression	66.7	8.3	62.8	8.6	-1.90	.07
Somatization	65.4	11.2	58.0	9.8	-2.90	.01*
Occupational Disability	6.8	3.6	7.2	3.3	.47	.64
Social Disability	7.0	3.2	6.7	3.1	-.31	.76
Family Disability	6.7	3.3	6.5	3.6	-.21	.84
Attitudes Towards Seeking Help	17.0	3.1	18.6	4.5	1.73	.09

Note.

* $p < .05$;

Table 3
Analysis of Covariance Means, SDs, and Effect Sizes on Outcome Measures at Pre-test (Time 0; T0) and Post-test (Time 1; T1) for the Treatment (n = 37) and Wait-list Control (n = 30) Groups

Variable and group	Pretest (T0)		Posttest(T1)		F ratio	Effect Size
	M	SD	M	SD		
PTSD- Treatment (T)	56.6	14.4	55.8	15.0	13.73 ***	.10
Wait-list (WL)	51.2	13.2	46.5	15.5		
Anxiety- T	68.4	9.6	66.2	10.6	13.49 ***	.02
WL	62.2	12.7	59.2	12.7		
Depression- T	66.7	8.3	64.8	9.0	4.62 *	-.09
WL	62.8	8.6	61.5	10.6		
Somatization- T	65.4	11.2	62.8	11.6	8.69 **	-.16
WL	58.0	9.8	57.3	11.0		
Occupational Disability-T	6.8	3.6	7.0	3.6	5.45 *	.55
WL	7.2	3.3	5.5	3.6		
Social Disability- T	7.0	3.2	6.9	3.2	3.83	.28
WL	6.7	3.1	5.7	3.4		
Family Disability- T	6.7	3.3	6.6	3.1	4.73 *	.35
WL	6.5	3.6	5.1	3.8		
Attitudes Towards Seeking Help- T	17.0	3.1	22.2	6.4	0.17	.23
WL	18.6	4.5	22.8	5.9		

Note. Pretest (T0) scores for each measure served as the covariate for posttest (T1) dependent measures; T1 for the WL condition reflects scores prior to receiving any treatment.

* $p < .05$.

**

$p < .01$,

$p < .001$

Table 4
Mixed Effects Regression Modeling Results: Time 0 = Pre-treatment (N=67), Time 1=Post-treatment (N=67), Time 2 = follow-up (n=50)

	Estimated Regression Coefficient	95% Lower Confidence Limit	95% Upper Confidence Limit	Standard Error of Estimate	t	p
PTSD						
Group WL	-4.99	-14.03	4.05	4.50	-1.11	.27
Time	-3.17	-5.70	-.65	1.26	-2.51	.02
Group*time	-1.92	-5.77	1.94	1.92	-1.00	.32
Anxiety						
Group WL	-7.52	-14.38	-.67	3.41	-2.20	.03
Time	-2.98	-4.67	-1.30	.84	-3.53	<.01
Group*time	.47	-2.11	3.06	1.29	.37	.72
Depression						
Group WL	-5.90	11.73	-.08	2.90	-2.04	.05
Time	-4.13	-5.79	-2.47	.83	-4.96	<.01
Group*time	1.45	-1.09	3.99	1.27	1.15	.26
Somatization						
Group WL	-9.03	-16.22	-1.84	3.58	-2.52	.02
Time	-2.67	-4.53	-.80	.93	-2.85	.01
Group*time	1.13	-1.72	3.98	1.42	.80	.43
Occupational Disability						
Group WL	.75	-1.78	3.27	1.26	.59	.56
Time	-.31	-1.02	.40	.36	-.86	.39
Group*time	-.69	-1.78	.39	.54	-1.29	.20
Social Disability						
Group WL	.54	-1.73	2.80	1.13	.48	.62
Time	-.40	-1.03	.24	.32	-1.25	.22
Group*time	-.78	-1.75	.18	.48	-1.63	.11
Family Disability						
Group WL	.16	-2.21	2.53	1.18	.14	.89
Time	-.45	-1.09	.20	.32	-1.38	.17

	Estimated Regression Coefficient	95% Lower Confidence Limit	95% Upper Confidence Limit	Standard Error of Estimate	t	p
Group *time	-.50	-1.48	.48		-1.02	.31
Attitudes Towards Seeking Help						
Group WL	2.69	-.65	6.03	1.66	1.62	.11
Time	3.49	2.11	4.86	.69	5.07	<.01
Group *time	-.77	-2.88	1.33	1.05	-.74	.46

Note. All participants received psychoeducation treatment at 1-month follow-up; Results reflect assessment timepoints at baseline (T0) for both groups, post-treatment (T1) for both groups (same day as T0 for the treatment group and 1-month after T0 for the control group), and 1-month follow-up after treatment (T2; 1 month after T0 for the treatment group and 2 months after T0 for the control group);

* p<.05,

** p<.01,

*** p<.001.