

Evaluation of an Ecological Intervention Targeting Helpers in the
Aftermath of Disasters

Matthew Stephen Yoder

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State
University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
In
Psychology

Dr. Danny Axsom, Ph.D. (Chair)
Dr. Tom Ollendick Ph.D.
Dr. Russell Jones Ph.D.
Dr. Julie Dunsmore, Ph.D.
Dr. Fred Piercy, Ph.D.

May 7, 2008
Blacksburg, Virginia

Keywords: Disasters, Mental Health Intervention, Helpers, Trauma, Ecological

Copyright 2008, Matthew Stephen Yoder

Evaluation of an Ecological Intervention Targeting Helpers in the Aftermath of Disasters

Matthew S. Yoder

ABSTRACT

Ecological interventions hold promise for meeting the needs of post-disaster communities, yet little systematic quantitative evidence is available about such programs. This study evaluated the short-term outcomes of participants in the Strategies for Trauma Awareness and Resilience (STAR) program, a novel and exemplar ecological intervention for helpers working in post-disaster settings. It is a one week training and support program for helpers working in disaster-affected communities. Changes in the psychological distress of 42 STAR participants, across four STAR sessions, were assessed and identified as primary outcome variables. Knowledge, attitude, and intended practice changes were also assessed, along with perceived support, using a pre (T1)/post (T2) design. These indicators were then tested as possible predictors of participants' changes in distress. An integrity check was conducted on a sample of the seminar modules to assess fidelity to the program manual. Qualitative data were also gathered from follow up visits conducted with two participants. These data were used to help interpret quantitative findings, as well as to plan for future studies of how STAR effects might extend out from helpers into their home communities.

Results showed that participants exhibited significant changes in knowledge, attitudes, and intended practices from the beginning of the seminar to the end. Results also showed significant decreases in psychological distress over the STAR week. Regression analyses showed that changes in knowledge, attitudes, and practice, as well as perceived social support during the seminar, explained significant amounts of variance in self reported trauma symptoms at T2. Variance in T2 burnout and compassion fatigue explained by these predictors was notable but not statistically significant due to lack of power. Results suggest that STAR can change knowledge and attitudes of helpers from disaster communities and that participants in this program experience decreases in distress during their stay. The lack of a valid comparison group makes causal interpretations of these findings premature. Findings also suggest that changes in distress are not caused by, or even significantly related to, learning that takes place during the STAR week. The mechanism for distress reduction during the STAR week is an unresolved question.

Other significant unresolved questions remain regarding the STAR intervention and ways the present findings can be generalized to ecological interventions more broadly. For example, while the current study suggests important changes occur in helpers during the STAR week, it is of central importance to explore how these changes translate into the disaster-affected home communities. Discussion also focuses on the difficulties involved in conducting systematic research with organizations and helpers whose primary goals are practical or clinical, not scientific. Despite the questions that remain, taken together, results point to the promise of STAR to address the mental health needs of helpers and perhaps eventually disaster communities.

Grant Information

This project was made possible in part by a \$16,350 grant from Church World Services. This grant provided crucial money for travel between Blacksburg and Harrisonburg, VA during the formulation, data collection, and feedback stages of this project.

Dedication

Dedicated to my family: Sarah and Sofia.

Acknowledgements

A very special thank you goes to my advisor, Danny Axsom. Danny, I always left our meetings/discussions feeling as if you believed in me and my ideas. I count you as one of my friends. Thank you.

Also, thank you to several undergraduates in the Axsom lab, who helped with various often tedious aspects of this project. Sarah Fargo, Erin Fowler, Mimi Kelly, and Tiffany Taylor – your expertise with Inter-library loans, willingness to run to the library for an obscure journal article, and focus in data coding were invaluable. Each of you will undoubtedly do well on whatever paths you choose.

Finally, thank you to my family. Mom and Zach, your interest in my work and unconditional love kept me going many times over the past five years. My baby daughter Sofia – time with you is my reward for getting this thing done. And of course, Sarah – your patience, companionship and love are the best things in my life. I could not do any of this without you.

Table of Contents

Evaluation of an Ecological Intervention Targeting Helpers in the Aftermath of Disasters.....	1
Ecological Interventions Targeting Helpers.....	6
Impact of Disasters on Helpers.....	7
Evaluating Ecological Interventions.....	13
STAR Evaluation.....	18
Hypotheses.....	29
Method.....	30
Results.....	44
Discussion.....	60
Limitations.....	70
Conclusions.....	75
References.....	79
Appendix A: Pre-STAR Measures.....	92
Appendix B: Post-STAR Measures.....	101
Appendix C: Retrospective Evaluation.....	108
Appendix D: STAR Itinerary.....	111
Appendix E: Adherence Checklist.....	112
Appendix F: Site Visit Semi-structured Interview.....	113

List of Figures

Figure 1: Conceptual model of Proposed Mechanism of STAR Impact.....	22
Figure 2: Externalized Cycle of Violence/Trauma.....	26
Figure 3: Internalized Cycles of Violence/Trauma.....	27
Figure 4: Change in Scaled Means Scores on the IES & Subscales from T1 to T2.....	54
Figure 5: Change in scaled KAQ subscale scores from T1 to T2.....	55
Figure 6: Domestic and International Group Differences.....	57

List of Tables

Table 1: Participant Demographics.....	34
Table 2: Demographic differences between STAR sessions.....	36
Table 3: Changes in the main predictor and outcome variables at T1 and T2.....	45
Table 4: Summary of a Hierarchical Regression Analysis of IES and subscales.....	50
Table 5: Time 1 mean scores and ANOVA F-values by STAR session.....	51
Table 6: Mean scores by country of origin.....	56

Evaluation of an Ecological Intervention Targeting Helpers in the Aftermath of Disasters

In the last five years alone, hurricanes, a tsunami, genocide, and terrorism have focused worldwide attention on the impact natural disasters, wars, and violence can have on enormous numbers of people. In these events, the homes, careers, families and lives of hundreds or thousands of people are torn apart at once. The terrorist attacks of 9/11/01 focused our nation's attention on large-scale traumatic events in a way not seen since Pearl Harbor. Several years later, Hurricane's Katrina and Rita emphatically reminded Americans that we are not immune to catastrophic events.

For purposes of this project, disasters will be defined as extreme events, or series of events, with sudden onset affecting a large group of people. Disaster typology generally includes three major subdivisions, demarcated by the responsible source: 1) natural disasters described as acts of God or nature, 2) technological accidents resulting from human error, and 3) intentional human acts such as terrorism (North, 2003). It is important to remember that these categories need not be mutually exclusive, as an event may initially be classified one way (hurricane – natural disaster), but the series of events following the disaster may fit into other categories (government response – accident). For purposes of this review, the word “disaster” will be used interchangeably with “large-scale trauma” and will refer to all three types of disaster, unless otherwise noted.

While disasters affect individuals and communities on many different levels, as psychologists we are especially interested in the mental health impacts – and they are substantial. Estimates of Posttraumatic Stress Disorder (PTSD) and Major Depressive Disorder (MDD) prevalence rates in Manhattan 5-9 weeks after 9/11 were 7.5 and 9.7%,

respectively (Galea et al., 2002). Given the population estimates for the same time, roughly 150,000 to 240,000 people were experiencing significant psychopathology 1 – 2 months after the attacks. Similarly, after Katrina, estimates of psychopathology (PTSD, MDD, and Substance Abuse Disorders) ranged from 25 – 38% (Weisler et al., 2006), suggesting over 500,000 people in the Gulf Coast were experiencing significant psychological distress up to 5 months after the waters started receding. In addition, while it is difficult to obtain reliable data, the Deputy Coroner of New Orleans recently reported a near 3-fold increase in the suicide rate in Orleans Parish. The rate jumped from 9 to 26 per 100,000 in the first four months after Katrina (Sauna, 2006). Furthermore, murder rates have also been found to have increased dramatically, from 59.7 per 100,000 in early 2005 to 71 per 100,000 in the second quarter of 2006, a 37.1% increase (Perlstein, 2006).

Internationally, an example of the impact disasters have is the disruption in residence that commonly accompanies extreme events. The number of people defined by the United Nations as refugees, asylum seekers, or internally displaced is approximately 20-25 million (UNHCR, 2005). While this number is staggering, it is likely an underestimation as it does not include those who have lost their homes but remain in or near their community.

Medical Model of Intervention

Undoubtedly disasters have a significant mental health impact on individuals, communities, regions, and nations experiencing them. The dominant model for psychological intervention has been the medical model, which focuses on highly-trained professionals providing clinic-based services such as individual or group psychotherapy and psychiatric medication (Miller & Rasco, 2004). This model has strengths as a way to

respond to the needs of disaster survivors. First, disasters have been shown to overwhelm community response systems. The number of individuals requiring medical and mental health services spikes significantly following disasters (see above), yet the very nature of disasters often disrupts the means by which most individuals seek care. For example, following Katrina only 22 out of 196 psychiatrists continued to practice (Pope, 2006) and nine months after the hurricanes in the Gulf Coast, there were only 2 psychiatry beds available within 25 miles of the city and no inpatient substance abuse detoxification beds closer than 75 miles away in Baton Rouge, La. (as reported in Weisler, Barbee, & Townsend, 2006). Second, external mental health professionals are often willing and available to offer services following disasters. Likewise, following the shootings at Virginia Tech, the outpouring of aid offers was notable and at times overwhelming (Yoder, in press).

While the medical model has its strengths, the circumstances of disasters often create unique conditions that limit the feasibility and efficacy of clinic-based services. One of the primary concerns with the medical model has been the documentation of unmet mental health needs in post-disaster contexts. While the utilization of health services for mental health needs following disasters has been documented (Boscarino, et al., 2002, Boscarino et al., 2003; Carr, Lewin, Carter, & Webster, 1990; Covell, et al., 2006; Smith, North, McCool, Shea, 1990), it is generally recognized that there are unmet mental health needs in the wake of disasters (Stuber, Galea, Boscarino, & Schlesinger, 2006). For example, there is evidence that the utilization rates of formal mental health services (MHS) in the 6-12 months following a disaster are low (Norris et al., 2002a; Stuber et al, 2006). Boscarino et al., (2002) found only a 2.5% increase in reported MHS

use from 30 days before to 30 days after 9/11/01 among those living in Manhattan. Boscarino's group also reported that nearly 60% of those directly affected by 9/11 living in Manhattan, *with probable PTSD or depression*, did not use counseling services in the five months following the attacks (Boscarino et al, 2004). Others have found similar rates in survivors of natural disasters (2.7%, Goto, Wilson, Kahana, & Slane, 2002).

Low rates of MHS utilization have also been found for helpers following disasters (Jayasinghe et al., 2005). Because survivors often do not seek formal mental health treatment, the survivor's social network may be the primary resource for processing the event and searching for meaning in the traumatic experience (Sprang, 2000). MHS utilization findings in post-disaster populations reflect similar findings of unmet mental health needs in less calamitous times (Kessler et al, 2001; Majtabai, Olfson, & Mechanic, 2002; McAlpine & Mechanic, 2002). Thus, there has been a call from those who work internationally and domestically to modify medical intervention approaches to more fully address the needs of victims (de Jong, 2002; Miller & Rasco, 2004; Norris, Friedman, & Watson, 2002b).

Ecological Model of Intervention

The ecological model of intervention has arisen out of this call. This model represents a shift in how mental health professionals can respond effectively to the psychological needs of communities affected by disasters. After conducting a comprehensive review of the disaster psychology literature, Norris and colleagues (2002b) advocate for an approach to disaster mental health that moves away from the medical model guiding many psychological interventions for traumatized populations towards one that "should emphasize empowerment, meaning [the intervention models]

draw upon and build strengths, capabilities, and self-sufficiency” (p.248). Existing models focus on healing or ameliorating symptoms of psychological distress within individuals, with little attention given to repairing damaged social structures within communities, or building resources inherent in many communities that could facilitate recovery and prevent maladaptive cycles and violence.

As an alternative to the medical model, Miller and Rasco (2004) suggest, “...an ecological paradigm similar to that of community psychology, with its roots in public health and its emphasis on collaboration and community empowerment...” (p. 4). In an introduction to their model, the authors espouse six principles to guide the development of ecological interventions. They are: 1) altering problematic settings and creating settings better suited to people’s needs and capacities; 2) addressing problems that are priorities of the community; 3) the priority of prevention over treatment whenever possible; 4) the incorporation of local values regarding psychological well-being and distress; 5) the integration of interventions into existing community settings and structures; and 6) a focus on capacity building and empowerment rather than direct provision of services (Miller & Rasco, 2004).

As described above, ecological models of intervention after disaster have very important theoretical differences from medical approaches to intervention; however, these two types of approaches are not mutually exclusive. Certainly there are those in the medical field providing mental health services that meet ecological criteria (e.g. physicians volunteering at functioning post-disaster hospitals). The two categories of interventions also may be thought of as working well in tandem. Advocates of ecological interventions note medical approaches for mental health following disasters are often

essential, especially in the short term, acute aftermath (de Jong, 2002; Miller & Rasco, 2004; Norris, Friedman, & Watson, 2002b).

In a book devoted to approaches for working with the mental health of refugees, Miller and Rasco (2004) bring together descriptions of seven programs arising out of an ecological framework that address the needs of disaster victims domestically and internationally. While the content focus of each program varied, five of the seven programs involved the training of helpers. Core components of the programs include: training in empathic listening, education about trauma healing, peace-building, forgiveness, and justice; advocacy; and community-building. However, only one of the seven groups report systematic evaluation data regarding their particular ecological intervention (Weine et al, 2004; see below, p. 19 for review).

Ecological Interventions Targeting Helpers

One common feature of many ecological interventions is the use of extant helpers and support systems within a community as a point of entry into the community. They differ from the medical model in that rather than targeting victims directly, interventions are aimed at those who *help* in the wake of disaster. Helping in the aftermath of a disaster can take many forms and meet many different needs. Helpers range from rescue workers pulling victims off of rooftops after floods, to teachers working with children to focus on their studies in a refugee camp. Helpers meet needs ranging from basic safety and survival to working toward the longer-term needs of economic sustainability and conflict transformation.

The term “helpers” usually refers to those who are not highly trained in mental health interventions or theory, and who often do not work out of traditional clinic settings

(also referred to as “non-professional helpers” and “informal helpers”). This group includes clergy, healthcare workers, teachers, and emergency responders. As part of the community, helpers often have strong ties to victims and are frequently those to whom people in a community turn when in need in daily life.

Disasters often place these helpers in formal “counseling” roles, as they are expected to listen to and help alleviate the worries and fears of victims. The actual process of help-seeking in the wake of disasters is complex, as many factors influence if and when victims look for assistance in the wake of large-scale trauma, including social comparisons and socially-influenced construal processes (Yates, Axsom, & Tiedeman, 1999). However, it is assumed that a significant portion of individuals, at some post-disaster point, turn to the group broadly defined as helpers for assistance. Therefore, this group is a logical resource for outsiders who wish to intervene in the psychological wake of disasters. Yet, by definition, helpers are part of the traumatized community and their dual role as helper *and* survivor presents a unique set of vulnerabilities for helpers that have the potential to limit their ability to perform their support roles in the community.

Impact of disasters on helpers

Large-scale traumas, by definition, disrupt the social support networks within affected communities. Support structures within these communities are often not equipped to handle the volume of services that are needed and many times there are respondents who come to assist from outside the community. It is well documented that those who help in the wake of disasters, from both inside and outside a victimized community, are at risk for adverse physiological and psychological effects resulting from their role as helpers. Such effects include compassion fatigue (Figley, 1995), secondary

traumatic stress (McCann & Pearlman, 1999) and vicarious victimization (Pearlman, 1995). There is also a limited body of literature suggesting that service providers who are simultaneously victims and helpers have worse outcomes than helpers who are not victims, including increased incidence of alcohol abuse and higher rates of secondary traumatic stress reactions (Calorossi, Heyman, & Phillips, 2005; Dane & Chachkes, 2001; Luce, Firth-Cozen, Midgley, & Burges, 2002).

Those who work with victims of disasters over a longer time period may be at particular risk for certain types of stress reactions. Job burnout has key characteristics including overwhelming exhaustion, feelings of frustration, anger and cynicism, and a sense of ineffectiveness and failure (Maslach & Goldberg, 1998). While studies were not found that directly compared burnout rates in first responders to other helpers, research suggests that the longer professionals work in a mental health setting, the less they like working with patients, the less successful they feel, and the less compassionate their attitudes are towards mental illness (Maslach & Goldberg, 1998; Pines & Maslach, 1978).

Similarly, Boscarino et al. (2004) studied secondary trauma and job burnout rates among NYC social workers following the September 11 attacks. They found that being involved in the World Trade Center recovery significantly predicted secondary trauma. They also found that among social workers who had clinical involvement following the attacks, high levels of rescue involvement lead to a 52.4% chance of potential secondary trauma, a significant difference from the 24.7% potential secondary trauma for those with low involvement. While the distinctions between secondary trauma, compassion fatigue, and burnout are not clear and involve disagreement between researchers (see Figley,

1995, for a review of the discussion), most agree the constructs overlap significantly and describe “the natural consequent behaviors and emotions resulting from knowing about a traumatizing event experienced by another – the stress resulting from helping or wanting to help the traumatized or suffering person” (Figley, 1995, p. 4).

Studies have found indicators of resilience in the face of disasters among first responders, as they show a decreased incidence of PTSD, depression, and other anxiety disorders after disasters compared to the victims they serve (Duckworth, 1986; North et al., 2002; Boscarino, Figley, & Adams, 2004; Galea et al., 2005). However, the prevalence of psychopathology in first responders following disasters is still high relative to the general population rate of 7.8% (Kessler et al., 1995).

Thus, the literature suggests that despite certain protective factors, helpers are a unique group at risk for psychopathology in the aftermath of disasters. By their nature, helpers are agents for providing interventions aimed at victims of large-scale traumas. For this reason, impairment resulting from direct and indirect exposure to disasters in helpers is of particular concern as it affects not only the helpers themselves but the victims to whom they provide services.

Most programs targeting helpers can be placed into one of two categories. First, there are programs aimed at helping helpers address their own adjustment after disasters. This category can be thought of as support interventions, with the support focusing on helpers. The focus is often on trauma healing of helpers, with the assumption that helpers who have dealt with their own traumatic experiences will be better able to serve disaster victims (Figley, 1995; Myers & Wee, 2005).

The second general category can be thought of as education and skills development or training interventions. Training interventions are those in which helpers are taught a set of skills or given information which they then can use with disaster survivors. These classifications are loose and not mutually exclusive. It is not difficult to imagine an intervention that both supports and trains helpers as agents of change in traumatized communities.

Support Interventions

In general, support interventions target helpers as victims of disasters and therefore focus on alleviation of trauma-related symptoms experienced either as a direct result of a disaster or indirectly through helping victims of a disaster. The focus of most programs supporting helpers is on the prevention or minimization of trauma symptoms. The literature on treating victims of large-scale traumas is expansive and has been reviewed extensively by others (see Myers & Wee, 2005; Watson et al., 2003). Examples of support interventions include Cognitive-behavioral therapy (CBT, Foa et al., 2000; McFarlane, 1988), psychological debriefing (Mitchell & Everly 2001; Rose, Wessely, & Bisson, 1998), and support groups.

Supporting helpers may also give helpers tools to use with victims. For example, if a helper receives CBT following a disaster and finds the experience helpful, they may incorporate certain aspects of CBT into their role as helper. However, the idea that support interventions of CBT would be “taught” to helpers is not consistent with the ecological model, which seeks to utilize helpers in their extant roles without taking the necessary time and resources to train them in specialized techniques. Much has yet to be

learned about the ripple effects of support interventions and further studies into this mechanism are needed.

Training Interventions

There are models, however, that fit better into an ecological approach and give helpers a set of skills to use within the traumatized community. Unlike those in the medical model, these skills can be taught relatively quickly and can be effectively used by newly trained helpers in disaster settings without supervision, making them ecological in nature. For example, basic information about normal responses to traumatic events along with signs to look for that point to risk of future maladjustment can be taught to helpers as a way to facilitate referrals for those who need it. This information is a key component of Psychological First Aid (PFA, Jacobs & Meyer, 2006), a model of intervention that falls under the “training” umbrella.

Unlike support interventions, which generally approach helpers as victims of large-scale traumas, training interventions seek to give helpers certain knowledge and basic skills which they in turn use with and disseminate among primary victims. Depending on several important factors, including type of helper trained, type of disaster addressed, and number of victims served, models for training helpers vary widely. In addition to PFA, other models and programs designed to train helpers include the American Red Cross Training Model (Hamilton, 2005), a Healing and Reconciliation approach (Staub et al., 2005), and a Middle Range model (Lederach, 1997). The Middle Range model was designed to address needs following civil disasters borne of conflict. Those who use this model state two general aims: to raise awareness and impart skills. The model seeks to identify key persons who officially, or unofficially, represent warring

parties and seeks to raise their awareness – that is educate – about conflict and the cycles of violence associated with severe conflict. Secondly, this model involves teaching specific techniques and approaches for dealing with conflict, often in the form of analytical, communication, negotiation, or mediation skills. Middle Range models have been used in the former Yugoslavia (Gutlove & Montville, 1992, as reported in Lederach, 1997), Northern Ireland (Fitzduff, 1996), and parts of Africa (Assefa, 1993).

In addition to intervening at the level of helpers (rather than individual survivors), there are several other key components of ecologically-oriented training interventions. Keeping with ecological principles 2, 4, and 6 (see p. 8), helpers themselves often have input into the content and direction of the training. Many ecological training models also include space and time for helpers to brainstorm about the most pressing needs in their community and to shape the direction of the training (Lederach, 1997). In addition, the skills being taught are often easily learned and applied by helpers, or in some cases survivors themselves.

As can be seen, educating helpers is a significant part of training (and some support) interventions. While the aim of educating participants is usually not symptom reduction, the parallels with other, more traditional psychological interventions that employ psychoeducation are clear. Most CBT-based interventions for traumatic stress involve a psychoeducational component that has the purpose of imparting knowledge to the client regarding, for example: event frequency base-rates, typical reactions to traumatic events, helpful and unhelpful coping, and differences between thoughts and feelings. Changing trauma-related cognitions, such as the dangerous nature of the world and incompetence of the self (Foa & Rothbaum, 1998; Janoff-Bulman, 1992), is an

important part of symptom reduction in most major theories of PTSD (see review in Cahill & Foa, 2007). Therefore, imparting knowledge to those experiencing traumatic stress symptoms appears to be a crucial component of many traditional and ecologically-oriented psychological interventions for trauma and likely contributes to the reduction of symptoms associated with treatment.

Thus, there are a wide range of extant interventions targeting helpers that fall under the ecological umbrella. As is probably evident, the categories of “support” and “training” interventions are not mutually exclusive and many ecological interventions have components of both. These interventions represent an attempt by practitioners to begin to address the shortcomings of some mental health practices in areas affected by disasters.

Evaluating Ecological Interventions

In attempting to meet the psychological needs of victims of large-scale traumas, programs targeting helpers must consider many factors, including type of trauma, nationality/ethnicity of affected population, accessibility of population, community infrastructure, and available technology. Such programs are disparate and broad both in intervention content and process. The breadth and flexibility of models targeting helpers, as a group, are in part what make the models valuable and adaptive. However, the value of wide applicability can simultaneously be a significant obstacle when it comes to establishing that these programs are effective.

Programs aimed at helping victims of disasters through helpers have made considerable progress in recent years, both in design and implementation. This has been in large part due to the sharing of information between practitioners through the creation

of protocols and an increased awareness of the need for disaster mental health services in the field (de Jong, 2002; Myers & Wee, 2005). Along with this progress, there has been a growing recognition in practitioners that critical questions remain surrounding interventions aimed at helping victims of large-scale trauma (Hubbard & Miller, 2004; Mika, 2006; Ross & Rothman, 1999). One such question is whether these programs are meeting their intended outcomes or goals. That is, to what degree are mental health interventions targeting helpers *effective* in addressing the needs of disaster survivors?

Evaluations are an essential part of developing an evidence base for interventions. This base is necessary if practitioners are to have well-founded confidence that their interventions are meeting their goals. In addition, as organizations that employ ecological interventions compete for scarce funding resources, effectiveness evidence is often a necessity. To these ends, evaluations are recognized as helping to identify design or implementation problems and to answer other interesting questions such as: Who is being reached by the intervention? What are the critical components of the intervention? What unanticipated effects does the program have in the community and with helpers?

The evaluation of disaster mental health services in the post-disaster environment is complex and challenging. During disasters, the focus of providers is on disaster response, recovery intervention, and providing services as rapidly and efficiently as possible. The needs of victims and survivors often overwhelm existing support and relief organizations in a region. In the sometimes frantic effort to provide basic aid, systematic evaluation is not a high priority. In nearly a case-by-case manner, those who document disaster interventions are not able to gather evidence for the efficacy of their programs. Many have a small section at the end of their report or article noting the need for more

evaluation and the reasons why a systematic evaluation was not completed in their case. A review of published reports of ecological interventions in the past 10 years revealed only four out of twenty-five reported systematic, quantitative outcome data.

In a notable example, Ervin Staub and colleagues (2005) conducted a ecologically-based intervention in Rwanda and experimentally evaluated the effects of the program. They were able to show that a 9-day training program for helpers in a refugee camp improved outcomes *in the refugee population* better than two separate control groups. Helpers were trained in basic listening/empathy skills and educated in three main content areas: the origins of genocide, psychological trauma and healing, and basic human needs. Participants came from three groups, an experimental group (treated by helpers trained by researchers), a treatment-control group (received services from providers not trained by researchers) and a no-treatment control (received no mental health services). All groups were assessed at three points: directly before, directly after, and two months after the three week treatment regiment. The authors found a significant Time by Treatment interaction for trauma symptoms, with the Experimental group showing a greater reduction in symptoms over time than either of the control groups. In addition, they found a significant Time by Treatment interaction for the construct they call “orientation to other,” which is a combination of openness to reconciliation with perpetrators and forgiveness. The interaction was such that the treatment group showed a significant increase in their positive orientation to the “other” group from T1 to T3, while the control groups did not change over time.

While this study is noteworthy for its rigor in very difficult field conditions, it leaves several questions unanswered. First, there is no indication of the effect the

intervention had on helpers themselves. What were the levels of distress occurring in the helpers? Did the program have an impact on those symptoms? Also the mechanism of the refugees improved adjustment is unspecified. Were changes in the refugee population associated with how well the helpers learned from or agreed with the training? Or perhaps changes in the refugees were related to the amount of skill use employed by helpers. It is important not only to know whether ecological interventions improve outcomes but *how* they do so.

Likewise, Goodkind et al., (2004) found evidence that their ecological intervention, which combined education and advocacy, improved well-being of Hmong refugees living in the U.S. from a baseline (pre-intervention) score. However, their study did not assess the effects of the intervention on the helpers themselves. They also did not address questions related to the mechanism of impact, and did not include a comparison group. Others have shown that education of helpers is effective in improving knowledge and skills of helpers (Kabura, Fleming, & Tobin, 2005). This study was not designed to show impact beyond knowledge and skill acquisition. Therefore, questions about what the participants did with their training, and how it impacted their own trauma symptoms, would be interesting to know.

The fourth ecological intervention that reported systematic evaluation data came from a group targeting Bosnian and Kosovar families who settled in the Chicago area. Weine and colleagues (2004) experimentally evaluated a 15 week, family-based intervention. They randomly assigned families to either a treatment or wait-list control group. The treatment group was found to have improvements in psychiatric service utilization, knowledge and attitudes concerning trauma-related mental health, family

communication, mental health service utilization, and symptoms of depression, at assessments 6-18 months after treatment, compared to a control group who only received information regarding community treatment options.

These four studies represent some of the most earnest attempts at evaluations in the ecological intervention literature. As noted above, the unpredictable contexts in which disaster mental health interventions are carried out often make empirical evaluation difficult. However, the dearth of empirical studies on the effectiveness of such interventions suggests there may be more preventing research in the area than situational problems and underscore significant challenges for researchers in this area.

One aspect of ecological interventions that contributes to a lack of empirical support may be a values tension between those who carry out such interventions and those who are tasked with building an empirical base for their effectiveness. This tension has been well-documented in many disciplines, including education (Giroux, 2001), economics (Dasgupta & Maskin, 1987), and medicine (Wolfe, 1999) to name a few. Indeed, the field of psychology continues to work through seemingly fundamental values differences between clinical practitioners and scientists in the search for greater accountability in clinical training and practice (Wilson, 1996; Addis, Wade, & Hatgis, 1999). The subfields of disaster psychology in general, and ecological interventions in particular, likely struggle with similar tensions.

Often, organizations implementing ecological interventions are working in less than ideal conditions for carrying out systematic evaluations. Many work in developing countries with limited budgets and under chaotic demands. Most also lack staff with experience in program evaluation (de Jong, 2002; Hubbard & Miller, 2004). This lack of

experience with empirical evaluation may make the process either intimidating or undervalued as an important part of their intervention design. Even those who conduct ecological interventions are often forced to choose how they want to allocate their time. Harry Mika, one such clinical-scientist who has worked extensively conducting ecological interventions in Northern Ireland, stated that despite knowing both implementation and evaluation are important, his "...DNA favors the first" (Mika, 2006). A review of published accounts of ecological interventions in areas of on-going conflict or trauma revealed one consequence of this tension: innovative program designs, compelling implantation strategies, and minimal discussion of outcome data (de Jong, 2002). This tension was felt in the current project and is addressed below (see p. 63-65).

In conclusion, it appears ecological interventions hold promise as a way for mental health professionals to more fully meet the psychological needs of affected communities and address some of the shortcomings of the medical model. However, empirical evidence is scant, and there may be aspects of ecological interventions, including a tension regarding the value of research, that make them inherently difficult to evaluate using traditional psychological methods.

STAR Evaluation

To gain a better understanding of interventions based on the ecological model and of programs targeting helpers, a systematic evaluation was conducted on the Strategies for Trauma Awareness and Resilience (STAR) program, which was treated as an exemplar of an ecological approach targeting helpers. The STAR program is noteworthy for several reasons. First, it is an intervention aimed at helpers from disaster communities rather than individual survivors. It is also based on the six previously noted

principles guiding ecological interventions described by Miller and Rasco (2004): 1) it focuses on communities and structures within which helpers and their constituents live; 2) helpers are encouraged to share about problems that are priorities for their communities; 3) skills and topics covered in STAR seek to prevent further trauma and violence, rather than simply treating that which has already occurred; 4) local values from the helpers' home communities are incorporated into the STAR curriculum; 5) the STAR intervention equips helpers to integrate their learning and skills into existing community structures and settings; and 6) helpers are taught and encouraged to build the capacity of their home communities through education and awareness.

Following the events of September 11, 2001, Church World Service (CWS) partnered with Eastern Mennonite University's (EMU) internationally-known Center for Justice and Peace-building (CJP) to support religious caregivers in the aftermath. The joint effort resulted in the creation of a unique community-level intervention for trauma, based on educating and training those to whom a traumatized community turns. The program was developed based on trauma, justice, and peace-building research, on evidence-based practices, on community-based trauma-specific clinical skills, and on a public health systems approach acquired from the CJP's extensive work in responding to violence around the world. STAR held its first gathering in February 2002. While the project initially served clergy, mental health workers, and teachers from the New York City area, it expanded to include participants from all over the world who work with (and are themselves) victims of a wide-range of traumas.

STAR seeks to impact communities who have been affected by trauma in two related, but distinct ways. First, it brings helpers and community leaders to a week-long

seminar, at Eastern Mennonite University, where the trauma experienced by the helpers themselves is addressed and worked with. This portion of the program falls under the “support” wing of ecological interventions, as discussed above. While STAR is not a formal treatment for trauma and does not market itself that way, one of the goals of the program is to decrease psychological distress among those who attend. One of the assumptions of the intervention is that by improving the adjustment of helpers, the helpers will then be able to return back to their home communities and perform their helper role more effectively, which in turn will improve outcomes in communities affected by disaster.

The second, and more systematic, way communities are impacted by STAR is through the leaders as they return with new knowledge and skills to use in the population with which they work. During the STAR week, emphasis is placed on giving participants specific skills, applicable across populations and types of trauma. For example, participants are taught about typical, adaptive responses to trauma, as well as florid symptoms of PTSD. They are then better able to categorize behavior of victims in their classrooms, congregations, and clients. This part of the program is more like ecological “training” interventions discussed above. Thus, the STAR program falls under the broader umbrella of ecological interventions, in general. Rather than sending trained trauma workers to communities impacted by disaster, people who are already part of a disaster community’s support network, and to whom survivors turned for help *before* the disaster, are given basic mental health tools, provided with resources, and offered support themselves. The assumption is that these helpers will then return to their home

communities and be better equipped (and reenergized) to work in their role as helper, thereby improving the adjustment of the survivors with whom they work.

The STAR model for treating victims of trauma (see fig. 1) is markedly different than interventions based on sending trained mental health workers to a traumatized community to treat individual victims (e.g., Macy, et al, 2004), in that it focuses on training pre-existing networks of support in a community with which victims are more familiar. The model represents a theoretical framework for conceptualizing the relationships between project inputs, intermediate outcomes, and impact.

The second distinctive aspect of the STAR program is its multidimensionality. Addressing the trauma reactions of individual participants is a major point of emphasis, similar to other interventions for trauma, but what makes STAR unique and worth investigating closer, is that “trauma healing” is only one point of the five-pointed “STAR”. The other four points of emphasis are peace-building, restorative justice, spirituality, and leadership. These five points are a large part of what make STAR an exemplar ecological intervention. They are a combination of most of the components making up many of the extant ecological components discussed above (p. 8).

While the initial impetus for creating STAR was to address trauma resulting from civil strife (9/11/01), it has since been used with victims of other types of disasters, including natural disasters. Due to the multidimensional nature of the program, the points of the star which are emphasized can be modified, for differing trauma and population types, without changing fundamental aspects of the intervention.

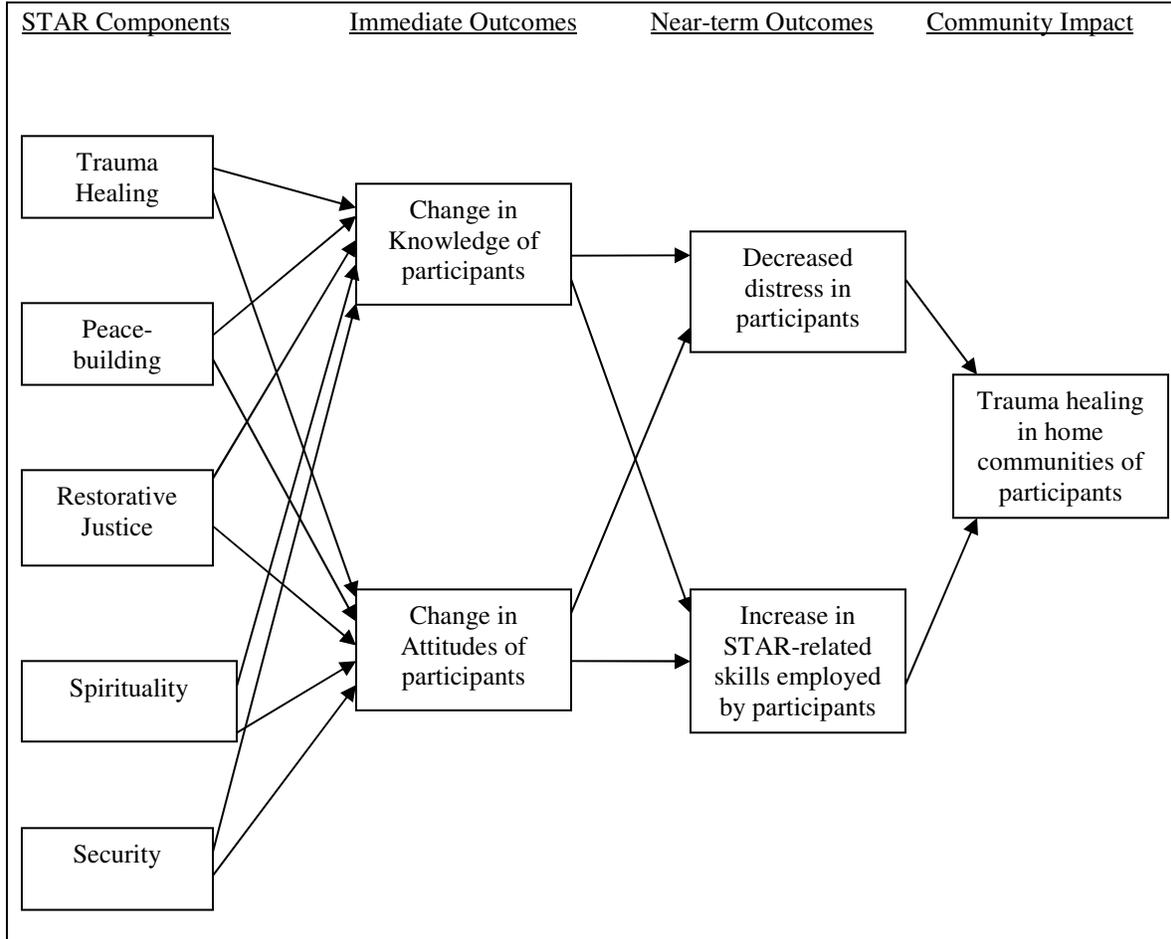


Figure 1. Conceptual model of Proposed Mechanism of STAR Impact

A core tenet of the program is that trauma impacts not only individuals within a community, but systems within the community. In fact, many large-scale traumas are viewed, at times, as being inseparable from the systems they affect (war, human-made disasters, terrorism). Therefore, addressing issues of justice, peace, and spirituality is seen as necessary to true trauma healing. For example, significant time within the seminar is spent teaching participants about cycles of violence and how perpetrators of violence (terrorists, soldiers, etc) are often themselves victims of violence whose actions are a direct result of their victimization. While the relevance of this topic is clear to civil

disasters like war and terrorism, it has important bearing on natural disasters as well. Often the destruction of shared resources and type (or lack) of governmental response to natural disasters brings interpersonal and inter-group conflict to the surface. Examples of this shift from natural to civil disaster are numerous, including hurricanes Katrina and Rita (see above, pp 5-6), drought in Africa (contributing to genocides in Rwanda and Sudan), and the recent tsunami in southeast Asia (Bhugra & Van Ommeren, 2006). In fact, several reports of interviews with survivors of hurricanes Katrina & Rita point to the shift in how survivors conceptualized the disaster (Lee & Pollard, 2006; Perlstein, 2006). One long-time resident of New Orleans expressed the frustrations of many when she stated, *“At first I thought the wind and water were the worst thing I’d ever experienced, but when I saw how the government did all those poor people in the Superdome – how they did all of us – what mother nature did wasn’t as bad as what the politicians didn’t do”* (Lee & Pollard, 2006).

Learning about cycles of violence often becomes an exercise in forgiveness, which has been explored for its effect on treating trauma (McCullough, Finchman, Tsang, 2003; Staub, Pearlman, & Gubin, 2005). Participants are encouraged to “break the cycle” by not becoming perpetrators of violence as a result of their victimhood, primarily through an exploration of reactions that diffuse, rather than perpetuate, anger and aggression. The ability and methods with which to do this are then available to participants as they return to their home communities.

STAR Content

The STAR program has five points of emphasis which include: (a) trauma healing, (b) peace-building, (c) restorative justice, (d) spirituality, and (e) security. These

points of emphasis are addressed through various activities, including power-point lectures, group discussions, skill-building exercises, informal discussions, and private reflection time.

Trauma Healing. The trauma healing component of the program is a major emphasis. One of the goals of the intervention is to decrease distress among participants. Participants attend lectures to be educated about a range of trauma related areas, including definitions of common trauma terms, how communities and systems are impacted by trauma, and normal as well as maladaptive responses to trauma. Helpers also take part in exercises designed to give them an opportunity to create and share their “trauma narrative” in a supportive setting. This is done through writing exercises, artwork creation, and guided small group processing sessions. Each of these exercises is hypothesized to have an exposure-like effect which has been shown to be a core component of cognitive-behavioral treatments for traumatic stress symptoms in traditional clinical settings (Foa & Rothbaum, 1998; Resick & Calhoun, 2001).

The curriculum also includes description and demonstration of trauma interventions for use in the aftermath of crises. These include Psychological First Aid (PFA), empathic listening, relaxation training, the use of rituals/symbols, and meaning-making. Participants are given the opportunity to use these skills themselves and to practice using them with others. These types of training are “ecological” in nature because they are introductory, can be taught in relatively short amounts of time, and can be effectively employed by helpers in disaster communities (see Kabura, Fleming, & Tobin; Staub et al., 2005 for examples). In addition, these trauma training points are similar to the psychoeducation components of many more formal, cognitive-behavioral

interventions targeting trauma-related psychopathology (Cohen, Deblinger, Mannarino, & Steer, 2004; Foa & Rothbaum, 1998; Resick & Calhoun, 2001), and may contribute to symptom reduction in participants themselves.

Peacebuilding/Security. One unique feature of the STAR program is that it places trauma awareness and healing within the larger field of peacebuilding. A major component of the intervention is an introduction to the “cycles of violence” model in which disasters are seen as being a triggering event for potentially pernicious patterns of responding (see figure 2). In this cycle of responding to trauma, participants learn about how if survivors of disasters (both natural and human-made) ineffectively process their trauma, it can lead to thoughts, feelings and behaviors which become harmful themselves. Through this process, today’s victims have the potential to become tomorrow’s perpetrators. Participants are exposed to issues of violence, revenge, forgiveness, justice, and resilience that are not part of traditional symptom-based interventions for trauma. Participants are exposed to the Peacebuilding component via lectures, small group discussions, and role playing. As noted above, these Peacebuilding components address issues of both human-made and natural disasters.

In addition, there is consideration given to what security means in the face of disaster. At times overlooked in psychological interventions, security and safety are more basic needs than things like social support and acceptance. Building peace and addressing justice concerns are presented as ways to empower participants (and those with whom they work) to create the security they require to heal trauma.

Restorative Justice. Justice concerns have been found to be a common response to many types of trauma, including disasters (Soloman, Iancu, & Tyano, 1997; Staub et

al., 2005; Taylor, Nailatikau, & Walkey, 2002). Yet, survivors' justice concerns are rarely adequately addressed by traditional systems (i.e., courts of law) designed to handle typical justice complaints (Latimer, Dowden, & Muise, 2005; Zehr, 1990). Not only are the justice concerns of survivors rarely dealt with by traditional justice systems, they are also inadequately addressed by traditional psychological interventions. The STAR model presents alternatives to traditional notions of justice through lectures, group discussions, and introductory training in conflict mediation. These alternatives are presented in the larger context of peacebuilding, and juxtaposed on the cycles of violence models shown below (figures 2 & 3). Through these activities, it is assumed that participants are given alternative ways to think about and respond to justice concerns that arise in the aftermath of disasters.

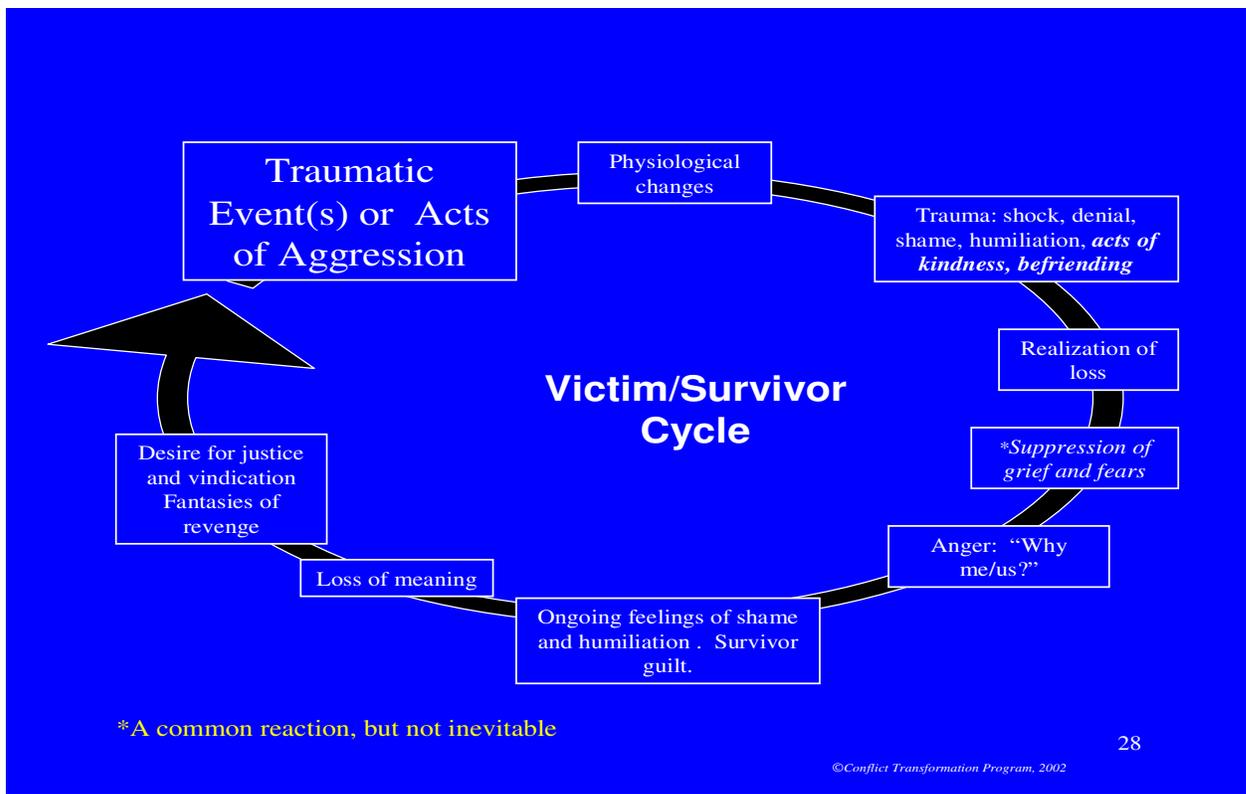


Figure 2. Externalized Cycle of Violence/Trauma

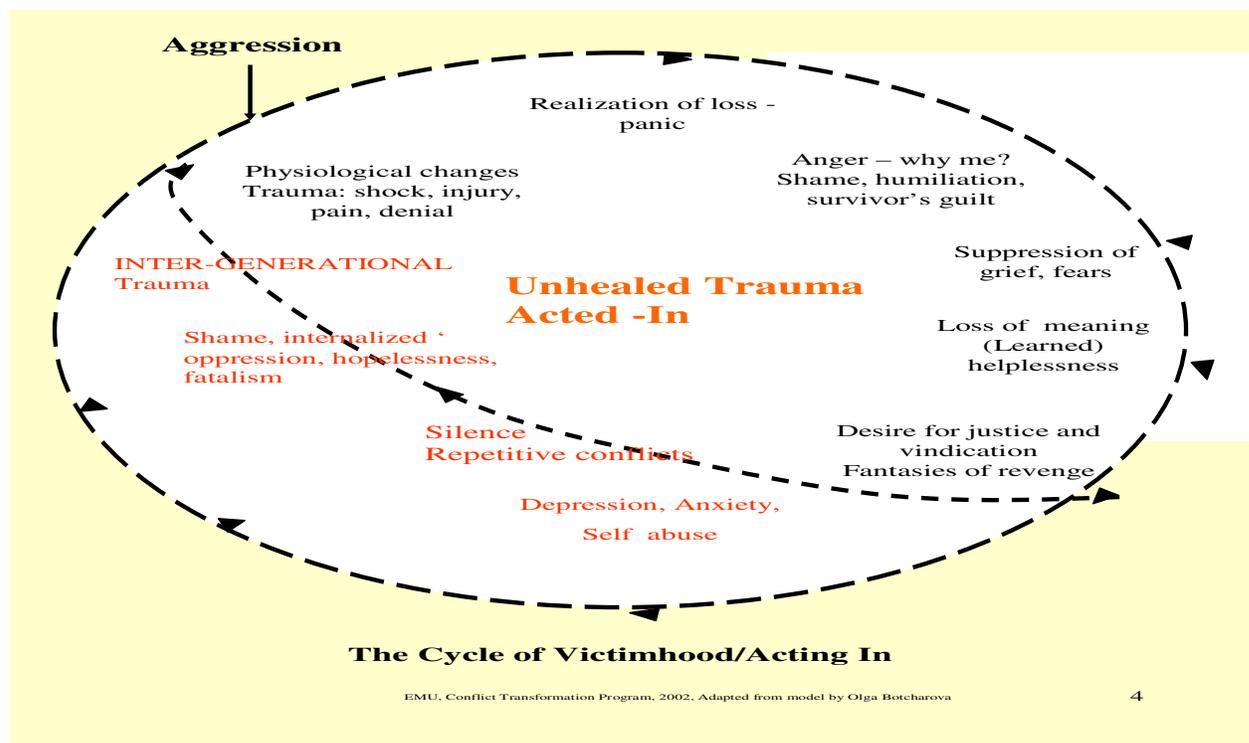


Figure 3. Internalized Cycles of Violence/Trauma

Specific activities related to peacebuilding include thorough discussion of the cycles of violence noted above, both in lecture format and in small groups. Writing assignments asking participants to name and describe the cycles of violence in their home communities is also part of the curriculum that targets peacebuilding.

Spirituality. The original target population for the intervention was religious leaders and helpers. While that focus has broadened, faith and spiritual concerns in the aftermath of disaster remains a component of the program. The intervention makes a point of advertising itself as a multi-faith seminar, with sensitivity towards the religious backgrounds of other participants as one of the first conditions emphasized. This is important given the religious diversity of participants. For example, it is not uncommon to have Jewish, Muslim and Christian participants in the same small group discussing their beliefs about terrorism. In fact, it is through such discussions that the spiritual

component of the seminar manifests. There are also lecture points and activities relating to spiritual questions resulting from disasters. For example, there is a facilitated discussion on the role and stages of forgiveness following trauma, based on the work of Frederic Luskin (1996). There is also education and small-group discussions about what the role of faith is, both for the helpers themselves and the survivors with whom they work, in recovery from disasters. Because of the multi-faith composition of the intervention, participants are inevitably exposed to beliefs and perceptions other than their own regarding issues of trauma and spirituality.

Current Study

This study systematically assesses the STAR intervention by asking three main questions. First, is there transfer of knowledge and skills during the STAR week? Given the training focus of the intervention, it is important to establish that participants evidence learning across the STAR week. The second question addresses whether STAR is effective in reducing trauma symptoms of the participants (helpers) themselves. Given the prominence given to the area of trauma-healing during the STAR week, changes in symptoms of participants themselves are expected. Participants' trauma symptoms are assessed pre and post-intervention. Third, how does STAR have an impact on participants? If STAR changes knowledge and expected practices, and decreases distress among participants, what are the mechanisms by which these changes occur? It is proposed that distress at the end of STAR will be predicted by changes in knowledge, perceived social support at the end of the intervention, and anticipated skill-use change in home communities. In other words, the STAR program fits under both the "support" and "training" designations discussed above (pp. 13-16) and it is in these domains that STAR

is evaluated – what it teaches and how it supports participants. While these are likely not the only impacts, they are a place to begin to assess the effectiveness of the intervention. Impacts other than symptom reduction, such as those that “ripple” out into home communities, are of interest but beyond the scope of the present study.

In order to address these questions, a pre-post design was used. Knowledge, practice and distress measures were given to participants and the beginning (Time 1) and end (Time 2) of the STAR week. Social support was assessed at time 2 (T2).

Hypotheses

1. The STAR seminar will result in changes in knowledge, attitudes and practices relating to the STAR curriculum.
 - a) Participants will answer significantly more questions regarding STAR material correctly at T2 than at T1 on the STAR Knowledge and Attitudes Questionnaire (KAQ).
 - b) Participants will score higher on the STAR Practice Checklist (SPC) at T2 than at T1.
2. Psychological distress will decrease in participants from time one to time two.
 - a) Scores on the Impact of Event Scale – Revised (IES-R) will decrease significantly from T1 to T2 for STAR participants.
 - b) Scores on the Professional Quality of Life Scale: Compassion Satisfaction and Fatigue Subscales-IV (CSF) will decrease significantly from T1 to T2.
3. Psychological distress following the intervention will be lowest in those who learn the most during the STAR seminar.

Changes in scores on the KAQ from T1 and T2 will significantly predict T2 scores on each of the measures of distress (IES-R, CSF). That is, the greater the increase in knowledge and attitudes, the less distress at T2.

4. Distress at T2 will be lowest in participants with the highest levels of validation at T2.

Scores on the VQ at T2 will correlate significantly with scores on the measures of distress at T2. That is, the higher the validation score at T2, the less distress at T2.

Method

Overview

This project was carried out between August, 2005 and November, 2007, with data collection occurring between March and November of 2007. Data were collected on 42 individuals from four different STAR sessions in Harrisonburg, VA, on the campus of Eastern Mennonite University. At each session, participants were given pre and post assessments and integrity checks were conducted. In addition, two participants were visited in order to conduct qualitative and quantitative follow-up assessment, approximately one month after they returned home from STAR.

On the first day of each STAR session, participants arrived at the university at 8:30am from their hotels. After a brief welcome by the university president, they went through a brief ice-breaker activity and were then introduced to the researcher. The researcher explained the evaluation process, including rationale, value, and overall fit with the program. Participants were given a chance to ask questions and then given approximately 30 minutes to complete the pre-STAR measures, consisting of the KAQ, SPC, IES-R and several qualitative questions (see Appendix A). The researcher was available during this time for questions and to handle rare issues related to translation for the international participants. After each participant was finished, their measures were placed in a folder with a number on it. The number was connected to their name on a separate sheet of paper, but participants were asked not to put their name on the measures themselves.

After completing the pre-measures, participants completed the four and a half day seminar (see content above). On the last day, the activities and lectures end shortly after

lunch, giving them time to prepare to return home. Before returning to their hotels, participants were asked to complete an “exit interview” that included the post-test (see Appendix B). The post-test was comprised of the IES-R, CSF, VQ, SPC, and KAQ.

The evaluation was designed to answer three basic questions: 1) Does STAR change the knowledge and attitudes of helpers? 2) Does STAR improve the psychological adjustment of helpers? and 3) Are changes in knowledge and attitudes associated with improvements in adjustment?

In conjunction with STAR facilitators, and based on pilot feedback from participants, it was decided that the IES-R and CSF would be given at this point in the evaluation timeline rather than prior to arrival at STAR, for several reasons. STAR facilitators were uncomfortable presenting this measure to participants without proper explanation or support. Pilot data suggested those coming to STAR were experiencing fairly high levels of compassion fatigue and burnout, given their designation as helpers and the difficult situations from which many participants came. In order to answer any questions participants had regarding the measure, it was decided to give the measure at the beginning of the session rather than sending it out prior to arrival. Also, the concepts of compassion fatigue and burnout are used in the STAR curriculum, making questions that arise from taking the measure possible teaching points and material for discussion. Finally, during the piloting stage, data showed return rates for questionnaires sent out prior to arrival were very low (< 20%).

Adherence Check

During each of the four STAR sessions during which data were collected, one day was chosen at random to audio record the entire day (see Appendix C for STAR

itinerary). For each day's recording, one module (out of 17 total modules in the seminar) was chosen and listened to separately by the researcher and an upper-level undergraduate lab assistant who independently rated each module for adherence to the manual. A checklist for each module was created by the researcher in collaboration with STAR trainers that covered the range of material, focusing particularly on the critical components, for that module (see Appendix D). Inter-rater reliability was high ($\kappa = .86$), and adherence to the manual across each of the four modules was 80%, meaning that out of a possible 40 items addressing the most important parts across the two modules, STAR facilitators covered an average of 32 (averaged between two raters). Adherence was similar across the four sessions and four modules (72, 78, 86, and 84%, respectively). What is viewed as adequate adherence to treatment manuals varies significantly depending on the type of setting (research vs. clinical) and population (community vs. clinical) with which they are being used. However, with psychosocial interventions, in community samples, adherences between 75 – 85% have been reported (Nezu & Nezu, 2008). This suggests STAR trainers remained true to the content of the manual during STAR sessions.

Participants

As noted above, STAR was initially created as an intervention to support and train religious leaders following 9/11/01. However, its focus has subsequently broadened. The intervention currently serves helpers from many disciplines, including clergy, social workers, teachers, and relief workers. Participants are also diverse in terms of religious background.

Participants self-select for the program. They are often referred by their organization, or hear about the program through word of mouth. As of January 2006, each participant or their organization pays their own way. The cost of the seminar is \$850 and includes registration fees, several meals, transportation to and from the airport, and tuition; all participants, or their organization, in the current study paid to attend the seminar.

During the course of the evaluation, at least partial data were collected on 42 participants (see table 1). The majority of participants were from the United States and were female. The most common occupation was clergy, followed by Peacebuilder and Other. The majority of participants were married and Protestant.

STAR participants came to the seminar having lived through a lot. A large majority reported experiencing at least 4 lifetime traumatic events, with a significant number reporting over 10 events. Participants were also more likely to have experienced a human-made (war, genocide, shooting, or bombing) than natural disaster. In addition, the majority of participants reported feeling as if their life was in danger during at least one of these traumatic events. The majority of participants coming to the STAR program had experienced multiple traumatic events during which they feared for their lives, suggesting these helpers are at particular risk for experiencing traumatic stress symptoms themselves.

Demographic	Number	Percentage
Country of Origin		
United States	26	61.9%
International	16	38.1%
Gender		
Female	24	57.1%
Male	18	42.9%
Profession		
Clergy	10	23.8%
Peacebuilder	8	19.0%
Other	8	19.0%
Teacher	7	16.7%
Social Worker	4	9.5%
Mental health worker	2	4.8%
Researcher	2	4.8%
Religion		
Protestant	20	47.6%
Catholic	7	16.7%
Other	6	14.3%
No Affiliation	5	11.9%
Buddhist	2	4.8%
Muslim	1	2.4%
Lifetime Traumatic Events		
0	4	9.5%
1	2	4.8%
2	4	9.5%
3	4	9.5%
4-10	18	42.9%
10+	9	21.4%
Threat of Life during trauma		
Yes	23	54.7%
No	19	45.3%
Type of Disaster*		
Natural	15	35.7%
Human-Made	35	83.3%

Table 1. Participant Demographics

* Categories are not mutually exclusive

The level of trauma reported by participants is somewhat surprising given that the STAR program is designed to assist lay helpers, and that the majority of participants were from the United States, with the most common occupation being clergy. Epidemiological data suggest that only 10.2% of men and 6.4% of women in the United States will

experience four or more traumas in their lifetime (Kessler et al, 1999). In this sample 64.3% reported four or more traumas in their lifetime. Given their designation as helpers and inclusion of international participants, higher incidence of trauma exposure is expected, but it is unknown how the exposure in this sample corresponds to that in other helper populations. Part of the high levels reported may be due to how participants defined trauma, as they completed this item at T1 before commonly accepted definitions were taught. Either way, these data suggest participants come to the program with significant experience with traumatic events, which has implications for many of the outcome variables assessed.

Participants attending the four STAR sessions were different on several important demographics (see table 2). STAR personnel reported that one of the most powerful determinates of the character of any given STAR session is the percentage of international participants in attendance. The September STAR session had significantly more participants from or working in countries other than the United States than did the other groups. This group also reported higher incidence of traumatic experiences than did the other groups. In addition, the groups had different make-up in terms of gender and number of prior traumas. These differences are explored and discussed more fully below.

On-site Interviews

Two participants were chosen to follow-up with to begin to assess the impact STAR has on home communities. The majority of the present evaluation centered on the changes occurring in helpers who come to the program. However, in looking at the larger purpose of the STAR program, and other ecological interventions, other important

questions are made salient. One of the central questions to this line of research is whether ecological interventions are a time and cost effective way to address mental health needs in the aftermath of disaster. To be able to speak to this and related questions, research must consider the impact of such interventions on individual survivors (and groups of survivors). While assessing the direct effectiveness of ecological interventions on disaster communities is beyond the scope of the current project, visiting helpers in their home communities to see how their training is impacting their work, and those with whom they work, was seen as a way to help conceptualize future impact assessments.

Demographic	N	% International	% Male	% reporting 4+ traumas
STAR session				
February	8	13%	25%	25%
April	13	23%	62%	77%
September	8	75%	50%	88%
November	13	46%	77%	62%
Total	42	38%	57%	64%

Table 2. Demographic differences between STAR sessions.

Therefore, two participants from different STAR sessions were chosen to visit approximately one month after they returned home from the STAR training. The first helper was a pastor of a large church in the Washington D.C. area that had a significant percentage of members directly affected by the terrorist attack of 9/11/01 on the Pentagon. The second helper, from Austin, Texas, was a lawyer working with families of people on death row. Participants to follow up with were chosen to vary on several points in an attempt to be as comprehensive as possible, including gender, profession, and type of trauma experienced. While not a typical “helper” working in disaster settings, the attorney represented the breadth of types of helpers who attend STAR. The participants

represented two different types of helpers, from different communities affected by different types of trauma. They were also willing to be visited and interviewed after leaving STAR.

The two follow-up participants were visited by the researcher in their home communities and given the four outcome measures (IES, CSF, KAQ, and SPC, see below for more information). They were also qualitatively assessed using a semi-structured, qualitative interview (see Appendix F) about the ways they were implementing what they learned at STAR and their perceptions of how it was impacting those with whom they work.

Retrospective Data

To complement the evaluation, retrospective data were obtained from past STAR participants. 293 participants for whom an email address was known (88% of total past STAR participants) were contacted and asked to complete and return an electronic attachment to an email (see appendix C). Fifty-eight (20%) participants completed the measure and returned it via email. 36% of those who returned the questionnaire were international, similar to the 38% of STAR participants who were international during the 2007 calendar year. The questionnaire included demographic questions and a modified version of the practice checklist. These data were not used in hypothesis testing and were merely supplemental to the evaluation.

Measures (see appendices A & B)

Impact of Event Scale – Revised (IES-R). Trauma symptoms were assessed at T1 and T2 using the IES-R. The original scale was developed by Horowitz and colleagues in 1979 and was designed to assess the degree of symptomatic response to a specific

traumatic exposure as it was manifested in the previous seven days. The self-report scale was based on Horowitz's fledgling, but empirically based understanding of the construct PTSD at the time, which considered responses in the domains of intrusion and avoidance as the primary areas of measurement. Weiss, Marmar and colleagues devised an updated, 22-item version called the Impact of Event Scale-Revised (IES-R) in 1997. This version included tracking of responses in the domain of hyperarousal symptoms as well as the previously assessed intrusion and avoidance. The new version includes seven hyperarousal, seven intrusion, and eight avoidance items interspersed randomly in the scale. The self report items use a scoring scheme of degree of distress with 0, 1, 2, 3, 4 for the responses, respectively, of "Not at all," "A little bit," "Moderately," "Quite a bit," and "Extremely." The scale has demonstrated solid psychometric properties including consistency coefficient alphas ranging from .83 to .91 and test-retest reliability r 's ranging from .71 to .77 (see Weiss, 2004 for further psychometrics). In addition, the scale has been translated into different languages and used internationally, and used with immigrants in the U.S. while maintaining sufficient psychometric reliability and validity (Weiss, 2004). All forms given to participants were in English, as proficiency in English is a prerequisite for attending STAR. With the current sample, the IES-R had high internal reliability (Cronbach's $\alpha = 0.93$).

Fifteen participants pilot tested the IES-R during the fall of 2006. The range found was from 0-60 (possible range of 0-88) with a mean of 30.1 and a standard deviation of 20.87. Eight participants (53%) had scores above 33. These scores suggested that participants come to STAR with moderate levels of PTSD symptomatology. Recent studies suggest a cutoff score of 33 as the best diagnostic

criterion in a community sample (Creamer, Bell, & Failla, 2003). Therefore, it is likely that participants come to the STAR program with PTSD symptom levels high enough to find positive change if it does happen. In other words, there did not appear to be a floor effect for participants' incoming PTSD symptomatology.

Compassion Satisfaction and Fatigue Scale (CSF). At T1 and T2 all participants were given the Compassion Satisfaction, Burnout, and Fatigue subscales of the Professional Quality of Life-version IV (CSF). This scale was developed by B. Hudnall Stamm in 1997 as an extension of the work of Charles Figley and as way to measure the constructs of burnout, compassion fatigue and compassion satisfaction in formal and non-formal helpers. The compassion satisfaction construct was designed to assess the pleasure helpers get from the work they do. It was created as an attempt to quantify positive aspects of being a helper that may protect from some of the unique risk factors associated with helping. The scale has thirty items, ten for each subscale, and response choices from 0 (Never) to 5 (Very Often) and has been normed on several populations including school personnel (teachers, aids, administration), child/family workers, and general health workers (administration, nurses, clinicians). Reported alpha reliabilities for the scales are .87 (Compassion Satisfaction), .72 (Burnout), and .80 (Compassion Fatigue). Normed average scores for each subscale were: Compassion Satisfaction, 37 ($SD = 7$); Burnout, 22 ($SD = 6$); and Compassion Fatigue, 13 ($SD = 6$). The construct validity of the three scales has been established in over 200 peer-reviewed articles (see Stamm, 1999 for a review). The scale has also been used in over 30 different countries (Stamm, 2005).

Pilot data gathered on the CSF (n=16) found the mean scores for the Burnout subscale (CSF-B) to be 21.12 ($SD = 6.02$), the Compassion Fatigue subscale (CSF-CF) to be 15.86 ($SD = 4.55$), and the Compassion Satisfaction subscale (CSF-CS) to be 36.03 ($SD = 3.12$). These means suggested participants were experiencing similar levels of these two constructs as the populations on which the measure was normed, including therapists, nurses, and humanitarian aid workers (Stamm, 2005). Pilot data also suggested there was room to improve over the course of the STAR week, that there was not a floor effect in place.

Use of the CSF was incorporated into the STAR curriculum such that on the first day, towards the end of the day, participants were directed to complete the measure and score it themselves as an introduction to the notions of burnout, compassion fatigue, and compassion satisfaction. Therefore the measure was not given with the rest of the pre-STAR packet, which was administered within the first hour of the seminar. The CSF was also administered by STAR facilitators, not by the researcher, as it was part of the curriculum. During two of seminars during which data were collected, STAR facilitators elected not to conduct the CSF exercise due to time constraints. Therefore about half of the participants had missing data for the pre-STAR CSF. From the CSF data that was obtained on day one, the compassion satisfaction and compassion fatigue subscales showed solid internal reliability ($\alpha = 0.82, 0.85$, respectively) and the burnout subscale had an internal reliability of 0.65.

Validation Questionnaire (VQ). This measure was comprised of 10 modified items from the Interpersonal Support Evaluation List (ISEL, Cohen, Mermelstein, Kamarck, & Hoberman, 1985). Items were changed to assess support felt during the

STAR week rather than general social support. Others have modified the ISEL to assess perceptions of available support in different settings, including support groups for battered women (Tutty, Bidgood, & Rothery, 1993) and substance-abuse treatment groups (Schmitz et al, 1997). Items were chosen from three subscales of the measure – the appraisal subscale (availability of someone to talk to about one’s problems), the self-esteem subscale (availability of a positive comparison when comparing one’s self to another), and the belonging subscale (availability of people one can do things with). The tangible subscale (e.g., If I needed to borrow \$20 I would not have a problem finding someone to loan me the money) was omitted.

The response choices were 1 (definitely false) to 4 (definitely true) yielding a range of 10 – 40. This measure had excellent reliability ($\alpha = .86$). However, it appeared that a ceiling effect was in place as the distribution was skewed toward the upper limit of the range and the mean was 35.5. This was most likely due to the importance placed by the STAR program on creating a supportive environment for participants. Many helpers come alone to the program from difficult environments. Many come from other countries. In order to facilitate learning, STAR trainers encourage relationship building and collaboration. Indeed, a stated goal of the program is to be a trauma-healing and peacebuilding resource for participants once they leave the program and return home.

Knowledge and Attitudes Questionnaire (KAQ). The KAQ was designed by the researcher and STAR personnel for the purposes of the evaluation. Items were created to assess levels of knowledge and type of attitudes participants have regarding STAR material. Participants were asked to answer 27 statements and mark to what degree they agree or disagree on a Likert-type scale with 1 being “Strongly Disagree” and 5 being

“Strongly Agree.” The range of the KAQ is 27 – 135. Items were chosen to comprehensively assess the construct (knowledge, attitude) along each of the five main “points,” or components of the STAR intervention. It was possible to evaluate participants’ learning in any or all of the five domains of STAR content.

STAR trainers and administrators were included to assure the measure accurately assessed the domains of learning targeted by the seminar. The symbol of a star was chosen for the program not only because of the title’s acronym but because each of the five points of a star represented a point of emphasis within the program: Trauma-healing, Peacebuilding, Restorative Justice, Leadership, and Spirituality. Experts from within the STAR network, in each of the five areas, were asked to come up with a list of questions from their domain. KAQ items were chosen from each group of questions by the researcher and the two lead trainers from STAR.

The response choices were initially a mixture of true/false and multiple choice. However, after piloting the measure across several different STAR sessions, it was discovered that the nature of the answers to the questions often did not lend themselves to rigid right and wrong categories. Those who piloted the measure, especially those from international settings, described frustration at having to choose one answer when, depending on situational factors, another answer may be just as appropriate. For example, item 20 reads, “Modern justice systems are designed to meet victims’ needs.” Participants from different parts of the world interpreted the words “modern” and “justice systems” to mean different things. In addition, some, having lived through regime changes in various parts of the world, suggested that at one point the justice system did

not meet the needs of victims, but after changes were made, it did. Therefore, a Likert-type answering scheme was chosen.

The original measure of knowledge and attitudes included separate questionnaires, with 12 items evaluating knowledge and 18 items measuring attitudes. Anecdotal evidence from STAR trainers suggested participants present to the program from very different backgrounds with very different levels of knowledge and attitude relating to STAR material. However, piloting these two separate questionnaires found range restrictions suggesting the items were not difficult enough to capture the variance in knowledge and attitudes present among participants. Therefore the current measure reflects several iterations of modifying and piloting items. The internal reliability (Cronbach's α) of the KAQ at T1 was 0.79.

Star Practices Checklist (SPC). The SPC is a checklist of 23 practices and skills related to the STAR curriculum created for the purposes of this project. The measure was designed and created in a collaborative way similar to that of the KAQ. STAR personnel were asked to create a list of practices and skills that they thought would represent assimilation of STAR material into participants' "toolkits" and that they hoped participants would employ upon returning home. The final list was created after two rounds of piloting to capture the fullest range of practices used by this diverse group of helpers, and yet reflect accurate levels of variance. At T1 participants are asked to indicate how often they had used the practice with the population they work with, in the past month. Response choices range from 0 (never/not sure) to 5 (always), and the range is 0 – 115. At T2, participants are asked to indicate how often they *intend* to use the practices upon returning home. Therefore, this measure is not an actual measure of

change, as it is a proxy for how much participants' intentions change relative to their prior behavior. Given the lack of a T3 data collection point, obtaining an actual measure of practice change was beyond the scope of this project. However, the measure was found to have high internal reliability at T1 (Cronbach's $\alpha = 0.94$).

In creating both the KAQ and the SPC, and in conducting the evaluation in general, an emphasis was placed on being concise and brief. Feedback from pilot data collection was clear in suggesting many participants found the evaluation process onerous and frustrating. As mentioned, many, particularly international participants, were not accustomed to the quantitative nature of the measures. Originally, other standardized measures of distress were considered as additional outcome measures but had to be discarded after participants reported aversions to the length of the assessment battery. In addition, STAR facilitators reported a noticeable change in the flow of the seminar when the evaluations were being conducted (T1 and T2). Therefore, in order to be as sustainable as possible, there was a focus placed on being brief and uncomplicated during the evaluation process. The resulting length of assessments was approximately 30 minutes each at T1 and T2.

Results

Hypothesis 1:

Hypothesis 1a. It was posited that participants' would gain knowledge and improve attitudes relating to STAR material during the week. This change was hypothesized to be reflected in higher mean scores on the KAQ at the end of the week than at the beginning of the week. The first hypothesis was tested using paired t-tests to compare means of the participant's scores on the KAQ (range = 27-135) at T1 to the

means at T2. Complete data were available for 40 participants. Results indicated that KAQ scores were indeed significantly higher at T2 ($X=114.6$) than at T1 ($X=109.5$), ($p < .001$). This difference resulted in an effect size of 0.67.

Hypothesis 1b. It was predicted that participants would report intentions to use STAR practices more than they had used them before coming to STAR and that this difference would result in higher mean scores on the SPC (range 0-115) at the end of the training than at the beginning. As predicted, an analysis of the means found intended practices at T2 ($X=76.9$) to be higher than practices reported at T1 ($X=44.3$). This difference in means (32.6, $SD = 17.55$) was found to be significant ($p < .001$), and also had a large effect size (see table 3). Hypothesis 1 was supported by the data.

Measure and Time	Score		Difference From Baseline			
	<i>M</i>	(<i>SD</i>)	<i>df</i> ^a	<i>t</i>	<i>p</i>	Effect Size ^b
KAQ						
Time 1	109.5	(9.62)				
Time 2	114.6	(10.05)	39	-4.235	<.001	0.67
SPC						
Time 1	44.3	(21.4)				
Time 2	76.3	(17.75)	39	-11.769	<.001	1.86
IES-R						
Time 1	20.8	(16.16)				
Time 2	16.6	(15.87)	36	2.206	<.03	0.36
CSF						
Burnout						
Time 1	19.9	(5.55)				
Time 2	18.4	(4.39)	16	1.388	.18	0.37
Compassion Fatigue						
Time 1	12.8	(8.28)				
Time 2	11.9	(6.88)	16	0.715	.49	0.17
Compsn Satisfaction						
Time 1	35.2	(4.24)				
Time 2	38.1	(4.65)	16	-2.802	<.01	0.68
VQ						
Time 1						
Time 2	35.5	(4.03)	n=42			

Table 3. Changes in the main predictor and outcome variables at T1 and T2.

KAQ = Knowledge and Attitudes Questionnaire (range = 27-135); SPC = STAR Practices Checklist (rng = 0-115); IES-R = Impact of Event Scale-Revised (rng = 0-88); CSF = Compassion Satisfaction and Fatigue Questionnaire; all subscales (range = 0-50); VQ = STAR Social Validation Questionnaire (range = 0-40).

^aDifferences in degrees of freedom reflect missing data

^bMean change/pooled SD

Hypothesis 2: Hypothesis 2 was tested by comparing means from T1 to T2 of the two distress measures. Paired t-tests were conducted to evaluate whether changes in distress from the beginning of the training were significantly different from those at the end.

Hypothesis 2a. It was predicted that scores on the IES-R would be lower at T2 than at T1, reflecting a decrease in participants' psychological distress during the week. A paired t-test ($N = 37$) found scores were lower at the end of the week and that the difference was significant (see table 3). In addition, at the beginning of the week, nine participants were above the clinical cut-off of 33, and T2, eight participants had scores higher than 33. There were five participants with missing data who were excluded from the above analysis. These participants did not differ from those with complete data in meaningful ways. For example, non-completers did not experience more traumas in their lifetimes (complete data, $X=3.4$; missing data, $X=3.0$), did not differ in their knowledge related to STAR material at T2 (complete, $X=115.2$; missing, $X=114.6$), and were not significantly different on any of the subscales of the CSF at T2.

Hypothesis 2b. It was predicted that scores on two of the CSF subscales (Burnout, Compassion Fatigue) would decrease from T1 to T2, while the CS subscale would increase from T1 to T2. Mean scores on the Burnout subscale ($N = 17$) of the CSF were found to be $X_{T1} = 19.9$ and $X_{T2} = 18.4$, for a mean difference of 1.5 ($SD = 4.72$). This difference was not found to be significant, $t = 1.388$, $p = 0.184$. Means scores on the Compassion Fatigue subscale ($N = 17$) were found to be $X_{T1} = 12.8$ and $X_{T2} = 11.9$, for a mean difference of 0.9 ($SD = 5.43$) (see table 2). This difference was not significant, $t = .715$, $p = .485$. A power analysis suggested this test (2b) was underpowered (23.24%) to find a significant difference given a medium effect size and an N of 17. The test was

likely even more underpowered as two of the three tests had small effect sizes. Finally, as predicted, mean scores on the Compassion Satisfaction subscale (N=17) were found to be higher at T2 ($X = 38.1$) than at T1 ($X = 35.2$), for a mean difference of -2.9 ($SD = 4.24$). The difference from the beginning of the week to the end on this subscale was significant, $p = .013$. Therefore, data are mixed regarding hypothesis 2.

As noted above, at T1, the CSF was administered by STAR facilitators as it was an existing part of the STAR curriculum and used as an introduction to the concepts of burnout, compassion fatigue, and compassion satisfaction. Due to time constraints, STAR administrators chose not to give the measure during two of the STAR sessions, which resulted in missing T1 CSF data (N=17). Because of this, the decision was made not to include it as an outcome measure for hypothesis 2 (see pp. 52-53 & 64 for discussion on session differences).

Hypothesis 3: Hypothesis 3 was tested in two parts. The first step was to assess the zero-order correlations between the variables of interest. The second step was to conduct multiple regression analyses to assess the proportion of variance in the outcome measures accounted for by the predictor variables. Scores at T2 on the four measures of distress (IES-R, CSF-B, CSF-CF, CSF-CS) were the outcome measures. The predictors were participants' change scores on the KAQ and SPC. This analysis tested whether it is possible to accurately predict participants' distress at T2 using changes in knowledge, attitudes, and skills.

Step 1. It was predicted that change scores on the measures of distress (IES-R, CSF-B, CSF-CF) would negatively correlate with change scores on the KAQ. That is to say, it was hypothesized that those who learned the most during the STAR week would

have the greatest decrease in symptoms from the beginning of the session to the end. Surprisingly, changes in the KAQ were not found to significantly correlate with changes in any of the outcome measures, including the IES-R (Pearson's $r = -0.116$, $p = .496$), the CSF-B ($r = -0.247$, $p = .340$), the CSF-CF ($r = 0.407$, $p = .105$), or with changes on the compassion satisfaction subscale of the CSF-CS ($r = -0.275$, $p = .286$). However, given the missing data associated with the CSF measure, significance testing for these subscales was underpowered. Therefore, in looking more closely at the magnitude, rather than the significance, of the correlations, changes on the CSF subscales and the KAQ were found to be larger and potentially indicative of meaningful associations.

Step 2. Hierarchical multiple regression analyses were conducted to assess the amount of variance in the outcome measures that was attributable to the predictor variables. Given the missing data associated with the CSF subscales, they were dropped as outcome measures for this analysis and scores at T2 on the remaining outcome variable (IES-R) were used as the outcome variable. A post-hoc power analysis was conducted and the achieved power, given a sample size of 37 and a medium effect size, was 43.5%. Typically, power should be around 80%, which suggests this test of significance, with a small to medium effect size, did not have a large enough sample to provide significant prediction.

Scores on the IES-R at T1 were entered as the first step in the analyses and change scores on the KAQ and SPC were entered as step two (see table 4). With T2 IES-R scores as the criterion variable, T1 scores accounted for 57.4% ($p < .0001$) of the variance. Difference scores (T2 minus T1) on the KAQ and SPC accounted for an additional 5% of the variance in the post IES-R, $F(2, 31) = 2.05$, $p = .146$. While the

amount of additional variance explained is not significant, given the limited power of this test, it is noteworthy. The three subscales of the IES-R were also analyzed as outcome variables in an attempt to look for possible effects of the predictors on the three symptom clusters of posttraumatic stress – intrusion (IES-In), avoidance (IES-Av) and hyperarousal (IES-Hy) – separately (see table 3 and Additional Analyses section).

These analyses showed that after controlling for levels of distress on the first day of STAR, changes in learning and practices together did not explain significant amounts of variance in the levels of post-distress reported by the participants. Taken together, data from step one and step two do not support hypothesis 3.

Hypothesis 4: It was predicted that distress scores at T2 would be negatively correlated with ratings of social support during the STAR week at T2. Correlation analyses showed that only the CSF-CS was significantly related to the VQ ($r = 0.394, p = .014$). Ratings of social support during the week were found to have a small relationships with the IES-R ($r = 0.053, p = .737$), the CSF-CF ($r = 0.128, p = .443$). The VQ was negatively correlated with the CSF-B ($r = -0.313, p = .056$), a relationship that approached significance. As noted above, there was a ceiling effect involved with the VQ, making it likely there was too much range restriction to accurately test the correlation between the VQ and other measures.

Additional Analyses

Several aspects of the data were explored more fully through supplemental analyses. These analyses were not part of formal hypothesis testing and were exploratory in nature.

Predictors	Outcome	IES-R total ^b		IES-In ^b		IES-Av ^b		IES-Hy ^b	
		β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1									
Pre-Score		0.758**	0.574	0.682**	0.465	0.756**	0.572	0.734**	0.539
Step 2									
KAQ Δ^a		-0.105	0.05	-0.055	0.079 ^c	-0.189	0.032	-0.035	0.053
SPC Δ^a		-0.184		-0.277*		0.066		-0.229	

Table 4. Summary of a Hierarchical Regression Analysis of IES and subscales

^a Δ = post-score minus pre-score

^b N = 37

^c $p = .085$;

* $p < .05$

** $p < .001$

Session differences.

The sample was taken from all of the four introductory STAR sessions during the calendar year 2007. In order to test for homogeneity among sessions, a grouping variable was created for Sessions and explored for possible differences. A one-way ANOVA indicated the sessions did not differ significantly in participants' initial knowledge and attitudes (T1 scores on the KAQ, $F(3,36) = 1.62, p = .20$) or in several important demographic items, including age, profession, or experiencing a life-threatening event(s).

However, there were differences in some areas. At T1, significant differences in means between the four groups were found on the IES-R (including all three subscales), and STAR-related practices (SPC) reported before coming to STAR. Post hoc tests (Fisher's LSD) found the February/September groups and the April/November groups to cluster together on several of the T1 IES measures (see table 5). The four groups also differed significantly on CSF scores at T2. In particular, an ANOVA found compassion fatigue (CSF-CF) reported by participants at T2 to be significantly different between groups, $F(3, 34) = 6.24, p < .01$. The other subscales (e.g., CSF-B, CSF-CS) were not significantly different between groups. Post hoc analyses found the September session to

differ significantly from the other sessions on the CSF-CF, but that the other sessions were not different from each other.

T1 Measure	IES-R	IES-In	IES-Av	IES-Hy	SPC
STAR session					
February	28.5 ^a	12.3 ^a	11.2	5.0	33.6
April	15.4 ^b	6.8 ^b	5.8	2.9	35.8
September	38.5 ^a	15.5 ^a	13.8	9.2	69.8
November	14.0 ^b	5.6 ^b	5.2	3.2	42.2
Between groups F-value	5.64**	5.25**	3.37*	3.15*	7.60**

Table 5. Time 1 mean scores and ANOVA F-values by STAR session

* = $p < .05$

** = $p < .01$

a,b = Within measures, means sharing superscript do not differ at $p < .05$

In addition to the above noted differences, the four sessions also differed on several interesting *change* variables. Participants in the four sessions were significantly different in the amount of change between T1 and T2 on the IES-R ($F(3,33) = 2.99, p = .05$), the IES-In ($F(3,33) = 3.88, p = .02$), the IES-Av ($F(3,33) = 4.27, p = .01$), and the SPC ($F(3,36) = 7.60, p < .01$). Post hoc analyses (Fisher's LSD) revealed that on the total IES-R measure, February scores were significantly lower than November, but all other groups were not different. On the Intrusions subscale, February scores were lower than September; on the Avoidance subscale April and November clustered together (lower scores), as did February and September; and finally, on the Hyperarousal subscale none of the sessions were significantly different. Post hoc tests did not reveal any meaningful clusters by session on the SPC.

As can be seen in table 2 (p. 39) the high T1 distress group (Feb/Sept) was composed of smaller sessions with a lower percentage of men. Interestingly, the newly created groups did not cluster together in terms of percentage of international participants or number of traumas experienced. This is surprising given the robust finding that

number of prior traumas and being from a developing country are risk factors for psychological problems after a traumatic event (Norris et al, 2002a). Given these differences between groups on T1 distress measures, and the way the sessions clustered together on the IES-R and IES-In, additional analyses were run with the data clustered along T1 distress differences.

Since hypotheses three and four were not supported by the data, they were revisited after parceling the data into these two clusters (high distress and low distress).

Hypothesis 3: In the high distress group, learning across the five STAR dimensions was not significantly correlated with any of the T2 outcome measures. However, in the low distress group, changes on the overall KAQ were negatively correlated with T2 IES-R scores ($r = -0.44$) and with T2 hyperarousal ($r = -0.48$), meaning the greater the difference between T1 and T2 KAQ scores, the less overall PTSD symptomatology and hyperarousal participants reported, in the low distress group. In both high and low distress groups, KAQ change and SPC change did not account for significant amounts of variance in T2 IES-R scores after controlling for T1 IES-R scores. However, when T2 Hyperarousal was the outcome measure, in the high distress group ($N = 11$), KAQ change accounted for an additional 40% of the variance in the dependent measure after controlling for T1 hyperarousal ($F(2,7) = 5.94, p = .03$). This finding suggests in the high distress group, improvements in KAQ scores were predictive of lower hyperarousal symptoms at the end of the STAR session.

Hypothesis 4: The VQ did not have significant correlations with any of the outcome measures for either of the groups.

Measure subscales.

As noted above, the IES-R was divided into the three subscales that comprise the measure. These three subscales correspond to the three clusters of symptoms necessary for a diagnosis of PTSD in the DSM-IV – intrusion, avoidance, and hyperarousal. To explore the data more fully, the IES-R subscales were used as separate outcome measures for several of the following analyses. In testing hypothesis 2a, the IES-R was found to change significantly from T1 to T2. In order to assess whether change in distress varied by IES-R subscale (a proxy for the three PTSD symptom-clusters), a 2 (Time) X 3 (Subscale) factorial repeated measures ANOVA was conducted. As expected, main effects were found for time ($F(1,36) = 4.88, p = .03$) and IES-R subscale ($F(1,72) = 5.92, p = .004$). However, the interaction was not significant ($F(2,72) = 1.18, p = .31$). The results suggest that participants do improve on the IES from T1 to T2 and that their scores differ on the IES-R subscales, but that they did not improve across each subscale differently. Paired t-tests were conducted to test whether the change from T1 to T2 on each of the IES-R subscales was significant. These analyses found changes in the Avoidance subscale changed significantly over the STAR week ($t = 2.92, p < .01$) while changes in the Intrusion subscale ($t = 0.84, p = .41$) and Hyperarousal subscale ($t = 1.72, p = .09$) were not significant (see graph 1).

In order to investigate nuances in learning that may contribute to variance in the outcome measures, the KAQ was divided into five subscales relating to the five “points,” or areas of emphasis, of STAR – trauma healing, leadership, spirituality, justice, and peacebuilding. KAQ items were created with the distinctions between these areas in mind, and the five subheadings were placed in the scale (see Appendix A). Each subscale did not have equal numbers of items in the KAQ in an attempt to reflect the

emphasis given to each area during the STAR seminar. Therefore scaled means were created by summing the total in each dimension and dividing the total by the number of items in each subscale in order to make meaningful comparisons across subscales.

A 2 (Time) X 5 (Subscale) factorial repeated measures ANOVA was conducted on the KAQ to assess differences across time (T1 and T2) and KAQ subscale (trauma, leadership, spirituality, justice, and, peacebuilding). When KAQ scores were analyzed this way, a main effect for time was not found ($F(1,39) = 1.21, p < .28$). There was, however, a significant main effect for KAQ subscale ($F(4,156) = 7.96, p < .001$). Of primary interest to this analysis, however, was that the Time by Subscale interaction was significant ($F(4,156) = 20.14, p < .001$). This finding suggests that change over time was moderated by subscale dimension. Matched t-tests revealed three of the subscales changed significantly over time, including the trauma subscale ($X = 0.26, t = 4.72, p < .001$); the justice subscale ($X = 0.54, t = 7.85, p < .001$), and the spirituality subscale ($X = 0.4, t = 3.01, p < .005$) (see graph 2).

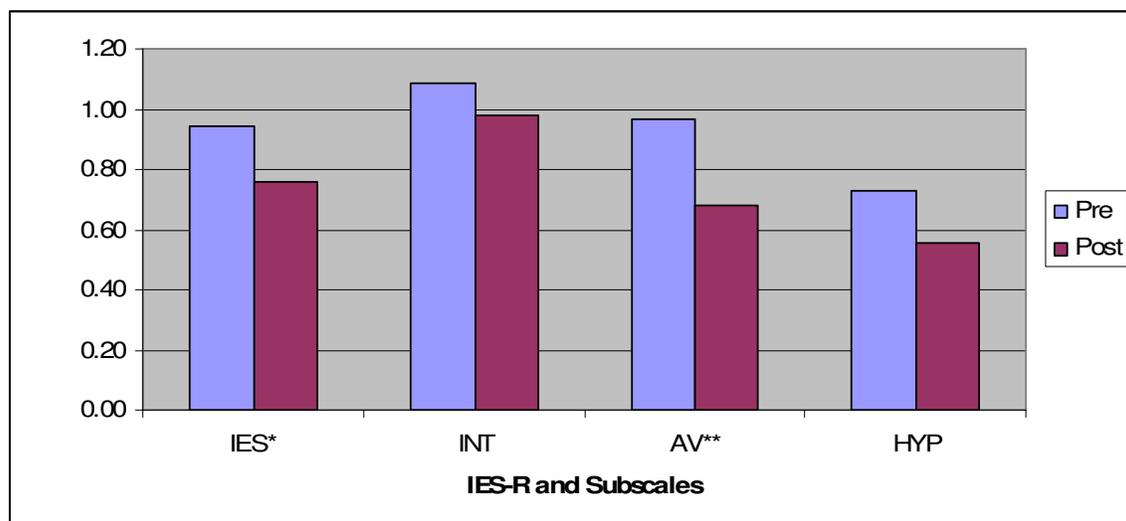


Figure 4. Change in Scaled Means Scores on the IES & Subscales from T1 to T2

* = $p < .05$

** = $p < .01$

Finally, the subscale scores for each KAQ “STAR” dimension were correlated with the outcome measures (IES-R, IES-In, IES-Av, & IES-Hy). The only subscale significantly correlated with any of the outcome measures was the Leadership subscale (KAQ-L), which is surprising given that this subscale was made up of only three items. Correlations of -0.347 ($p < .03$) and -0.316 ($p < .05$) were found between the KAQ-L and T2 scores on the IES-In and IES-Hy, respectively, meaning that higher magnitudes of change on the Leadership subscale of the KAQ were associated with lower intrusion and hyperarousal score at the end of the seminar.

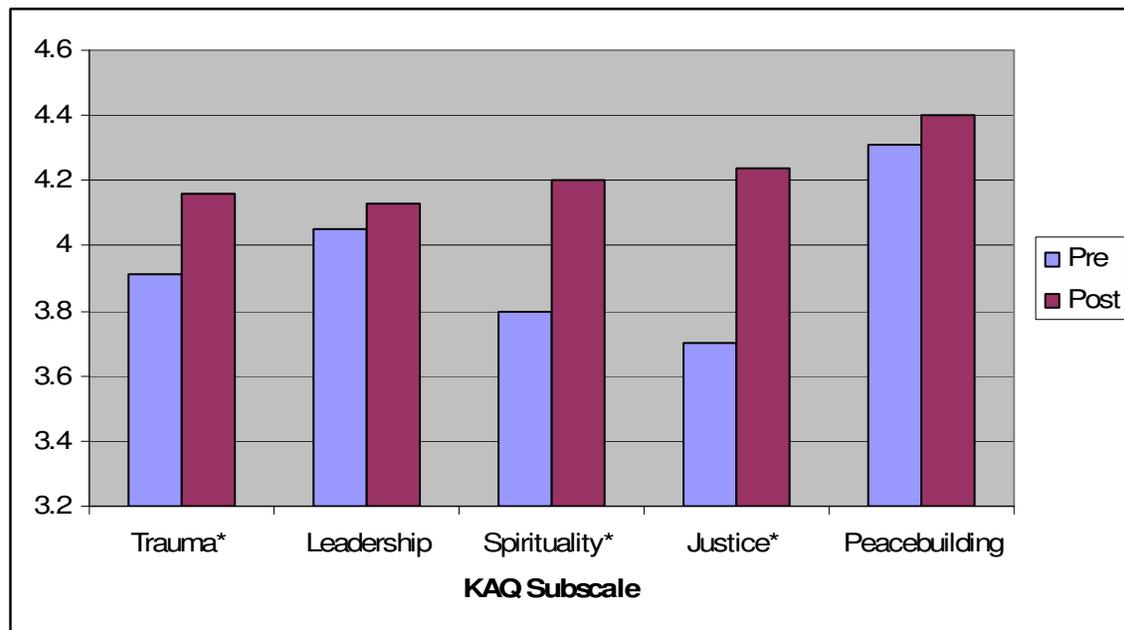


Figure 5. Change in scaled KAQ subscale scores from T1 to T2

* pre/post change = $p < .05$

International participants.

Participants' scores on several important variables were different depending on from where they were coming to STAR (see table 6). Participants from the US and Canada were placed into one group (“domestic”) and all the rest were placed in a group called “international”. A one-way ANOVA found significant differences ($p < .05$)

between the groups in: number of practices reported before coming to STAR, pre-STAR levels of STAR related knowledge and attitudes, and incoming distress levels. In addition, significant differences were found between the groups in distress levels when leaving STAR and time 2 scores on the KAQ. These results are consistent with the robust finding in the disaster literature suggesting that being from a developing country is a risk factor in developing psychological distress following traumatic events (Norris et al, 2002a), given that nearly all of the international participants were not from developed countries.

Measure	T1 SPC	T1 KAQ	T1 IES-R	T2 KAQ	T2 IES-R
Country					
Domestic ^a	38.4	112.6	16.6	118.5	14.3
International ^b	54	104.4	28.4	109	25.3
Between groups F-value	5.57*	7.95**	5.03*	10.52**	4.43*

Table 6. Mean scores by country of origin

* = $p < .05$

** = $p < .01$

a – N = 25

b – N = 15

However, the groups were *not* significantly different on several important areas. Despite coming into STAR with different levels of knowledge and distress, international and domestic participants were not significantly different in rates of change, meaning their KAQ and IES-R scores changed similarly across the week (see graph 3). These findings may suggest that STAR has similar impacts on participants no matter where they come from. It also may suggest that T1 differences on the measures are not due to cultural differences. After a week of STAR and “culturalization” to similar definitions of the constructs being assessed, differences between the two groups remained. These conclusions, however, must remain tentative because the low statistical power of the

study enhances the potential for Type II errors, and it is important to avoid confirming the null hypothesis.

On-site interviews.

In order to enhance the evaluation and to inform future studies, two STAR participants were chosen to visit approximately 45 days after leaving STAR. The information gleaned from these site visits was not hypothesis driven and was meant only to complement the program evaluation.

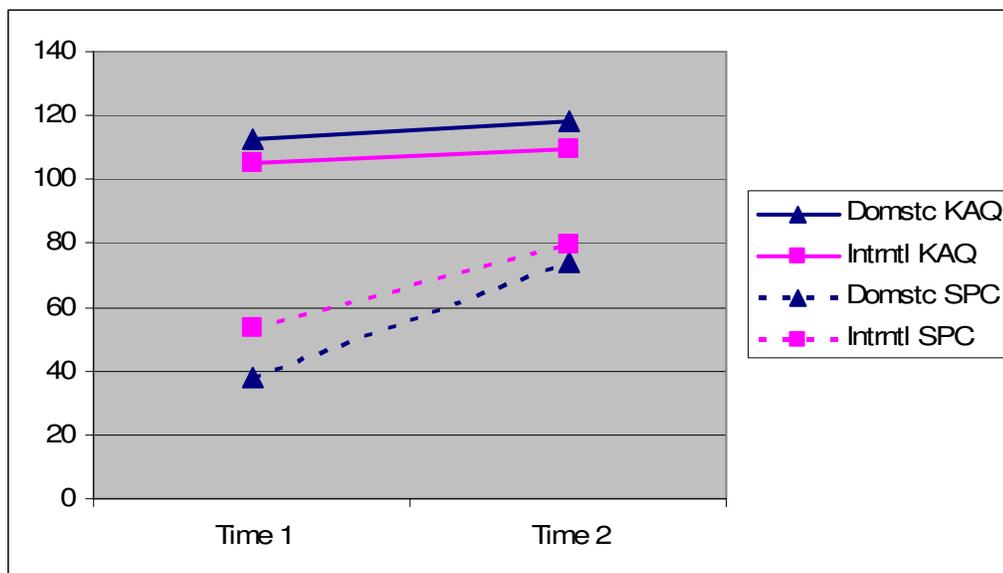


Figure 6. Domestic and International Group Differences

Both participants who were visited were complementary of the STAR program in multiple ways. In particular, each noted the “snail model” (see figures 2 & 3), was helpful in conceptualizing the impact trauma has on individuals and communities. Both expressed an intuitive understanding of the truth of core tenets of the model – that unhealed traumas are likely to result in future trauma and that today’s perpetrators of violence are often yesterday’s victims – from their own work prior to coming to STAR, but that the model was helpful in its simplicity and parsimony. The pastor reported

building a series of sermons around the snail model and the attorney reported using the model in multiple conversations with families of those whom he represents – death row inmates. Quantitatively, however, neither participant was using STAR practices as much as they anticipated when leaving STAR. The clergy member scored a 67 at T2 on the SPC (intended use of practices) and the attorney scored an 87. At follow up (current use), their scores were 53 and 50, respectively.

Both participants reported not learning much during their week at STAR. While they found certain parts of the seminar engaging, each noted that in terms of trauma healing, they did not perceive much learning to have occurred. Their KAQ-trauma subscale scores across the three assessments seem to confirm their perceptions. The clergy member had scores of 48, 47, & 47 at T1, T2, & T3 respectively, while the attorney scored 51, 57, & 50. On the IES-R, scores for the pastor and the attorney at T1, T2, & T3 were 23, 10, 10, and 11, 13, 8, respectively. In addition, both participants reported valuing the connections made at STAR and both had plans to attend future, more advanced, STAR trainings.

Visiting these two participants where they work, seeing them in their roles as helper, underscored the difficulty of assessing “ripple effects” of the intervention through helpers into their home communities. Neither of these participants were coming from acute disaster settings and given the longer term target of ecological models, this is what we would expect. But, it was not as if each was taking a STAR manual with them and holding workshops with direct survivors – they were using the information they gleaned from STAR in rather idiosyncratic ways. Also, the outcomes which they hoped to address using their STAR training were not clearly defined or mutually exclusive from

outcomes they had been targeting their entire careers. In addition, it is not clear from the existing T3 data, that gains in knowledge and intended practices are maintained after helpers leave STAR. Taken together, these factors point to the difficulty of comprehensively assessing T3 impact of STAR in the current format, with the heterogeneous population currently attending the seminar.

Retrospective data.

All of the past STAR participants for whom email addresses were known were sent a retrospective questionnaire (see Appendix C) in the spring of 2007. Much like the on-site assessments, the purpose of the retrospective questionnaires was to enhance the evaluation, not to inform the hypotheses. Of the 293 emails sent, 58 returned completed questionnaires (20%). As noted above, the make up of those returning the questionnaire was similar to that of the prospective sample in terms of percentage of international respondents (36% & 38%), and the average time since coming to STAR was 28 months. However, since such a small percentage of past participants responded and because of the selection biases represented in those who did, the retrospective data cannot be taken as representative of all prior STAR participants.

The most notable findings from the retrospective questionnaires were in regard to the STAR-related practices reported by past participants. Those who returned the questionnaires scored an average of 70.3 when asked how often they have used STAR principles in the past month which was similar to the mean T2 score of 76.3 for the 2007 participants. When asked how much they used these same practices before coming to STAR, the retrospective sample scored a mean of 48.5 (current sample $X=44.3$). These findings may suggest a couple of things: first, the self-reported practices (and intended

practices) by the prospective STAR sample are in the same general range as those reported by a subset of participants several months to several years out. Second, there may be at least a subset of STAR participants who likely are maintaining the gains in skills/practices they pick up at STAR long after they leave. It is possible, of course, that non-respondents were less likely to be using STAR skills/practices, and since this group constituted the majority of former participants, broader conclusions based on the retrospective sample would be premature.

Discussion

Hypothesis one was that participants' knowledge related to STAR curriculum would increase from T1 to T2 and participants would report intending to use more STAR related practices upon returning home than they did before coming to STAR. Findings from this study support hypothesis one. Scores at T2 on the total KAQ and the SPC were significantly different from scores at T1, suggesting more knowledge and improved attitudes, and intention to use STAR-related practices in their home communities. That participants exhibit learning across the STAR week is not surprising given the nature of the program: it is designed primarily as a training seminar, with a focus on didactic sessions in a classroom-type setting.

However, supplemental analyses found that learning did not occur evenly across the five points of STAR emphasis. It was found that changes over time were moderated by KAQ subscale and that the most change occurred on the trauma, justice, and spirituality subscales. This finding has implications for the STAR program in that it suggests participants learn more about certain dimensions of the program than others.

The findings from hypothesis one are also consistent with other ecological programs which have an emphasis on skills training (Kabura, Fleming, & Tobin, 2005). One of the core features that defines ecological interventions is that the training provided should be accessible to lay persons in a relatively short amount of time and that the skills and knowledge provided should not require a high degree of specialization to utilize. The data suggest STAR meets this criterion. As noted, the range on the KAQ was 27-135. At T2, the mean score on the KAQ was found to be 115.1, or 85% of the total points possible, suggesting participants were in the upper range of possible scores on the measure. While these findings are not surprising, they are nonetheless important in establishing that changes indeed do occur in the areas of knowledge, attitudes, and intended practices and that the information imparted is easily learned by those without a formal mental health background. Both of these findings are consistent with the framework of ecological interventions (p. 8) In addition, these findings are a necessary baseline in order to look at other impacts of the program, both on participants and in their home communities.

Mean IES-R scores at T1 were found to be 20.8 suggesting participants came to the STAR program with mild to moderate levels of posttraumatic stress symptoms. Recent studies suggest a cutoff score of 33 or higher is correlated with diagnoses of PTSD in community samples (Creamer, Bell, & Failla, 2003), indicating STAR participants, on average, come to the program with subclinical levels of symptoms. However, there were nine participants (24%) who scored above 33 at T1. Interestingly, further analyses revealed that much of the change in the IES-R occurred in the Avoidance subscale. Changes between T1 and T2 on the overall IES-R were found to be significant,

including changes in the IES-Av subscale. However, changes in hyperarousal and intrusions were not as large suggesting participants experienced more change in their avoidance symptoms than either hyperarousal or intrusion symptoms. It is important to note here and throughout the interpretation of the results that the conclusions drawn from these data should be tempered by the limitations of the study. These are discussed below, but the small sample size and lack of comparison group make it impossible to suggest STAR caused the changes seen in participants.

Mean scores at T1 suggest this sample of STAR participants reported less trauma symptoms than previous participants. Pilot data collected on 15 participants in 2006 found T1 IES-R scores to average 30.1 ($SD = 20.87$). There were important differences between the present sample and the sample on which pilot data were collected. First, pilot data had a return rate of 20%, suggesting significant selection criteria bias such that the more distressed participants were over-represented. Also, pilot data were collected via email meaning helpers were still *in-situ*. At T1, the study sample was already a day or two removed from their home community and role as helper. Secondly, the percentage of international participants was less in the current sample (38%) than in the piloted group (53%). In addition, the top two professions of helpers in the pilot sample were social worker (35.3%) and teacher (17.6%). There were no clergy in the pilot group, which was the most common profession in the current sample (23.8%). Finally, the pilot sample was younger ($X = 39.5$, $SD = 13.09$) than the current sample ($X = 48.3$, $SD = 13.44$).

The lower scores at T1 of the current (versus pilot) sample do help address one possible threat to the validity of the measure – demand characteristics. The scores

suggest that participants in the current study were *not* responding to perceived pressure initially to over-report trauma symptoms.

Likewise, the other measure of distress used in this study, the CSF, evidenced subclinical levels of symptoms. Mean scores on the burnout and compassion fatigue subscales of the CSF at T1 was 19.9 and 12.8 respectively. When normed on a clinical population, the average CSF-B subscale score was found to be 22, with 25% of people scoring over 27 and 25% scoring under 18. On the CF subscale, the mean was found to be 13 with 25% scoring over 17 and under 8 (Stamm, 2005). This suggests STAR participants arrive with subclinical, yet substantial, levels of burnout and compassion fatigue.

Results from hypothesis 2 show that, over the course of the STAR week, participants' distress decreases significantly. Despite the subclinical T1 scores, there was enough symptomatology to show improvements over the course of the 4.5 day program. In particular, the additional analyses suggest that the STAR program has more of an effect on certain features of psychological distress (i.e., avoidance) than others. This finding was expected for several reasons including that it removed participants from their stressful daily conditions and that the program included key features of several empirically supported treatments for PTSD symptoms. This study was limited by the lack of a comparison group, making it inappropriate to claim the program was causal in the symptom change evidenced by participants. However, as discussed below, there are factors that make the change likely to have been considerably affected by the intervention.

While the STAR program is not conceptualized as an intervention focused on reducing symptom distress of helpers, it nonetheless may be an outcome of the program. One possible explanation for this decrease is the psychoeducation that occurs during the week. Hypothesis 3 was that there would be a direct relationship between participants' learning and their decrease in symptomatology. The data did not support this hypothesis. Change scores on the KAQ were not significantly correlated with change scores on any of the distress measures. Likewise, indicators of learning – KAQ and SPC scores at T2 and KAQ & SPC change scores – did not explain significant amounts of variance in distress scores at T2 after controlling for distress scores at T1.

However, additional analyses revealed that changes in knowledge were predictive of T2 hyperarousal in the low distress group – the two STAR sessions in which participants had lower scores on T1 IES-R and IES-IN. These analyses were only exploratory, but suggest that the effects of learning on certain types of distress may be moderated by initial distress. It is possible that if participants' initial distress were too high, cognitive changes may not have an impact. This possibility is interesting and warrants further investigation for its implications for disaster interventions.

The finding that overall knowledge change did not predict distress change is surprising given the inclusion of psychoeducation components in the majority of empirically supported treatments for PTSD (Foa & Rothbaum, 1998; Litz & Maguen, 2007; Resick & Calhoun, 2001). However, the conditions for testing this hypothesis were less than ideal. The direction of the results was in the expected direction, but as noted above, the test was likely underpowered. In addition, the KAQ and SPC measures were created for the purposes of this study and have not undergone rigorous

psychometric distillation. The un-standardized nature of these measures likely added noise to the analyses out of which meaningful variance accounted for was harder to find.

Interestingly, additional analyses revealed that when change scores on the SPC, and the Justice subscale of the KAQ (KAQ-J) were entered into the regression model, they explained an additional 13% of variance in T2 IES-In scores after controlling for T1 scores. The KAQ-J also explained an additional 6.4% of variance in the Hyperarousal subscale of the IES-R. Other subscales of the KAQ did not explain significant variance in any of the outcome measures. Both of these percentages of variance explained by the KAQ-J were more than the overall KAQ. This suggests that learning about certain aspects of the STAR curriculum predicts changes in certain types of distress, namely that learning about justice predicts changes in avoidance and hyperarousal. The Justice subscale was found to change the most over time (see pp. 56-57 & graph 2), which suggests that magnitude of learning as well as content of learning may impact changes in play a role in decreasing certain PTSD symptoms. These findings are surprising because they suggest learning about trauma (KAQ-T) was not predictive of changes in trauma-related symptomatology but that learning about other disaster-related areas (i.e. justice) was.

Formal hypothesis testing was not conducted on these data and further investigation is necessary before drawing conclusions. However, as ecological interventions evolve, these findings suggest careful consideration of what outcomes in participants are desired, and that learning about certain areas of topics other than trauma will likely be important in achieving these outcomes.

Two interviews with STAR participants in their home communities resulted in qualitative data that may help elucidate the finding that knowledge change did not predict distress symptomatology at T2. A theme that emerged from speaking with both participants was that they felt the trauma psychoeducation component of the STAR curriculum was not as advanced as they hoped. Their education level coupled with the experience these two participants had in the field resulted in a high level of trauma-related knowledge prior to their arrival at STAR. Both reported limited levels of learning related to traditional conceptualizations of trauma during their week. Post-hoc analysis of their individual data showed neither evidenced meaningful change on the overall KAQ or the trauma subscale (KAQ-T). Their scores at T1 on the KAQ-T were 48 and 51 out of 60. While in the upper end of the range, there was room for improvement in these scores as they were 80% and 85%, respectively, of the total possible points on that subscale. Interestingly, at T3 (during site interview approx 1 mo. after STAR), both participants scored within one point to their pre-STAR score on the KAQ-T, KAQ-J, and KAQ-P. This provides objective data to back up their subjective perception that they did not experience significant learning regarding trauma during the STAR week.

A closer look at sample-wide KAQ data reveals a similar finding. The KAQ is a 27-item questionnaire with answers on a 5 point Likert scale, giving it a range of 27-135. The mean score of participants at T1 was 109.5, a median of 112, and a range of 83 to 129. At T2 the mean was 115.1, median 118, and range 92-129. These numbers suggest most of the change occurred at the bottom end of the score range. One possible reason KAQ change scores were not correlated with distress scores at T1 or T2 is because there

was a ceiling effect on the KAQ and the instrument was therefore not sensitive to the actual changes in learning that occurred during the program.

As noted above, change in the KAQ over time was moderated by subscale. The subscale that did evidence the highest level of change from T1 to T2 was the Justice subscale, followed by the Trauma subscale, and the Spirituality subscale (see p. 55 for full results). However, these individual subscales were not significantly correlated with any of the distress measures at T1 or T2. Of course, another possible reason for the lack of association between KAQ change scores and distress, is that significant levels of learning did not occur.

One *a priori* explanation for the change in distress was that participants would feel significant levels of social support during the week. Social support has consistently been shown in trauma research to improve mental health outcomes following disasters. Hypothesis 4 was that levels of social support at T2 would be positively correlated with distress scores at T2. The data did not support this hypothesis. Social support, as indicated by the VQ, was not found to be significantly correlated with the distress measures at T2 and did not add significant amounts of explanatory power to the regression model after controlling for distress at T1.

These findings may suggest that something other than the psychoeducation component and social support during the STAR week was responsible for the change in participants' distress. One possible explanation is simply that the passage of time is responsible for the decrease in reported distress. It has been well documented that the majority of those who experience traumatic events improve with time, even without formal mental health intervention (Litz & Maguen, 2007; Rothbaum, Foa, & Riggs,

1992). Since there was not a control or comparison group in the present study, it is not possible to rule out the effects of time on the dependent measures. However, the majority of STAR participants do not come to the program from acutely traumatic situations. The average length of time from the most recent, distressing traumatic event was 37 weeks, suggesting the effects of time would have leveled off, and that one additional week's distance from the event would likely not, by itself, result in meaningful symptom change (Litz & Maguen, 2007). This notion is bolstered by the subclinical levels of distress at T1 reported by the majority of participants.

The STAR program has several pieces that are similar to other interventions targeting distress following traumatic events. Cognitive-behavioral therapies have recently been labeled as “A” treatments based on their high degree of empirical support by the International Society for Traumatic Stress Studies (ISTSS) (DeAngelis, 2007). These treatments include Prolonged-exposure therapy (PE), Cognitive-processing therapy (CPT), and Stress-inoculation therapy (SIT). The STAR week includes elements of each of these three therapies. Like PE, there is an exposure component to the STAR week, as each participant is given opportunities to talk, write, and draw about their own particular trauma(s). CPT also includes an exposure component, but places greater emphasis on cognitive strategies to help people change distorted thinking that has emerged as a result of a traumatic event. STAR participants are also exposed to a set of ideas that, and a group of people who, have the potential to challenge accrued posttraumatic false beliefs. Finally, similar to SIT, the STAR program teaches participants several different techniques to manage and reduce anxiety, including controlled breathing and progressive muscle relaxation. Given the empirical support for these cognitive-behavioral treatments,

it is possible that the blending together of several such therapies decreases reported distress from T1 to T2.

However, in addition to these components, the STAR program has several other unique features that may contribute to decreases in participants' symptomatology. An important focus of the STAR model is the "cycle of violence" (see figure 2) which incorporates restorative justice, peacebuilding, and trauma healing pieces into one model of the propagation of trauma across time. Information gleaned from the on-site interviews suggests that this model is useful to participants upon returning home. Both participants in qualitative interviews pointed to ways they were using the model in their work with disaster survivors. One, the clergy member at a church in Washington D.C. impacted by the 9/11 terrorist attacks on the Pentagon, described a series of sermons and small group sessions focused on the model. The second, the capital habeas attorney in Texas, used the model in talking with families of those he represents on death row and in abolitionist speeches given to state legislators.

The on-site interviews pointed to several other ways that the STAR program fits within an ecological framework. As noted in the introduction (p. 14), one of the ways in which helpers can be trained to intervene after disasters is by making referrals for those who need them to more highly trained treatment providers. Both of helpers interviewed stated that, after their training at STAR, they felt more able to identify those who were at risk for developing lasting trauma-related problems. In addition, both reported making referrals more often in the month following STAR than they did prior to attending. This qualitative finding contradicts the report by both interviewees that they did not learn very much regarding trauma during their time at STAR.

Limitations

There were several main limitations in the current study. The first is the lack of power associated with testing hypotheses 2b, 3 and 4. Pilot data from the fall of 2006 suggested between 75 and 100 participants would attend the four STAR sessions offered during the 2007 calendar year. However, only 42 helpers attended the program during data collection period. Discussions with STAR personnel suggested several reasons for the change. First, significant funding cuts occurred between 2006 and 2007. The initial grant from Church World Services provided money to pay for tuition and travel of helpers selected to attend STAR. At the end of 2006, an expected renewal to the grant came through but contained significant budget cuts, necessitating participants to find their own funding to attend the program. As noted above, the tuition for the program was \$850, not including travel costs to and from Washington D.C. Once participants were required to find their own funding, it was not surprising that attendance decreased.

A second reason for decreased attendance was a change in emphasis by the program itself. Once funding changes were made known, it was decided that STAR would make more of an effort to take the program to disaster communities, rather than asking helpers to come to them. During the 2007 year, multiple 4.5 day trainings were held in different places including Sudan, Rwanda, New Orleans, and Colombia. Thus, helpers who, prior to 2007, may have come to STAR in Virginia, had access to the training in their home communities. The combination of these two factors likely accounted for the significant drop-off in attendance resulting in lower power than predicted for hypothesis testing.

Another factor making hypothesis testing difficult was the missing data associated with one of the primary outcome measures, the CSF. As noted above, at T1 this measure was not given with the packet of other pre-measures; it was administered later during the first day as a way to introduce the concepts of burnout, compassion fatigue, and compassion satisfaction in the STAR curriculum. Therefore, the researcher was not present during the administration of this measure and control was turned over to STAR trainers. During two of the four data collection sessions, STAR administrators decided to forgo giving the CSF measure due to time constraints on the first day. This occurred despite repeated efforts by the researcher to emphasize the importance of adherence to the research protocol.

A one-way ANOVA comparing means of the four STAR sessions found them to differ significantly along several important T1 and change variables (see above, p. 52). Therefore, participants who had complete T1 and T2 CSF data had significantly different scores on the IES-R (and all subscales) and the SPC. For example, the scaled mean T1 IES-R score for those who were given the CSF at T1 was 0.90, while those who were not given the CSF at T1 had a scaled mean score of 0.99. T1 CSF completers also had lower levels of hyperarousal at T1 than did non-completers, with scaled means of 0.46 and 0.63, respectively. Thus, it is possible there was something about the non-T1 CSF group that influenced STAR personnel to forgo the usual protocol and not administer the CSF on that first day (e.g. higher symptomatology), but this possibility was not formally investigated.

This limitation of the study speaks to a larger difficulty in doing field research with persons not trained as researchers. A nearly constant tension in working with the

STAR program existed surrounding perceptions of the importance of systematic, semi-standardized evaluation. Despite being brought on by STAR leaders to conduct the evaluation, the majority of individuals within the program, including lead trainers, admitted perceiving the research process as a lower priority than a full evaluation necessitates. The lower priority of research was reflected in how trainers allotted time, and their resistance to fully incorporating the administration of pre and post measures into the weekly schedule. Informal interviews with STAR personnel revealed that many of them felt as if it was awkward and uncomfortable to strongly encourage participants to fill out paper and pencil, standardized measures that felt like tests. They also noted participants, particularly international participants, expressed dislike of the testing and a lack of understanding regarding the rationale behind the research process. Most importantly, they expressed that there was simply not very much free time in the STAR week, and that allotting 30 minutes for research at two different points in the week required them to omit other parts of the curriculum – parts they were understandably committed to and felt were very important.

Many of these concerns that participants themselves reported were known from the piloting process and steps were taken to assuage them, including educating STAR personnel on the research process, shortening the pre and post packet of questionnaires, training STAR personnel in the research process, and making sure the researcher himself was present at the pre and post administration of measures to explain as much as possible the rationale behind the research process and answer any questions that may arise. Resistance remained, however, largely from STAR personnel. Much of the resistance is understandable given the four years that STAR conducted sessions without a systematic

evaluation process as part of the curriculum. As noted by those who work within ecological frameworks (DeJong, 2002; Hubbard & Miller, 2004; Staub et al, 2005) this experience underscores the importance of incorporating on-going, systematic evaluation from the onset into mental health interventions for disasters, including the conceptualization and budget allocation stages.

However, experience gleaned from this project suggests it is simply not enough for researchers and academics to proclaim that research is important and hope that those carrying out interventions with disaster populations (NGOs, Non-profits, foundations, etc) will somehow change the value they place on research. As noted in the introduction, the field of disaster psychology, like many other disciplines, suffers from a void between science and practice. The breadth and long history of this gulf suggests imploring one side to change is not only inadequate but futile. As a researcher in the area of ecological interventions, it is important to ask if it is possible to apply standard research methods in disaster communities and maintain fidelity to ecological principles of incorporating local values/beliefs and community empowerment – especially when empiricism is not one of the local values! There may be populations in which evaluating ecological interventions with quantitative methodology deviates from the very ecological principles being evaluated. In these cases, it is important for researchers to collaborate even more closely with not only local helpers but also direct survivors in an attempt to formulate an evaluation model that meets the needs of the community, while also informing the field of disaster psychology about the effectiveness of ecological interventions.

Finally, a major limitation in the present study was the lack of a comparison group. This decision was intentional, necessitated by limited funding and time associated

with this project. The unavailability of a comparison group and lack of randomization introduces multiple validity threats into the study requiring cautious interpretation of results, particularly hypothesis 2, which posited that the STAR program would decrease symptomatology in helpers from T1 to T2. One potential threat to the internal validity is the “passage of time” and potential influences from external factors other than the STAR intervention. There are other factors that likely played a role in the observed symptom change, for example, being removed from what, for many STAR participants, were very stressful situations. However, as a first step in a program of research, the present study does add to the knowledge base regarding ecological interventions and sets the stage for future explorations into the impact of such interventions on helpers and individual survivors of large-scale traumatic events.

In particular, the present study adds to the literature on the effects ecological interventions have on helpers. There is evidence to suggest ecological interventions can be successful in teaching information about various disaster-related topics (trauma, justice, peacebuilding, etc) to community leaders and to change their commitment to using ecological practices in their work with disaster survivors. This is consistent with what was found in one of the four published reports of outcome data regarding ecological interventions (Kabura, Fleming, & Tobin, 2005). In addition, it was found that helpers who attended this ecological intervention experienced a decrease in psychological distress over the 4.5 day period. Prior to this study, few published reports of the effects of ecological interventions on helpers themselves were found and this study speaks to these effects.

As stated, documenting change in helpers an important first step in evaluating programs that train and support them as agents of change in disaster communities. It is, however, only a first step. To those working the discipline of disaster psychology, it is of primary interest to speak to the impact ecological interventions have on direct survivors. Is training community leaders and helpers a way to significantly improve mental health outcomes in direct survivors? What outcomes can be expected to change in survivors? What are the best research designs with which to address these questions? All of these questions remain to be addressed and are natural next steps to the current project.

Conclusions

Overall, the only aspects of STAR that make it an ecological intervention are the target (helpers vs. direct survivors) and the timing (longer term vs. short term). Therefore, the changes seen in this sample cannot be solely attributed to ecological principles and the evidence base for the effectiveness of ecological interventions is not added to much by this study. Nevertheless, this study presented many learning opportunities for a beginning researcher in the field of disaster psychology. There were several significant limitations to this study, including missing data and the lack of a comparison group. Despite the difficulties of the current project, there are conditions present in many disaster research settings that make valid findings even harder to come by, including language differences, exaggerated cultural differences, chaotic data collection environments, and on-going threats. None of these were significant problems in this study. Proficiency in English was a requirement for attendance, most participants were familiar with American culture, and data collection occurred on the safe campus of an American university. Given the relative stable nature of this evaluation one might ask

whether it is even possible to conduct sound outcome studies of ecological interventions with disaster populations. Experiences from this study suggest, yes, it is possible, but that it is certainly not easy. Several recommendations for future research in this area (including by the author) arise from the experience of this project:

1. Get involved in the ecological intervention from the outset. Waiting until the program has been designed before attempting to insert a sound evaluation component makes it more likely program facilitators will have to make choices between intervention content and data collection – choices that then magnify values differences between practitioners and researchers. Ideally, those with field experience in disaster mental health will collaborate from the inception with those with expertise in research design and implementation. Or, even better, those creating and conducting the interventions will be experts in both implementation and evaluation.
2. Learn to present and discuss the research process and design, along with expected and actual outcomes, in ways accessible to lay persons. As noted above, it is not realistic to assume emphatic statements about the value of research will change the opinions of practitioners conducting ecological interventions. Simply having strong convictions about the value of research is not enough to influence practitioners;
3. Finally, the most important recommendation: build relationships with those conducting the intervention AND with those who are the target of the intervention. The importance of actively involving those for whom the results

have the most practical impact, including survivors, in the research process cannot be overstated.

These recommendations are presented, in part, to highlight the multifaceted benefits of the current study. As noted above, the findings from this study clearly move the field of ecological disaster interventions forward in terms of knowledge regarding the effects of such interventions on helpers. However, the benefits of the current study cannot simply be measured in terms of difference scores and p-values. To the degree that the experience of completing dissertation projects serves to train scientists in an area of interest to them, this study was invaluable. Collaborating directly with an existing intervention for disaster communities, working with international and domestic helpers, piloting and conducting an evaluation from scratch (including several measures), and presenting these findings to both academic audiences and to the practitioners in the STAR program, provided a unique, if atypical, training opportunity. This training could not have been matched by a tightly controlled laboratory study that may have likely avoided some of the challenges of the current study. This study, largely because of the difficulties encountered, was invaluable in providing training in both the science and the practice of disaster mental health.

Overall, this study points to the potential that ecological interventions in general may have for addressing the mental health needs of disaster communities by suggesting such interventions may improve knowledge, skills, and distress levels of helpers from those communities. However, significant questions remain. The next steps are to investigate the ways in which these changes in helpers affect individual survivors – to assess how this intervention “ripples” out into disaster communities. These next steps

will also ideally address some of the limitations of the current study by utilizing a comparison group, and randomizing placement into treatment groups, if possible. The next steps will not only be informed by the findings of the current study, but hopefully by the experience and challenges encountered while conducting this study. When combined with the above recommendations, the next empirical steps will further inform the mental health community of the ability of ecological interventions to help those who live through large scale traumatic events.

References

- Addis, M.E., Wade, W.A., & Hatgis, C. (1999). Barriers to dissemination of evidence-based practices: Addressing practitioners' concerns about manual-based psychotherapies. *Clinical Psychology: Science and Practice, 6*(4), 430-441.
- Assefa, G. & Miller, H. (1993). Peace and reconciliation in Africa. *Mennonite Central Committee Occasional Paper, 19*. Akron, PA: Mennonite Central Committee.
- Bhugra, D., & Van Ommeren, M. (2006). Mental health, psychosocial support and the tsunami. *International Review of Psychiatry, 18*(3), 213-216.
- Boscarino, J.A., Figley, C.R. & Adams, R.E. (2004). Compassion fatigue following the September 11 terrorist attacks: A study of secondary trauma among New York City social workers. *International Journal of Emergency Mental Health, 6*(2), 1-10.
- Boscarino, J.A., Galea, S., Ahern, J., Resnick, H., & Vlahov, D. (2002). Utilization of mental health services following the September 11th terrorist attacks in Manhattan, New York City. *International Journal of Emergency Mental Health, 4*(3), 143-156.
- Boscarino, J.A., Galea, S., Ahern, J., Resnick, H., & Vlahov, D. (2003). Psychiatric medication use among New York City residents following a mass urban disaster: Implications for research and medical care. *Journal of Traumatic Stress, 16*(3), 301-306.
- Boscarino, J.A., Galea, S., Adams, R.E., Ahern, J., Resnick, H., & Vlahov, D. (2004). Mental health service and medication use in New York City after the September 11, 2001 terrorist attack. *Psychiatric Services, 55*(3), 274-283.

- Cahill, S.P. & Foa, E.B. (2007). Psychological theories of PTSD. In M.J. Friedman, T.M. Keane, & P.A. Resick (Eds). *Handbook of PTSD: Science and Practice*, (pp. 55-77). New York, NY: Guilford Press.
- Carlsmith, K.M, Darley, J.M., & Robinson, P.H. (2002). Why do we punish? Deterrence and just deserts as motives for punishment. *Journal of Personality and Social Psychology*, 83, 284-299.
- Calarossi, L., Heyman, J., & Phillips, M. (2005). Social workers' experiences of the World Trade Center Disaster: Stressors and their relationship to symptom types. *Community Mental Health Journal*, 41(2), 185-198.
- Carr, V.J., Lewin, T.J., Carter, G.L., & Webster, R.A. (1989). Patterns of service utilization following 1989 Newcastle earthquake: Findings from phase I of the quake impact. *Australian Journal of Public Health*, 16, 330-369.
- Cohen, J.A., Deblinger, E., Mannarino, A.P., & Steer, R.A. (2004). A multisite, randomized controlled trial for children with sexual abuse-related PTSD symptoms. *Journal of the American Academy of Child and Adolescent Psychiatry*, 43(4), 393-402.
- Cohen, S., Mermelstein, R., Kamarck, T., & Hoberman, H. (1985). Measuring the functional components of social support. In I.G. Sarason & B.B. Sarason (Eds.), *Social support: Theory, research, and application*. The Hague, Holland, Martinus Nijhoff.
- Covell, N.H., Donahue, S.A., Allen, G, Foster, M.J., Felton, C.J., & Essock, S.M. (2006). Use of Project Liberty counseling services over time by individuals in various risk categories. *Psychiatric Services*, 57(9), 1268-1270.

- Creamer, M., Bell, R., & Failla, S. (2003). Psychometric properties of the Impact of Event Scale – Revised. *Behaviour Research and Therapy*, *41*, 1489-1496.
- Dane, B., & Chachkes, E. (2001). The cost of caring for patients with an illness: Contagion to the social worker. *Social Work in Health Care*, *33*, 31-51.
- Dasgupta, P., & Maskin, E. (1987). The simple economics of research portfolios. *The Economic Journal*, *97*(387), 581-595.
- DeAngelis, T. (2008). PTSD treatments grow in evidence, effectiveness. *Monitor on Psychology*, *39*(1), 40-45. Available at <http://www.apa.org/monitor/jan08/ptsd.html>. Accessed 1/5/08.
- De Jong, J. (2002). Public mental health, traumatic stress and human rights violations in low income countries. In J. de Jong (Ed.), *Trauma, war, and violence: Public mental health in socio-cultural context* (pp. 1-92). New York: Kluwer Academic/Plenum Publishers.
- Duckworth, D.H. (1986). Psychological problems arising from disaster work. *Stress Medicine*, *2*, 315-323.
- Felton, C.J. (2002). Project Liberty: a public health response to New Yorkers' mental health needs arising from the World Trade Center terrorist attacks. *Journal of Urban Health*, *79*(3), 429-433.
- Figley, C.R. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In C.R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp 1-20). Philadelphia, PA: Brunner/Mazel.

- Fitzduff, M. (1996). *Beyond violence: Conflict resolution processes in Northern Ireland*. Tokyo, Japan: United Nations University.
- Foa, E.B., Keane, T.M., & Friedman, M.J. (Eds.), (2000). *Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies*. New York, NY: Guilford Press.
- Foa, E.B. & Rothbaum, B.O. (1998). *Treating the trauma of rape: Cognitive-behavioral therapy for PTSD*. New York, NY: Guilford Press.
- Folger, J.P. (1999). Evaluating evaluation in ethnic conflict resolution: Themes from, and commentary on, the Haverford-Bryn Mawr Conference. In M.H. Ross & J. Rothman (Eds.), *Theory and practice in ethnic conflict management: Theorizing success and failure*, pp. 209-239. New York, NY: St. Martin's Press, Inc.
- Galea, S., Ahern, J., Hesnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., & Vlahov, D. (2002). Psychological sequelae of the September 11 terrorist attacks in New York City. *The New England Journal of Medicine*, *346*(13), 982-987.
- Galea, S., Nandi, A., & Vlahov, D. (2005). The epidemiology of post-traumatic stress disorder after disasters. *Epidemiologic Reviews*, *27*, 78-91.
- Giroux, H.A. (2001). *Theory and Resistance in Education: Towards a Pedagogy for the Opposition*. Westport, CT: Greenwood Publishing Group.
- Goodkind, J., Hang, P., & Yang, M. (2004). Hmong Refugees in the United States: A community-based advocacy and learning intervention. In K.E. Miller & L.M. Rasco (Eds.), *The mental health of refugees: Ecological approaches to healing and adaptation*, pp. 295-334. Mahwah, NJ: Lawrence Erlbaum Associates.

- Goto, T., Wilson, J.P., Kahana, B., & Slane, S. (2002). PTSD, depression and help-seeking patterns following the Miyake Island volcanic eruption. *International Journal of Emergency Mental Health, 4*, 157-172.
- Gutlove, P. & Montville, J. (1992). Toward sustainable peace in the Balkans. Unpublished report, Balkans Peace Project, Cambridge, MA.
- Hamilton, S.E. (2005). Volunteers in disaster response: The American Red Cross. In Y. Danieli, D. Brom, & J. Sills (Eds.), *The Trauma of Terrorism: Sharing Knowledge and Shared Care, An International Handbook*, pp. 621-632. New York, NY: Haworth Press.
- Hubbard, J. & Pearson, N. (2004). Sierra Leonean refugees in Guinea: Addressing the mental health effects of massive community violence. In K.E. Miller & L.M. Rasco (Eds.), *The mental health of refugees: Ecological approaches to healing and adaptation*, pp. 95-132. Mahwah, NJ: Lawrence Erlbaum Associates.
- Hubbard, J. & Miller, K.E. (2004). Evaluating ecological mental health interventions in refugee communities. In K.E. Miller & L.M. Rasco (Eds.), *The mental health of refugees: Ecological approaches to healing and adaptation*, pp. 337-374. Mahwah, NJ: Lawrence Erlbaum Associates.
- Jacobs, G.A., & Meyer, D. (2006). Psychological first aid: Clarifying the concept. In L. Barbanel & R.J. Sternberg (Eds.), *Psychological interventions for victims of disaster and trauma*, pp. 57-71. New York, NY: Springer Publishing.
- Jayasinghe, N., Spielman, L., Cancellare, D., Difede J.A., Klausner, E.J., & Giosan, C. (2005). Predictors of treatment utilization in World Trade Center attack disaster

- workers: Role of race/ethnicity and symptoms severity. *International Journal of Emergency Mental Health*, 7, 91-100.
- Kabura, P., Fleming, L.M., & Tobin, D.J. (2005). Microcounseling skills training for informal helpers in Uganda. *International Journal of Social Psychiatry*, 51, 63-70.
- Kessler, R.C., Berglund, P.A., Bruce, M.L., Koch, J.R., Laska, E.M., Leaf, P.J., Manderscheid, R.W., Rosenheck, R.A., Walters, E.E., & Wang, P.S. (2001). The prevalence and correlates of untreated serious mental illness. *Health Services Research*, 36, 987-1007.
- Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C.B. (1995). Posttraumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry*, 52(12), 1048-1060.
- Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M., Nelson, C.B., & Breslau, N. (1999). Epidemiological risk factors for trauma and PTSD. In R. Yehuda (Ed.) *Risk Factors for Posttraumatic Stress Disorder*, (pp. 23-60). New York: American Psychiatric Publishers, Inc.
- Latimer, J., Dowden, C., & Muise, D. (2005). The effectiveness of restorative justice practices: A meta-analysis. *The Prison Journal*, 85(2), 127-144.
- Lederach, J. (1997). *Building peace: Sustainable reconciliation in divided societies*. Washington, DC: U.S. Institute of Peace.
- Lee, S., & Pollard, S.D (Producers), Lee, S. (Director). (2006). *When the Levees Broke: A Requiem in Four Acts*. [Motion Picture]. Hollywood, CA: HBO Video

- Litz, B.T., & Maguen, S. (2007). Early intervention for trauma. In M.J. Friedman, T.M. Keane, & P.A. Resick (Eds.) *Handbook of PTSD: Science and Practice*. (pp. 307-329). New York, NY: Guilford Press.
- Luce, A., Firth-Cozens, J., Midgley, S., & Burges, C. (2002). After the Omagh Bomb: Posttraumatic stress disorder in health service staff. *Journal of Traumatic Stress, 15*, 27-30.
- Macy, R.D., Behar, L., Paulson, R., Delman, J., Schmid, L., & Smith, S.F. (2004). Community-based, acute posttraumatic stress management: A description and evaluation of a psychosocial-intervention continuum. *Harvard Review of Psychiatry, 12*, 217-228.
- Majtabai, R., Olfson, M., & Mechanic, D. (2002). Perceived need and help-seeking in adults with mood, anxiety, or substance use disorders. *Archives of General Psychiatry, 59(1)*, 77-84.
- McAlpine, D.D. & Mechanic, D. (2002). Utilization of specialty mental health care among persons with severe mental illness: the roles of demographics, need, insurance, and risk. *Health Services Research, 35*, 277-292.
- Maslach, C. & Goldberg, J. (1998). Prevention of burnout: New perspectives. *Applied & Preventative Psychology, 7*, 63-74.
- McCann, L., & Pearlman, L.A. (1999). Vicarious traumatization: A framework for understanding the psychological effects of working with victims. In M.J. Horowitz (Ed.), *Essential papers on posttraumatic stress disorder* (pp. 498-517). New York, New York University Press.

- McCaslin, S.E., Jacobs, G.A., Meyer, D.L., Johnson-Jimenez, E., Metzler, T.J., & Marmar, C. (2005). How does negative life change following disaster response impact distress among Red Cross responders? *Professional Psychology: Research and Practice, 36*(3), 246-253.
- McCullough, M.E., Fincham, F.D., & Tsang, J. (2003). Forgiveness, forbearance, and time: The temporal unfolding of transgression-related interpersonal motivations. *Journal of Personality and Social Psychology, 84*, 540-557.
- McFarlane, A.C. (1988). The longitudinal course of posttraumatic morbidity: The range of outcomes and their predictors. *The Journal of Nervous and Mental Disease, 176*, 30-39.
- Mika, H. (2006). Personal Communication.
- Miller, K.E., & Rasco, L.M. (2004). An ecological framework for addressing the mental health needs of refugees. In K.E. Miller & L.M. Rasco (Eds.), *The mental health of refugees: Ecological approaches to healing and adaptation*, pp. 1-64. Mahwah, NJ: Lawrence Erlbaum Associates.
- Mitchell, J.T., & Everly, G.S., Jr. (2001). *Critical Incident Stress Management: The basic course workbook* (3rd ed.). Ellicott City, MD: International Critical Incident Stress Foundation.
- Motta, R.W., Newman, C.L., & Lombardo, K.L. (2004). Objective assessment of secondary trauma. *International Journal of Emergency Mental Health, 6*(2), 67-74.
- Myers, D., & Wee, D.F. (2005). *Disaster mental health services: A primer for practitioners*. New York: Bruner-Routledge.

- Nezu, A.M. & Nezu, C.M. (2008). Ensuring treatment integrity. In A.M. Nezu & C.M. Nezu (Eds), *Evidence-based Outcome Research: A Practical Guide to Conducting Randomized Controlled Trials for Psychosocial Interventions*, pp. 263-281. New York, NY: Oxford University Press.
- Norris, F.H., Friedman, M.J., Watson, P.J., Byrne, C.M., Diaz, E., & Kaniasty, K. (2002a). 60,000 disaster victims speak: part I. An empirical review of the empirical literature, 1981-2001. *Psychiatry: Interpersonal and Biological Processes*, 65(3), 207-239.
- Norris, F.H., Friedman, M.J., & Watson, P.J. (2002b). 60,000 disaster victims speak: Part II. Summary and implications of the disaster mental health research. *Psychiatry: Interpersonal and Biological Processes*, 65(3), 240-260.
- Norris, F.H., Hamblen, J.L., Watson, P.J., Ruzek, J.I., Gibson, L.E., Price, J.L., Stevens, S.P., Young, B.H., Friedman, M.J., & Pfefferbaum, B.J. (in press). Toward understanding and creating systems of postdisaster care: Findings and recommendations from a case study of New York's response to the World Trade Center disaster. In E.C. Ritchie, P.J. Watson, & M.J. Friedman (Eds.), *Mental health intervention following disasters or mass violence*. New York: Guilford Press.
- North, C.S. (2003). Psychiatric epidemiology of disaster responses. In R.J. Ursano & A.E. Norwood (Eds.), *Trauma & disaster: Responses and management*, pp. 37-62. Washington D.C: American Psychiatric Publishing Inc.
- North, C.S., Tivis, L., McMillen, J.C., Pfefferbaum, B., Sptznagel, E.L., Cox, J., Nixon, S, Bunch, K.P., & Smith, E.M. (2002). Psychiatric disorders in rescue workers after the Oklahoma City bombing. *American Journal of Psychiatry*, 159(5), 857-859.

- Pearlman, L.A. (1995). Self-care for trauma therapists: Ameliorating vicarious traumatization. In B.H. Stamm (Ed.), *Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators*, pp. 51-64. Lutherville, MD: Sidran Press.
- Perlstein, M. (2006, June 25). NOPD is set to do battle with an influx of criminals to make the new New Orleans safer. *Times Picayune*, New Orleans, LA. June 25, 2006. Available at <http://search.nola.com/> Accessed November 21, 2007.
- Pines, A., & Maslach, C. (1978). Characteristics of staff burnout in mental health settings. *Hospital and Community Psychiatry*, 29(4), 233-237.
- Pope, J. (2006, April 26). Three-fourths of medical professionals have left New Orleans. *Times Picayune*, New Orleans, LA. Available at <http://search.nola.com/> Accessed December 2, 2007.
- Resick, P.A. & Calhoun, K.S. (2001). Posttraumatic stress disorder. In D. Barlow (Ed.). *Clinical Handbook of Psychological Disorders, 3rd ed.* (pp. 60-113). New York, NY: Guilford Press.
- Rose, S., Wessely, S., & Bisson, J., (1998). Brief psychological interventions (“debriefing”) for trauma-related symptoms and prevention of post traumatic stress disorder. In *Cochrane Database of Systematic Reviews*, (2nd ed.). Oxford: Update Software.
- Ross, M.H. & Rothman, J. (1999). Issues of theory and practice in ethnic conflict management. In M.H. Ross & J. Rothman (Eds.), *Theory and practice in ethnic conflict management: Theorizing success and failure*, pp 1-23. New York, NY: St. Martin’s Press, Inc.

- Rothbaum, B., Foa, E., & Riggs, D. (1992). A prospective study of post-traumatic stress disorder in rape victims. *Journal of Traumatic Stress, 5*(3), 455-475.
- Rubonis, A.V. & Bickman, L. (1991). Psychological impairment in the wake of disasters: The disaster-psychopathology relationship. *Psychological Bulletin, 109*(3), 384-399.
- Saulny, S. (2006, June 21). A legacy of the storm: depression and suicide. *New York Times*, New York, NY. Available at <http://www.nytimes.com/2006/06/21/us/21depress.html>. Accessed October 20, 2007.
- Schmitz, J.M., Oswald, L.M., Jacks, S.D., Rustin, T., Rhoades, H.M., Grabowski, J. (1997). Relapse prevention treatment for cocaine dependence: Group vs. individual format. *Addictive Behaviors, 22*, 405-418.
- Shadish, W.R., Cook, T.D., & Campbell, D.T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton Mifflin Company.
- Smith, E.M., North, C.S., McCool, R.E., & Shea, J.M. (1990). Acute post-disaster psychiatric disorders: Identification of persons at risk. *American Journal of Psychiatry, 147*, 202-206.
- Solomon, Z., Iancu, I., & Tyano, S. (1997). World assumptions following disaster. *Journal of Applied Social Psychology, 27*(20), 1785-1798.
- Sprang, G. (2000). Coping strategies and traumatic stress symptomatology following the Oklahoma City bombing. *Social Work and Social Sciences Review, 8*, 207-218.
- Stamm, B.H. (1999). *Secondary Traumatic Stress: Self-Care Issues for Clinicians, Researchers, and Educators*, 2nd Ed. Lutherville, MD: Sidran Press.

- Stamm, B.H. (2005). The ProQOL Manual: Professional Quality of Life: Compassion Satisfaction and Fatigue Subscales. <http://www.isu.edu/~bhstamm>.
- Staub, E., Pearlman, L.A., Gubin, A., & Hagengimana, A. (2005). Healing, reconciliation, forgiving and the prevention of violence after genocide or mass killing: An intervention and its experimental evaluation in Rwanda. *Journal of Social & Clinical Psychology, 24*(3), 297-334.
- Stuber, J., Galea, S., Boscarino, J.A., & Schlesinger, M. (2006). Was there unmet mental health need after the September 11, 2001 terrorist attacks? *Social Psychiatry and Psychiatric Epidemiology, 41*, 230-240.
- Taylor, A. J., Nailatikau, E., & Walkey, F. (2002). A hostage trauma assessment in Fiji. *Australasian Journal of Disaster and Trauma Studies, 6*(2), 246-255.
- Tutty, L.M., Bidgood, B.A., & Rothery, M.A. (1993). Support groups for battered women: Research on their efficacy. *Journal of Family Violence, 8*, 325-343.
- United Nations High Commissioner for Refugees (UNHCR). (2005). 2004 global refugee trends. <http://www.unhcr.org/statistics>
- United Nations International Strategy for Disaster Reduction (UN/ISDR). (2004). UN report on disaster statistics 1994-2004. <http://www.unisdr.org/disaster-statistics/introduction.htm>
- Watson, P.J., Friedman, M.J., Gibson, L.E., Ruzek, J.I., Norris, F.H., & Ritchie, E.C. (2003). Early interventions for trauma-related problems. In R.J. Ursano & A.E. Norwood (Eds.), *Trauma & disaster: Responses and management*, pp. 97-124. Washington D.C: American Psychiatric Publishing Inc.

- Weine, S., Feetham, S., Yasmina, K., Besic, S., Lezic, A., Mujagic, A., Muzurovic, J., Spahovic, D., Zhubi, M, Rolland, J., & Pavkovic, I. (2004). Bosnian and Kosovar refugees in the United States: Family interventions in a services framework. In K.E. Miller & L.M. Rasco (Eds.), *The mental health of refugees: Ecological approaches to healing and adaptation*, pp. 262-293. Mahwah, NJ: Lawrence Erlbaum Associates.
- Weiss, D. & Marmar, C. (1997). The Impact of Event Scale -Revised. In J. Wilson & T. Keane (Eds), *Assessing psychological trauma and PTSD*, New York: Guildford.
- Wilson, G.T. (1996). Empirically validated treatments: Reality and resistance. *Clinical Psychology: Science and Practice*, 3(3), 241-244.
- Wolfe, J. (1999). Overcoming barriers to evidence-based practice: Lessons from medical practitioners. *Clinical Psychology: Science and Practice*, 6(4), 445-448.
- Wunsch-Hitzig, R., Plapinger, J., Drapter, J., & del Campo, E. (2002). Calls for help after September 11: a community mental health hotline. *Journal of Urban Health*, 79(3), 417-428.
- Yates, S., Axsom, D., & Tiedeman, K. (1999). The help-seeking process for distress after disasters. In R. Gist & B. Lubin (Eds.), *Response to disaster: Psychosocial, community, and ecological approaches*, pp. 133-165. Philadelphia, PA: Brunner/Mazel.
- Yoder, M. (in press). Helping in the wake of disaster: a graduate student's perspective in the wake of the VT tragedy. *Traumatology*.
- Zehr, H. (1990). *Changing lenses: A new focus for crime and justice*. Scottsdale, PA: Herald Press.

Appendix A
Pre-STAR Measures

Name: _____

Number: _____

STAR Research

Hello from STAR! We are very excited that you are here. We are asking that you fill out these questionnaires before you begin the seminar. This information is part of an evaluation being conducted about the STAR program and will explore changes that may happen as a result of what is learned at STAR.

This study is part of an external evaluation being performed by researchers at Virginia Tech to gather information about the STAR program's effectiveness in meeting its objectives. While some of the questions you will be asked may seem personal in nature, information you provide is completely confidential. The specific information you give will not be directly connected to your name. Instead a coding system will be used to keep your name stored separately from your completed questionnaires. Please be as honest and thoughtful as you can when answering, as it will help the research process, the STAR program, and hopefully the community of people who work in situations of conflict, violence and trauma. Thank you for your time, it is greatly appreciated.

Thank you for your time, it is greatly appreciated.

Matthew Yoder, M.A.
Department of Psychology
Virginia Polytechnic Institute and State University

Instructions:

Please answer the following questions as thoroughly as possible.

2. What is your age? _____ years
2. What is your country of origin?
3. In what country are you currently working?
4. How would you classify your main profession (mark one)?

<input type="checkbox"/> Teacher/Educator	<input type="checkbox"/> Social worker
<input type="checkbox"/> Clergy	<input type="checkbox"/> Mental health worker
<input type="checkbox"/> Law enforcement	<input type="checkbox"/> Researcher
<input type="checkbox"/> Peacebuilder	<input type="checkbox"/> Other
5. What is your gender?

<input type="checkbox"/> Female	<input type="checkbox"/> Male
---------------------------------	-------------------------------
6. What is your marital status?

<input type="checkbox"/> Single, never married	<input type="checkbox"/> Married
<input type="checkbox"/> In a long-term relationship	<input type="checkbox"/> Divorced
<input type="checkbox"/> Spouse is deceased	
7. Do you have a child (children) or are you the primary care-giver for children?

<input type="checkbox"/> Yes	<input type="checkbox"/> No
------------------------------	-----------------------------
8. Has your community experienced a traumatic event in the past year? (yes/no)

In the past 2-4 years? _____
In the past 5+ years? _____
9. If so, how would you categorize the trauma (check all that apply)?

<input type="checkbox"/> Hurricane	<input type="checkbox"/> War
<input type="checkbox"/> Tornado	<input type="checkbox"/> Genocide
<input type="checkbox"/> Earthquake	<input type="checkbox"/> Bombing
<input type="checkbox"/> Flood	<input type="checkbox"/> Shooting
<input type="checkbox"/> Other Natural Disaster	<input type="checkbox"/> Other Human-made Disaster
<input type="checkbox"/> Other (describe)	
10. How many traumatic experiences have you had in your lifetime?

<input type="checkbox"/> 0	<input type="checkbox"/> 1
<input type="checkbox"/> 2	<input type="checkbox"/> 3
<input type="checkbox"/> 4-10	<input type="checkbox"/> 10+
11. In how many of these experiences did you believe your life to be in danger?

<input type="checkbox"/> 0	<input type="checkbox"/> 1
<input type="checkbox"/> 2	<input type="checkbox"/> 3
<input type="checkbox"/> 4-10	<input type="checkbox"/> 10+

12. How would you classify your religious affiliation?

Buddhist

Catholic

Hindu

Jewish

Muslim

Protestant

No affiliation

Other (describe)

13. What do you hope to learn during your week at STAR?

14. What are the most important issues facing your community?

15. Have you been able to address these issues? If so, how?

SPC – STAR Practices Checklist

Please indicate how often you have used the following techniques, *in the past month*.

0 = Never (not sure) 1 = Rarely 2 = Sometimes 3 = Often 4 = Very Often 5 = Always

- a. ____ Listened people to tell the story of what happened to them
- b. ____ Provided education on brain function in times of crisis
- c. ____ Encouraged physical activity such as sports or dancing
- d. ____ Encouraged or planned community activities and responses
- e. ____ Analyzed the meaning-making of the trauma stories people/groups tell
- f. ____ Thought about or talked with others about what forgiveness involves when individuals groups, or nations have been harmed
- g. ____ Normalized and encouraged healthy ways to mourn and grieve
- h. ____ Named or helped others name fears about the future
- i. ____ Found ways to memorialize what happened
- j. ____ Planned or participated in rituals for healing (such as religious services, healing ceremonies)
- k. ____ Educated others about the cycles of victimhood and violence
- l. ____ Looked closely at the possibility of compassion fatigue and burnout in myself
- m. ____ Examined my response (or my group or nation's responses) to harm or attack and named what was justice and what was revenge
- n. ____ Provided a way for victims and offenders to communicate or talk in person
- o. ____ Studied the history of those who caused harm to understand why they did what they did
- p. ____ Reflecting on what I/we did or failed to do that contributed to harm
- q. ____ Talked with the person or group who hurt me to understand why they did what they did
- r. ____ Promoted nonviolent ways of addressing conflict and violence in your community and nation.
- s. ____ Participated in efforts to address the roots causes of conflict in your community or nation.
- t. ____ Met with those who are considered the other side or representatives of the enemy group
- u. ____ Worked at helping someone who did something wrong understand how his or her actions impacted other people, their lives and their feelings.
- v. ____ Found creative ways for different sides of a conflict to talk or work together
- w. ____ Other (please describe) _____

KAQ - Pre-STAR Questionnaire

Please read each question carefully and **circle** the best answer.

1. Traumatic reactions are primarily emotional in nature.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. If someone has been in an accident or experienced some kind of traumatic event and is shaking all over, it is important to help them calm down and stop it as soon as possible.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. The meaning that people give to threatening events does NOT relate to how well a person gets through it or gets stuck.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. If someone doesn't heal their trauma, they will often continue to hurt themselves or other people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. Hyper-arousal is a common response to trauma that helps people be more empathetic to other people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. Freezing, running away, or fighting are responses to threatening events that are usually processed first in the rational part of the brain.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. Mourning and grieving is NOT an important step in healing from trauma.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. A person who hurts someone else can experience traumatic reactions themselves.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. Forgiveness can be an important part of healing from trauma when another person or group caused the traumatic event.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10. Working to end the structural violence of poverty is trauma healing work.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

11. Helping people reconnect with each other after traumatic events promotes recovery.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12. What helps us heal from trauma partly depends on our cultural background.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Leadership

13. My own unhealed traumas have little to do with my ability to help other people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

14^a. I feel overwhelmed by the conditions **in my country**.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

15^a. I feel overwhelmed by the conditions **in the world**.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

16. I am able to provide leadership in my community in times of crisis.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

17. Emotionally strong and highly competent leaders are not impacted by trauma and rarely need outside help in making decisions during times of trauma.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Spirituality

18. Religious leaders often make a difference when they confront those encouraging violence.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

19. A strong sense of connection with a higher power provides a sense of security in the midst of difficult circumstances.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Justice

20. Modern justice systems are designed to meet victims' needs.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

21. An effective justice process involves both victims and offenders finding resolutions.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

22. To be truly accountable, those who offend should help right the wrong they have committed.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

23. Acts of terror and violence are often driven by a sense of injustice.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Peacebuilding/Security

24. If you try to understand how a sense of trauma can motivate acts of violence and terror, you contribute to condoning the acts.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

25. We can make choices about how to respond to trauma that can lead to greater peace, justice, and security.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

26. Leadership in times of crisis can help communities make choices toward greater peace and security, or toward greater fear and hostility.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

27. Our understanding of the causes of conflict helps to shape how we choose to respond to conflict.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

28. It is important to make our own needs and interests known while engaging in empathy and relationship with others.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

29. Trauma healing is one approach to increasing security.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

30^a. How effective do you believe STAR will be in aiding your work with those who have experienced trauma?

1	2	3	4	5
Not effective at all	A little effective	Somewhat effective	effective	Very effective

a – items not included in analyses of KAQ data

Impact of Event Scale-Revised

INSTRUCTIONS

Please think about the most stressful event you have experienced over the past several years and describe: _____

Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you **in the past week, including now**. Use the following scale to indicate how much you were distressed or bothered by these difficulties:

0= Not at all 1= A little bit 2=Moderately 3= Quite a bit 4= Extremely
(Put number in spaces below)

1. ____ Any reminder brought back feelings about it.
2. ____ I had trouble staying asleep.
3. ____ Other things kept making me think about it.
4. ____ I felt irritable and angry.
5. ____ I avoided letting myself get upset when I thought about it or was reminded of it.
6. ____ I thought about it when I didn't mean to.
7. ____ I felt as if it hadn't happened or wasn't real.
8. ____ I stayed away from reminders about it.
9. ____ Pictures about it popped into my mind.
10. ____ I was jumpy and easily startled.
11. ____ I tried not to think about it.
12. ____ I was aware that I still had a lot of feelings about it, but I didn't deal with them.
13. ____ My feelings about it were kind of numb.
14. ____ I found myself acting or feeling as though I was back at that time.
15. ____ I had trouble falling asleep.
16. ____ I had waves of strong feelings about it.
17. ____ I tried to remove it from my memory.
18. ____ I had trouble concentrating.
19. ____ Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.
20. ____ I had dreams about it.
21. ____ I felt watchful or on-guard.
22. ____ I tried not to talk about it.

Appendix B
Post-STAR Measures

Please indicate how often you plan to use the following techniques, *when you return home*.

0 = Never (not sure) 1 = Rarely 2 = Sometimes 3 = Often 4 = Very Often 5 = Always

- a. ____ Listen people to tell the story of what happened to them
- b. ____ Provide education on brain function in times of crisis
- c. ____ Encourage physical activity such as sports or dancing
- d. ____ Encourage or plan community activities and responses
- e. ____ Analyze the meaning-making of the trauma stories people/groups tell
- f. ____ Think about or talk with others about what forgiveness involves when individuals groups, or nations have been harmed
- g. ____ Normalize and encourage healthy ways to mourn and grieve
- h. ____ Name or help others name fears about the future
- i. ____ Find ways to memorialize what happened
- j. ____ Plan or participate in rituals for healing (such as religious services, healing ceremonies)
- k. ____ Educate others about the cycles of victimhood and violence
- l. ____ Look closely at the possibility of compassion fatigue and burnout in myself
- m. ____ Examine my response (or my group or nation's responses) to harm or attack and name what was justice and what was revenge
- n. ____ Provide a way for victims and offenders to communicate or talk in person
- o. ____ Study the history of those who caused harm to understand why they did what they did
- p. ____ Reflect on what I/we did or failed to do that contributed to harm
- q. ____ Talk with the person or group who hurt me to understand why they did what they did
- r. ____ Promote nonviolent ways of addressing conflict and violence in your community and nation.
- s. ____ Participate in efforts to address the roots causes of conflict in your community or nation.
- t. ____ Meet with those who are considered the other side or representatives of the enemy group
- u. ____ Work at helping someone who did something wrong understand how his or her actions impacted other people, their lives and their feelings.
- v. ____ Find creative ways for different sides of a conflict to talk or work together
- w. ____ Other (please describe) _____

VQ – Validation Questionnaire

This scale is made up of a list of statements each of which may or may not be true about you and your week at STAR. For each statement check “definitely true if you are sure it is true about you and “probably true” if you think it is true but are not absolutely certain. Similarly, you should circle “definitely false” if you are sure the statement is false and “probably false” if you think it is false but are not absolutely certain.

1. When I felt alone or lonely over the past week, there were several people here who I felt I could talk to.

1	2	3	4
definitely false	probably false	probably true	definitely true

2. During the STAR week, there were several different people I enjoyed spending time with.

1	2	3	4
definitely false	probably false	probably true	definitely true

3. When I needed suggestions on how to deal with a personal concern, there was someone at STAR I knew I could turn to.

1	2	3	4
definitely false	probably false	probably true	definitely true

4. I feel that I have more people I can count on to help me professionally as a result of attending STAR.

1	2	3	4
definitely false	probably false	probably true	definitely true

5. During the last week, if I wanted to have lunch with someone, I could easily find someone to join me.

1	2	3	4
definitely false	probably false	probably true	definitely true

6. There is at least one person I met at STAR whose advice I really trust.

1	2	3	4
definitely false	probably false	probably true	definitely true

7. I was emotionally supported during my week at STAR.

1	2	3	4
definitely false	probably false	probably true	definitely true

8. There are several people from STAR I will want to keep in touch with after I return home.

1	2	3	4
definitely false	probably false	probably true	definitely true

9. I was accepted by others during my week at STAR.

1	2	3	4
definitely false	probably false	probably true	definitely true

10. After STAR I realize my emotions and actions are more normal than I previously thought.

1	2	3	4
definitely false	probably false	probably true	definitely true

Impact of Event Scale - Revised

INSTRUCTIONS

Please think about the most stressful event you have experienced over the past several years and describe: _____

Below is a list of difficulties people sometimes have after stressful life events. Please read each item, and then indicate how distressing each difficulty has been for you in the past week, **including now**. Use the following scale to indicate how much you were distressed or bothered by these difficulties:

0= Not at all 1= A little bit 2=Moderately 3= Quite a bit 4= Extremely
(Put number in spaces below)

1. ____ Any reminder brought back feelings about it.
2. ____ I had trouble staying asleep.
3. ____ Other things kept making me think about it.
4. ____ I felt irritable and angry.
5. ____ I avoided letting myself get upset when I thought about it or was reminded of it.
6. ____ I thought about it when I didn't mean to.
7. ____ I felt as if it hadn't happened or wasn't real.
8. ____ I stayed away from reminders about it.
9. ____ Pictures about it popped into my mind.
10. ____ I was jumpy and easily startled.
11. ____ I tried not to think about it.
12. ____ I was aware that I still had a lot of feelings about it, but I didn't deal with them.
13. ____ My feelings about it were kind of numb.
14. ____ I found myself acting or feeling as though I was back at that time.
15. ____ I had trouble falling asleep.
16. ____ I had waves of strong feelings about it.
17. ____ I tried to remove it from my memory.
18. ____ I had trouble concentrating.
19. ____ Reminders of it caused me to have physical reactions, such as sweating, trouble breathing, nausea, or a pounding heart.
20. ____ I had dreams about it.
21. ____ I felt watchful or on-guard.
22. ____ I tried not to talk about it.

ProQOL R-IV
 Professional Quality of Life Scale
 Compassion Satisfaction and Fatigue Subscales – Revision IV

[Helping] people puts you in direct contact with their lives. As you probably have experienced, your compassion for those you [help] has both positive and negative aspects. We would like to ask you questions about your experiences, both positive and negative, as a [helper]. Consider each of the following questions about you and your current situation. Select the number that honestly reflects how frequently you experienced these characteristics in the last 30 days.

0=Never 1=Rarely 2=A Few Times 3=Somewhat Often 4=Often 5=Very Often

- ___ 1. I am happy
- ___ 2. I am preoccupied with more than one person I [help].
- ___ 3. I get satisfaction from being able to [help] people.
- ___ 4. I feel connected to others.
- ___ 5. I jump or am startled by unexpected sounds.
- ___ 6. I feel invigorated after working with those I [help].
- ___ 7. I find it difficult to separate my personal life from my life as a [helper].
- ___ 8. I am losing sleep over traumatic experience of a person I [help].
- ___ 9. I think that I might have been “infected” by the traumatic stress of those I [help].
- ___ 10. I feel trapped by my work as a [helper].
- ___ 11. Because of my [helping], I have felt “on edge” about various things.
- ___ 12. I like my work as a [helper].
- ___ 13. I feel depressed as a result of my work as a [helper].
- ___ 14. I feel as though I am experiencing the trauma of someone I have [helped].
- ___ 15. I have beliefs that sustain me.
- ___ 16. I am pleased with how I am able to keep up with [helping] techniques and protocols.
- ___ 17. I am the person I always wanted to be.
- ___ 18. My work makes me feel satisfied.
- ___ 19. Because of my work as a [helper], I feel exhausted.
- ___ 20. I have happy thoughts and feelings about those I [help] and how I could help them.
- ___ 21. I feel overwhelmed by the amount of work or the size of my case[work]load I have to deal with.
- ___ 22. I believe I can make a difference through my work.
- ___ 23. I avoid certain activities or situations because they remind me of frightening experiences of the people I [help].
- ___ 24. I am proud of what I can do to [help].
- ___ 25. As a result of my [helping], I have intrusive, frightening thoughts.
- ___ 26. I feel “bogged down” by the system.
- ___ 27. I have thoughts that I am a “success” as a [helper].
- ___ 28. I can’t recall important parts of my own work with trauma victims.
- ___ 29. I am a very sensitive person.
- ___ 30. I am happy that I chose to do this work.

Source: © B. Hudnall Stamm, 1997-2005. Professional Quality of Life: Compassion Satisfaction and Fatigue Subscales, R-IV (ProQOL). <http://www.isu.edu/~bhstamm>. This test may be freely copied as long as (a) author is credited, (b) no changes are made other than those authorized below, and (c) it is not sold.

KAQ - Post-STAR Questionnaire

Please read each question carefully and **circle** the best answer.

1. Traumatic reactions are primarily emotional in nature.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. If someone has been in an accident or experienced some kind of traumatic event and is shaking all over, it is important to help them calm down and stop it as soon as possible.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. The meaning that people give to threatening events does NOT relate to how well a person gets through it or gets stuck.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. If someone doesn't heal their trauma, they will often continue to hurt themselves or other people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. Hyper-arousal is a common response to trauma that helps people be more empathetic to other people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. Freezing, running away, or fighting are responses to threatening events that are usually processed first in the rational part of the brain.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. Mourning and grieving is NOT an important step in healing from trauma.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. A person who hurts someone else can experience traumatic reactions themselves.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. Forgiveness can be an important part of healing from trauma when another person or group caused the traumatic event.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10. Working to end the structural violence of poverty is trauma healing work.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

11. Helping people reconnect with each other after traumatic events promotes recovery.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12. What helps us heal from trauma partly depends on our cultural background.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Leadership

13. My own unhealed traumas have little to do with my ability to help other people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

14. I feel overwhelmed by the conditions **in my country**.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

15. I feel overwhelmed by the conditions **in the world**.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

16. I am able to provide leadership in my community in times of crisis.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

17. Emotionally strong and highly competent leaders are not impacted by trauma and rarely need outside help in making decisions during times of trauma.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Spirituality

18. Religious leaders often make a difference when they confront those encouraging violence.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

19. A strong sense of connection with a higher power provides a sense of security in the midst of difficult circumstances.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Justice

20. Modern justice systems are designed to meet victims' needs.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

21. An effective justice process involves both victims and offenders finding resolutions.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

22. To be truly accountable, those who offend should help right the wrong they have committed.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

23. Acts of terror and violence are often driven by a sense of injustice.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Peacebuilding/Security

24. If you try to understand how a sense of trauma can motivate acts of violence and terror, you contribute to condoning the acts.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

25. We can make choices about how to respond to trauma that can lead to greater peace, justice, and security.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

26. Leadership in times of crisis can help communities make choices toward greater peace and security, or toward greater fear and hostility.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

27. Our understanding of the causes of conflict helps to shape how we choose to respond to conflict.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

28. It is important to make our own needs and interests known while engaging in empathy and relationship with others.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

29. Trauma healing is one approach to increasing security.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

30. How effective do you believe STAR was in making you more able to help survivors of trauma?

1	2	3	4	5
Not effective at all	A little effective	Somewhat effective	effective	Very effective

Appendix C Retrospective Evaluation

Name: _____

Instructions:

Please answer the following questions as thoroughly as possible.

1. What are the dates you attended STAR?

2. What is your age? _____ Years

3. What is your country of origin?

4. In what country are you currently working?

5. How would you classify your main profession (mark one)?

- | | |
|--|---|
| <input type="checkbox"/> Teacher | <input type="checkbox"/> Social worker |
| <input type="checkbox"/> Pastor/Clergy | <input type="checkbox"/> Mental health worker |
| <input type="checkbox"/> Law enforcement | <input type="checkbox"/> Researcher |
| <input type="checkbox"/> Student | <input type="checkbox"/> Peacebuilder |
| <input type="checkbox"/> Other | |

6. What is your gender?

- | | |
|---------------------------------|-------------------------------|
| <input type="checkbox"/> Female | <input type="checkbox"/> Male |
|---------------------------------|-------------------------------|

7. What is your marital status?

- | | |
|--|--|
| <input type="checkbox"/> Single, never married | <input type="checkbox"/> In a long-term relationship |
| <input type="checkbox"/> Married | <input type="checkbox"/> Divorced |
| <input type="checkbox"/> Spouse is deceased | |

8. Are you the primary care-giver for children?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

9. How much knowledge/experience did you have, *before coming to STAR*, about each of the following?

- | | | | | | | |
|------------------------|------|---|---|------|---|-----------|
| a) Trauma Healing | 0 | 1 | 2 | 3 | 4 | 5 |
| | None | | | Some | | Very Much |
| b) Peacebuilding | 0 | 1 | 2 | 3 | 4 | 5 |
| | None | | | Some | | Very Much |
| c) Restorative Justice | 0 | 1 | 2 | 3 | 4 | 5 |
| | None | | | Some | | Very Much |
| d) Security | 0 | 1 | 2 | 3 | 4 | 5 |
| | None | | | Some | | Very Much |

10. Has your community experienced any new traumas since you returned home from STAR? If so, how would you categorize the trauma? (mark all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Hurricane | <input type="checkbox"/> War |
| <input type="checkbox"/> Tornado | <input type="checkbox"/> Genocide |
| <input type="checkbox"/> Earthquake | <input type="checkbox"/> Bombing |
| <input type="checkbox"/> Flood | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Other Natural Disaster | <input type="checkbox"/> Other Human-made Disaster |
| <input type="checkbox"/> Other (describe) | |

Checklist of Skills Used and Broader Impact

11. In thinking about your STAR experience, please use the appropriate number from the scale below to show how often you used each of the following techniques both **BEFORE** and **AFTER** coming to STAR.

0 = Never (not sure) 1 = Rarely 2 = Sometimes 3 = Often 4 = Very Often 5 = Always

- | <u>BEFORE</u> | <u>AFTER</u> | |
|-----------------------------|--------------------------|--|
| a. <input type="checkbox"/> | <input type="checkbox"/> | Listened to people tell the story of what happened to them |
| b. <input type="checkbox"/> | <input type="checkbox"/> | Provided education on brain function in times of crisis |
| c. <input type="checkbox"/> | <input type="checkbox"/> | Encouraged physical activity such as sports or dancing |
| d. <input type="checkbox"/> | <input type="checkbox"/> | Encouraged or planned community activities and responses |
| e. <input type="checkbox"/> | <input type="checkbox"/> | Analyzed the meaning that people give the trauma events through the stories they tell |
| f. <input type="checkbox"/> | <input type="checkbox"/> | Thought about or talked with others about what forgiveness involves when individuals, groups, or nations have been harmed |
| g. <input type="checkbox"/> | <input type="checkbox"/> | Normalized and encouraged healthy ways to mourn and grieve |
| h. <input type="checkbox"/> | <input type="checkbox"/> | Named or helped others name fears about the future |
| i. <input type="checkbox"/> | <input type="checkbox"/> | Found ways to memorialize what happened |
| j. <input type="checkbox"/> | <input type="checkbox"/> | Planned or participated in rituals for healing (such as religious services, healing ceremonies) |
| k. <input type="checkbox"/> | <input type="checkbox"/> | Educated others about the cycles of victimhood and violence |
| l. <input type="checkbox"/> | <input type="checkbox"/> | Looked closely at the possibility of compassion fatigue and burnout in myself |
| m. <input type="checkbox"/> | <input type="checkbox"/> | Examined my response (or my group or nation's responses) to harm or attack and named what was justice and what was revenge |
| n. <input type="checkbox"/> | <input type="checkbox"/> | Provided a way for victims and those who cause harm to communicate or talk in person |
| o. <input type="checkbox"/> | <input type="checkbox"/> | Studied the history of those who caused harm to understand why they did what they did |
| p. <input type="checkbox"/> | <input type="checkbox"/> | Reflecting on what I/we did or failed to do that contributed to harm |
| q. <input type="checkbox"/> | <input type="checkbox"/> | Talked with the person or group who hurt me to understand why they did what they did |
| r. <input type="checkbox"/> | <input type="checkbox"/> | Promoted nonviolent ways of addressing conflict and violence in your community and nation. |
| s. <input type="checkbox"/> | <input type="checkbox"/> | Participated in efforts to address the roots causes of conflict in your community or nation. |
| t. <input type="checkbox"/> | <input type="checkbox"/> | Met with those who are considered the other side or representatives of the enemy group |

- u. _____ _____ Worked at helping someone who did something wrong understand how his or her actions impacted other people, their lives and their feelings.
- v. _____ _____ Found creative ways for different sides of a conflict to talk or work together
- w. _____ _____ Other (please describe)

12. How much impact has the STAR program had on you personally?

- 1) No impact
- 2) A little impact
- 3) Medium impact
- 4) Large impact
- 5) Very large impact

13. How much impact has the STAR program had on you professionally?

- 1) No impact
- 2) A little impact
- 3) Medium impact
- 4) Large impact
- 5) Very large impact

14. How much **overall** impact, *because of new things you've done since your STAR experience*, has the STAR program had in your community (family, work, religious body, etc)?

- 1) No impact
- 2) A little impact
- 3) Medium impact
- 4) Large impact
- 5) Very large impact

15. How much impact did interacting with, and hearing the stories of the other participants at STAR have on you?

- 1) No impact
- 2) A little impact
- 3) Medium impact
- 4) Large impact
- 5) Very large impact

16. In your opinion, what are the greatest specific needs of helpers – people like yourself who choose to work with survivors of traumatic events?

17. If there is anything else you would like to respond to or give feedback about, regarding STAR please do so here.

Thank you again for your time and thoughtfulness. STAR hopes to use this information to improve not only their program but also to inform the entire area of trauma and peacebuilding practice. Your input has been an important part of their efforts. Please do not hesitate to contact Matthew Yoder if you have further questions. Email: myoder@vt.edu Phone: 540.231.2281
Best wishes.

Appendix D
STAR Itinerary

	Monday, 11/12	Tuesday, 11/13	Wednesday, 11/14	Thursday, 11/15	Friday, 11/16
8:15-9:00	Welcome (Carolyn Heggen and EMU President Loren Swartzentruber)	Announcements /Check-In (Margaret) Reflection (Carolyn)	Announcements /Check-In (Margaret) Reflection	Announcements /Check-In (Carolyn) Reflection	Announcements / Check-In Reflections (Carolyn)
9:00-10:15	Introductions/Expectations Orientation to the week (Margaret Foth & Mary Walala) Footprints (Carolyn) Evaluation Tool (Matt Yoder) Trauma Activity (Margaret)	Cycles of Violence: Acting In, Acting Out (Carolyn)	Coming to the Table (Amy Potter & Phoebe Kilby)	9-9:15 Susan Beck Trauma Healing Through Restorative Practices (Elaine)	What Sustains Us: Symbols of Hope (Carolyn)
10:15-10:30	BREAK	BREAK	BREAK	BREAK	BREAK
10:30-12:00	Trauma , Violence & Resilience Overview (Carolyn)	River of Life (Carolyn)	Compassion Fatigue and Self-Care (Carolyn) Self-Care Neck Massage (Lourene Bender) Introduction to Breaking Cycles of Violence (Carolyn)	Restorative Justice Video “Meeting with a Killer” (Elaine)	Evaluation Closing Ceremony & Blessing
12:00-1:30	LUNCH - West Dining Room Campus Tour	LUNCH (On your own)	LUNCH (On your own)	LUNCH (On your own)	
1:30-3:00	Symbols of Trauma (Margaret)	Cheryl Denise poem (read by Barb Graber) The Trauma Healing Journey: Breaking Free Forgiveness as a Trauma Healing Intervention (Marg)	Breaking Cycles of Violence— Identity Issues (Barry Hart)	Leadership for Peace (David Brubaker)	
3:00-3:15	BREAK	BREAK	BREAK	BREAK	
3:15-4:30	Trauma Effects on Brain, Body, Identity & Relationships (Carolyn) Brain Exercises (Carolyn)	Compassionate Listening (Presentation by Nancy Arthur)	Peace Making/Nonviolent Action “A Force More Powerful” video	Truth, Mercy, Justice and Peace— Psalm 85 (Elaine) 4:15 Evaluation Tool (Matt Yoder)	
	Closing	Closing/Dinner at Foths 6:30	Closing	Closing	

Appendix E – Adherence Checklist

Directions: Listen to each of the two files (corresponding to the two numbers in boxes below). The numbers in italics are the time stamps where you should start and stop. Listen for each of the phrases, words, or subject areas listed on the left. Make a check if you hear the word/phrase mentioned, and another if you hear the word/phase discussed for longer than 30 seconds.

File # 092607

Breaking cycles of trauma (*1:28-2:15*)

<u>Points of the model</u>	<u>Mentioned</u>	<u>Discussed</u>
Mourning	_____	_____
Accepting the loss	_____	_____
Reflecting, understanding root causes	_____	_____
Acknowledging the enemy's story	_____	_____
Memorializing	_____	_____
Committing to taking risks	_____	_____
Tolerance/Coexistence	_____	_____
Engaging the offender (or society)	_____	_____
Choosing to forgive	_____	_____
Establishing justice, acknowledging responsibility, restitution	_____	_____
Negotiating solutions	_____	_____
Integrating trauma into new self/group identity	_____	_____
Possibility of reconciliation	_____	_____

File #092707

Restorative Justice (*0:00-49:15*)

	<u>Mentioned</u>	<u>Discussed</u>
Differences b/n retributive & restorative justice	_____	_____
Evidence for restorative justice	_____	_____
“Encounter-ing”	_____	_____
Models of Restorative Justice	_____	_____
Participant's experiences w/justice	_____	_____
Justice as trauma healing	_____	_____
Cultural reflections on justice	_____	_____

Appendix F
Site Visit Semi-structured Interview

Profession –

Age –

From Pre-STAR evaluation (T1): (answers to questions qualitative questions from Pre-STAR evaluation were inserted here and used as guides to interview)

13. What did you hope to learn during your week at STAR?

14. What are the most important issues facing your community?

15. Have you been able to address these issues? If so, how?

1. Administer IES-R, CSF, SPC, & KAQ

2. Re-visit questions 13, 14, 15 from above:

a. Did you learn [what you hoped to learn during STAR]?

b. After having returned, what do you see as the most important issues facing your community?

c. Have you been able to address these issues? How? Are you doing anything in addition to [what you reported doing at T1 in question 15]?

3. What were the most valuable aspects of STAR for you?

4. Where there any negative consequences of attending STAR for you?

5. How do you see yourself implementing STAR in your work?

a. Now

b. Future

6. What have you done since you've returned home that has been informed by STAR?

7. What haven't you done that perhaps you hope to after returning home? Why?

8. How has STAR affected you in your role as helper?

a. self-care

b. psychological well-being

c. personal application of principles/learning

9. Who are the most likely recipients of the “first ripple” of your STAR experience?

10. In what ways do you see them being affected?

11. Are there ways you can think of to systematically assess this population for how they have been impacted by STAR through you?