The Effect of a Culturally Informed Therapy on Self-Conscious Emotions and Burden in Caregivers of Patients With Schizophrenia: A Randomized Clinical Trial

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Objective: Caring for a family member with schizophrenia often results in high degrees of self-conscious emotions (shame and guilt/self-blame), burden, and other serious mental health consequences. Research suggests that ethnic and cultural factors strongly influence the manner in which family members respond to mental illness. Research further indicates that certain cultural practices and values (spirituality, collectivism) may assist family members in coping with the self-conscious emotions and burden associated with caregiving. With this in mind, the authors have developed a family-focused, culturally informed treatment for schizophrenia (CIT-S). *Method:* Using a sample of 113 caregivers of patients with schizophrenia (60% Hispanic, 28.2% Caucasian, 8% African American, and 3.8% other), the authors assessed the ability of CIT-S to reduce self-conscious emotions and caregiver burden above and beyond a 3-session psychoeducation (PSY-ED) control condition. They further examined whether self-conscious emotions mediated the relationship between treatment type and caregiver burden. *Results:* In line with expectations, CIT-S was found to outperform PSY-ED in reducing guilt/self-blame and caregiver burden. Furthermore, consistent with hypotheses, reductions in guilt/self-blame were found to mediate the changes observed between treatment type and caregiver burden. Although caregivers in both treatment groups demonstrated significant posttreatment reductions in shame, CIT-S was not found to outperform PSY-ED in reducing levels of this construct. *Conclusions:* Results suggest that caregivers of patients with schizophrenia may respond well to a treatment that specifically taps in to their cultural beliefs, values, and behaviors in helping them cope with schizophrenia in a loved one. Study implications and future directions are discussed.

Keywords: schizophrenia, family therapy, cultural interventions, caregiver burden, self-conscious emotions

Schizophrenia is a disabling, chronic psychiatric disorder that occurs in approximately 1% of the population (Mueser & Fox, 2008). Over the past 50 years, with the de-institutionalization of psychiatric care it is estimated that from 50% to 90% of American adults with this illness live with a relative (Harvey, Heaton, Carpenter, et al., 2012; World Health Organization, 2001). Not surprisingly, this responsibility has been associated with numerous negative outcomes for caregivers in multiple domains. These include high levels of perceived burden and self-conscious emotions such as shame and guilt over their loved one's illness (Awad & Voruganti, 2008; Weisman de Mamani, Tuchman, & Duarte, 2010). Research suggests that the degree of perceived burden and self-conscious emotions that result from experiencing adverse events are highly tied to one's cultural world view (Mekala et al., 2013; Wong & Tsai, 2007). Thus, addressing cultural beliefs and

core values in therapy may help to reduce caregiver burden and other self-conscious emotions commonly associated with caring for a family member with schizophrenia.

Caregiver Burden and Self-Conscious Emotions

Caregiver burden refers to the stressful psychological state that often results from caring for a person with a severe mental illness (Hoenig & Hamilton, 1967). Suro and Weisman de Mamani (2013) examined the relationship between objective (e.g., financial burdens; missing important social obligations or days at work) and subjective burden (e.g., feeling trapped by the caregiver role; excessive concern regarding what the future will be like for the relative) and negative mental health outcomes in a sample of caregivers of patients with schizophrenia. Results indicated that subjective burden partially mediated the relationship between objective burden and mental health outcomes demonstrating the underlying influence of one's subjective evaluation process on psychological well-being. This finding suggests that the objective stressors associated with caregiving may incite an appraisal process for caregivers of patients with schizophrenia, illustrating the potential to improve the negative psychological outcomes by addressing caregivers' subjective experience.

Tangney (1995) postulated that the process of judging and responding to interpersonal events (e.g., mental illness in a loved one) may also be mediated by self-conscious emotions of guilt/

self-blame and shame. These emotions are similar in that both are self-evaluative and often lead individuals to reflect on their role in bringing on and managing an emotion-eliciting event (Tracy & Robins, 2006). However, some research indicates that shame may be more likely to occur when stable aspects of the self are implicated (e.g., "I am a bad person") whereas guilt is more likely to occur when unstable aspects are involved (e.g., "I did a bad thing"). Thus, on occasion, these emotions may lead to different outcomes. For example, Tangney, Miller, Flicker, and Barlow (1996) argued that when a person experiences guilt/self-blame, one's behaviors are often the object of negative self-evaluation. Therefore one may be more likely to take ownership for a negative event and prosocial or reparative behaviors are likely to follow. Shame on the other hand is related to behaviors such as hiding and social withdrawal.

There is reason to believe that high degrees of self-conscious emotions may lead to greater subjective distress and possibly greater levels of burden in caregivers of patients with schizophrenia. For example, in a cross sectional study, Weisman de Mamani et al. (2010) found that higher degrees of shame proneness were associated with greater general emotional distress in caregivers of patients with schizophrenia. This suggests that interventions targeting the appraisal processes underlying caregivers' shame and guilt/self-blame may reduce subsequent levels of caregiver burden.

Religion and Spirituality

Approximately 60% of patients with schizophrenia report using religion and spirituality extensively to cope with their illness (Mohr et al., 2006, 2007). Numerous individual studies and comprehensive review papers indicate that religion is associated with delayed onset of physical and mental illness and a better course and outcome for a range of disorders (e.g., Koenig, Larson, & Weaver, 1998; George, Larson, Koenig, & McCullough, 2000; Weisman de Mamani et al., 2010). In patients with schizophrenia, Tabak and Weisman de Mamani (2014) found meaning-making coping significantly mediated the effect of intrinsic religion (use of religion as a framework to understand life) on quality of life. In other words, the meaning making that religion offers appears to improve the quality of patients' lives. Greater religiosity was also found to be correlated with less depression and better self-esteem and self-care in several studies of caregivers of patients with mental illness (e.g., Magaña, Ramirez Garcia, Hernandez, & Cortez, 2007; Murray-Swank et al., 2006).

Family Interventions for Schizophrenia

Over 20 clinical trials have demonstrated that family interventions lead to improved outcomes for individuals with schizophrenia including reduced risk of relapse and symptom severity, as well as increased medication adherence (Dixon, Adams & Lucksted, 2000; Pharoah, Mari, Rathbone & Wong, 2004). The most widely disseminated treatment available for families of persons with schizophrenia is a brief (one to three sessions) course of psychoeducation about the illness (McFarlane, Dixon, Lukens & Lucksted, 2003). Although both patients and their families are included in these programs, only a handful of trials have focused on caregiver factors that go beyond assessing for family variables known to directly impact patient relapse rates and other patient outcomes

(e.g., expressed emotion). A few studies indicate that family therapy may improve burden and quality of life for caregivers (e.g., Cuijpers, 1999). Little information exists regarding the impact of family treatments on self-conscious emotions. Understanding what causes caregivers to respond positively to treatment will lead to the refinement of current interventions like family psychoeducation.

Despite the promising findings described above, it is estimated that less than 7% of patients with schizophrenia receive any family therapy at all (Dixon, McFarlane, Hornby, McNary, 1999) and save a few exceptions (e.g., Kopelowicz et al., 2012), the majority of interventions designed for families of patients with schizophrenia are offered only in English (e.g., Miranda et al., 2005; U.S. Department of Health & Human Services, 2001). Furthermore few existing programs take cultural factors into account. Cross-cultural research indicates that caregivers respond to mental illness in a culturally specific manner and that certain practices such as turning to one's religion, externalizing blame for a family member's event, and construing and responding to problems in an interdependent shared manner may help reduce the burden and self-conscious emotions associated with caring for a family member with schizophrenia (Mekala et al., 2013; Wong & Tsai, 2007).

Weisman (2005) and her colleagues (Weisman, Duarte, Koneru, & Wasserman, 2006) developed a 15-week, family focused, culturally informed intervention for schizophrenia (CIT-S) with the intention of decreasing levels of caregiver burden, shame, and guilt/self-blame. CIT-S strongly aims to foster collective beliefs and values as well as spiritual practices that research suggests are culturally sanctioned for minorities and possibly beneficial for all (Weisman & López, 1996; Weisman, 1997). CIT-S is considered to be "culturally informed" because throughout the treatment therapists use structured exercises and techniques to access beliefs, behaviors, and practices from participants' ethnic and cultural backgrounds. Using cognitive–behavioral techniques such as thought monitoring, cognitive restructuring, and behavioral activation, adaptive beliefs and behaviors are encouraged and bolstered whereas attempts are made to modify maladaptive ones.

The current study is focused on assessing the impact of CIT-S on caregiver burden and self-conscious emotions, though it is important to point out that patients attend the sessions with family members and CIT-S is also aimed at reducing patient psychiatric symptoms. A prior study using this data set indicated that CIT-S outperformed PSY-ED in reducing psychiatric symptoms (rated from the Brief Psychiatric Rating Scale) with a 20% reduction in psychiatric symptoms from baseline to posttreatment. The treatment was found to work equally well for Caucasian and minority patients alike. CIT-S's impact on patient functioning was addressed in a separate manuscript (Weisman de Mamani et al., 2014).

Hypotheses

Based on the research reviewed above, in the current study the following two sets of hypotheses were tested. First, it was expected that caregivers who receive CIT-S would demonstrate decreased levels of burden, shame, and guilt/self-blame when compared to those who receive PSY-ED. The second set of hypotheses addressed potential mediators of the relationship between treatment type and caregiver burden. Specifically, it was hypothesized that changes in levels of self-conscious emotions would partially me-

diate the relationship expected between treatment type and caregiver burden. In other words, greater decreases in self-conscious emotions were expected to drive some of the expected improvement in caregiver burden for participants who receive CIT-S relative to those who receive PSY-ED.

Method

Culturally Informed Therapy for Schizophrenia

CIT-S is a fully manualized family treatment for schizophrenia that combines cognitive–behavioral techniques with components informed by cross-cultural research. Weisman and colleagues (2006) developed this intervention to address the limitations of existing family interventions for this population. Specifically, the majority of interventions designed for families of patients with schizophrenia are offered only in English (e.g., Miranda et al., 2005; U.S. Department of Health & Human Services, 2001) and do not take into account factors that may be important for different cultural groups. As a result, these programs may be less relevant for ethnic/racial minority groups, who overwhelmingly report turning to spiritual and collectivistic values when coping with mental illness (Magaña et al., 2007). In addition, evidence suggests that these values, which are more common among minorities, may encourage more supportive family environments and a healthier environment for the patient. Much of the research used to inform the development of CIT-S was based on Hispanics. However, the treatment is not specific to any particular racial or cultural group and we believe it will benefit Caucasians and minorities alike.

CIT-S incorporates therapeutic components informed by cross-cultural research including modules on spirituality and family collectivism, as well as techniques that have demonstrated efficacy in treating families of patients with schizophrenia, such as psychoeducation and communication training. The cognitive–behavioral components are drawn from prior family-focused treatments for schizophrenia (Falloon et al., 1984; Goldstein & Miklowitz, 1995) that have been shown to reduce symptoms in patients with serious mental illness.

CIT-S is a 15-week intervention comprising five segments, each lasting for three sessions. Each segment is guided by a series of handouts. Between-session homework is assigned for family members to practice the skills that are addressed during therapy.

Family collectivism. The first treatment segment of CIT-S is family collectivism. The rationale for this segment was motivated by and developed based on prior research. For example, using cross-sectional data obtained from the Family Environment Scale, Weisman et al. (2005) found that greater perceived family cohesion is associated with less severe psychiatric symptoms in individuals with schizophrenia and lower levels of depression, anxiety, and stress in both patients and their caregivers (Weisman et al., 2005). Thus, the objective of this module is to help family members develop the perspective that they are part of a unified team working toward common goals.

Within this module, maladaptive perceptions are challenged, and family members are encouraged to view themselves as interdependent and to recognize that each individual's behavior affects other family members. The therapist begins treatment by asking each family member to verbalize their expectations and goals for treatment. This provides an opportunity to emphasize commonal-

ities, as most family members report that getting along better and promoting the patient's health are shared priorities. In-session activities and homework assignments associated with this module include preparing personal narratives regarding how each family member feels they contribute to the general family functioning. Through these narratives, family members begin to consider the ways they impact the family system and generate ideas about improving family functioning. Family members are encouraged to discuss any dissatisfaction with roles they have acquired or lost as a result of the illness. In brief, this segment incorporates the families' cultural beliefs and values and focuses on how the family system works as a whole to impact family problems. This is expected to decrease individual members' feelings of blame, shame, and burden as the focus is shifted away from any one person's role in bringing on or solving family problems.

Psychoeducation/comparison condition. The second module of CIT-S is psychoeducation. This segment is based on an intervention developed by Falloon, Boyd, and McGill (1984) and Miklowitz and Goldstein (1997). The objective of this segment is to provide thorough information regarding known causes of schizophrenia and its exacerbating factors, including genetics, neurochemistry, and environmental factors. Family members are educated about the common symptoms of schizophrenia and are taught to accurately identify the prodromal symptoms that may be present before a relapse. In an attempt to de-stigmatize the illness, we frequently draw parallels to medical disorders such as cancer or diabetes. We expect that highlighting the influence of genetic and other external factors (e.g., financial stress) on the illness may alleviate some of the shame and guilt/self-blame that relatives may feel about their role in causing the illness.

This module also served as our comparison condition. It should be noted that the comparison condition is considerably shorter than the 15-session experimental condition. In this early phase of testing CIT-S, a psychoeducation control condition was chosen in order to address whether or not the intervention leads to clinical improvement above and beyond ordinary clinical management. As reviewed, short-term family psychoeducation has demonstrated improved patient functioning as well as benefits for caregivers. Thus, it was not considered to be a placebo condition. However, it is less intensive than the minimum of four sessions recommended by the Schizophrenia Patient Outcomes Research Team (Dixon et al., 2010).

Spiritual coping. The third module of CIT-S, spiritual coping, is aimed at assisting family members in accessing any spiritual or existential beliefs that may serve as a resource in coping with the illness. This module is grounded in literature pointing to numerous benefits associated with religion and spiritual methods of coping with adversity. See Weisman de Mamani, Tuchman, and Duarte (2010) for a review of the literature linking spirituality to better functioning in persons with schizophrenia and their caregivers. The segment begins by asking family members to provide a history of their spiritual beliefs, values, and practices. The handout for this module consists of questions to guide a discussion regarding family member's beliefs about God or a supreme being, perceptions of morality, and their views on the meaning and purpose of life. In addition, they are asked about the role of any spiritual practices that they currently use or would like to use. These practices include concrete behaviors such as prayer, meditation, volunteerism, or attending religious services. Discussions

address spiritual practices such as forgiveness, kindness and empathy. Family members are encouraged to engage in practices outside of treatment that are identified as being potentially therapeutic and then discuss these experiences in session.

The spirituality module is completed with every family, regardless of their expressed religious orientation, or lack thereof. Family members who do not subscribe to a particular religious practice or do not want to discuss their religious beliefs complete many of the same exercises as religious families using a parallel set of handouts that do not specifically reference "God" or "religion." Instead, these family members engage in existential exercises such as philosophical readings or mindfulness meditation and a discussion of spiritual concepts such as empathy and appreciation.

During therapy, clinicians have an opportunity to reframe maladaptive religious beliefs, such as "the patient's mental illness is God's punishment for some wrongdoing" with more adaptive attributions such as "God uses struggles to build virtue and patience." Therapists do not directly challenge any religious or spiritual beliefs held by family members, but instead work to shift blame and shame away from participants by guiding them to adopt less stigmatizing conceptualizations.

Communication training and problem solving. The final two modules of CIT-S, communication training and problem-solving, are based largely on approaches that have strong empirical support for assisting families of persons with severe mental illnesses (Falloon, Boyd & McGill, 1984; Miklowitz & Goldstein, 1997). In CIT-S however, during these modules there is a strong emphasis on exploring how the family's ethnic and cultural background influences their communication and problem solving patterns. Adaptive practices (e.g., use of culturally specific metaphors to soften language) are encouraged and maladaptive practices (e.g., gender based hierarchies in communication or problem solving) are discouraged.

In communication training, family members are taught a set of skills to assist them in providing support for one another more effectively such as active listening, expressing positive regard, and making requests for behavioral change. Role-playing and homework assignments are used to help shape these behaviors. Caregivers are guided to shift the focus of their communication regarding illness-related stressors from the individual as a whole to specific behaviors.

In the final phase of treatment, family members practice problem-solving skills to enhance their ability and self-efficacy in managing the challenges associated with schizophrenia. Participants are taught to identify problems, brainstorm all possible solutions without judgment, and then evaluate each of these ideas to arrive upon the optimal solution for the chosen problem. A strategy is then put in place to carry out the solution.

Sample

The study sample consisted of 113 (71 female, 42 male) caregivers, from 66 separate families who completed their assigned therapy condition as well as a baseline and termination assessment battery. The mean age of caregivers was 53.77 (SD = 14.93). The average number of caregivers per family was 1.72. Participants were randomized as a family to either CIT-S or PSY-ED. Sixty-four participants were randomized to and completed CIT-S, 49 were randomized to and completed PSY-ED. Sixty percent of the family member sample identified as Hispanic, 28.2% as Caucasian, 8% as African American, and 3.8% identified as other. This ethnic makeup is reflective of the greater metropolitan area of Miami from which the sample was drawn. Seventy-two percent of the assessments took place in English, 28% were conducted in Spanish. Sixty-nine point eight percent of participants identified as Catholic, 16% did not identify a religion, 11.06% identified as Christian, 1.49% as Protestant, 1.13% as Methodist, .18% as Baptist, .16% as Agnostic, .04% as Jewish, .03% as Pentecostal, .02% as Hindu, and .09% as other. Thirty-eight percent identified as mother of the patient, 21.8% identified as father of the patient, 7.9% identified as significant other of the patient, 10.7% identified as sister of the patient, 9.3% identified as brother of the patient, 2.3% as daughter of the patient, 1% as son of the patient, 2.5% as aunt of the patient, 3.2% as grandmother of the patient, 2.3% as cousin of the patient, and 1% as stepfather of the patient. Finally, 37% of the caregivers sample reported living with the patient, 14.1% reported between 51 and 100 hours of contact per week with the patient, 21.3% reported between 21 and 50 hours of contact per week with the patient, 7% reported between 11 and 20 hours of contact per week with the patient, and 20.4% reported between 2 and 10 hours of contact per week with the patient.

Procedure

The current study is part of a larger family study that examines how CIT-S and other psychosocial factors relate to how patients and their caregivers cope with schizophrenia. To be eligible, caregivers had to be in regular weekly contact (minimum of one hour or more face to face contact over the past three months) with an individual diagnosed with schizophrenia or schizoaffective disorder, as confirmed by the Structured Clinical Interview for the *DSM–IV*, patient edition, (SCID-I/P; First, Spitzer, Gibbon, & Williams, 2002). A *caregiver* was defined as a biological relative, a steprelative, a spouse, or a significant other (SO), as long as the relationship with the SO had been in existence for at least 6 months and the patient described the relationship as meaningful and committed. Participants were required to give informed consent and agree to participate in all assessment and intervention phases of the study. For ethical reasons and to simulate real world settings, all other types of individual psychosocial treatments were permitted.

Participants were recruited through referrals from hospitals, community mental health centers, newspaper advertisements, and advertisements on Miami's metro system. Participants were given contact information. When participants initiated contact they first received a brief screening instrument over the phone to assess eligibility. If participants appeared to meet criteria they were scheduled for an initial screening assessment. During this assessment, a trained bilingual research assistant fully explained the study process, including the randomization design. The participant was asked to review study procedures, and if in agreement, to sign an informed consent form. The research assistant then interviewed the patient using the SCID-I/P to confirm diagnosis.

See Figure 1 for a chart outlining the flow of patients through each stage in the study. Participants who did not have an eligible family member were filtered into a cross-sectional study on family environment or a group intervention trial. One hundred and seventy-one participants were eligible for this study and subse-
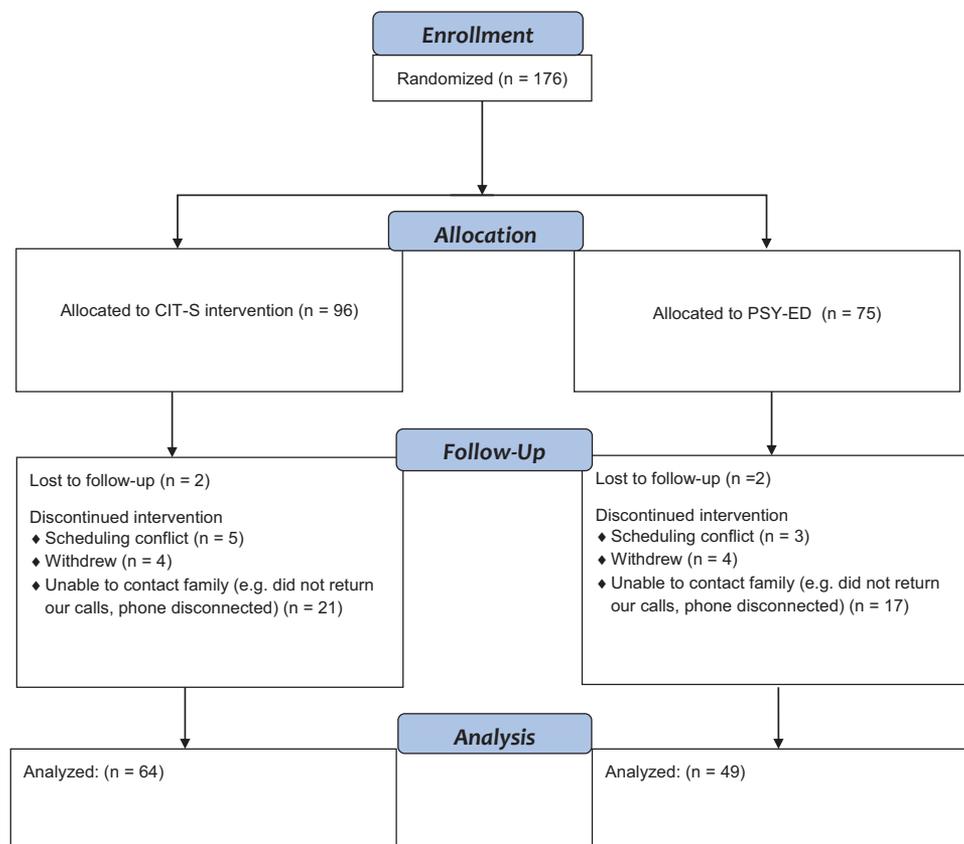
Figure 1. CONSORT Flow Diagram. See the online article for the color version of this figure.

quently randomized to either CIT-S or PSY-ED with one or more family members.

If the patient met study criteria they continued with a baseline assessment. This assessment lasted approximately 2 to 2.5 hrs and gathered data across a variety of domains including, but not limited to, cultural identity, family dynamics, and coping strategies. Assessments were conducted in interview format to control for variability in participants' level of reading comprehension. The first family assessment occurred approximately 1–2 weeks before treatment. Participants were then randomly assigned to either 15 weeks of CIT-S or three sessions of PSY-ED. Participants in the CIT-S condition were reassessed using the same measures after the 15th and final session. Participants in the PSY-ED condition also received the same assessments at the same time intervals as the experimental group (i.e., 15 weeks after the first treatment session). After study completion (including all follow-up assessments), participants in both treatment conditions were invited to participate in an ongoing, drop-in, multifamily group that taught and/or reinforced CIT-S skills.

It is important to note that treatment adherence to both CIT-S and PSY-ED was closely monitored in this project. Treating clinicians were all doctoral level clinical psychology doctoral-level students (seven female, two male; three White, five Hispanic, and one Asian/Indian) in a program with a primarily cognitive–behavioral orientation. The study principal investigator, a licensed clinical psychologist, closely monitored therapist fidelity of pre-

scribed and proscribed behaviors and held weekly supervision meetings with all treating therapists. Sixty-nine videotaped sessions from the first 23 families to enter treatment were rated as part of an earlier study (Carlson & Weisman de Mamani, 2010), using a variant of the Therapist Competency Adherence Scale (Weisman et al., 1998, 2002). The CIT-S Therapist Competency Adherence Scale includes a manual and detailed anchor points and assesses both recommended and proscribed therapist behaviors for both treatment conditions. Interrater reliability between raters, using intraclass correlations were satisfactory for all 24 questions, ranging from .75 to 1.00. Internal reliability for the therapist competence/adherence scale was also adequate, with a Cronbach's alpha of .80. Overall, therapists demonstrated excellent competence and adherence on all of the 24 domains assessed. Mean ratings across the 24 domains were 6.29 ($SD = .45$) on a 7-point scale ranging from 1 (*poor*) to 7 (*excellent*). See Carlson and Weisman de Mamani (2010) for a more detailed description of the results of our fidelity study.

Translation of measures. All assessments in this study were offered in English or Spanish. Measures were translated from English to Spanish using the editorial board approach. This is considered to be more effective than the translation-back translation approach because it takes into account the within group language variations that are often an issue (Geisinger, 1994). See Weisman de Mamani, Weintraub, Gurak, & Maura, 2014 for further details on the translation procedure.

Measures

Eligibility for current study. The psychotic symptoms section of the SCID-I/P was used in this study to determine diagnoses of schizophrenia/schizoaffective disorder. Since the beginning of the study, 11 raters including the principal investigator have done SCID assessments on this study. Interrater reliability of the SCID interviewers was evaluated by having all interviewers as well as the study's principle investigator watch six videotaped interviews and independently rate each item to determine an overall diagnosis (in four of the training tapes a diagnosis was present and in two it was absent). Interrater agreement using Cohen's kappa was 1.0. This rating indicates that there was perfect agreement in determining whether a diagnosis of schizophrenia/schizoaffective disorder was present or absent.

Caregiver burden. Family member burden was assessed using the Modified Burden Assessment Scale for Families of the Seriously Mentally Ill (BAS; Reinhard, Gubman, Horwitz, & Minsky, 1994). This self-report scale contains 19 items and two distinct subscales that assess the objective and subjective consequences of caregiving.[1] Ten objective burden items measured potentially observable behavioral effects of caregiving in four areas: financial problems, limitations on personal activity, household disruption, and social interactions. Nine subjective burden items measured the feelings attitudes and emotions specifically related to caregiving in multiple domains (e.g., stigma, grief). The scale's developers reported excellent reliability and validity (Reinhard et al., 1994). In the current study the BAS demonstrated very good reliability at baseline with a total Cronbach's alpha of .951 (.983 for English and .925 for Spanish). Overall, the BAS demonstrated good reliability at termination with a total Cronbach's alpha of .874 (.881 for English and .862 for Spanish).

Self-conscious emotions. Shame and guilt/self-blame were each assessed using Likert ratings that ranged from one to seven with higher scores reflecting a greater degree of the construct. To assess shame, participants were asked to rate the degree to which having a relative with schizophrenia is a source of shame for them. To assess guilt/self-blame, participants were asked to rate the degree to which having a relative with schizophrenia is a source of guilt/self-blame for them.

Statistical Analyses

All preliminary analyses took place using SPSS version 16.0. Prior to conducting primary analyses, the distribution of all variables were examined for normality and homoscedasticity of residuals. Additional analyses were conducted to examine the relationship of caregiver demographic variables (age, gender, ethnicity, family member type, religion) to primary variables of interest. In addition, pretreatment variables, both demographic and primary, were compared between the CIT-S and PSY-ED conditions to examine equivalence across conditions at baseline. Multilevel structural equation modeling in Mplus was used to analyze individual family members nested within families using guidelines provided by Raudenbush and Bryk (2002). This approach allowed for an increase in sample size and overall statistical power and takes into account any bias in standard errors and statistical tests resulting from the nonindependence of observations (Krull & MacKinnon, 2001). Specifically, data was modeled using two levels. The Level 1 equation contained the intercepts and slopes for

individual caregivers. At Level 2, the average family intercepts and slopes were modeled by overall averages and corresponding variance components that capture the variability of the family. Estimates of model fit were obtained using the Satorra-Bentler scaled correction (Satorra, 2000) to account for possible multivariate abnormality. For the second set of analyses, model fit was evaluated using four fit statistics: a nonsignificant value for the chi-square test of model fit (χ^2), $\geq$.95 for the comparative fit index (CFI), $\leq$.06 for the root mean square error of approximation (RMSEA), and $\leq$.09 for the standardized root mean squared residual (SRMR).

Results

Preliminary Analyses

Cases where families were randomized to treatment but later left the study were designated as "drop-outs." Fifty-eight participants (34%) did not complete the study for a variety of reasons (e.g., relocation, scheduling conflicts, no longer interested in treatment, etc.). A chi-square indicated no differences between the treatment groups on attrition, with 31 dropping out of CIT-S and 27 dropping out of PSY-ED ($\chi^2 = .405$, $p = .67$). Furthermore, there were no differences at baseline for any primary study variable or demographic variable for participants who completed the study and those who did not.

Missing data. Full information maximum likelihood estimation method was used to account for missing observations. Using this method, all cases in the sample were partitioned into subsets with the same patterns of missing observations. Statistical information and structural parameters were obtained from each subset, and each case remained in the analysis. The maximum likelihood estimation method has been found to outperform traditional methods of accounting for missing data in structural equation modeling (Kline, 2005), thus resulting estimators are considered to be valid provided that the missing data mechanisms are missing at random. Missing data were present for all variables of interest and there was no indication of systematic bias in the responses that were missing.

Demographic variables. The relationship of caregiver demographic variables (age, hours of contact, gender, ethnicity, type of relative and religion) to primary variables of interest was examined. Pearson's r correlations were conducted with the main variables of study (caregiver burden, shame and guilt/self-blame) and with continuous demographic variables (age, hours of contact). Neither age (burden/$r = .07$, $p = .11$; shame/$r = .05$, $p = .358$; guilt/self-blame/$r = .03$, $p = .763$) nor hours of contact with the patient (burden/$r = .05$, $p = .489$; shame/$r = .08$, $p = .218$; guilt/self-blame/$r = .07$, $p = .573$) were found to be significantly

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[1] It is important to note that there are two items on the BAS that assess guilt. Because those items overlap with the concept of guilt/self-blame in our study, we examined the psychometric properties of the scale without these items. We found that the scale's reliabilities with and without those two items were very similar as were mean Caregiver BAS scores at baseline and at terminations. Furthermore, we reran all of the analyses using the abbreviated BAS (without these items) and none of the models or patterns changed. Because the BAS is a widely used psychometrically valid scale, we have chosen to report the results with only the full scale BAS in this article.

associated with any of the primary variables of interest in this study.

Independent-sample t test statistics were performed to assess whether main variables of study were significantly associated with nominal demographic variables with two groups (gender). Gender was found to be significantly associated with both shame, $t = 13.78$, $p < .01$, and guilt/self-blame, $t = 18.74$, $p < .01$, related to having a relative with schizophrenia such that females demonstrated higher levels of both of these self-conscious emotions than males. As a result, gender was controlled for in subsequent analyses.

One-way analyses of variance were used to assess any significant relationships between primary variables and nominal demographic variables with more than two groups (type of family member, ethnicity, and religion). Significant ethnic differences were found for levels of shame regarding having a relative with schizophrenia, $F = 7.07$, $p < .01$. Specifically, African Americans demonstrated significantly higher levels of shame when compared with Caucasians. Hispanics did not significantly differ from African Americans nor Caucasians. Based on these findings, ethnicity was controlled for in subsequent analyses. No significant differences were found for primary variables of study according to family member type or religion.

Finally, pretreatment and demographic variables were compared between CIT-S and the PSY-ED conditions at baseline. A series of two-tailed t tests (for continuous data) and Fisher's exact tests (for categorical data) were used. No group differences were found between treatment conditions for any primary variable at baseline.

Primary Analyses

Our data were modeled using two levels. The Level 1 equations contained the intercepts and slopes for individual caregivers. At Level 2, the average family intercepts and slopes were modeled by overall averages and corresponding variance components that captured the variability of the family.

Hypothesis 1. The first set of analyses examined the ability of CIT-S to reduce self-conscious emotions and burden. A confirmatory factor analysis was first run to assess the fit of a latent variable labeled *self-conscious emotions* that was specified by termination levels of shame and guilt/self-blame (controlling for baseline levels of these variables). Model fit indicators demonstrated that this model did not fit the data, $\chi^2(5) = 22.53$, $p = .000$, CFI = .752, RMSEA = .334, SRMR = .083. In addition, factor loadings for both indicators were less than .8 indicating inadequate fit. As a

result, shame and guilt/self-blame were examined separately in all subsequent analyses.

Next, a model was specified regressing termination levels of caregiver burden, shame, and guilt/self-blame (controlling for each of these variables at baseline) on the Level 2 variable of treatment condition. Intraclass correlations for each outcome variable were used to calculate design effects. Design effects for each variable were greater than 2, indicating that clustering of the data was appropriate for this data set. Examination of the between-level estimates of the model results demonstrated that treatment condition significantly predicted termination levels of caregiver burden ($\beta = 2.058$, $p < .01$) and guilt/self-blame ($\beta = .397$, $p < .05$), in the manner hypothesized, while controlling for baseline values of these variables. Treatment condition was not found to significantly predict termination levels of shame ($\beta = .271$, $p = .274$).

It is important to note that prepost treatment paired t tests indicated that levels of each primary variable within treatment conditions significantly decreased from baseline to termination with the exception of guilt/self-blame in the PSY-ED condition. Results of the paired t tests and means of primary variables for both CIT-S and PSY-ED participants at baseline and termination can be found in Table 1.

Hypothesis 2. Multilevel structural equation modeling was used to assess whether changes in the self-conscious emotions of shame and guilt/self-blame partially mediated the relationship between treatment type and caregiver burden (Preacher et al., 2011). As in the previous set of analyses, individual caregiver variables were measured at Level 1, and caregivers nested within families were measured at Level 2. Given this design, a $2 \rightarrow 1 \rightarrow 1$ mediational model was specified as recommended by Krull and MacKinnon (2001) to appropriately model the error structure of our clustered data.

The mediation model examined both shame and guilt/self-blame as mediators of the relationship between treatment condition and caregiver burden. This model fit the data as demonstrated by indicators of model fit, $\chi^2(13) = 13.762$, $p = .106$, CFI = .915, RMSEA = .05, SRMR = .083. When examining the specific paths, treatment condition was found to significantly predict termination levels of guilt/self-blame and caregiver burden. Treatment condition did not significantly predict termination levels of shame. This was consistent with previous analyses. Guilt/self-blame was found to significantly predict termination levels of caregiver burden ($\beta = 1.819$, $p < .05$). Shame was not found to predict caregiver burden at termination ($\beta = .179$, $p = .858$). Finally, the new/additional parameters introduced to the model

Table 1

Baseline (BL) and Termination (Term.) Means for Primary Variables of CIT-S vs. PSY-ED, Paired Sample T-Tests Within Conditions

Condition	Shame			Guilt/self-blame			Burden		
	BL M	Term. M	t	BL M	Term. M	t	BL M	Term. M	t
CIT-S	2.41	1.66	9.348**	3.11	1.43	8.812**	39.92	31.15	4.217**
PSY-ED.	2.84	1.74	2.386*	3.07	2.67	1.554	40.77	35.94	2.615*

Note. The baseline and termination Modified Burden Assessment Scale for Families of the Seriously Mentally Ill scores in this sample are similar in range to those commonly reported by family members caring for a relative with schizophrenia in other studies. (e.g. Reinhard, et al., 1994). CIT-S = culturally informed treatment for schizophrenia; PSY-ED. = psychoeducation.
* $p < .05$. ** $p < .001$.

were examined. A significant indirect effect was found between treatment condition and termination caregiver burden via termination guilt/self-blame ($\beta = .497$, $p < .05$) indicating a partial mediation effect. The indirect effect between treatment condition and termination caregiver burden via shame, however, was not significant, ($\beta = -.176$, $p = .860$). The full model including covariates is depicted in Figure 2. Parameter estimates for the mediation model are reported in Table 2.[1]

Discussion

The overarching aim of this study was to test whether a family focused, culturally informed treatment for schizophrenia (CIT-S) was effective in lowering burden, shame, and guilt/self-blame in caregivers of patients with this illness. We also attempted to assess whether changes in shame and guilt/self-blame might account for some of the therapeutic benefits of this intervention. CIT-S was compared against a three-session psychoeducation condition (PSY-ED).

With respect to our first study aim, results suggested that CIT-S significantly lowered levels of caregiver burden when compared to PSY-ED. As reviewed, the toll that schizophrenia takes on family members is severe and most caregivers report high degrees of objective and subjective burden (e.g., Barrowclough et al., 1996). Although other psychosocial interventions for schizophrenia have been developed to incorporate family members, levels of burden remain considerable in this population (Awad & Voruganti, 2008). One explanation for the persisting levels of distress may be that many of the current family treatment programs for schizophrenia are focused on improving patient outcomes, such as relapse rates and symptom severity, but fail to view caregiver well-being as a central area of focus (Cuijpers, 1999; Lam, 1991). Most approaches also fail to take culture into account and therefore may not be tapping in to the central issues that underlie caregiver burden and guilt/self-blame regarding having a relative with schizophrenia.

Table 2
Path Coefficients and Standard Errors for Direct Effects and Indirect Effects

	β	b	SE
Between level			
Treatment condition to caregiver burden	2.252**	.630	.234
Treatment condition to guilt/self-blame	.391*	.474	.197
Within level			
Guilt/self-blame to caregiver burden	.345*	.403	.129
Indirect effects			
Treatment condition to caregiver burden via guilt/self-blame	.497		1.155*
Treatment condition to caregiver burden via shame	-.176		.713

* $p < .05$. ** $p < .001$.

Also in line with hypotheses, caregivers who completed CIT-S endorsed significantly lower levels of guilt/self-blame about having a relative with schizophrenia at termination when compared to those who completed PSY-ED. Our results demonstrate that CIT-S was successful in addressing these maladaptive cognitions of responsibility beyond what was offered by PSY-ED. This finding has important implications for patients too because guilt/self-blame has been found to be a significant predictor of high expressed emotion (EE; Wasserman et al., 2012). *High EE* is defined as excessive levels of critical, hostile, or emotionally overinvolved attitudes (Miklowitz, Goldstein, Falloon, & Doane, 1984). This is important because extensive research has demonstrated that high EE communication is associated with increased severity of symptoms and a greater number of relapses and hospitalizations for patients (e.g., Hooley, 2007).

In this study, CIT-S was not found to outperform PSY-ED in lowering shame. However, it is noteworthy that shame was significantly reduced from baseline to termination in both PSY-ED and CIT-S conditions as noted in Table 1. Thus, PSY-ED (which
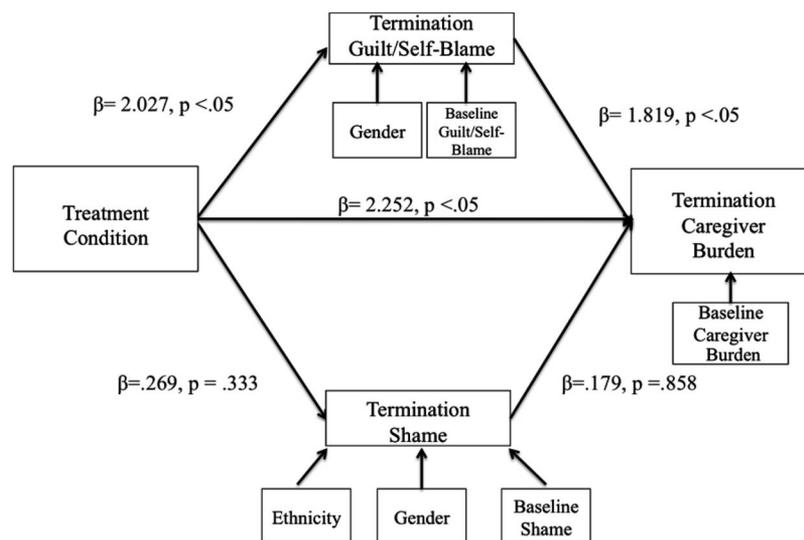

Figure 2. Structural equation model including covariates and parameter estimates.

is included in both conditions) appears to be effective in reducing shame. It is also noteworthy that shame and guilt/self-blame did not load on to a latent variable in our sample. This suggests that it is important to examine these self-conscious emotions separately, as they appear to capture somewhat different constructs.

It was hypothesized that changes in levels of shame and guilt/self-blame would partially mediate the relationship expected between treatment type and caregiver burden. In line with our study hypotheses, treatment condition was found to significantly impact levels of caregiver burden not only directly, but also indirectly, via termination levels of guilt/self-blame. These results suggest that addressing the cognitions or attributions associated with caregivers' experience of guilt/self-blame may be an effective path to also decrease the high levels of caregiver burden that tend to plague this population.

There were a number of limitations to the present study. First, the sample was predominantly Hispanic and mothers of patients. Thus, findings may not generalize to a broader sample of relatives. Follow-up research with a larger and more diverse sample is needed. Future study is also needed to better understand the demographic and ethnic/racial patterns observed in this study. Specifically, it will be important to clarify the mechanisms that may account for higher levels of self-conscious emotions in women and African American caregivers when confronted with a loved one with schizophrenia.

Furthermore, additional research is needed to pinpoint who may be best served by CIT-S. For example, is the treatment better suited to individuals who place a high or low value on interdependent and spiritual beliefs at the outset of treatment? Identifying treatment moderators would allow for a more cost-effective matching of the treatment to clients who are most likely to benefit. Given that women tend to be more collectivistic in their values, they may be especially good candidates for CIT-S. Furthermore, given our data that women exhibit more guilt/self-blame than do men, ramping up attention to this construct with female caregivers may be warranted.

Another limitation to our study was having a somewhat restricted range for the measure of shame, such that most relatives reported experiencing relatively low levels of shame about having a loved one with schizophrenia. It is possible that caregivers willing and motivated to participate in a research study with their family are more accepting of their relatives' illness, and therefore less representative of the shame experienced by caregivers of mental illness in the general population. Alternatively, Ryan (1993) argued that many individuals defend against the conscious awareness of shame. Perhaps caregivers in this study were not fully aware that they were feeling ashamed of having a loved one with schizophrenia. Future research should use more objective measures of shame, such as the Test of Self-Conscious Affect (Tangney, Wagner, & Gramzow, 1991), to capture elements of shame that participants are unwilling or unable to acknowledge directly.

In addition, the constructs of shame and guilt/self-blame were measured with just one item each. Longer scales tend to be more reliable and valid (Smith, McCarthy, & Anderson, 2000) and should be considered when conducting follow-up work in this area. Future studies that measure both specific and dispositional measures of self-conscious emotions may offer the greatest insights

into how self-directed emotions relate to caring for a person afflicted with mental illness.

The length of our comparison condition may also be seen as a study limitation as CIT-S is 12 weeks longer than PSY-ED. Although it is exciting that CIT-S is able to outperform a treatment that has demonstrated effectiveness and that is currently the standard treatment (only 7% of patients get any family therapy), it will be critical to eventually examine whether CIT-S can outperform other established interventions, such as family focused therapy (Miklowitz & Goldstein, 1997) that are matched in length.

A final study limitation is that treatment assessors were not always blinded to the treatment condition because the study was managed by one central treatment team so logistical and other issues were often discussed at weekly lab meetings. Given that the measures used in this study are primarily self-report, it is unlikely that systematic bias was introduced. However future studies would be enhanced by ensuring that assessors are always unaware of treatment condition.

Conclusions and Clinical Implications

In sum, findings from the current study demonstrate that a family-focused treatment that incorporates participants' cultural beliefs and traditions and aims to foster greater familial cohesion and use of adaptive spiritual practices has the potential to reduce burden in caregivers of patients with schizophrenia. One of the vehicles by which this may occur is by lowering levels of guilt/self-blame. These findings have important clinical implications for improving family treatments for schizophrenia.

Therapists who work with mentally ill patients and their family members are encouraged to explore clients' religious and cultural beliefs and values and incorporate those that may be adaptive in coping with the illness into treatment. Results of this study and our prior research (Weisman de Mamani et al., 2014) also suggest that using techniques to modify dysfunctional communication and problem solving patterns may ease burden in caregivers and reduce symptom in patients (Weisman de Mamani et al., 2014). As part of the CIT-S project we have developed a set of handouts that are easy to implement and offer detailed and specific strategies for how to address these constructs in therapy. We invite you to contact Amy Weisman de Mamani (aweisman@miami.edu) for a copy of the handouts if you are interested in using them.

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