Disaster Health 2:1, 3–12; January/February/March 2014; © 2014 Landes Bioscience

Psychological first aid
Rapid proliferation and the search for evidence

James M Shultz[1,*] and David Forbes[2]

[1]Center for Disaster & Extreme Event Preparedness (DEEP Center); University of Miami Miller School of Medicine; Miami, FL USA; [2]Australian Centre for Posttraumatic Mental Health (ACPMH); Department of Psychiatry; The University of Melbourne; East Melbourne, Victoria Australia

Keywords: psychological first aid, stress first aid, early intervention, five essential elements, evidence, evaluation

Psychological first aid (PFA) has become the flagship early intervention for disaster survivors, with recent adaptations for disaster responders, in the post-9/11 era. PFA is broadly endorsed by expert consensus and integrated into guidelines for mental health and psychosocial support in disasters and extreme events. PFA frameworks are proliferating, with increasing numbers of models developed for delivery by a range of providers for use with an expanding array of target populations. Despite popularity and promotion, there remains a dearth of evidence for effectiveness and recent independent reviews of PFA have highlighted this important gap. This commentary juxtaposes the current propagation of PFA against the compelling need to produce evidence for effectiveness and suggests a series of actions to prioritize and expedite real-time, real-event field evaluation of PFA.

Rapid Adoption and Proliferation of Psychological First Aid

"Psychological first aid" was first introduced conceptually in the mid-Twentieth Century;[1-3] in the post-9/11 era, psychological first aid has emerged as a mainstay for early psychological intervention with survivors of disasters and extreme events.[4-10] Dating from the 2001 National Institute on Mental Health conference on mass violence,[11] psychological first aid is now the first, and most favored, early intervention approach.[4-6,9,10] Psychological first aid has been broadly endorsed and widely promulgated by disaster mental health experts in reports from a series of consensus conferences and in the peer-reviewed disaster behavioral health literature.[7,8,11-20] Psychological first aid is also consistently recommended in international treatment guidelines for posttraumatic stress disorder (PTSD) and as an early intervention for disaster survivors.[7,12,14-21]

Since 9/11, numerous psychological first aid frameworks have been introduced for use by an ever-growing range of providers whose work encompasses an enlarging array of target populations.[22-48] Frameworks and models are variously labeled as psychological first aid, community-based psychosocial support, disaster behavioral health first aid, mental health first aid, and stress first aid. For ease and brevity, we will use the term, "psychological first aid," and the generic abbreviation, "PFA," throughout this commentary. A sampling of PFA models is listed in chronological order, based on year of release, in **Table 1**.

In recent years, the psychosocial consequences of disaster exposure have been deftly researched and widely accepted,[49-52] with a resultant demand from the broader community for early intervention strategies to ameliorate the negative impacts and to facilitate healthy recovery. Psychological debriefing initially sought to address the psychological needs of professional emergency responders returning from stressful missions and subsequently, debriefing techniques were extended for use with civilian disaster survivors. A body of controlled research, however, has raised serious questions regarding the beneficial effects of this approach in terms of long-term recovery. Of more critical concern was a suggestion that, for a minority of recipients, psychological debriefing may actually result in worse adjustment.[53,54] PFA emerged in this context as an intervention that would "first, do no harm" by retaining the elements of other models most likely to assist recovery, while avoiding those elements (notably expectations for a detailed incident review) that may be iatrogenic.[8]

PFA is not a new intervention. Rather, it is better conceptualized as documenting and operationalizing good common sense—those activities that sensible, caring human beings would do for each other anyway.[8] It is underpinned by five "essential elements" generated from the available research literature by a consensus conference of disaster mental health experts convened in 2004 and later summarized in a landmark publication by Hobfoll and 19 co-authors.[55] These five elements are: safety, calming, connectedness, self-efficacy, and hope. The various PFA models adhere to varying degrees to these elements. In simple terms, PFA includes the provision of information, comfort, emotional care, and instrumental support to those exposed to an extreme event, with assistance provided in a step-wise fashion tailored to the person's needs.[8] As a front-line strategy, PFA is not intended for delivery by mental health specialists; rather, it is designed to

*Correspondence to: James M Shultz; Email: jamesmichaelshultz@gmail.com
Submitted: 06/20/13; Revised: 07/31/13; Accepted: 08/01/13
http://dx.doi.org/10.4161/dish.26006

Table 1. A chronological sample of psychological first aid courses and materials Introduced in the post-9/11 era—ordered by year of publication

Year	Title	Source	Target Audience	Ref.
2005	Nebraska Psychological First Aid Curriculum	University of Nebraska Public Policy Center	disaster survivors	22
2005	Psychological First Aid: Field Operations Guide, 1st Edition	National Child Traumatic Stress Network, National Center for PTSD	disaster survivors	23
2005	B-FAST: Disaster Behavioral Health First Aid Specialist Training	Florida Center for Public Health Preparedness, University of South Florida	disaster survivors	24
2005	Psychological First Aid – A Guide for Emergency and Disaster Response Workers (Fact Sheet)	Substance Abuse and Mental Health Services Administration (SAMHSA)	disaster responders	25
2006	Psychological First Aid: Field Operations Guide, 2nd Edition	National Child Traumatic Stress Network, National Center for PTSD	disaster survivors	26
2006	Listen, Protect, Connect	The Advertising Council, US Department of Homeland Security, The National Center for School Crisis and Bereavement	parents of young children	27
2006	C-FAST: Disaster Behavioral Health First Aid Specialist Training with Children	Florida Center for Public Health Preparedness, University of South Florida	children	28
2006	Psychological First Aid Competencies for Public Health Workers	Johns Hopkins Center for Public Health Preparedness	public health workforce	29
2006	Psychological First Aid: How You Can Support Well-being in Disaster Victims (Fact Sheet)	Center for the Study of Traumatic Stress, Uniformed Services University of the Health Sciences	disaster responders	30
2007	B-FAST + SN: Disaster Behavioral Health First Aid Specialist Training with Special Needs Populations	Florida Center for Public Health Preparedness, University of South Florida	special needs populations	31
2007	Psychological First Aid: Field Operations Guide: Medical Reserve Corps	Medical Reserve Corps National Child Traumatic Stress Network, National Center for PTSD	disaster survivors served by: Medical Reserve Corps responders	32
2007	Psychological First Aid for Healthcare Professionals	New York State Office of Mental Health and University of Rochester	public health and healthcare professionals	33
2008	R-FAST: Disaster Behavioral Health First Aid Specialist Training for Responders	Florida Center for Public Health Preparedness, University of South Florida	disaster first responders	34
2008	Psychological First Aid: Field Operations Guide for Nursing Homes,	Florida Mental Health Institute, University of South Florida, National Child Traumatic Stress Network	nursing home residents and personnel	35
2009	Psychological First Aid: Response to Pandemic Influenza	Minnesota Department of Health	public health and healthcare workers	36
2009	Psychosocial Interventions: A Handbook	International Federation of Red Cross and Red Crescent Societies: Reference Centre for Psychosocial Support	disaster/ humanitarian crisis survivors/refugees/IDPs	37
2009	Community-Based Psychosocial Support: Trainer's Book: A Training Kit	International Federation of Red Cross and Red Crescent Societies: Reference Centre for Psychosocial Support	disaster/ humanitarian crisis survivors/refugees/IDPs	38
2009	Community-Based Psychosocial Support: Participant's Book	International Federation of Red Cross and Red Crescent Societies: Reference Centre for Psychosocial Support	disaster/ humanitarian crisis survivors/refugees/IDPs	39
2010	Coping in Today's World: Psychological First Aid and Resilience for Families, Friends and Neighbors: Instructor's Manual	American Red Cross	disaster survivors	40
2010	Coping in Today's World: Psychological First Aid and Resilience for Families, Friends and Neighbors: Participant's Manual	American Red Cross	disaster survivors	41
2010	Psychological First Aid: An Australian Guide.	Australian Red Cross Australian Psychological Society	disaster survivors	42

Table 1. A chronological sample of psychological first aid courses and materials Introduced in the post-9/11 era—ordered by year of publication (continued)

2010	Combat and Operational Stress First Aid (COSFA) Field Operations Manual.	Bureau of Medicine and Surgery, Department of the Navy, in cooperation with the Combat and Operational Stress Control, Manpower and Reserve Affairs, Headquarters Marine Corps, the Navy Operational Stress Control, Chief of Naval Personnel, TotalForce N1, and the National Center for PTSD, Department of Veterans Affairs	military personnel on combat assignments	43
2010	Psychological First Aid for First Responders – Tips for Emergency and Disaster Response Workers (Fact Sheet)	Substance Abuse and Mental Health Services Administration (SAMHSA)	disaster responders	44
2011	Psychological First Aid: Guide for Field Workers	World Health Organization War Trauma Foundation World Vision International	disaster survivors (especially low and middle income countries)	45
2012	Psychological First Aid for Schools: Field Operations Guide	National Child Traumatic Stress Network	children and teachers in schools	46
2013	Curbside Manner: Stress First Aid for the Street Student Manual	National Fallen Firefighters Association	firefighters first responders	47
2013	Stress First Aid for Firefighters and Emergency Medical Services Personnel Student Manual	National Fallen Firefighters Association National Center for PTSD Department of Veterans Affairs	firefighters first responders	48

be administered by a multiplicity of lay providers, ranging from professional disaster responders (emergency services personnel, medical emergency teams) through to teachers, clergy, and PFA-trained disaster volunteers.

PFA frameworks are now broadly accessible and available in a global spectrum of languages. Education on PFA is offered through a range of live, online, mobile, and mediated training modalities. Although PFA was initially designed for use with civilian disaster survivors, several "stress first aid ('SFA')" variations have been recently introduced for use with emergency response personnel, active duty military combat units, and other high-risk occupational groups.[25,29,,32-34,36,43,44,47,48] In short, PFA/SFA in its various forms has rapidly become the universally-accepted early intervention of choice for disaster and trauma affected populations.

What Evidence Currently Exists for PFA Effectiveness?

The alacrity with which PFA has been adopted as the first line approach in psychosocial recovery following disasters is surprising. This is, perhaps, an indication of the powerful need to feel knowledgeable and "in control" when dealing with distressed survivors—to know what to do and how to best respond to diminish distress and promote recovery. The simplicity and step-by-step approach of PFA is very appealing in addressing these needs.

Unfortunately, however, PFA's popularity, promotion, and proliferation have not been matched with a commensurate pursuit of evidence demonstrating its effectiveness. Not only is there a dearth of data regarding the benefits of PFA, but there is limited demonstration of widespread commitment to generate such data. There are considerable complexities in the design and implementation of PFA evaluation in the post-disaster context. These complexities may be perceived as potentially so daunting that PFA approaches are routinely launched without prioritizing, designing, and implementing robust evaluation strategies. While the lack of field evaluations and a credible evidence base has been raised at professional meetings, and occasionally in press,[6,8,56-59] progress toward addressing this issue continues to be slow.

It was, therefore, not surprising that in late 2012, a warning shot across the bow was delivered in the form of a published systematic review of the literature on the effectiveness of PFA.[60] The review was commissioned by the American Red Cross as part of that organization's routine process of continuously updating the evidence-based literature on the techniques, procedures, and interventions that are trained and delivered by Red Cross personnel. Most of these reviews focus on medical interventions, but PFA was included because the American Red Cross has introduced its own version (**Fig. 1**). This systematic review represents an independent assessment of the effectiveness of PFA; members of the review committee were experts in disaster response but none was a co-author or contributor to any PFA model, nor a participant in the multiple consensus conferences that endorsed PFA. The review process therefore provided a high degree of objective scrutiny of PFA using a well-developed and meticulous examination of the literature from 1990 through 2010, graded against standardized levels of evidence.

The results demonstrated the absence of any solid evidence for PFA effectiveness.[60] The reviewers were unable to find any randomized trials, nor any non-randomized or even large descriptive studies. Thus, the best available "evidence" is currently restricted to peer-reviewed consensus statements and guidelines. Based on the literature review process, the authors recommend supporting the use of PFA but note that PFA is "evidence informed but without proof of effectiveness" (p.251).[60] Interestingly, even the

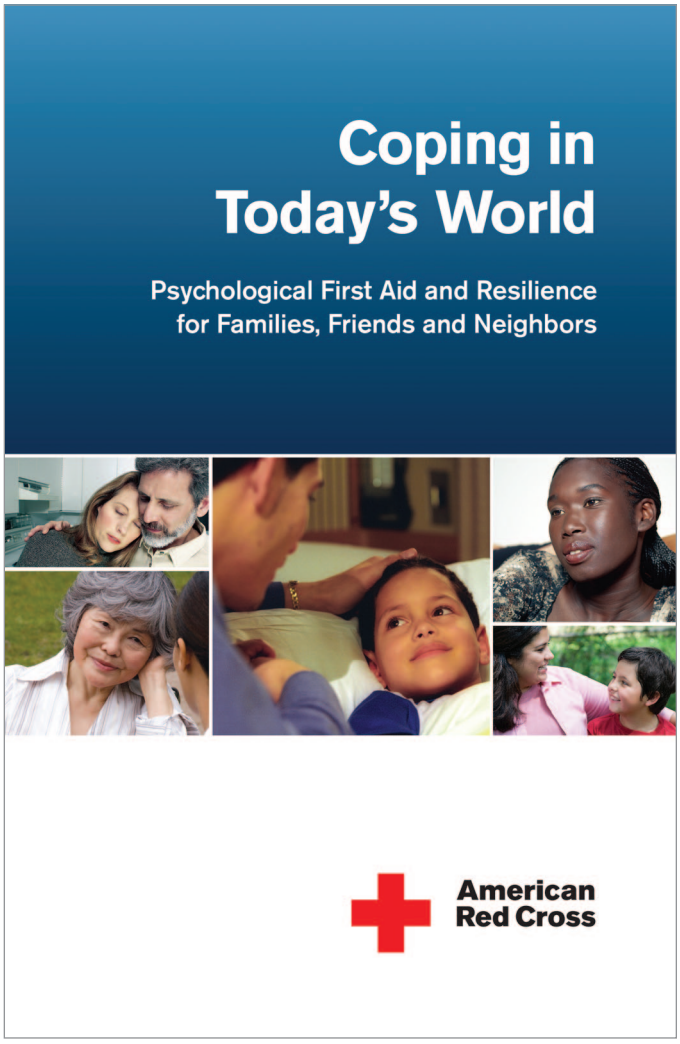

Figure 1. Cover for *Coping in Today's World: Psychological First Aid and Resilience for Families, Friends and Neighbors,* the psychological first aid curriculum developed by the American Red Cross.[40,41] The American Red Cross commissioned the review of psychological first aid effectiveness.[60]

authors of the review stretch beyond the data in their conclusion by stating (for people who have experienced a traumatic event) "PFA is a vital first step in ensuring basic care, comfort, and support" (p.251).[60]

The current situation juxtaposes a high level of promotion and advocacy for PFA against a low level of evidence of its effectiveness. Importantly, of course, lack of extant evidence does not mean that PFA is not effective; rather, that effectiveness has not yet been demonstrated. It is, however, clear that there is an urgent need to demonstrate the effectiveness—or otherwise—of this widely used early intervention.

Who Should Advocate for Evaluation of PFA Effectiveness?

Ideally, disaster mental health experts should continue to raise a chorus of strong voices for expedited, systematic evaluation of PFA effectiveness. It is incumbent upon leaders in the field of disaster recovery to adopt this as a high priority and to maintain a proactive stance. Government funders of PFA and non-governmental organizations that have developed and implemented PFA models should be encouraged to provide financial support for field evaluation and evidence review. As with testing of all new interventions, however, it is important that researchers who are independent of the development and advocacy of a specific PFA model conduct at least some of the evaluation. For example, the American Red Cross evidence review[50] is likely to be updated regularly, providing one source of impetus for disaster mental health experts to champion rigorous evaluation.

What Methodologies Could be Applied to Seek Evidence for PFA Effectiveness?

What might be done to begin to gather the evidence? We propose the following steps for consideration, but in doing so, as outlined above, we acknowledge the considerable complexities in the design and implementation of evaluation of PFA when delivered in a post-disaster context. A detailed discussion of the methodological issues is beyond the scope of this commentary and only a few of the more obvious points will be noted here. The highly flexible nature of PFA, for example, underscores the need to document as conscientiously as possible what is, and is not, delivered, and to whom.[8] It is difficult, if not impossible, to find adequate control or comparison groups against which to judge the benefits of the intervention. In some disaster events where there is advance warning, pre-post designs may be possible; in others, it may be possible to use comparison disaster-affected communities that did not receive PFA.

The goals of PFA are vague and difficult to operationalize, such as: "PFA is designed to reduce the initial distress caused by traumatic events, and to foster short- and long-term adaptive functioning."[23,26] If these are accepted goals, then presumably a repeated measures design with simple assessments of psychological wellbeing, as well as social and occupational functioning, would be appropriate. As part of this process, it will be incumbent upon research teams to design operationalized versions of PFA that maintain consistency with the existing manuals while incorporating clearer decision rules that allow ratings of fidelity to the model and adequacy of implementation of the intervention. Nevertheless, conducting such a longitudinal design in an uncontrolled setting, and maintaining participation over multiple waves, pose particular challenges.[61]

Perhaps most importantly, a large majority of disaster survivors will recover relatively quickly with the support of family members and friends; PFA is likely to have most impact for a small minority who would otherwise not recover.[8] Thus, it is important to use designs that do not simply aggregate all the data into single means, since that is likely to obscure any effects.

It is also important to use measures of outcome that are sufficiently sensitive to identify benefits where they occur. As such, selection of outcome measures needs to consider not only domains of symptomatology and wellbeing, such as quality of life, alcohol or other substance consumption, depression and traumatic stress, but also the broader range of knowledge,

Figure 2. Covers, in six languages, for *Psychological First Aid: Guide for Field Workers* developed by the World Health Organization, War Trauma Foundation, and World Vision International with special applications for low and middle income countries.[45] This version of psychological first aid is being used globally in humanitarian crises and complex emergencies.

attitudinal, and behavioral outcomes that PFA is intended to influence. These broader outcomes include rates of self-referral for mental health treatment, use of coping strategies, amount and quality of social connections/support, knowledge of disaster-related psychological reactions, and stigma related attitudinal variables.

What is PFA? Content Analysis and a Link to the "Five Essential Elements"

With the rapid-fire introduction of multiple, and non-equivalent, models of PFA/SFA, it would be beneficial to catalog what is being offered. Effective evaluation is not possible unless an intervention can be defined and replicated. One step in the process would be to compare the content of the various PFA models.

Actually this process has been utilized by the creators of several recently-released PFA curricula who reviewed both the available literature on PFA and the predecessor models in the field. For example, the World Health Organization (WHO), War Trauma Foundation (WTF), and World Vision International (WVI) joined forces to produce a PFA model that was released in 2011 for use in humanitarian crises worldwide (**Fig. 2**).[45] In the process, the WHO commissioned a "Systematic Review of Psychological First Aid"[13] and the partner organizations (WTF, WVI) created an "Anthology of Resources" on PFA for low and middle income countries.[62] Furthermore, prior to public release,

this PFA model was pilot tested in Haiti and refined.[63] Recently, in the 2013 inaugural edition of the "Curbside Manner" Stress First Aid (SFA) program for firefighters and first responders, the bibliography presents an extensive listing of currently-available PFA models that were perused by the SFA developers.[47,48]

Comparison of the content of PFA models is useful for describing commonalities across models and for identifying PFA versions that provide additional or distinctive content. For example, some PFA programs bring strong focus to personal or community resilience. As a departure from the stand-alone PFA products, The International Federation of Red Cross/Red Crescent Societies, has embedded and integrated a very simple, brief PFA module within a comprehensive multi-faceted approach to "community-based psychosocial support" that encompasses the entire post-disaster period. Given these distinctions, defining the scope of PFA content is important in any attempt at evaluation.

The "five essential elements" identified by Hobfoll and colleagues (safety, calming, connectedness, self-efficacy, and hope)[55] might be considered the best "standard" available for assessing the coverage of various PFA frameworks. Researchers are currently conducting a content and components analysis of PFA models and, as part of the process, they are examining the manner and extent to which each of the "five essentials" is addressed.[64] Preliminary findings indicate that "calming" and "connectedness" are elements that are prominently and consistently emphasized. Furthermore, these elements appear to be the most amenable for evaluation and quantification of psychological effect. In contrast, "safety" is less developed in most PFA models; PFA providers typically arrive on-scene after disaster survivors have evacuated away from the epicenter of disaster (the "ground zero" or "hot zone" scene of high risk and imminent danger) to safer environments (with the notable exception of humanitarian crises involving ongoing armed conflict). Likewise, the final two essential elements, "self-efficacy" and "hope," are more challenging to measure and to relate to the PFA intervention. Despite the difficulties, however, it would be worth making every effort to include these five elements in any PFA evaluation, since they have been so central to the model development.

Which Aspects Work Best? Conducting Components Analysis of PFA Models

Each PFA model organizes its contents around a set of "core actions" or "core principles" that identify the major components of the intervention. There is notable variability in the enumeration and "packaging" of these skills sets. At a minimum, the manner in which the core actions are labeled, organized, and presented is likely to affect the ease of teaching, acquisition, retention, and especially, in-the-field application of the corresponding knowledge and skills on the part of PFA providers.

The components that appear to be "best candidates" for developing data on effectiveness are those that are "psychological" in nature and measurable. Various models label these components with names such as: comfort, connection, competence, confidence, coping, and social support. It is apparent that such components closely align with the Hobfoll et al.[55] essential elements of "calming" and "connectedness."

In contrast, some components will not contribute strongly to demonstrating the effectiveness of PFA. For example, some PFA programs provide explicit guidance to the PFA provider on how to initiate the encounter with the recipient, counting this "first contact" as a separate core action. Indeed, instructing the PFA practitioner on the appropriate way to approach the survivor and effective "opening lines," is critical teaching; the success of any subsequent intervention pivots on these first moments. However, in practice, this brief phase of the provider/recipient interaction is not likely to provide sufficient substance to be evaluated separately.

Other components cannot be cleanly "isolated" as a psychosocial intervention. Consider that several PFA frameworks elevate "practical assistance" to the level of a core principle. Disaster survivors receive practical help from family, friends, neighbors, disaster response professionals, and volunteers. Most of the persons who provide such help are neither trained nor familiar with PFA. In most instances, practical help is, by its very nature, intentionally "practical" and "helpful" and only incidentally psychologically beneficial.

Practical assistance is therefore problematic in terms of evaluation. Certainly it would be overreach to subsume practical assistance from all sources as part of PFA. However, it should be possible to measure the impact of the quantum of practical assistance that is provided by PFA providers. This would be worthwhile because practical assistance is closely related to problem-solving, a much tested intervention for depression, and practical assistance is one of the most important elements across multiple models of PFA.

In summary, components analysis assists the PFA evaluation process by 1) contrasting models in terms of the types and packaging of core actions provided, and 2) identifying those core actions that can be measured in a manner that contributes toward real-time/real-event evaluation of the effectiveness of PFA.

What is the Context of PFA? Exposures, Target Populations, and PFA Providers

Any evaluation strategy for PFA must recognize and document the context in which it is provided: what is the nature of the potentially traumatizing event, who was affected, and who is delivering the PFA intervention? Defining the disaster setting and traumatic exposures, the target population, and the PFA providers is essential for examining the possible differential effects of PFA and determining when and where it is most effective.

Exposure to potentially traumatizing events

It is possible that PFA may be more effective following some disaster and trauma types than others. Different combinations and intensities of PFA components may be applied in events characterized by acts of human malevolence compared with those resulting from natural forces; or for events that pose ongoing and prolonged threat to life (armed conflict situations, natural disasters with widespread devastation) compared with those where

danger is time-limited and transient (school shooting, tornado). By documenting the exposures during a disaster mental health assessment, it may be possible to better tailor PFA to the specific needs of the affected population.

Target population

Following on from exposure type and severity, the evaluation should clarify the target population. Early PFA models were originally developed for use with diverse populations of disaster survivors. Some models have been modified for special applications with children,[27,28,46] older adults,[35] and special needs survivor populations.[31] Other PFA frameworks have been developed to build resilience among first responders, and public health and hospital-based professionals, engaged in disaster response.[25,29,,32-34,36,44] Stress First Aid ("SFA") models have been designed specifically for use with emergency responder personnel or combat military units exposed to potentially-traumatizing missions.[43,47,48] Any evaluation needs to clearly define the target population, with a view to selecting—or adapting—the PFA/SFA model to suit their specific needs.

PFA provider

The PFA provider is another key consideration for documentation in the evaluation process. Indeed, several versions of PFA have been tailored for use with a specific type of provider. The international network of Red Cross/Red Crescent societies, for example, have developed PFA versions for delivery by their own trained and credentialed disaster mental health services volunteers in a specific nation (e.g., American Red Cross PFA,[40,41] Australian Red Cross PFA[42]) (**Fig. 3**). Similarly, a PFA model has been designed for use by US. Medical Reserve Corps personnel.[32] It is reasonable to assume that some provider types may be more appropriate than others, depending on the disaster context.

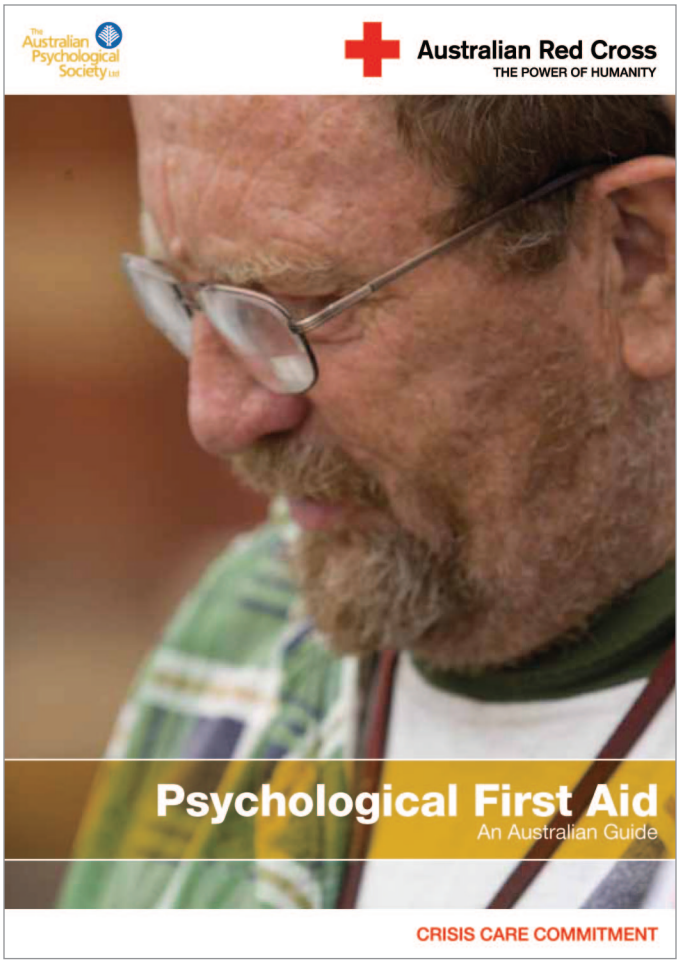

Figure 3. Cover for *Psychological First Aid: An Australian Guide,* the psychological first aid curriculum developed by the Australian Red Cross.[42]

Where to From Here? The Way Forward

In this article, we have argued for the importance of evaluating the effectiveness of PFA and some of the key questions to be addressed in an evaluation process. We have also acknowledged the difficulties inherent in designing and implementing a rigorous evaluation protocol for PFA in real world settings. We conclude with five suggestions as to how the challenge of evaluating PFA may be achieved.

First, recognizing the difficulties of evaluating the use of PFA with disaster survivors in a disaster context, it has been suggested that an evaluation within the organizational context of first responders may be a good place to start.[8] Here the focus would be the first responders themselves as the affected population. The application of PFA (or more appropriately, the SFA models that are now available specifically for responders), in an organizational setting with known and predictable ongoing exposures allows for the development of a phased approach. By undertaking this work, it may be possible to identify ways to strengthen the implementation of PFA in less controlled disaster settings. Forbes and colleagues[8] outline a phased approach to evaluation, including components to be initiated and measured pre-event. The first of these phases is the development of PFA-consistent organizational policies and procedures. As the effectiveness of PFA will be influenced by the environment in which the exposure occurs and in which the PFA intervention is delivered, the first step of a Phased PFA model should address organizational policies and procedures dealing with psychological trauma. The second pre-event phase involves PFA promotion and staff training, that is, promoting and embedding the policy. Once policies and procedures are in place to delineate responsibilities for core PFA actions to various role positions across the organization, this information must be communicated consistently and regularly to staff at all levels. This includes education and training programs to the deliverers of PFA in the organizational context (supervisors, managers, peer supporters and health professionals where relevant) and the recipients (being the members themselves), with a view to "buddy to buddy" ("mate to mate") PFA-consistent support. Preliminary evidence indicates shifts in knowledge, awareness and confidence in using PFA interventions by managers and peers following such training.[65,66]

This approach facilitates relatively controlled testing of the elements of PFA within the ranks of first responders, but it must be clearly acknowledged that emergency response teams, trained

to respond to potentially traumatizing events within the line of duty, differ from general civilian populations who are exposed to traumas often without warning or training. While advantageous for testing components of PFA, and of critical import for this trauma-affected population, results from PFA applications with responders have limited generalizability to civilian survivors of traumatic events.

Second, it is possible to test the implementation of PFA with civilians in controlled settings such as hospital emergency rooms in which large numbers of trauma survivors routinely present immediately following trauma exposure. Such environments offer systematic advantages for efficacy and effectiveness research. It is possible to quantify the type and severity of medical trauma—measures of trauma exposure—and to aggregate data over a series of similar trauma cases as PFA is tested with this population.

Third, there is a widely accepted need to test the effectiveness of PFA in real disaster situations with civilian populations in harm's way. As previously mentioned, no amount of rigorous testing of PFA elements with responders will replace the need to examine effectiveness with disaster survivors. A frequent excuse for not conducting robust evaluation is the assertion that disasters are not predictable. While many disasters strike without warning, there are notable exceptions. For example, we have been working on community resilience projects with a river community that routinely engages in an annual "flood fight" when river levels rise rapidly during the spring thaw; the river has exceeded "flood stage" during 19 of the past 20 years. Other communities around the world regularly face the threat of floods, bushfires, cyclones, and other natural disasters. These communities present an ideal opportunity to test PFA using a pre-post design. In some scenarios where multiple communities are affected, there may be options to use comparisons in which one area is provided with PFA and the other with an alternative control condition. These relatively predictable disasters provide opportunities to test PFA in ecologically valid real world settings in communities that routinely experience disaster threats.

Fourth, evaluation of PFA will be most effective if it is coordinated internationally. Ideally we should strive to achieve agreement on the research questions, measures, and designs to achieve comparable methodologies for evaluation of PFA effectiveness when conducted for a variety of disaster events around the globe. Clearly, this is a significant challenge, but one that is worth striving to achieve. Only by collating and comparing similar studies across different populations will we be in a position to comment definitively about the effectiveness or otherwise of PFA.

Fifth, it is also important to consider the ongoing evolution of the field that will facilitate future enhancements that can be incorporated into PFA. Our current work with trauma signature (TSIG) analysis suggests that in the future, early intervention can be adapted to the nature of the disaster or extreme event.[67-70] Trauma signature (TSIG) analysis is an evidence-based method that examines the interrelationship between population exposure to a disaster, extreme event, or complex emergency, and the interrelated physical and psychological consequences for the purpose of providing timely, actionable guidance for effective mental health and psychosocial support that is organically tailored and targeted to the defining features of the event.

TSIG analysis also holds promise for better preparing PFA practitioners for the likely disaster-specific stressors they will encounter when responding. PFA practitioners will benefit from training in disaster survival skills to elevate their field skills and self-sufficiency while on deployment.

Finally, remembering the recommendations of the NIMH consensus conference,[11] it is advisable to "reintegrate" PFA within a multi-faceted disaster mental health response that includes validated mental health assessment of disaster survivors, identification of persons at high risk for progressing to psychopathology, inclusion of specialized mental health services referral, and monitoring the post-disaster recovery environment.

Conclusion

The widespread and relatively uncritical acceptance of PFA as the preferred approach to early intervention following disaster has brought with it concerning questions about its effectiveness. Although not clearly operationalized, the goals of PFA are broadly recognized as reducing immediate distress and optimizing short- and long-term functioning. Little evidence exists to demonstrate the effectiveness of PFA in achieving these goals. Having not been created with field evaluation in mind, researchers are now attempting to bootstrap evaluation strategies to PFA models that are frankly unwieldy to test for effectiveness. It is now incumbent upon the field to collaboratively design evaluation protocols to test specific aspects and applications of this popular and potentially valuable approach. In the final analysis, we must be able to demonstrate improved trajectories of recovery for people affected by disaster and trauma.

Note: Just as this commentary was published online, an important paper on mental health response to community disasters was published in a special issue of JAMA.[71] Authors Carol North and Betty Pfefferbaum state, "Evidence-based treatments are available for patients with active psychiatric disorders, but psychosocial interventions such as psychological first aid, psychological debriefing, crisis counseling, and psychoeducation for individuals with distress have not been sufficiently evaluated to establish their benefit or harm in disaster settings." This review article reinforces key points made in this commentary.

Disclosure of Potential Conflicts of Interest

No potential conflicts of interest were disclosed.

References

1. Blain D, Hoch P, Ryan VG. A course in psychological first aid and prevention: A preliminary report. Am J Psychiatry 1945; 101:629-34
2. Tyhurst JS. Individual reactions to community disaster. The natural history of psychiatric phenomena. Am J Psychiatry 1951; 107:764-9; PMID:14819372
3. Drayer CS, Cameron DC, Woodward WD, Glass AJ. Psychological first aid in community disasters. JAMA 1954; 156:36-41; PMID: 13183803
4. Ruzek RI, Brymer MJ, Jacobs AK, Layne CM, Vemberg EM, Watson PJ. Psychological first aid. J Ment Health Couns 2007; 29:17-49
5. Vernberg EM, Steinberg AM, Jacobs AK, Brymer MJ, Watson PJ, Osofsky JD, et al. Innovations in disaster mental health: psychological first aid. Prof Psychol Res Pr 2008; 39:381-8; http://dx.doi.org/10.1037/a0012663
6. Bryant RA, Litz BT. Mental health treatments in the wake of disaster. In: Neria Y, Galea S, Norris F, eds. Mental Health and Disasters. New York, NY: Cambridge University Press; 2009:321-335.
7. Forbes D, Creamer M, Bisson JI, Cohen JA, Crow BE, Foa EB, Friedman MJ, Keane TM, Kudler HS, Ursano RJ. A guide to guidelines for the treatment of PTSD and related conditions. J Trauma Stress 2010; 23:537-52; PMID:20839310; http://dx.doi.org/10.1002/jts.20565
8. Forbes D, Lewis V, Varker T, Phelps A, O'Donnell M, Wade DJ, Ruzek JI, Watson P, Bryant RA, Creamer M. Psychological first aid following trauma: implementation and evaluation framework for high-risk organizations. Psychiatry 2011; 74:224-39; PMID:21916629
9. Watson PJ, Brymer MJ, Bonanno GA. Postdisaster psychological intervention since 9/11. Am Psychol 2011; 66:482-94; PMID:21823776; http://dx.doi.org/10.1037/a0024806
10. Brymer MJ, Reyes G, Steinberg AM. Disaster behavioral health for children and adolescents. In Framingham JL, Teasley ML, eds. Behavioral Health Response to Disasters. New York, NY: Taylor & Francis; 2012.
11. National Institute of Mental Health. Mental Health and Mass Violence: Evidence-based Early Psychological Intervention for Victims/Survivors of Mass Violence: A Workshop to Reach Consensus on Best Practices. NIH Publication No. 02-5138, Washington DC: US Government Printing Offtce. 2002. Available at: http://www.nimh.nih.gov/health/publications/massviolence.pdf. Accessed 9 June 2013.
12. Inter-Agency Standing Committee (IASC). IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings. IASC. 2007. Available at: http://www.humanitarianinfo.org/iasc/content/products. Accessed 9 Jun3 2013.
13. Bisson JI, Lewis C. Systematic Review of Psychological First Aid. Commissioned by World Health Organization. Cardiff University, Cardiff, Wales; and World Health Organization, Geneva, Switzerland. 2009.
14. Disaster Mental Health Subcommittee. Disaster Mental Health Recommendations: Report of the Disaster Mental Health Subcommittee of the National Biodefense Science Board. 2009. Available at: http://www.phe.gov/Preparedness/legal/boards/nbsb/Documents/nsbs-dmhreport-final.pdf. Accessed 9 June 2013.
15. National Commission on Children and Disasters. National Commission on Children and Disasters: 2010 Report to the President and Congress. 2010. Available at: http://www.childrenanddisasters.acf.hhs.gov. Accessed 9 June 2013.
16. Bisson JI, Tavakoly B, Witteveen AB, Ajdukovic D, Jehel L, Johansen VJ, Nordanger D, Orengo Garcia F, Punamaki RL, Schnyder U, et al. TENTS guidelines: development of post-disaster psychosocial care guidelines through a Delphi process. Br J Psychiatry 2010; 196:69-74; PMID:20044665; http://dx.doi.org/10.1192/bjp.bp.109.066266
17. Inter-Agency Standing Committee (IASC). Mental Health and Psychosocial Support in Humanitarian Emergencies: What Should Humanitarian Health Actors Know? IASC. 2010.
18. Inter-Agency Standing Committee (IASC) Reference Group Guidelines for Mental Health and Psychosocial Support in Emergency Settings. 2010. Available at: 2010. http://www.humanitarianinfo.org/iasc/pageloader.aspx?page=content-subsidi-common-default&sb=72. Accessed 9 June 2013.
19. Schreiber M. National Children's Disaster Mental Health Concept of Operations. Oklahoma City, OK: Terrorism and Disaster Center at the University of Oklahoma Health Sciences Center. 2011.
20. U.S. Department of Health and Human Services Office of the Assistant Secretary for Preparedness and Response, Office of Policy and Planning Division for At-Risk Individuals, Behavioral Health, and Community Resilience. HHS Disaster Behavioral Health Concept of Operations. Available at: http://www.phe.gov/. Accessed 9 June 2013.
21. Kelly CM, Jorm AF, Kitchener BA. Development of mental health first aid guidelines on how a member of the public can support a person affected by a traumatic event: a Delphi study. BMC Psychiatry 2010; 10:49; http://www.biomedcentral.com/1471-244X/10/49. PMID:20565918; http://dx.doi.org/10.1186/1471-244X-10-49
22. Zygurski R, Bulling D, Chang R. Nebraska Psychological First Aid Curriculum. University of Nebraska Public Policy Center, Lincoln, NE. 2005. Available at: http://www.nebhands.nebraska.edu/files/Psych%20first%20aid%20presenter%20manual%20jan%2005.pdf. Accessed 9 June 2013.
23. Brymer M, Jacobs A, Layne C, Pynoos R, Ruzek J, Steinberg A, Vernberg E, Watson P. Psychological First Aid: Field Operations Guide. National Center for PTSD and National Child Traumatic Stress Network, UCLA, Los Angeles, CA. 2005.
24. Florida Center for Public Health Preparedness. B-FAST: Disaster Behavioral Health First Aid Specialist Training. University of South Florida, Tampa, FL. 2005. Available at: http://www.fcphp.usf.edu/courselistings/courses_ListingsBFAST.htm. Accessed 9 June 2013.
25. Substance Abuse and Mental Health Services Administration (SAMHSA). Psychological First Aid – A Guide for Emergency and Disaster Response Workers (Fact Sheet). US Department of Health and Human Services, Washington, DC, USA. 2005. Available at: http://store.samhsa.gov/product/Psychological-First-Aid-for-First-Responders/NMH05-0210. Accessed 9 June 2013.
26. Brymer M, Jacobs A, Layne C, Pynoos R, Ruzek J, Steinberg A, Vernberg E, Watson P. Psychological First Aid: Field Operations Guide, 2nd Edition. National Center for PTSD and National Child Traumatic Stress Network, UCLA, Los Angeles, CA. 2006. Available at: http://www.nctsn.org/content/psychological-first-aid. Accessed 9 June 2013.
27. Schreiber R, Gurwitch M, Wong M. Listen, Protect, Connect. The Advertising Council, US Department of Homeland Security, The National Center for School Crisis and Bereavement. 2006. Available at: www.ready.gov. Accessed 9 June 2013.
28. Florida Center for Public Health Preparedness. C-FAST: Disaster Behavioral Health First Aid Specialist Training with Children. University of South Florida, Tampa, FL. 2006. Available at: http://www.fcphp.usf.edu/courselistings/courses_ListingsCFAST.htm. Accessed 9 June 2013.
29. Johns Hopkins Center for Public Health Preparedness. Psychological First Aid Competencies for Public Health Workers. Johns Hopkins University, Baltimore, MD. 2006. Available at: http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-public-health-preparedness/training/online/dis_mtl_hlth_comp.html. Accessed 9 June 2013.
30. Center for the Study of Traumatic Stress. Psychological First Aid: How you can support well-being in disaster victims. Disaster Response Education and Training Project, Center for the Study of Traumatic Stress. 2006. Available at: http://www.cstsonline.org/psychological-first-aid/. Accessed 9 June 2013.
31. Florida Center for Public Health Preparedness. B-FASTplusSN: Disaster Behavioral Health First Aid Specialist Training with Special Needs Populations. University of South Florida, Tampa, FL. 2007. Available at: http://www.fcphp.usf.edu/courselistings/courses_ListingsBFASTplusSN.htm. Accessed 9 June 2013.
32. Brymer M, Jacobs A, Layne C, Pynoos R, Ruzek J, Steinberg A, Vernberg E, Watson P and Medical Reserve Corps Co-Authors: Finn A, Herrmann J, Hickey J, Kantor E, Santucci P, Shultz J. Psychological First Aid: Field Operations Guide, Medical Reserve Corps Edition. National Center for PTSD and National Child Traumatic Stress Network, UCLA, Los Angeles, CA. 2007. Available at: http://www.nctsn.org/products/psychological-first-aid-field-medical-reserve-corps-field-operations-guide. Accessed 9 June 2013.
33. Herrmann J, Cole V. Psychological First Aid for Healthcare Professionals (Fact Sheet). Office of Mental Health, State of New York. Produced by University of Rochester, Rochester, NY, 2007. Available at: http://www.omh.ny.gov/omhweb/disaster_resources/pfa/Healthcare.pdf. Accessed 9 June 2013.
34. Florida Center for Public Health Preparedness. R-FAST: Disaster Behavioral Health First Aid Specialist Training for Responders. University of South Florida, Tampa, FL. 2007. Available at: http://www.fcphp.usf.edu/courselistings/courses_ListingsRFAST.htm. Accessed 9 June 2013.
35. Brown LM, Hyer K. Psychological First Aid: Field Operations Guide for Nursing Homes. Psychology Beyond Borders and Florida Mental Health Institute, University of South Florida, Tampa, FL, April, 2008. Available at: http://amh.fmhi.usf.edu/pfanh.pdf. Accessed 9 June 2013.
36. Minnesota Department of Health. Psychological First Aid: Response to Pandemic Influenza. Minnesota Department of Health, St. Paul, MN. 2009. Available at: www.health.state.mn.us/oep/responsesystems/psychfirstaid.ppt. Accessed 9 June 2013.
37. International Federation of Red Cross and Red Crescent Societies. Psychosocial Interventions: A Handbook. IFRC: Reference Centre for Psychosocial Support. Copenhagen, Denmark. 2009. Available at: http://pspdrk.dk/sw40688.asp Accessed 9 June 2013.
38. International Federation of Red Cross and Red Crescent Societies. Community-Based Psychosocial Support: Trainer's Manual: A Training Kit. IFRC: Reference Centre for Psychosocial Support. Copenhagen, Denmark. 2009. Available at: http://pspdrk.dk/sw40688.asp Accessed 9 June 2013.
39. International Federation of Red Cross and Red Crescent Societies. Community-Based Psychosocial Support: Participant's Book. IFRC: Reference Centre for Psychosocial Support. Copenhagen, Denmark. 2009. Available at: http://pspdrk.dk/sw40688.asp Accessed 9 June 2013.

40. Gurwitch R, Hughes L, Porter B, Schreiber M, Bagwell Kukor M, Herrmann J, Yin R. Coping in Today's World: Psychological First Aid and Resilience for Families, Friends and Neighbors: Instructor's Manual. American Red Cross, Washington DC. 2010.
41. Gurwitch R, Hughes L, Porter B, Schreiber M, Bagwell Kukor M, Herrmann J, Yin R. Coping in Today's World: Psychological First Aid and Resilience for Families, Friends and Neighbors: Participant's Manual. American Red Cross, Washington DC. 2010.
42. Bryant RA, Clarke B, Coghlan A, Creamer M, Eustace G, Gordon R, Gridley H, Montgomery B, O'Brien C, Paynter S, et al. (Advisory Committee to Australian Red Cross). Psychological First Aid: An Australian Guide. Australian Red Cross and Australian Psychological Society. Sydney, Australia. 2010. Available at http://www.psychology.org.au/Assets/Files/Red-Cross-Psychological-First-Aid-Book.pdf. Accessed 9 June 2013.
43. Nash WP, Westphal RJ, Watson P, Litz BT. Bureau of Medicine and Surgery, Department of the Navy, in cooperation with the Combat and Operational Stress Control, Manpower & Reserve Affairs, Headquarters Marine Corps, the Navy Operational Stress Control, Chief of Naval Personnel, TotalForce N1, and the National Center for PTSD, Department of Veterans Affairs. Combat and Operational Stress First Aid (COSFA) Field Operations Manual. Washington, DC: U.S. Government. 2010. Available at: http://www.alsbom-gm.org/files/COSFA%20NAVY%20TM.pdf. Accessed 9 June 2013.
44. Substance Abuse and Mental Health Services Administration (SAMHSA). (2010). Psychological First Aid for First Responders – Tips for Emergency and Disaster Response Workers. 2011. Available at: http://store.samhsa.gov/product/SAMHSA-Disaster-Kit/Most-Popular/SMA11-DISASTER?sortBy=4 Accessed 9 June 2013.
45. van Ommeren M, Snider L, Schafer A. (World Health Organization, War Trauma Foundation and World Vision International). Psychological First Aid: Guide for Field Workers. World Health Organization. Geneva, Switzerland. 2011. Available at: http://whqlibdoc.who.int/publications/2011/9789241548205_eng.pdf. Accessed 9 June 2013.
46. Brymer M, Taylor M, Escudero P, Jacobs A, Kronenberg M, Macy R, Mock L, Payne L, Pynoos R, Vogel J. Psychological First Aid for Schools (PFA-S): Field Operations Guide. National Child Traumatic Stress Network. Los Angeles CA. 2012. Available at: http://www.nctsn.org/content/psychological-first-aid-schoolspfa. Accessed 9 June 2013.
47. Gist R, Watson P, Taylor V, Elvander E. Curbside Manner: Stress First Aid for the Street (Student Manual). National Fallen Firefighters Association, 2013. Available at: http://www.fireherolearning-network.com/Training_Programs/Curbside_Manner__Stress_First_Aid_for_the_Street.aspx. Accessed 9 June 2013.
48. Watson P, Taylor V, Gist R, Elvander E, Leto F, Martin B, Tanner J, Vaught D, Nash W, Westphal RJ, et al. Stress First Aid for Firefighters and Emergency Medical Services Personnel Student Manual. National Fallen Firefighters Association, National Center for PTSD, Department of Veterans Affairs, 2013.
49. Norris FH, Friedman MJ, Watson PJ, Byrne CM, Diaz E, Kaniasty K. 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981-2001. Psychiatry 2002; 65:207-39; PMID:12405079; http://dx.doi.org/10.1521/psyc.65.3.207.20173
50. Norris FH, Friedman MJ, Watson PJ. 60,000 disaster victims speak: Part II. Summary and implications of the disaster mental health research. Psychiatry 2002; 65:240-60; PMID:12405080; http://dx.doi.org/10.1521/psyc.65.3.240.20169
51. Neria Y, Nandi A, Galea S. Post-traumatic stress disorder following disasters: a systematic review. Psychol Med 2008; 38:467-80; PMID:17803838; http://dx.doi.org/10.1017/S0033291707001353
52. Shultz, J.M. Perspectives on disaster public health and disaster behavioral health integration. Disaster Health 2013; 1:1-4; http://dx.doi.org/10.4161/dish.24414.
53. McNally RJ, Bryant RA, Ehlers A. Does early psychological intervention promote recovery from traumatic stress? Psychol Sci Public Interest 2003; 4:45-79
54. Rose S, Bisson J, Churchill R, Wesseley S. Psychological debriefing for preventing post traumatic stress disorder (PTSD). The Cochrane Database of Systematic Reviews. In: The Cochrane Library, Issue 3. Art. No. CD000560. 2009. DOI: 10.1002/14651858.CD000560.pub2
55. Hobfoll SE, Watson P, Bell CC, Bryant RA, Brymer MJ, Friedman MJ, Friedman M, Gersons BPR, de Jong JTVM, Layne CM, et al. Five essential elements of immediate and mid-term mass trauma intervention: empirical evidence. Psychiatry 2007; 70:283-315, discussion 316-69; PMID:18181708; http://dx.doi.org/10.1521/psyc.2007.70.4.283
56. National Steering Committee on Multidisciplinary Guideline Development in Mental Health Care. Multidisciplinary Guideline: Early Psychosocial Interventions after Disasters, Terrorism and Other Shocking Events. Impact: Dutch Knowledge and Advice Centre for Post-disaster Psychosocial Care. Amsterdam, The Netherlands. 2007.
57. Litz BT. Early intervention for trauma: where are we and where do we need to go? A commentary. J Trauma Stress 2008; 21:503-6; PMID:19107726; http://dx.doi.org/10.1002/jts.20373
58. Raphael B, Maguire P. Disaster mental health research, past, present, and future. In Neria Y, Galea S, Norris FH (eds.), Mental Health and Disasters. Cambridge, UK: Cambridge University Press, 2009, 7–28.
59. Shultz JM, Neria Y, Allen A, Espinel Z. Psychological Impacts of Natural Disasters. In: Bobrowsky, P. (ed.), Encyclopedia of Natural Hazards. Dordrecht, Heidelberg, London, New York: Springer Publishing, 2013, 779-791.
60. Fox JH, Burkle FM Jr., Bass J, Pia FA, Epstein JL, Markenson D. The effectiveness of psychological first aid as a disaster intervention tool: research analysis of peer-reviewed literature from 1990-2010. Disaster Med Public Health Prep 2012; 6:247-52; PMID:23077267; http://dx.doi.org/10.1001/dmp.2012.39
61. Scott CK, Sonis J, Creamer M, Dennis ML. Maximizing follow-up in longitudinal studies of traumatized populations. J Trauma Stress 2006; 19:757-69; PMID:17195975; http://dx.doi.org/10.1002/jts.20186
62. World Vision International and War Trauma Foundation. Anthology of Resources: Psychological First Aid for Low- and Middle-Income Countries Project 2009-2010. Middlesex UK and Amsterdam, The Netherlands. 2010.
63. Schafer A, Snider L, van Ommeren M. Psychological first aid pilot: Haiti emergency response. Intervention (Amstelveen) 2010; 8:245-54; http://dx.doi.org/10.1097/WTF.0b013e32834134cb
64. Newell S, Shultz JM, Espinel Z. Psychological First Aid (PFA): Comparison and Components Analysis of PFA Frameworks. Presented at: 18th World Congress on Disaster & Emergency Medicine, Manchester, United Kingdom, 29 May 2013. Prehosp Disaster Med 2013; 28 (Suppl. 1):s116
65. Allen B, Brymer MJ, Steinberg AM, Vernberg EM, Jacobs A, Speier AH, Pynoos RS. Perceptions of psychological first aid among providers responding to Hurricanes Gustav and Ike. J Trauma Stress 2010; 23:509-13; PMID:20623598; http://dx.doi.org/10.1002/jts.20539
66. Lewis V, Varker T, Phelps A, Forbes D. Organizational implementation of Psychological First Aid (PFA): Training for Managers and Peers. Psychological Trauma: Theory. Research and Practice. 2013; ; http://dx.doi.org/10.1037/a0032556
67. Shultz JM, Neria Y. Trauma Signature Analysis: State of the art and evolving future directions. Disaster Health 2013; 1:4-8; http://dx.doi.org/10.4161/dish.24011
68. Shultz JM, Marcelin LH, Madanes SB, Espinel Z, Neria Y. The "Trauma Signature:" understanding the psychological consequences of the 2010 Haiti earthquake. Prehosp Disaster Med 2011; 26:353-66; PMID:22336183; http://dx.doi.org/10.1017/S1049023X11006716
69. Shultz JM, Forbes D, Wald D, Kelly F, Solo-Gabriele HM, Rosen A, Espinel Z, McLean A, Bernal O, Neria Y. Trauma Signature of the Great East Japan Disaster provides guidance for the psychological consequences of the affected population. Disaster Medicine and Public Health Preparedness 2013; 0:1-14.
70. Shultz JM, McLean A, Herberman Mash HB, Rosen A, Kelly F, Solo-Gabriele HM, Youngs GA Jr., Jensen J, Bernal O, Neria Y. Mitigating flood exposure: Reducing disaster risk and trauma signature. Disaster Health 2013; 1:30-44; http://dx.doi.org/10.4161/dish.23076
71. North CS, Pfefferbaum B. Mental health response to community disasters: A systematic review. JAMA 2013; 310:507-18; http://dx.doi.org/10.1001/jama.2013.107799.