

Conceptual Paper

Post-disaster psychosocial support and quality improvement: A conceptual framework for understanding and improving the quality of psychosocial support programs

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Abstract

This article is original in that it addresses post-disaster psychosocial support programs from a quality-improvement perspective, not from the traditional viewpoint of mental health services. Based on a combination of renowned quality models, a framework is sketched that offers chances to better understand and optimize the quality of post-disaster psychosocial service delivery. The quality is reflected in the program's structure, process, and outcome. Moreover, quality can be expressed in scores per criterion (i.e. need centeredness, effectiveness, safety, timeliness, efficiency, and equity) that are proposed to be related to the "attitude" (more passive or active) toward affected people. When quality and attitude are combined in a 2-D parabolic model, psychosocial support is preferably found in the middle of the attitude-axis (high quality); extremely passive or active positions are to be avoided (low quality). Well-timed assessments of structure, process, and outcome aspects, and associations between them, will help planners, providers, and evaluators understand if the optimum is reached, as well as provide guidance for quality improvement.

Key words

disaster, framework, psychosocial support, quality improvement, conceptual framework, quality of care.

INTRODUCTION

What we can learn from the annual World Risk and World Disaster reports is that communities all over the world are being confronted with large-scale disasters and major incidents (Alliance Development Works, 2011; 2012; International Federation of Red Cross and Red Crescent Societies, 2012; 2013). Some areas of the world are more exposed and vulnerable than others. Disasters, such as the Japan earthquake in 2011 and the cyclone in the Philippines in 2013, have a severe impact on communities and individuals. Regardless of the local response and recovery capacity, the delivery of high-quality psychosocial services is indispensable. Despite the importance of professional aid after large-scale disasters, volunteers are often the first and main source of support to affected communities. While attention should be given to the safety, well-being and health of individuals, authorities and services have to follow a strategy that makes it possible to meet the needs of as many affected people within a community as possible (Williams *et al.*, 2009).

A planned community intervention, which in this article we call a "psychosocial program", can comprise: (i) basic aid (i.e. shelter, safety, food, drinking water, first aid, and medication); (ii) information (i.e. about what has happened, about the fate of loved ones, about normal reactions); (iii) social and emotional support (i.e. comfort, a listening ear, recognition of grief, compassion); (iv) practical help (i.e. legal and financial issues, household); and (v) mental health (i.e. adequate detection and management of complaints and problems). All these elements are included in leading psychosocial support guidelines for disaster settings (e.g. Inter-Agency Standing Committee, 2007; Te Brake *et al.*, 2009; Bisson *et al.*, 2010; World Health Organization *et al.*, 2011; Suzuki *et al.*, 2012; Te Brake & Dückers, 2013). When combined and carried out deliberately, the five elements form a program; a community intervention that can differ in length (weeks, months, years), scope (variation in themes) and organization (number of partner organizations at different levels).

Many aspects of psychosocial programs are interesting for academics. In this article, we address a set of features that we summarize as the "quality" of the program. The vast majority of publications on post-disaster psychosocial support originate from clinical psychology, psychiatry, or other branches of mental health research. What distinguishes the current

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contribution is that it is written explicitly from a quality-improvement perspective. Quality improvement (in health care) has been defined as “the combined and unceasing efforts of everyone – professionals, patients and their families, researchers, funding bodies, planners and educators – to make the changes that will lead to better health outcomes, better system performance, and better professional development (learning)” (Batalden & Davidoff, 2007, p. 2). Given the nature of psychosocial support, we consider it appropriate to slightly modify this definition, by adding “and trained volunteers” after “professionals” (volunteers play a crucial role in the support of affected people), adding “and well-being” after “health outcomes” (the scope is broader than health), and replacing “patients and their families” with “affected ones and the people close to them” (less stigmatic and less restrictive as loved ones can also include friends and colleagues).

Our objective is to present a conceptual framework that can serve as a basis for the further research we deem indispensable to understanding and optimizing the quality of psychosocial support in post-disaster settings. Two relevant issues are explored, based on a combination of internationally-renowned theoretical models: (i) what is high-quality psychosocial support?; and (ii) how can the quality of psychosocial support be enhanced? After summarizing the framework, we discuss some challenges for its application.

WHAT IS HIGH-QUALITY PSYCHOSOCIAL SUPPORT?

To answer this question, we examine common quality concepts. Different quality models can be found in the international literature. We chose to select two categorization schemes that are popular among scholars and quality managers throughout the world.

Structure, process, and outcome

Several quality aspects must be taken into account if we want to understand the quality of psychosocial support programs. The first categorization scheme, the “Donabedian model”, is one of the most influential conceptual models in the healthcare quality literature. This model provides a framework for examining health services and evaluating quality. According to the model, information about quality can be drawn from three categories: structure, process, and outcome (Donabedian, 1980). “Structure” describes the relatively stable context in which services are delivered, including people, financial resources, tools, and equipment. “Process” denotes transactions between clients and providers throughout the service delivery system, activities, and technical and interpersonal aspects of the performance. Finally, “outcome” refers to effects on the well-being and health of individuals and populations. One thing to keep in mind is that the three categories should not be mistaken for attributes of quality. Instead, they are the classifications for the types of information that can be obtained in order to infer whether the quality of care is poor, fair, or good. Furthermore, in order to make inferences about quality, there needs to be an established

relationship between the three categories; this relationship is a probability rather than a certainty (Donabedian, 1980).

The division in structure, process, and outcome, and its postulated relationship, is suitable to examine the quality of psychosocial programs. Psychosocial support guidelines, as mentioned in the first section, focus primarily on structure and process aspects. The structure is reflected, for instance, in the availability of competent service providers (professionals, trained volunteers). In addition, the program should contain a multi-agency planning group, a coordinator, and sufficient funding, and should be based on evidence-informed guidelines (integrated in disaster plans that are regularly updated, tested, and facilitated). Within this structure, recommended actions can take place, embedded in a process that ideally is responsive to the needs and problems of affected people. Here, we can think of needs assessments, the sharing of information leaflets, site visits, establishment of a memorial, and – for people with symptoms of post-traumatic stress disorder – the provision of trauma-focused cognitive behavioral therapy or eye movement desensitization and reprocessing (for other examples of structure and process elements, see Te Brake *et al.*, 2009; Bisson *et al.*, 2010; Witteveen *et al.*, 2012). Regarding the outcome of the program, it is meaningful to collect information on the well-being of people, their satisfaction about received support, the degree to which they feel taken seriously and looked after, and mental health complaints. In a high-quality psychosocial program, the structure and process elements should be in line with evidence-informed guidelines, and can ideally be linked to positive outcomes at the level of affected individuals or populations.

Quality criteria

The second categorization is complementary and allows us to delve deeper into the essence of quality. In the past decades, several quality features have been distinguished in the international health sciences literature (Donabedian, 1988, Berwick, 2002; Eccles *et al.*, 2009). The six performance criteria formulated by the Institute of Medicine are often used as quality standards (Berwick, 2002; as it is more appropriate to speak of “affected ones” or “beneficiaries”, rather than “patients” or “clients” in a disaster context, again we chose to slightly alter the terminology):

- Need-centeredness: provide services that are respectful of and responsive to preferences, needs, and values of affected people, ensuring that their values guide all decisions
- Safety: avoid injuries to people from services that are intended to help them
- Effectiveness: provide services based on scientific knowledge to all who could benefit from them, and refrain from providing services to those unlikely to benefit, thus avoiding both underuse and overuse, respectively
- Efficiency: avoid waste, including waste of equipment, ideas, and energy
- Timeliness: reduce waits and sometimes harmful delays for those who receive and those who provide services
- Equity: provide services without variation in quality because of personal characteristics, such as sex, ethnicity, religion, geographic location, and socioeconomic status

All these criteria are relevant for the specific field of post-disaster psychosocial support. We shall discuss each briefly.

Obviously, need-centeredness is imperative in a context of catastrophe where every event, its potential impact, and every affected individual are unique. Different disaster scenarios could yield a divergence of mental health needs (Bonanno *et al.*, 2010; North, 2010). However, the reality of disaster response and the resources mobilized do not often allow for individual attention, rather the support should be directed at groups of people with similar concerns and needs. Need-centered psychosocial support implies that the focus is on providing services that are respectful and responsive to the needs of groups or communities where the context determines what needs to be done, not just the habit of providers.

In addition, effectiveness and safety are two criteria that, for understandable reasons, are given a great deal of attention in the literature. To increase the likelihood of effectiveness, it is crucial to understand what works and why it works, and to ascertain the absence of adverse effects. It is exactly for this reason that some experts are critical about psychoeducation (Wessely *et al.*, 2008), and psychological debriefing (Rose *et al.*, 2005; Roberts *et al.*, 2010).

Timely intervention is essential. After comparing the health outcomes of volunteers who assisted after the terrorist attacks on the World Trade Center, Debchoudhury *et al.* (2011) found that lay volunteers' poorer health outcomes were related to more intense exposure to, and lack of protection from, physical and psychological hazards. Furthermore, the authors emphasized the need to provide timely screening and care (Debchoudhury *et al.*, 2011). After the tsunami in South-East Asia, Bryant (2006) concluded that inappropriately-targeted therapy can compromise recovery and could even exacerbate post-traumatic stress symptoms, particularly if treatment is initiated before grief reactions subside.

In a post-disaster setting, criteria, such as efficiency and equity, have to do with the allocation of resources that often can be utilized only once, on behalf of one individual, group, location, or purpose. Program managers and service providers are challenged to minimize waste and to realize an equal distribution of support for people in equal circumstances. Hurricane Katrina showed how difficult this could be. Few Katrina survivors with mental disorders received adequate care. Under-treatment was greatest among respondents who belonged to younger and older age groups, were never married, were members of racial or ethnic minority groups, uninsured, and of moderate means (Wang *et al.*, 2007).

The quality of psychosocial support interventions, or an entire program, can be expressed in scores per criterion. Theoretically, the bundled scores can be ranked on a continuum, ranging from low to high. Top quality implies that every criterion is fully met. At minimum, none of the criteria are satisfied. One can imagine that the extremes are seldom seen. People involved will rate care provision positively or negatively based on a variety of observations and impressions. It is difficult to say where the threshold lies exactly, but there will always be a point where the quality level becomes "unacceptable". A program then fails to meet people's needs, and is unsafe, ineffective, inefficient, untimely, and/or unequal.

Attitude toward affected people

Post-disaster psychosocial support is likely to reflect a certain attitude to those affected and their needs. We can see attitude as a dimension, ranging from extremely passive (waiting, deliberately or even unintentionally doing nothing) to active (outreach, intervention). Then there is "watchful waiting", an approach in which time is allowed to pass before – following a stepped care approach (Williams *et al.*, 2009; Bisson *et al.*, 2010) – more advanced psychological services are provided, with the purpose of avoiding overtreatment. During this time, repeated assessments can be performed to determine if (an alternative) intervention is warranted. Watchful waiting is recommended in situations with a high likelihood of self-resolution or self-recovery, and in situations where the risks of intervention might outweigh the benefits (Meredith *et al.*, 2007).

In our opinion, this fits post-disaster psychosocial support in the recovery phase very well. Nevertheless, in the emergency phase, or soon after the event, some service providers, if present at the site, will tend to intervene quickly with mental health services for people with immediate needs. The wish to do something is tempting in the post-disaster reality, and one can doubt whether watchful waiting is realistic in the disruption of the event. However, the imperative to avoid over-activeness and to stimulate self-reliance is always legitimate. Using watchful waiting as a tool to monitor and follow patterns of complaints implies looking for signals where support and care are appropriate; signals, such as complaints, questions, and observed risks for people's privacy, safety, and well-being. Watchful waiting is waiting combined with detection. This is what distinguishes it from extreme passivity, which is, whether deliberate or not, characterized by the absence of intervention. Although probably seldom seen after critical events, unless the resources are unavailable in the community, without watchfulness there is always a risk of under-treatment. Extreme pro-activeness, however, ignores the capacity for self-resolution or resiliency. This extreme might be as theoretical as its opposite, but some caregivers might want to start therapeutic activity before natural normalization has been allowed to take place. The challenge is to stay away from the extremes.

2-D model

It is interesting to combine the quality dimension (the 6 criteria) and the attitude dimension. Psychosocial support can vary along both dimensions simultaneously. In the conceptual model (Fig. 1), attitude is depicted on the x-axis, with a range of passive and active positions. Linked to quality on the y-axis, the possible positions no longer follow straight lines. They are distributed along a parabolic shape, illustrating that waiting or intervening is not problematic until the quality threshold (the horizontal marker) is passed. On each side of the parabola, the quality deteriorates after crossing the threshold, which is undefined, and the path reaches the bottom. The passive lack of quality is caused by neglect, and disregard, and a lack of insight, capacity, or opportunity. Quality on the active side suffers from over-attention and wasted resources.

Both the passive and active attitudes have reasonable starting points to defend. We can explain this by using the

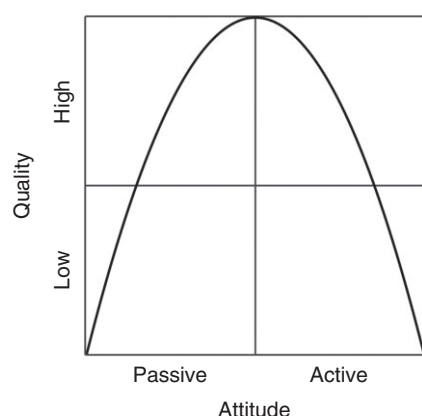


Figure 1. 2-D conceptual model. Attitude of caregivers toward people affected by disaster relates to quality. Possible positions of psychosocial care delivery are limited to the parabolic pathway. Route from the curve's top (high quality, middle attitude) to both bases (low quality, extremely passive, or active attitude) is accompanied by quality loss. Theoretically, differences in attitude are unproblematic until the quality threshold is crossed.

popular resilience concept and other ideas about how people respond to and recover from health problems (Bonanno *et al.*, 2010). Both attitudes can acknowledge people's capacity for self-recovery or resilience. Based on the viewpoint that intervening is unnecessary and a waste of resources, the passive group suggests holding back in the approach toward affected people believing that "the vast majority is self-reliant and recovers at its own strength". Activists, in their turn, do not accept the chance that people are overlooked, which is a legitimate position as well, believing that "not everyone is self-reliant or capable of self-recovery". The activist attitude is more common in major disasters where humanitarian agencies often quickly set up a psychosocial program with the aim of strengthening social support and re-establishing family links or a sense of normality.

In addition to defensible arguments for both attitudes, the risks are not to be ignored. Coupled with low-quality psychosocial services, having an overly passive or active attitude toward affected people is linked to an overestimation or underestimation of resilience, respectively (Table 1). A notable risk of an active attitude is that people are maneuvered into a dependent victim or patient role, with the main thought being: "I am entitled to assistance and compensation" or "I am sick and need treatment". Such thinking could result in stigma, with negative social and public health consequences (Link & Phelan, 2006). This type of thinking might also take away a person's opportunity to experience survival and growth. Likewise, one notable risk of a passive attitude is that affected people feel socially ignored or even abandoned.

HOW CAN THE QUALITY OF PSYCHOSOCIAL SUPPORT BE ENHANCED?

After this first exploration of what quality means in a post-disaster psychosocial support context, the next step is to con-

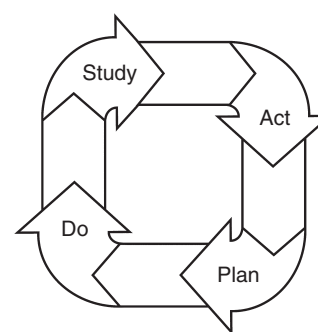


Figure 2. Systematic quality improvement: plan-do-study-act cycle.

sider quality improvement. We defined this as: "the combined and unceasing efforts of everyone – professionals and trained volunteers, affected ones and the people close to them, researchers, funding bodies, planners and educators – to make the changes that will lead to better health outcomes and well-being, better system performance, and better professional development (learning)". These "changes that will lead to" a better structure, process, and outcome can take many forms, ranging from the reallocation of resources and legislation to training programs and tool development. Moreover, quality improvement is about continuous and deliberate action to achieve quality goals, followed by a check to see if goals are realized. A typical quality-improvement strategy seeks to stimulate or maintain improvement based on the ongoing application of so-called "plan-do-study-act cycles" (Berwick, 1998; Taylor *et al.*, 2014). Plan-do-study-act cycles are precisely what their name suggests: a stepwise model to disentangle the actual effect of a plan, including a decisive moment regarding the necessity of alternative measures (Fig. 2).

Consequently, an optimization strategy for a post-disaster psychosocial support program should start with a plan, based on an objective derived from the assessed needs of people directly or indirectly affected by disaster, yielding appropriate measures supported by the best-available evidence and guidelines. In the "do" phase, the plan is implemented. A well-timed check will show if the optimum is reached or if adaptation is necessary. The strength of the quality-improvement strategy is that it links evaluation to need-centered planning (as recommended by Reifels *et al.*, 2013). The optimization strategy is a way to promote watchfulness on both sides of the parabola. By following the plan-do-study-act cycle, a safety valve is established. On the potential pathway to professional mental health care, people confronted with catastrophe can meet many different actors. Family members, friends, colleagues, community or religious leaders, trained volunteers, nurses, social workers, and family doctors can provide different types of support. They can all function as safety valves within the psychosocial program.

Repeated measurement

As an abundance of prevalence research is available from past events, crisis managers, service providers, and researchers

Table 1. Quality risks

Acting too passively	Acting too actively
Overestimated resilience and self-reliance. Problems and complaints are missed or neglected. Examples:	Underestimated resilience and self-reliance. Problems and complaints are created or increased. Examples:
– Unsafe: risk of damage – Ineffective: not reaching people in need – Inefficient: reparation costs – Not need-centered: not connecting to needs, ignoring interests – Not timely: appropriate care initiated too late or not at all – Inequity: disadvantaging people who cannot recover themselves	– Unsafe: intervention might make things worse – Ineffective: effects sought are unaffected by the intervention or with opposite result – Inefficient: wasted capacity, efforts directed towards people who do not need it – Not need-centered: suboptimal connection, supply-driven – Not timely: too early, redundant or misplaced – Inequity: resources spent are unavailable to others

should be able to make an educated guess regarding what to expect when confronted with a natural or man-made disaster. Prevalence studies are helpful to anyone who wants to know how needs and problems change through time and differ between populations. Although (or because) many mental health problems are likely to decrease gradually and naturally (Bonanno *et al.*, 2010), it is important to understand the influence of intervention. Single measurements say little about self-recovery, resiliency, or the added value of psychosocial assistance. This requires repeated measurement.

Examples can be found in the literature; for instance in the context of the Gulf Coast oil spill in Alabama and Mississippi. A comparison of individuals reporting depression symptoms and anxiety disorders in 2011 and 2010 showed that mental health services are still needed, particularly in households experiencing decreased income since the oil spill (Buttke *et al.*, 2012). Another study showed that mental health complaints in humanitarian volunteers decrease over time, but that levels at 18 months were still high enough to warrant additional intervention (Thormar *et al.*, 2014). Raguenaud *et al.* illustrated how epidemiological surveillance could be linked to an outreach program in the post-emergency phase of the storm Xynthia in Charente-Maritime (France). A surveillance program made it possible to describe the occurrence of psychological distress, monitor mental health service use by first-time users, and provide guidance to health authorities (Raguenaud *et al.*, 2012).

DISCUSSION

In the previous sections, we explored quality-improvement issues concerning post-disaster psychosocial support programs. Our objective was to sketch a conceptual framework for the further study of the quality of such programs, based on models described in the literature.

The variety in available models forced us to make a selection. One can always argue whether other models are more suitable or comprehensive. Nevertheless, we chose to adopt a couple of theoretical concepts that, in the last few decades, have become popular among scholars and institutions internationally. The resulting framework is a combination of the Donabedian model, the quality criteria, and the plan-do-study-act cycle, and leads to several conclusions. First, under-

standing the quality of a psychosocial program implies knowing the elements that constitute the program's structure, process, and outcome, including the scores per quality criterion, plus the associations between the elements. Only then can we work deliberately to improve the quality where desirable or necessary. Second, within the framework, high quality is associated with responsible behavior, avoiding waste and harm, and not overestimating or underestimating resilience (proposed here as a parabolic model). Third, the quality threshold is to be guarded. Program managers and service providers who check/monitor whether their plans and expectations regarding a diversity of individuals or communities are realized, bring a safety valve into the program. When we know the needs and problems of affected people, and are confronted with the effect of (non)intervention, we can verify if service delivery is situated in the optimal area of the parabolic model. Finally, application of the framework discussed in this article integrates research and evaluation into disaster response planning.

Based on these conclusions, we recommend that program managers, service providers, and researchers use this framework in practice to guide and evaluate the planning and implementation of post-disaster psychosocial support programs. It can be applied to various events and circumstances, and at various moments in time, that is, during the preparation, the response in the acute phase, and the service delivery in the short-, mid-, and long-term recovery phase.

Challenges

In addition to chances, there are challenges. First of all, it is important to examine the program in relation to its context, not as an isolated set of elements. The type of disaster and the nature of the threat are relevant. A natural disaster, such as flooding or an earthquake, for instance, is likely to demand a different program than a terrorist attack or chemical, biological, radiological, or nuclear events (Gouweloos *et al.*, 2014). Moreover, there is reason to assume that well-resourced countries are in a better position to serve communities and individual citizens because of a better-equipped system in terms of, for instance, education, access to general practitioners and hospitals, higher levels of public and private health expenditure, a lower proportion living in poverty, higher

levels of income equality, and less resource loss due to public building standards; these are only a few of the country indicators of the World Vulnerability Index (Alliance Development Works, 2011; 2012). The vulnerability level explains, at least partly, what helps or hinders the design and implementation of psychosocial support programs. The probable correlation between program quality and country features makes it important to unravel the dynamics between a program and its context, which besides vulnerability, is derived from other cultural, social, demographic, and natural factors.

Second, although numerous instruments are available to measure psychological and social capacities, needs, and problems of people, convenient and reliable instruments to comprehensively assess the quality of psychosocial support programs are rare. Some examples can be found (e.g. outcome-oriented survey tools described by Ommen *et al.*, 2010 or by Holsappel *et al.*, 2013). Still their availability is to be improved by the development, extensive testing, and international exchange and translation of such tools that, preferably, also cover the structure and process of a program. Crisis and health authorities, service providers, and researchers are likely to benefit from this. It will strengthen the evaluation potential and the opportunities to generate feedback that has a positive effect on quality improvement (Dückers *et al.*, 2011; Ivers *et al.*, 2012).

At the same time, we must be realistic. Our bandwidth to draw legitimate conclusions on what works and does not work is fairly limited (Bisson *et al.*, 2010; North & Pfefferbaum, 2013; Gouweloos *et al.*, 2014). Systematic program evaluations can enrich the international knowledge base. However, assessing what works and why it works will remain challenging in disaster settings that often are highly uncontrollable, unpredictable, and fluid.

CONTRIBUTIONS

Study Design: MD.

Data Collection and Analysis MD and ST.

Manuscript Writing MD and ST.

REFERENCES

- Alliance Development Works. *WorldRiskReport 2011*. Berlin: Alliance Development Works, 2011.
- Alliance Development Works. *WorldRiskReport 2012*. Berlin: Alliance Development Works, 2012.
- Batalden PB, Davidoff F. What is “quality improvement” and how can it transform healthcare? *Qual. Saf. Health Care* 2007; **16**: 2–3.
- Berwick DM. Developing and testing changes in delivery of care. *Ann. Intern. Med.* 1998; **128**: 651–656.
- Berwick DM. A user’s manual for the IOM’s “Quality Chasm” report. *Health Aff.* 2002; **21**: 80–90.
- Bisson JI, Tavakoly B, Witteveen AB *et al.* TENTS guidelines: development of post-disaster psychosocial care guidelines through a Delphi process. *Br. J. Psychiatry* 2010; **196**: 69–74.
- Bonanno GA, Brewin CR, Kaniasty K, La Greca AM. Weighing the costs of disaster: consequences, risks, and resilience in individuals, families, and communities. *Psychol. Sci. Public Interest* 2010; **11**: 1–49.
- Bryant RA. Recovery after the tsunami: timeline for rehabilitation. *J. Clin. Psychiatry* 2006; **67**: 50–55.
- Buttke D, Vagi S, Schnall A *et al.* Community assessment for public health emergency response (CASPER) one year following the Gulf Coast oil spill: Alabama and Mississippi, 2011. *Prehosp. Disaster Med.* 2012; **27**: 496–502.
- Debhoudhury I, Welch AE, Fairclough MA *et al.* Comparison of health outcomes among affiliated and lay disaster volunteers enrolled in the World Trade Center Health Registry. *Prev. Med.* 2011; **53**: 359–363.
- Donabedian A. *The Definition of Quality and Approaches to Its Assessment*. Ann Arbor, MI: Health Administration Press, 1980.
- Donabedian A. The quality of care: how can it be assessed? *JAMA* 1988; **260**: 1743–1748.
- Dückers MLA, Wagner C, Vos L, Groenewegen PP. Understanding organisational development, sustainability, and diffusion of innovations within hospitals participating in a multilevel quality collaborative. *Implement. Sci.* 2011; **6**: 18.
- Eccles MP, Armstrong D, Baker R *et al.* An implementation research agenda. *Implement. Sci.* 2009; **4**: 18.
- Gouweloos J, Dückers M, Te Brake H, Kleber R, Drogendijk A. Psychosocial care to affected citizens and communities in case of CBRN incidents: a systematic review. *Environ. Int.* 2014; **72**: 46–65.
- Holsappel J, Dorn T, Fassaert T, Te Brake H. Evaluating quality of post-disaster psychosocial care from a victim’s perspective. *Eur. J. Psychotraumatol.* 2013; **4**: 21127.
- Inter-Agency Standing Committee. *IASC Guidelines on Mental Health and Psychosocial Support in Emergency Settings*. Geneva: IASC, 2007.
- International Federation of Red Cross and Red Crescent Societies. *World Disasters Report 2012*. Geneva: IFRC, 2012.
- International Federation of Red Cross and Red Crescent Societies. *World Disasters Report 2013: Focus on Technology and the Future of Humanitarian Action*. Geneva: IFRC, 2013.
- Ivers N, Jamtvedt G, Flottorp S *et al.* Audit and feedback: effects on professional practice and healthcare outcomes. *Cochrane Database Syst. Rev.* 2012; (6) CD000259.
- Link BG, Phelan JC. Stigma and its public health implications. *Lancet* 2006; **62**: 528–529.
- Meredith LS, Cheng WJ, Hickey SC, Dwight-Johnson M. Factors associated with primary care clinicians’ choice of a watchful waiting approach to managing depression. *Psychiatr. Serv.* 2007; **58**: 72–78.
- North CS. A tale of two studies of two disasters: comparing psychosocial responses to disaster among Oklahoma City bombing survivors and Hurricane Katrina evacuees. *Rehabil. Psychol.* 2010; **53**: 241–246.
- North CS, Pfefferbaum B. Mental health response to community disasters: a systematic review. *JAMA* 2013; **310**: 507–518.
- Ommen O, Wirtz M, Janssen C, Neumann M, Ernstmann N, Pfaff H. Validation of a theory-based instrument measuring patient-reported psychosocial care by physicians using a multiple indicators and multiple causes model. *Patient Educ. Couns.* 2010; **80**: 100–106.
- Raguenaud ME, Germonneau P, Leseigneur J *et al.* Epidemiological surveillance linked to an outreach psychological support program after the Xynthia storm in Charente-Maritime, France, 2010. *Prehospital Disaster Med.* 2012; **27**: 483–488.
- Reifels L, Pietrantonio L, Prati G *et al.* Lessons learned about psychosocial responses to disaster and mass trauma: an international perspective. *Eur. J. Psychotraumatol.* 2013; **4**: 22897.
- Roberts NP, Kitchiner NJ, Kenardy J, Bisson JI. Early psychological interventions to treat acute traumatic stress symptoms. *Cochrane Database Syst. Rev.* 2010; (3) CD007944.

- Rose S, Bisson JI, Churchill R, Wessely S. A systematic review of brief psychological interventions ("debriefing") for the treatment of immediate trauma related symptoms and the prevention of posttraumatic stress disorder. *Cochrane Database Syst. Rev.* 2005; (2) CD000560.
- Suzuki Y, Fukasawa M, Nakajima S, Narisawa T, Kim Y. Development of disaster mental health guidelines through the Delphi process in Japan. *Int. J. Ment. Health Syst.* 2012; **6**: 7.
- Taylor MJ, McNicholas C, Nicolay C, Darzi A, Bell D, Reed JE. Systematic review of the application of the plan-do-study-act method to improve quality in healthcare. *BMJ Qual. Saf.* 2014; **23**: 290–298. doi:10.1136/bmjqs-2013-001862.
- Te Brake H, Dückers M. Early psychosocial interventions after disasters, terrorism and other shocking events: is there a gap between norms and practice in Europe? *Eur. J. Psychotraumatol.* 2013; **4**: 19093.
- Te Brake H, Dückers M, De Vries M, Van Duin D, Rooze M, Spreeuwenberg C. Early psychosocial interventions after disasters, terrorism, and other shocking events: guideline development. *Nurs. Health Sci.* 2009; **11**: 336–343.
- Thormar SB, Gersons BPR, Juen B, Djakababa MN, Karlsson T, Olff M. The impact of disaster work on community volunteers: the role of peri-traumatic distress, level of personal affectedness, sleep quality and resource loss, on post-traumatic stress disorder symptoms and subjective health. *J. Anxiety Disord.* 2014; **28**: 971–977.
- Wang PS, Gruber MJ, Powers RE *et al.* Mental health service use among hurricane Katrina survivors in the eight months after the disaster. *Psychiatr. Serv.* 2007; **58**: 1403–1411.
- Wessely S, Bryant RA, Greenberg N, Earnshaw M, Sharpley J, Hughes JH. Does psychoeducation help prevent post traumatic psychological distress? *Psychiatry* 2008; **71**: 287–302.
- Williams R, Bisson J, Ajdukovic D *et al.* Guidance for responding to the psychosocial and mental health needs of people affected by disasters or major incidents, 2009. [Cited 30 Jun 2014] Available from URL: http://www.healthplanning.co.uk/media/1992/Principles_for_Disaster_and_Major_Incident_Psychosocial_Care_Final.pdf.
- Witteveen AB, Bisson JI, Ajdukovic D *et al.* Post-disaster psychosocial services across Europe: the TENTS project. *Soc. Sci. Med.* 2012; **75**: 1708–1714.
- World Health Organization, War Trauma Foundation, World Vision International. *Psychological First Aid: Guide for Field Workers*. Geneva: WHO, 2011.