Published in final edited form as:

Traumatology (Tallahass Fla). 2012 November 19; 18(4): 86–91. doi:10.1177/1534765612444881.

Disaster Research Team Building: A Case Study of a Web-based Disaster Research Training Program

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Abstract

This case study describes the process and outcomes of the Northwest Center for Public Health Practice Child and Family Disaster Research Training (UWDRT) Program housed at the University of Washington, which used web-based distance learning technology. The purposes of this program were to provide training and to establish a regional cadre of researchers and clinicians; to increase disaster mental health research capacity and collaboration; and to improve the scientific rigor of research investigations of disaster mental health in children and families. Despite a number of obstacles encountered in development and implementation, outcomes of this program included increased team member awareness and knowledge of child and family disaster mental health issues; improved disaster and public health instruction and training independent of the UWDRT program; informed local and state disaster response preparedness and response; and contributions to the child and family disaster mental health research literature.

Keywords

disaster mental health; research training; team building

Introduction

The mental health impacts of disasters on children and families are very real but often difficult to measure or document. Likewise, the positive benefits of early interventions or trauma therapies for child and family disaster survivors are often difficult to gauge due to a host of practical and methodological considerations (Silverman & LaGreca, 2002). Often researchers lack the training and expertise in child and family disaster mental health research methodology, which has limited the capacity to conduct such research (Pfefferbaum, Maida,

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Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

et al, 2010). To begin addressing this lack of child and family disaster mental health research, the Northwest Center for Public Health Practice at the University of Washington (UWDRT) in collaboration with the Terrorism and Disaster Center (TDC) at the University of Oklahoma Health Sciences Center (OUHSC), initiated a web-based child and family disaster mental health research-training program for academic and practice community partners. The purposes of this program were to provide training and establish a cohesive regional cadre of researchers and clinicians in an effort to increase disaster mental health research capacity; to enhance disaster mental health collaboration among partners and team members; and, to improve the scientific rigor of research investigations of the mental health impacts of disasters in children and families (Pfefferbaum, Houston, et al, 2010; Pfefferbaum, Maida, et al., 2010). This disaster research training program at the Northwest Center for Public Health Practice at the University of Washington (UWDRT) was one of 10 such programs in the United States established by and affiliated with TDC at OUHSC.

The Child and Family Disaster Research Training and Education (DRT) program was created to enhance national capacity to conduct disaster mental health research related to children and families. The DRT program was supported by the National Institute of Mental Health, the National Institute of Nursing Research and the Substance Abuse and Mental Health Services Administration. Each of the 10 research teams had its own focus. Research teams were comprised based, in part, on disciplines or arenas of care such as public health, nursing, first responders, social work, and pastoral care. The teams were located at academic, mental health service, or community-based centers though out the United States. The DRT Research Teams were located in various regions across the United States, in part, to provide geographic diversity. Having teams located across the United States also meant that if a disaster occurred, a DRT team was more likely to be in the geographic vicinity of the disaster and could participate in the response and/or conduct research during the disaster recovery.

The overall DRT project included development of the DRT training curriculum and then the delivery of that curriculum to the DRT Research Teams. The core DRT curriculum focused on major areas of child disaster mental health. In addition to the core curriculum, teams selected additional training modules that best fit their interest areas. As part of their DRT training, several teams conducted experiential projects that provided applied, hands-on, experience with child disaster mental health research in a team setting. The process of creating and then delivering the training to all of the 10 Research Teams took approximately 5 years.

This “From the Field” case study describes the process and outcomes of the Northwest Center for Public Health Practice Child and Family DRT Program housed at the University of Washington. The Northwest Center for Public Health Practice at the University of Washington (UWDRT) was selected as one of the Child and Family DRT sites for several reasons:

- The Pacific Northwest Region of the United States is challenged by a number of relatively unique hazards, including earthquakes, tsunamis, and terrorist events, which could affect large numbers of children and families (Bond & Beaton, 2005).
- The Northwest Center for Public Health Practice has established enduring and robust partnerships with the Centers for Disease Control and Prevention (CDC) as well as FEMA Region X state and local health departments, and Pacific Northwest American Indian and Alaska Native tribal entities (Northwest Center for Public Health Practice [NWCPHP], 2011). This established regional network and linkages with regional partners allowed the UWDRT team to readily connect with and

recruit key representatives of the public health workforce from throughout the Pacific Northwest to participate in the DRT program.

- The Northwest Center for Public Health Practice is housed in the University of Washington School of Public Health, which is one of the Association of Schools of Public Health member schools (Association of Schools of Public Health [ASPH], 2007). The focus of the Northwest Center for Public Health Practice UWDRT team program was public health and disaster mental health research and practice.
- The web-based, distance learning and information technologies (IT) support available at the Northwest Center for Public Health Practice provided essential resources needed to realize the UWDRT objectives.

Model of Capacity Building

Rather than imposing a specific model of capacity building on the DRT project, the evaluators worked together with the project's cross-disciplinary training group and with each specific research team to design a participatory evaluation approach, which combined the conventions of participant-observation with the ethos of community-based participatory action research. Based on these principles, the project evaluation provided a framework for assessing training objectives and reporting progress and developed guidelines for final reporting of project outcomes that highlighted the specific objectives and activities developed to enhance each team's capacity to conduct research during the disaster recovery. To this end, the participatory approach to assessing capacity building was especially important since, once trained in the core DRT curriculum, research teams selected additional training modules that fit within their interest and conducted experiential projects that forwarded the team's specific focus area. Hence, rather than taking the lead in summarizing a research team's findings and conclusions, the intent was always to maintain the integrity of each team's unique approach to carrying out the overall goals of the DRT project and its own specific objectives and course of action to build capacity to conduct child disaster mental health research within a specific focus area and geographic region.

Activities and Outcomes

The following activities, outcomes, and deliverables associated with the Northwest Center for Public Health Practice UWDRT Program were all aided by distance learning and innovative web-based technology:

Recruitment and Composition of the Northwest Center for Public Health Practice UWDRT Team

Team members were recruited from both the host University and from other Pacific Northwest states. Although the team leader initially met fact-to-face with all of the team members, in many cases e-mail exchanges consolidated membership and program commitments. TDC provided a flexible menu of DRT course modules, assisted in the recruitment of disaster research training faculty, and conducted some of the DRT trainings (Terrorism and Disaster Center [TDC], 2010). The nine Northwest Center for Public Health Practice UWDRT team members who were eventually recruited included representatives from the Alaska State Department of Health and Social Services, the Oregon Department of Health, Public Health Seattle King County, the Seattle Skagit Chapter of the American Red Cross, the Washington State Department of Health, the Northwest Portland Area Indian Health Board, and the Harborview Center for Sexual Assault and Traumatic Stress as well as faculty affiliated with the University of Washington's Schools of Nursing and Public Health. The disciplines and health professions represented on this UWDRT team included psychology, public health, social work, and nursing. The UWDRT members were primarily

White and female with approximately an equal number representing academic and community settings.

The UWDRT faculty included nationally recognized child and family disaster mental health researchers and clinicians affiliated with various universities throughout the country including the University of Washington, Fielding Graduate University, the University of Oklahoma Health Sciences Center, and Boston College.

Needs Assessment

Prior to initiating training, an online needs assessment survey was administered to all prospective Northwest Center for Public Health Practice UWDRT team members. The needs assessment survey consisted of items addressing background and demographic information such as UWDRT team member professional affiliation, gender, and age and whether UWDRT team members had ever responded to a disaster and, if so, in what capacity as well as items assessing their familiarity with, and interest in, various potential topics such as family and child mental health screening in the aftermath of a disaster and research design and methodology. Data collected from this survey were tabulated, summarized, and used to guide the selection, sequencing, modification, and delivery of course modules. Training modules for the Northwest Center for Public Health Practice UWDRT team were selected from the modular TDC DRT curricula that had previously been developed (Pfefferbaum, Houston, et al., 2010; Pfefferbaum, Maida, et al., 2010; TDC, 2010).

Curricular Development and Refinement

Based on the findings from the needs assessment and on the clinical and research expertise of the various team members, the following DRT training modules were selected, refined for the target audience, and presented in the following sequence over the course of the Northwest Center for Public Health Practice UWDRT training program:

- Overview of Child and Family Disaster Research: Findings and Implications for Public Health Practice—summarized the prevalence and significance of disaster mental health impacts in children and families.
- Team Building and Action Planning—encouraged UWDRT team members to confer about their mutual interests and establish group as well as personal and professional goals for the training program.
- Cultural Competency in Disaster Research—allowed American Indian UWDRT guest faculty from the Portland Area Northwest Indian Health Board to describe the importance of understanding and incorporating cultural competency into research with minorities and vulnerable populations.
- Early Interventions (Including Debriefing and Psychological First Aid)—summarized the history of early interventions, described psychological first aid interventions for child and family disaster survivors and analyzed and synthesized the existing evidence base.
- Program Evaluation—focused on the criteria for comprehensive and scientific evaluation of programmatic interventions.
- Psychoeducational and Group Interventions—summarized what was known about group interventions for child and adolescent disaster survivors including those offered in school settings.
- Coping and Resilience—focused on individual and community resources needed to cope and maintain resilience in the aftermath of disasters.

- Child Mental Health Screenings—considered the potential benefits of mass screenings of child and adolescent survivors of disasters in a variety of settings.
- Ethics and Human Subject Issues—surveyed ethical and human subject considerations in disaster mental health research with children and families including subject recruitment, informed consent, and other Institutional Review Board (IRB) issues. Invited representatives from the University of Washington IRB were available during this session to respond to DRT team members' questions and concerns.
- Gaps and Challenges in Child and Family Disaster Research—explored areas and research questions where more disaster mental health research was needed.

Team Building

One of the first UWDRT modules employed interactive distance learning technology and group exercises to build team cohesion and establish a sense of mutual purpose as well as to identify shared goals. Consistent with the Railroad Model of team building (Tuckman, 1965) one of the first team development questions posed to team members was "What is the purpose of our team?" During this session, several mutual goals of our UWDRT team were identified including participation in each of the planned online trainings as well as the development of a process or mechanism for ongoing collaboration and a shared mission to conduct child and family disaster mental health research. This interactive process allowed UWDRT team members to establish linkages and create mutual understanding that fostered the development of a virtual research organization. Every effort was made during the team building and subsequent UWDRT training sessions to draw and build on team members' strengths and to engage all UWDRT members. For instance, time was reserved during each training session for participants to ask questions, make comments, and discuss relevant case examples.

Disaster Research Training Course e-Modules

Each UWDRT training module utilized web-based iLinc™ technology (Shield et al., 2005) to host faculty training presentations with web-based features that promoted collaboration, including synchronous participant verbal and text interactions, questions/answers, and discussions. Time was reserved during each training session for group feedback and interaction focused on research questions and issues, theoretical perspectives, methodological considerations, and practical matters, such as the recruitment of human participants for disaster research. This collaborative process was systematically included in an effort to build and sustain the Northwest Center for Public Health Practice UWDRT program.

Document and Archive Availability

Online readings and other training documents were made available to all participants on the Northwest Center for Public Health Practice host web site at <http://www.nwcphp.org/training/courses/drt>. These training documents are still available to the public at this web site. All of the Northwest Center for Child and Family UWDRT training modules are archived at <http://www.nwcphp.org/training/courses/exercises/courses/drt/?searchterm=archives>, so that those who seek basic or advanced research training in this arena or a refresher course can select and benefit from one or more of these archived educational modules.

Web-Based Distance Technology

Web-based distance technology enabled the participation of nationally recognized faculty, many of whom participated from remote locations across the United States. During each training session, UWDRT team members were able to interactively clarify content presented during each session. In addition, team members were encouraged to brainstorm and collaborate around potential research initiatives and proposals.

Archives

All UWDRT presentations, session discussions/collaborations, and course materials were electronically archived and are available at <http://www.nwcphp.org/training/courses-exercises/courses/drt/?searchterm=archives>.

Online Course Evaluations

Online course evaluations were collected from team members following each training session. These evaluations queried participants regarding the overall course, the faculty, and the applicability of the training content presented during each session. A 3-year, posttraining follow-up survey designed to assess clinical, teaching, and research applications and other consequences of the DRT training program was also administered.

Evaluation Outcomes

The UWDRT participant ratings of the e-module content and faculty effectiveness as well as the utility and applicability of course concepts and information were tabulated and were mostly in the *very good to excellent* range. Importantly, there were enduring outcomes of this UWDRT program including archived trainings and topical materials. There have been more than 2000 web page views of archived UWDRT materials and resources (between May 2007 and January of 2012)

Perhaps most importantly, follow-up evaluations of UWDRT team members conducted nearly 3 years posttraining indicated lasting benefits of the Northwest Center for Public Health Practice UWDRT program. The following are excerpts from respondents' replies to an open-ended question addressing potential long-term impacts of this UWDRT program on participants' research, training, practice, and/or teaching:

Several members of (our)UWDRT team went on to develop a research proposal to study the mental health impacts of deployment on military families and children. This (DRT) program helped (us) to identify methodological approaches, valid and reliable measures and to anticipate human subjects' issues as we developed this proposal.

Another comment by that same team member:

The (UW) DRT training also improved my knowledge base and understanding of child and family disaster mental health issues. This enhanced my instruction of disaster mental health content in courses taught at the University level as well as outreach trainings provided, for example, for local Community Emergency Response Teams (CERT).

A UWDRT team member currently employed by a state health department in the Northwest noted the following impact:

My feeling on this training is that it definitely made me more aware and knowledgeable about what a vulnerable population children and families are and the need to ensure that we plan responses to accommodate them. I personally

looked for this planning in the documents I reviewed and facilitated inclusion of these concepts into the response planning process.

A UWDRT team member with a local public health department subsequently launched an innovative disaster behavioral health training program offering Psychological First Aid training for frontline public health workers in her local health department (Beaton et al., 2009). Finally, a UWDRT team member who now practices in a large medical center noted, “I benefited from networking with regional public health professionals, using technology to participate in the courses and increasing my knowledge on the subject matter.”

Postcourse Activities

Distance learning technology has facilitated ongoing collaboration among UWDRT team members. An example of this collaboration included drafting, editing, and preparing a recent publication by team members, which summarized and synthesized the roles of public health in child and family disaster mental and behavioral health (Beaton et al., 2009).

Following the training series, a number of UWDRT participants consulted with team members for guidance when local community disasters occurred. For example, a UWDRT member collaborated with UWDRT faculty in the aftermath of a regional flood in central Washington State in 2008. The UWDRT training provided some guidance for this UWDRT team member’s efforts to mount a community disaster mental health program for affected residents. Another UWDRT participant consulted with team members in 2007 when a wildfire in his state required evacuations of families with children. This UWDRT participant wanted to ensure that counseling provided in shelters for child and family evacuees was evidence-based and considered “best practice.”

Obstacles and Barriers to the Northwest Center for Public Health Practice DRT Program

A number of obstacles emerged during the development and implementation of the Northwest Center for Public Health Practice UWDRT project including

- Team members were too busy to participate in all of the trainings resulting in uneven attendance. To address this obstacle, all trainings were archived and could be accessed by team members at a later date. Likewise, all training materials including slides were posted on the project web site the day of the training.
- Some UWDRT members dropped out of the training team due to competing demands and conflicts with other responsibilities. Efforts were made to make the training program and UWDRT collaborations as flexible as possible but some members made the decision to opt out of the training. By the end of training 6 core members of the Northwest Center for Public Health Practice UWDRT remained.
- Some UWDRT members discontinued their participation in posttraining UWDRT collaborative efforts due to competing demands. To address this obstacle we endeavored to identify posttraining projects, such as a review article with multiple authors that would be appealing to the majority of our team members. We were able to involve four members of Northwest Center for Public Health Practice DRT in a follow up publication. (Beaton et al, 2009)

Summary and Conclusions

Despite several programmatic obstacles the evaluation outcomes indicated, even though the Northwest Center for Public Health Practice Disaster Research Training DRT team met almost entirely online via web-based conferencing and was thus a virtual training and research endeavor, the team was able to achieve several important, lasting, and practical outcomes. These outcomes were achieved as the result of both the UWDRT training content

and the connections made between UWDRT team members and UWDRT faculty. Ultimately, the UWDRT program increased team member awareness and knowledge of child and family disaster mental health issues; influenced disaster and public health instruction and training independent of the UWDRT program; informed local and state disaster response preparedness and response; contributed to the child and family disaster mental health research literature through academic articles developed by UWDRT team members; and contributed to the development of at least one disaster research grant application.

One of the first and essential steps in establishing the Northwest Center for Public Health Practice DRT team was to conduct an online needs assessment of prospective UWDRT team members. This needs assessment helped to identify team members' mutual areas of interest and gaps in team members' knowledge and expertise. Also importantly, one of the initial UWDRT sessions focused on team building during which efforts were made to identify an overall "mission" for our UWDRT team. At the same time this team-building session helped us to better understand and recognize that team members, such as our faculty and community practice partners, varied in their research backgrounds, training, and expertise. The needs assessment also guided curricular development and the tailoring and sequencing of the UWDRT training modules. Every effort was made during the UWDRT training sessions to draw and build on team members' strengths and to engage all UWDRT members. This discussion/question/answer "process" component during each training session was critical and, we felt, necessary to establish and sustain a collaborative model of research inquiry (Maida, 1998). Our UWDRT program experience supports the premise that web-based conferencing and training sessions can be a cost-effective method to promote education and collaboration in a widely distributed practitioner community. Our UWDRT program relied on iLinc™ technology (Shield et al., 2005), but other web conferencing software solutions are widely available and vary in cost.

It is worth noting that our initiative was consistent with, but separate from, the nascent CDC efforts to establish Preparedness Systems Research Centers at academic public health departments throughout the United States (Scutchfield et al, 2007). The success of the Northwest Center for Public Health Practice Disaster Research Training program was largely due to the utilization of a collaborative model of research inquiry that employed distance learning technology including web-based conferencing/training. This approach can serve as a model for other regional and national public health research programs by using web-based technology and other IT platforms to develop and support emergent "virtual research organizations" (Maida, 1998).

In conclusion, the Northwest Center for Public Health Practice UWDRT program was a blend of an educational, practice, and collaborative research initiative aided by innovative distance technology that can serve as a model and provide guidance for other efforts to establish and sustain a "virtual research organization." The potential for additional UWDRT outcomes in the future exists as UWDRT team members remain connected, continue to interact, and encounter local, state, and/or regional emergencies that require public health response.

Acknowledgments

The authors appreciate the support of the General Clinical Research Center at the University of Oklahoma Health Sciences Center.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by a National Institute of Mental Health, National Institute of Nursing Research and Substance Abuse and Mental Health Services Administration grant 5 R25 MH070565-5 to Dr. Pfefferbaum as well as a cooperative agreement from the Centers for Disease Control and Prevention through the Association of Schools of Public Health grant #U09/CCU024247-03 and a HRSA/AEN training grant 1D09HP09334-03 to Dr. Beaton.

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