DOI: 10.1590/1413-81232015212.17502014

Community Mental Health in disaster situations. A review of community-based models of approach

Roberto Ariel Abeldaño [1]
Ruth Fernández [1]

Abstract *A review of narrative literature is performed, aimed at exploring psychosocial intervention models in disaster situations. The documents reviewed were retrieved from PubMed, SciELO, GoogleScholar, and Medline, correspond to the period 1980-2014, and are written in Spanish, English and French. Web pages of international and government organizations were also searched. Four types of psychosocial interventions in disaster situations were identified: based on time, centered on a specific type of disaster, by spheres or levels of action, and person-centered. This review detected differences and similarities arising from the theoretical conception of disasters and the integral vision of the phenomena. The importance of creating and supporting programs based on community empowerment and participation as the basis for psychosocial intervention is stressed.*
Key words *Mental health, Disasters, Public health*

[1] Facultad de Ciencias Médicas, Universidad Nacional de Córdoba. Ciudad Universitaria s/n, Enrique Barros. 5000 Córdoba Córdoba Argentina.
ariabeldanho@gmail.com

Introduction

Natural disasters have affected Latin America throughout history, with various effects on society; this has originated in the region a widespread concern for the prevention and minimization of such effects[1]. For many persons, disasters constitute a personal tragedy that entails the loss of loved ones, homes, possessions, health and jobs. Their occurrence makes it necessary to deploy a series of strategies and concrete actions aimed at reinforcing individual, family and community support systems in order to increase their capacity for coping with possible mental health crises.

For a variety of reasons, which include political, economical, and administrative ones, many Latin American communities currently lack suitable preparations for coping with disasters, and these shortcomings entail the impossibility of a quick and effective response to the various effects of some catastrophes.

An increasingly important approach to the study of disasters is related to their psychosocial effects on the persons affected. Thus, the main challenges in the field of mental health are posed by the necessity of coping with these psychosocial effects in the heterogeneous array of Latin American countries, by the international experiences that have been carried out in the region, and by the available models of psychosocial intervention that might be adapted to a particular affected area by taking into consideration the cultural peculiarities of each country.

This review aims at examining the models known so far for approaching mental health issues in disaster situations.

Method

This study consists of a review of the narrative literature on disasters, which in our opinion is the most appropriate type of publication for describing and discussing the development and state of the art of this particular subject matter, both from a contextual and a theoretical point of view[2]. Due to the specificity of the topic of psychosocial interventions in disaster situations, the selection of documents for the corpus was based upon intentional criteria. The papers, book chapters, reports, and institutional reports were traced to various sources. For book chapters and papers published in scientific journals, the following databases were searched: PubMed, SciELO, Google Scholar, and Medline, using key words such as "disasters", "emergencies", "mental health", "community mental health", "mental health services", "disaster relief planning", "psychological intervention". The period selected was 1980-2014, so as to include some disasters which, for their importance, were worth reviewing. The languages of the documents searched are Spanish, English, and French.

Besides, the websites of governmental agencies and international organizations (WHO/OMS, PAHO/OPS, UNISDR/EIRD) were searched to gather data on documents related to experiences and results in disaster situations.

The literature was analyzed on the basis of the theoretical conceptions of disaster and of experiences of working with persons who have undergone disaster situations.

The EM-DAT database was also accessed. EM-DAT is a database that contains data on emergency events. It was developed by CRED, the Centre for Research on the Epidemiology of Disasters, based in Belgium, and contains essential data on the occurrence and effects of more than 18000 large-scale disasters around the world, from 1900 to the present, which has been gathered from various sources, including United Nations offices, non-governmental organizations, insurance companies, research institutions, and news agencies[3]. Data was retrieved from this database on those geophysical and hydro-meteorological events that occurred in Latin America and the Caribbean, in the period 1900-2011, resulting at least in 10 people dead and 100 people affected, and which involved international assistance and declaration of the state of emergency (Table 1).

History of disasters in Latin America

In the American continent, the combination of a complex geographical configuration with political, social, cultural and economic conditions has configured different disaster scenarios according to geographical regions. Thus, hurricanes and tropical storms have a higher frequency of occurrence in Central America and the Caribbean, whereas earthquakes and volcanic eruptions take place in the Andean countries. On the other hand, the areas adjacent to rivers that flow through steep slopes are affected by floods, mudslides, and landslides. In recent years, tsunami alerts have been reported with increasing frequency in countries of the Pacific Coast[4].

The following is a list of the disasters that caused the highest death tolls in some countries

Table 1. Distribution of reviewed articles per source and language of publication

Sources	
PubMed	6
Scielo	9
Google Scholar	6
Medline	2
International and Government Organizations	29
Total	
Languages	52
Spanish	30
English	21
French	1
Total	52

Source: prepared by the authors.

of Latin America and the Caribbean from 1900 to 2011, classified per type of event, which has been retrieved from the EM-DAT international database[3] (Table 2).

Disasters and vulnerability

First, it is necessary to clarify the concepts associated to the terms "disaster" and "vulnerability". Romero and Maskrey[5] distinguish between natural events occurring with some regularity, such as summer storms and tropical hurricanes, and unusual disasters, such as tsunamis, avalanches, mudslides and floods. The irregular occurrence of the second group does not imply that they are not foreseeable —it is commonly accepted that all disasters have a certain degree of foreseeability, which is mainly dependent on historically constructed social processes which are peculiar to the communities affected by those disasters.

According to Wilches-Chaux[6], the occurrence of a natural event, whether ordinary or extraordinary, will not necessarily cause a disaster in the community. It is acknowledged that for a disaster to impact on a community there must be a combination of two factors: the natural threat and the vulnerability of the community to the effects of disaster. These elements interact in a network of active and dynamic relations: society-menace-vulnerablity.

The United Nations Organization has noted that *disasters cause a serious disruption of the functioning of a community or a society, involving widespread human, material, economic or environmental losses and impacts, which exceed the ability of the affected community or society to cope with them using their own resources*[7]. Disasters also entail a marked reduction of the development potential of the affected areas both in the medium term and in the long term[8-10] and, in the future, their impact on populations may be aggravated by the effects associated to climate change[11] and to the complex emergencies that follow the original impact[12,13].

Effects of disasters on the mental health of communities

The response of people to disasters and other traumatic situations in which they perceive a danger to their lives or suffer the loss of material assets, family and loved ones, may include mental disorders. These, as described by Buckley et al.[14], may include a reliving of the trauma, and the cognitive-behavioral avoidance of stimuli associated with trauma.

The reviewed literature points to the psychosocial effects as some of the most weakening long-term results of disasters on individuals[15-17]. Despite the fact that a considerable number of persons experience situations of danger and anxiety, most of them go back to their daily activities and continue to function normally. Yet, some of them may experience the persistence of stress symptoms that affect their behavior and functional capacity and may progress to Post Traumatic Stress Disorder, depression and other mental disorders[18,19]. The World Health Organization acknowledges that disasters pose *a heavy burden on the mental health of the affected persons, the majority of whom live in developing countries, where the capacity to cope with those problems may prove very limited*[20].

This has led some authors to research the characteristics of psychosocial interventions in disaster situations, and to conclude that the most common types of interventions are group assistance and workshops. Other authors point to the *precariousness of organizations for coping with catastrophes*[21].

There are descriptions of the most frequent consequences on the mental health of the affected communities, including Post Traumatic Stress Disorder (PTSD) and depressive disorders[22]. In this area, the Pan-American Health Organization (PAHO)[23] has noted that emergencies and disasters entail a psychosocial disturbance which exceeds the coping skills of the affected population.

Table 2. Disasters with highest death tolls per country and type of event in Latin America and the Caribbean. Years 1900 to 2011. EM-DAT database.

	Type of event	Date of occurrence	Death toll
Argentina	Earthquake	04/27/1905	10000
	Flood	07/01/1958	360
	Storms	02/01/1974	100
Bolivia	Epidemic	01/01/1991	329
	Flood	03/17/1983	250
	Earthquake	05/22/1998	95
Brazil	Epidemic	01/01/1974	1500
	Flood	01/11/2011	900
	Flood	01/23/1967	785
	Avalanche or slide	03/19/1967	436
Chile	Earthquake	01/24/1939	30000
	Earthquake	08/16/1906	20000
	Earthquake	05/21/1960	6000
	Earthquake	02/27/2010	562
Colombia	Volcanic eruption	11/13/1985	21800
	Earthquake	01/25/1999	1186
	Volcanic eruption	05/02/1905	1000
	Avalanche or slide	09/27/1987	640
	Earthquake	12/12/1979	579
Costa rica	Earthquake	04/13/1910	1750
	Volcanic eruption	07/29/1968	87
	Earthquake	01/08/2009	31
Cuba	Storms	11/09/1932	2500
	Storms	10/04/1963	1750
	Storms	10/20/1926	600
Dominican republic	Storms	09/03/1930	2000
	Storms	08/01/1979	1400
	Flood	05/23/2004	688
Ecuador	Earthquake	08/05/1949	6000
	Earthquake	03/05/1987	5000
	Epidemic	06/13/1991	343
El salvador	Storms	06/08/1934	2000
	Earthquake	10/10/1986	1100
	Earthquake	05/06/1951	1000
Guatemala	Storms	10/01/1949	40000
	Earthquake	02/04/1976	23000
	Volcanic eruption	10/24/1902	6000
	Volcanic eruption	04/12/1905	5000
	Earthquake	12/29/1917	2650
Haiti	Earthquake	01/12/2010	222570
	Epidemic	10/22/2010	6908
	Storms	09/17/2004	2754
	Flood	05/23/2004	2665
Honduras	Storms	10/25/1998	14600
	Storms	09/18/1974	8000
	Avalanche or slide	09/20/1973	2800
Mexico	Earthquake	09/19/1985	9500
	Flood	05/12/1905	2000
	Volcanic eruption	05/02/1905	1000
	Flood	09/12/1999	636
Nicaragua	Earthquake	12/23/1972	10000
	Storms	10/25/1998	3332
	Earthquake	03/31/1931	1000

it continues

Table 2. continuation

	Type of event	Date of occurrence	Death toll
Perú	Earthquake	05/31/1970	66794
	Epidemic	08/18/1991	8000
	Avalanche or slide	01/10/1962	2000
	Earthquake	11/10/1946	1400
Puerto rico	Flood	10/07/1985	500
	Storms	09/01/1928	300
Venezuela	Flood	12/15/1999	30000
	Earthquake	07/29/1967	240
	Earthquake	08/03/1950	100

Source: EM-DAT: The OFDA/CRED International Disaster Database. Data version: v12.07. www.em-dat.net. Université Catholique de Louvain, Bruxelles. Belgique.

The impact of disasters is also dependent on the social and economic dimensions: people who suffer severe housing damages, especially those belonging to the lower-income strata, and those who lose their work and livelihoods are likely to have a more pronounced psychological impact.

The literature also points to the association of pre-existent vulnerability factors to more pronounced negative consequences for the mental health of the affected persons. Thus, poverty and gender differences, combined with the level of exposure to disaster, may be decisive for the presence of symptoms of depression, anxiety and Post Traumatic Stress Disorder[24]. There is also evidence of the relationship between post traumatic mental disorders and physical alterations such as fatigue, cephalea, gastralgia, and cardiopathy[25].

Resilience

Resilience is conceived as the ability of a person or a group to recover from the effects of adversity and continue planning for the future[26]. It is commonly accepted that resilience varies depending on personal characteristics and environment peculiarities which will be dealt with below. There is evidence that, after certain traumatic experiences, survivors may show resilient behavior both in their physical and mental health, as evinced by the fact that they do not develop chronic pathological symptoms[26].

Factors influencing psychosocial impact

According to PAHO[27], the psychosocial impact of disaster on people may depend on many factors; some of them may be classified according to the following categories:

• The nature of the event.

• The personality traits and degree of vulnerability of the affected persons.

• The environment and the circumstances.

The nature of the event

The events that produce the strongest impact are the unexpected ones, those caused by man, those entailing situations of prolonged stress and affecting people collectively. Events such as earthquakes, avalanches and mudslides do not allow time for deploying individual or collective prevention strategies and may result in feelings of helplessness, and emotional reactions like *seeking someone to lay the blame on*; this reactions somehow inhibit the capacity to reflect and make appropriate decisions.

The personality traits and the vulnerability of the affected persons

Large-scale disasters, which entail emergencies of a collective nature, *generate a major impact, because people live not only their personal tragedies but also those of friends and relatives; besides, the social and family support network is affected*[27].

Some age groups are more vulnerable than others, such as children and advanced-age people. Age, gender and the characteristics of the population affected should be taken into account, since catastrophes will have different consequences for children, adolescents and senior adults[28]. Moreover, psychosocial needs and coping resources

will also differ, depending on the roles they play in their ethnic and social environments[29].

Environment and circumstances

Disasters do not choose their victims, but they obviously hit harder in the case of families belonging to poorer communities, who are in situations of social vulnerability, and who may have serious limitations of access to social and healthcare services[30-33].

Assistance should be provided with a maximum of organization; delayed assistance may become an additional problem, and it may trigger social conflict. Another aspect to take into account is the media treatment of disaster situations, since this is a factor that may foster the social processes arising from humanitarian emergency crises.

In cases requiring population displacement measures[34], it is necessary to assess the possibility of relocating families in houses of relatives who reside in areas that have been less affected by the event; it has been shown that coping is more effective when accompanied by family support[35]. Group management is a valuable skill for those in charge of refugee camps, particularly when it becomes necessary to handle problems that derive from the coexistence of various social groups having heterogeneous cultural patterns and practices.

According to PAHO, individual responses in coping with disasters may be differentiated in three phases or moments: the pre-disaster phase, the disaster or impact phase, and the post-disaster phase.

Those events that develop unexpectedly and over a very short period of time practically leave no room for individuals or families to put up some type of preparation for coping with the disaster.

During the impact phase of disasters, *individuals must cope abruptly with potentially terrifying incidents. Emotional reactions are intense, individuals feel that their lives have been disrupted and their reactions range from paralyzing fear to inordinate agitation, and from sensory anesthesia to extreme pain*[36]. This implies that people may experience some degree of difficulty for making decisions.

In the post-disaster phase, there may remain in the community a latent fear for the recurrence of the event; this may originate sleep disorders, loss of appetite, and difficulties in the normal performance of daily activities.

Sleep disorders may persist for a few days, a frequent occurrence in persons who have been moved to refugee camps that shelter a great number of families; feeding and personal hygiene may also pose problems in cases of delayed humanitarian assistance or faulty distribution organization.

In cases of severe collective impact, PAHO[27] states that *in this phase, the damage to family and social cohesion is already noticeable, which obviously makes it difficult for individuals to overcome the trauma. If there is additionally a persistent threat of or need for evacuation, it is easy to understand that readjustment processes may be delayed and psychological symptoms may be aggravated to become permanent sequelae*. In this case, each individual undergoes internal processes mediated by the need to simultaneously handle their personal emotions (mourning, losses) and interpersonal relations (compromise with the other); during this phase, the performance of daily activities may constitute a heavy burden for some of the affected, whereas for others these activities may provide an opportunity to start healing the gap in their routine life experiences.

Models of psychosocial intervention in disasters in Latin America

In the international literature, it is observed that there are various models of psychosocial intervention in disaster situations, which have been implemented from different conceptual perspectives. There are models based on a human development approach, on a biological-epidemiological approach, and on a community approach. They stem from what is conceived as mental health and from the meaning ascribed to the term "disaster". In recent years, a change of paradigm has led to an emphasis on the conception of integral mental health, which shifts the focus from the individual to the community, and from the deficiencies to the potentials of the community[37].

Intervention models may be classified in four groups: interventions based on time, interventions that are centered on specific types of events, interventions according to levels of action, and interventions centered on persons. The following is a brief description of the distinctive features of these approaches.

Interventions based on time

This model emphasizes the moment of intervention: before, during, and after the disaster. Responses prioritize two aspects: the consequences of disasters for the community and the actions that may be carried out by the professionals of that community. This leads to the implementation of actions and strategies in accordance with the evolution of the disaster in its different phases[38].

Despite the fact that international experiences in interventions appear so far to be focused on the emergency (event-centered), in recent years the model has began a change towards a transverse-in-time approach, in which the concepts of integrality, promotion, prevention and recovery have become prevalent[39].

Interventions centered on a specific type of disaster

Within this model, interventions are focused on a specific type of disaster, and they develop action strategies based on the precipitating factors of the event. The following are some examples of international experiences exhibiting strategies of this emergency-focused approach.:

• Ecuador, through the PAHO[40], in a document which focuses on volcanic eruptions.

• El Salvador[41,42], specific interventions on earthquakes.

• Peru[43,44] in the cases of the Pisco and Ica earthquakes.

• Chile, in the case of the earthquake and tsunami of February 27, 2010[45,46]. Also, the earthquake and mine rescue of 2010[47].

• Dominican Republic's humanitarian assistance to the people evacuated as a result of the Haiti earthquake of 2010[48].

• The 1999 floods in Venezuela, known as the Vargas' Tragedy[49].

Interventions by levels or spheres of action

In this model, interventions are no longer centered on survival and material recovery, but on integrated levels according to the needs of the affected population, and taking into account the various sectors of action. An important asset is the capacity to bring together the affected community and other social actors into the processes carried out by various institutions to solve the needs of the different levels in a disaster situation. The Sphere Project[50] is an international initiative based in Geneva that has pioneered the implementation of integral strategies in disaster situations.

Person-centered interventions

Models related to this type of intervention put the stress on the empowerment and participation of the affected community in order to integrate it to the assistance activities. The focus is centered on community potential rather than on its deficiencies. Mental health is conceived as having a community component which seeks to integrate promotion, prevention, assistance and recovery, both at family and community levels of the population affected. An instance of this model is a manual and guidebook for mental health developed in Colombia[51].

The orientation of psychosocial interventions in the face of disasters

In recent years, the change of paradigm has raised a growing concern over the capacity and quality of response to the impact of emergencies and disasters on the mental health of affected communities. This concern, which is shared by governments, international organizations, scientific societies, and intervention teams, has favored the coordination of various fields of knowledge and led to an integrated approach to interventions.

The American Red Cross[52] has developed the concept that *it is not necessary to have professionals or specialists in the communities to deal with the emergencies caused by a disaster, provided there is availability of a working group of persons who are sensitive to the emotional needs of the victims and who are prepared to listen and interact with others around them and to create an atmosphere of safety and hope*. For this institution, it would be highly beneficial that the first intervention in disaster crisis situations be in charge of persons belonging to the community, who are in a position to make immediate contact with the victims.

According to PAHO[27], the interventions on persons affected by traumatic events may be developed following two modalities.

One is the so called *Emotional First Aid*, which aims at restoring immediately the person's psychosocial equilibrium. PAHO recommends that this help be offered by non-specialized personnel who get in touch with the persons affected by the disaster in the first moments following the event. The other modality is a *Specialized or Professional Intervention for Psychiatric Emergencies*.

This organization also points to some strategies to be considered for intervention in crisis situations:

• Intervention should be prompt and efficient: assistance should be provided with propinquity.

• It should have well defined short-term objectives, with realistic expectations. The intervention should aim at reducing symptoms and stabilizing the psychosocial status of the person and their family.

• It should be done using simple and clearly aimed methods, with pragmatism and flexibility, offering support and empathy. It should foster group, family and social solidarity.

• Intervention approach should be integral; besides the therapeutic action, it should be preventive and have a social perspective.

Some specific technical resources for the care of mental health are also mentioned[27]:

• Selection or *triage*: procedures for the selection of cases to be given assistance immediately after the disaster, aimed at reducing cognitive and emotional disorganization.

• To help the person restructure and redirect their life in the face of the crisis being experienced, and to reflect on the critical incident in such a way as to counteract excessive emotions.

• To allow free disclosure of emotions and trauma verbalization, which helps reduce symptoms. Many techniques for treatment of post-traumatic reactions are based on the person's skill for recalling and integrating traumatic memories through verbal expression.

• To foster understanding of loss of control as a possible normal reaction in a crisis situation.

• Use of spiritual or religious resources. Well conducted crisis interventions based on spiritual help offer highly favorable prospects.

• Group work. Disasters disrupt daily routines of persons, families and communities, and heighten perceptions of isolation and helplessness, which in turn may increase the need to socialize. In this case, the sense of belonging to a group serves to strengthen the self and facilitates support through dialogue and exchange. PAHO[27] states that groups may participate and help in community management work, coordination, and networking. Group formation fosters confidence and creates environments for sharing experiences, expressing feelings and seeking coping alternatives. *Groups allow persons to externalize and verbalize emotions and to acknowledge feelings. They foster solidarity and mutual support, and help to develop a sense of belonging and identification with the group*.

Discussion

This review of the literature detected issues such as social vulnerability as one of the factors that influence the psychosocial impact of disasters, and the effects of disaster on the mental health of the affected persons. Various perspectives were identified as regards disaster conceptualization, which in turn have a bearing on the psychosocial approaches.

This study also reviewed a series of models for approaching mental health issues in disaster situations. Several perspectives for community mental health in these situations were included: interventions based on time, interventions centered on specific types of disaster, interventions by levels or spheres of action, and person-centered interventions.

The models analyzed evinced substantial differences, since they were developed starting from different perspectives such as time, type of disaster, persons, and actions. Also, some similarities were detected among those strategies based on levels of action and those centered on persons, since both of them favor an integral vision of the phenomenon. It was also noted that, as a result of such differences and similarities, some models of approach to community mental health may be more debatable than others, on the basis of the theoretical conceptions of disaster, particularly as regards the issue of the origin of disasters: the social construction of disasters and, as its counterpart, the emergency-centered approach. The majority of the documents reviewed are addressed to the professionals involved; few of the documents retrieved suggest interventions in which community participation is the fundamental asset (besides the recommendations of international organizations.) This suggests the need to advocate and generate programs in which community empowerment and participation are at the core of psychosocial interventions.

All of the above has led to the conclusion that both the ambiguity in the conception of disasters and the preventive conception may lead to different results. It was also detected that the purposes of the interventions are defined in a general way whereas the objectives and goals are not clearly defined, which may cause serious difficulties in the evaluation of the intervention results[37,38].

As regards the quantity of the interventions ascribing to the various perspectives, it was observed that a greater number of publications corresponded to interventions whose core strategy was the specific type of disaster, as in the case of

the Chile earthquake and tsunami of 2010, and the mine rescue in the same country and year, as well as earthquakes in other Latin American countries.

The systematization of experiences and models of approach to psychosocial problems in communities affected by disaster situations is still incipient, and its importance should be stressed for making available documents that may serve as a guide to professionals, communities and organizations[37].

According to Osorio Yepes et al.[37], though the majority of experiences of interventions originate in institutions and independent organizations, it should be stressed that the main responsibility for these strategies lies in the governments and their institutions, because the success of such strategies depends primarily on their sustainability over time, on the political and economic support that permits their steady and integral execution, and on the decentralization of decision making in the management of intervention programs. It is also necessary to generate community networks[53] based on intersectoriality; though these networks are recent and incipient, as a result of the characteristics of the event, they have a potential to facilitate multisectorial work for emergency intervention; besides, other elements are necessary, such as community involvement, sustainability over time and government support[45].

Finally, it is important to take into account that the social and economic circumstances that cause vulnerability play a key role and affect the mental health of the persons involved in disaster situations. In other words, social gradients cause the emergence and persistence of mental disorders and, therefore, programs and interventions that purport to protect mental health should aim strongly at reducing social inequalities, which stresses the importance of supporting preventive and participatory interventions[54].

Collaborations

RA Abeldaño took part in the drafting, correction, and final revision of the article. R Fernández took part in the final revision of the article.

References

1. Turcios C. *Concepción centroamericana sobre seguridad y sus efectos en la atención de los desastres de origen natural*. Buenos Aires, Washington: Universidad del Salvador, Colegio Interamericano de Defensa; 2005.
2. Rother ET. Revisión sistemática X Revisión narrativa. *Acta Paul Enferm* 2007; 20(2):ix.
3. EM-DAT. The International Disaster Database. Centre for Research on the Epidiomology of Disasters (CRED). Université de Louvain. [acceso 2014 oct 20]. Disponible en: http://www.emdat.be/
4. Lima BR, Gaviria M, editores. *Las consecuencias psicosociales de los desastres: La experiencia latinoamericana*. Chicago: Hispanic American Family Center; 1989.
5. Romero G, Maskrey A. Como entender los desastres naturales. In: Maskrey A, editor. *Los desastres no son naturales*. Lima: Red de Estudios Sociales en Prevención de Desastres en América Latina; 1993. p. 6-10.
6. Wilches-Chaux G. Vulnerabilidad global. In: Maskrey A, editor. *Los desastres no son naturales*. Lima: Red de Estudios Sociales en Prevención de Desastres en América Latina; 1993. p. 11-41.
7. United Nations International Strategy for Disaster Reduction (UNISDR). *2009 UNISDR terminology on Disaster Risk Reduction. Nations International Strategy for Disaster Reduction*. Geneva: UNISDR; 2009.
8. Cuny F. *Disasters and development*. Oxford: Oxford University Press; 1983.
9. Kreimer A, Munasinghe M, editors. *Managing Natural Disasters and the Environment*. Washington: The World Bank; 1991.
10. Lavell A. *The impact of disasters on development gains: clarity or controversy*. Geneva: IDNDR Programme Forum; 1999.
11. European Commission. *Communication on Climate Change in the Context of Development Co-operation*. Brussels: European Commission; 2003.
12. Allard Soto R, Arcos González P, Pereira Candel J, Castro Delgado R. Salud pública y conflictos bélicos: las emergencias humanitarias complejas. *Rev Adm Sanit* 2003; 1(1):29-45.
13. Salama P, Spiegel P, Talley L, Waldman R. Lessons learned from complex emergencies over past decade. *Lancet* 2004; 364(9447):1801-1813.
14. Buckley T, Blanchard E, Hickling E. A confirmatory factor analysis of posttraumatic stress symptoms. *Behav Res Ther* 1988; 36(11):1091-1099.
15. *World Health Organization (WHO). Psychosocial consequences of disasters: prevention and management. Geneva: WHO;* 1992.
16. Norris F. *Psychosocial consequences of natural disasters in developing countries: what does past research tell us about the potential effects of the 2004 tsunami?* White River Junction: National Center for PTSD, US Department of Veterans Affairs; 2005.
17. Ursano R, Fullerton C, McCaughey B. Trauma and disaster. In: Ursano R, McCaughey B, Fullerton C, editors. *Individual and community responses to trauma and disaster: the structure of human chaos.* Cambridge: Cambridge University Press; 1994. p. 3-27.

18. Institute of Medicine, National Academy of Sciences. *Preparing for the psychological consequences of terrorism: a public health strategy*. Washington: National Academy Press; 2003.
19. Ursano R. Terrorism and mental health: public health and primary care. In: Status report: meeting the mental health needs of the country in the wake of September 11, 2001. *The Eighteenth Annual Rosalynn Carter Symposium on Mental Health Policy*; 2002 Nov 6-7; Atlanta, Georgia. Atlanta: The Carter Center; 2002. p. 64-68.
20. World Health Organization (WHO). *The world health report 2001—mental health: new understanding, new hope*. Geneva: WHO; 2001.
21. Mendez M. Mapa Exploratorio de Intervenciones Psicosociales frente al Terremoto del 27 de Febrero de 2010 en la Zona Centro-Sur de Chile. *Ter Psicol* 2010; 28(2):193-202.
22. Cova F, Rincón P. El Terremoto y Tsunami del 27-F y sus Efectos en la Salud Mental. *Ter Psicol* 2010; 28(2):179-185.
23. Zaccardelli Davoli M. Los problemas psicosociales en situaciones de desastres y emergencias: marco general de referencia. In: Rodríguez J, Davali MZ, Pérez R, organizadores. *Guía Práctica de Salud Mental en situaciones de desastres*. Washington: OPS; 2006. p. 1-7.
24. Díaz C, Quintana G, Vogel E. Síntomas de depresión, ansiedad y estrés post-traumático en adolescentes siete meses después del terremoto del 27 de febrero de 2010 en Chile. *Ter Psicol* 2012; 30(1):37-43.
25. Logue J. Some indications of the long term health effects of a natural disaster. *Public Health Rep* 1981; 96(1):67-69.
26. Sapolsky R. *Why Zebras Don't Get Ulcers*. 3rd Ed. New York: Owl Books; 2004.
27. Organización Panamericana de la Salud (OPS). *Protección de la salud mental en situaciones de desastres y emergencias. Serie de manuales y guías sobre desastres*. Washington: OPS, OMS; 2002.
28. Breslau N, Davis G, Adreski P, Peterson E, Schultz L. Sex differences in post-traumatic stress disorder. *Arch Gen Psychiatry* 1997; 54(11):1044-1048.
29. Silverman W, La Greca A. Children experiencing disasters: Definitions, reactions, and predictor of outcomes. In: La Greca A, Siverman W, Silverman E, Robers M, editors. *Helping Children Cope with Disaster and terrorism*. Washington: American Psychological Ass; 2002. p. 11-33.
30. Cohen R. *Human problems in mayor disasters: a training curriculum for emergency medical personnel*. Washington: U.S Government printing Office; 1987.
31. Álvarez M, Guillén R, Robles Y, Aliaga K, Vargas E, Vilchez L. *Restableciendo el equilibrio personal en emergencias y desastres: Asistencia psicológica. Instituto Nacional de Salud Mental "Honorio Delgado-Hideyo Noguchi"*. Lima: Ministerio de Salud; 2010.
32. Neria Y, Galea S, Norris F. *Mental Health and Disasters*. New York: Cambridge Univ. Press; 2009.
33. Raphael B. Mental health responses in a Decade of Disasters. Australia 1974-1983. *Hosp and Comm. Psychiatry* 1987; 38(12):1331-1337.
34. Haghebaert G, Zaccarelli Davoli M. *Salud Mental y desplazamiento forzado. Capítulo III, en Guía Práctica de Salud Mental en situaciones de desastres*. Washington: OPS; 2006.
35. Moneta M. Apego, resiliencia y vulnerabilidad a enfermar: Interacciones genotipo-ambiente. *Gaceta de Psiquiatría Universitaria* 2007; 3(3):321-326.
36. García Ranedo M. *Psicología y desastres: Aspectos Psicosociales*. Barcelona: Castelló de la Plana; 2007. Publications de la Universitat Jaume I.
37. Osorio Yepes C, Díaz Facio Lince V. Modelos de intervención psicosocial en situaciones de desastre por fenómeno natural. *Rev Psicología de la Universidad de Antioquia* 2012; 4(2):65-84.
38. Ehrenreich J. *Enfrentando el desastre. Una Guía para la intervención psicosocial*. Washington: Trabajadores en Salud Mental sin Fronteras; 1999.
39. Comité Permanente entre Organismos (IASC). *Guía del IASC sobre Salud Mental y Apoyo Psicosocial en Emergencias Humanitarias y Catástrofes*. Ginebra: IASC. 2007.
40. Organización Panamericana de la Salud (OPS). *Preparativos de salud para situaciones de desastres. Guía de preparativos de salud frente a erupciones volcánicas*. Quito: OPS; 2005.
41. Estrategia Internacional de Reducción de Desastres (EIRD), Organización Panamericana de la Salud (OPS), República de El Salvador. *Lecciones aprendidas de los terremotos del 2001 en El Salvador*. San Salvador: EIRD, OPS; 2001.
42. Organización Panamericana de la Salud (OPS). *Terremotos en El Salvador 2001*. Washington: OPS; 2002. Crónicas de desastres Nº 11.
43. Instituto de Defensa Civil del Perú (INDECI). *Lecciones aprendidas del sur: Sismo de Pisco, 15 agosto 2007*. Lima: INDECI; 2009.
44. UNESCO, Ministerio de Educación de Perú. *Guía de recursos pedagógicos para el apoyo socioemocional frente a situaciones de desastre: La experiencia de Ica: "Fuerte como el Huarango Iqueño"*. Lima: UNESCO; 2009.
45. Loubat M, Fernández A, Morales M. La Experiencia de Peralillo: Una Intervención Psicológica para el Estado de Emergencia. Revista Sociedad chilena de psicología clínica. *Terapia psicológica* 2010; 28(2):203-207.
46. Organización Panamericana de la Salud, Ministerio de Salud de Chile. *Protección de la salud mental luego del terremoto y tsunami del 27 de febrero de 2010 en Chile: crónica de una experiencia*. Santiago de Chile: OPS, CRID; 2010.
47. Marín H. *Modelo de apoyo psicosocial en emergencias, desastres y catástrofes intervenciones psicosociales en el terremoto y rescate minero, Chile 2010. Memoria de conferencia dictada en congreso internacional de salud ambiental ocupacional*. Barranquilla: Uninorte; 2011.
48. República Dominicana. Ministerio de Salud Pública, Organización Panamericana de la Salud. *Apoyo psicosocial a población haitiana desplazada posterior al terremoto del 12 de enero del 2010*. Santo Domingo: Ministerio de Salud Pública de República Dominicana, OPS; 2010.

49. Sánchez L. La tragedia de Vargas: Dos experiencias universitarias en la comunidad. *Rev Acta Científica Venezolana* 2003; 54(1):98-105.
50. Steering Committee for Humanitarian Response (SCHR), Voluntary Organizations in Cooperation in Emergencies (VOICE), International Council of Voluntary Agencies (ICVA). *Proyecto Esfera: Carta humanitaria y normas mínimas de respuesta humanitaria en casos de desastre*. Ginebra: SCHR, VOICE, ICVA; 2004.
51. De Santacruz C, Medina E, Santacruz H. *Capacitación en salud mental. Manual de apoyo y guía de procedimientos*. Bogotá: Ministerio de Protección social de Colombia; 2003.
52. Prewitt J. *Primeros auxilios psicológicos*. Ciudad de Guatemala: Cruz Roja Americana, Delegación Regional de Centroamérica; 2001.
53. Salles M, Barros S. Inclusão social de pessoas com transtornos mentais: a construção de redes sociais na vida cotidiana. *Cien Saude Colet* 2013; 18(7):2129-2138.
Guimaro M, Santesso A, Dos Santos O, Silva S, Baxter S.
54. Sintomas de estresse pós-traumático em profissionais durante ajuda humanitária no Haiti, após o terremoto de 2010. *Cien Saude Colet* 2013; 18(11):3175-3181.

Article submitted 24/07/2014
Approved 29/01/2015
Final version submitted 31/01/2015