Disasters and Mental Health

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Preface

The mental health consequences of disasters have been the subject of a rapidly growing research literature in the last few decades. Moreover, they have aroused an increasing public interest, due to the dramatic impact and the wide media coverage of many recent disastrous events—from earthquakes to hurricanes, from technological disasters to terrorist attacks and war bombings.

The World Psychiatric Association has had for a long time a great interest and commitment in this area, especially through the work of the Section on Military and Disaster Psychiatry and the Program on Disasters and Mental Health. Several sessions on this topic have taken place in past World Congresses of Psychiatry, and other scientific meetings organized by the Association have dealt exclusively with disaster psychiatry.

Several research and practical issues remain open in this area. Among them, those of the boundary between ''normal'' and ''pathological'' responses to disasters; of the early predictors of subsequent significant mental disorders; of the range of psychological and psychosocial problems that mental health services should be prepared to address; of the efficacy of the psychological interventions which are currently available; of the nature and weight of risk and protective factors in the general population; of the feasibility, effectiveness and cost-effectiveness of the preventive programs which have been proposed at the international and national level. Moreover, wherever disasters strike, policy and service organization issues that plague the mental health field worldwide receive even more prominence: the detection and management of mental health problems are assigned less priority than care for physical problems; trained personnel is lacking; community resources for mental health care are poor; a vast proportion of people in need hesitate to ask for or accept mental health care.

However, it is clear that the field is progressing rapidly from the scientific viewpoint (with a refinement of early diagnostic concepts and treatment strategies, and a deeper understanding of resilience factors at the individual and community level) and that in a (slowly) growing number of countries concrete steps have been taken concerning training of personnel, education of the population, and the development of a network of services prepared to deal with psychological emergencies.

This volume aims to portray this evolutionary phase, by providing an overview of current knowledge and controversies about the mental health

consequences of disasters and their management, and by offering a selection of first-hand accounts of experiences in several regions of the world. We were impressed by the liveliness of some of the reports, and particularly touched by some of the chapters dealing with the mental health consequences of armed conflicts, especially on children and adolescents. The authors of these chapters have accepted our advice to be as objective as possible in their descriptions. However, despite the intentions of the authors and the editors, some traces of their unavoidable emotional involvement may have been left in their chapters.

Neither the research overview nor the selection of experiences presented in this volume should be seen as being comprehensive. We hope, however, that the book will throw more light on the issue of mental health consequences of disasters, stimulate acquisition of more knowledge through research, enhance our sensitivity, and contribute to a more effective prevention and management of the behavioural effects of disasters. Disasters have been happening since time immemorial and will continue to happen. We must be prepared to face them and deal with their consequences.

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CHAPTER

1

What is a Disaster?

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INTRODUCTION

It is almost impossible to find an acceptable definition of what a disaster is. Nevertheless, a definition is unavoidable if we want to be able to face disasters and their consequences. Quarantelli [1] states that, if the experts do not reach an agreement whether a disaster is a physical event or a social construct, the field will have serious intellectual problems, and that defining what a disaster is does not mean becoming involved in a futile academic exercise. On the contrary, it means delving into what are the significant characteristics of the phenomenon, the conditions that lead to it and its consequences. On the other hand, a definition is also needed to guide the interventions following a natural event, for instance, when a government declares a region devastated by a flooding as a ''catastrophe area''. Furthermore, a definition is needed for understanding, because any concrete disaster poses the question of its meaning.

A danger is an event or a natural characteristic that implies a risk for human beings, i.e., it is the agent that, at a certain moment, produces individual or collective harm. A danger is therefore something potential. A risk is the degree of exposure to the danger, it is therefore something probable. A reef shown on a nautical map is a danger; but it is a risk only for those who sail in waters nearby. A disaster is the consequence of a danger, the actualisation of the risk.

The literature on disasters offers several definitions from different perspectives, as summarised in the following sections.

THE MAGNITUDE OF THE DAMAGE PRODUCED BY THE EVENT

Human losses, number of injured persons, material and economic losses and the harm produced to the environment are often considered in order to

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define a disaster. For some authors (e.g., 2) the number of 25 deceased has to be exceeded; for others (e.g., 3) this figure has to be higher, more than 100 deceased and more than 100 injured or losses worth more than one million US dollars; or even higher (e.g., 4), an event leading to 500 deaths or 10 million US dollars in damages. According to Wright [5], experience shows that when an event affects more than 120 persons, except for cases of war, non-routine interventions and coordination between different organisations are needed, something which is already pointing out another important characteristic of a disaster. For German insurance companies, damages greater than one million marks or more than 1,000 deceased are needed [2]: these figures are obviously given in order to limit responsibilities of insurance policies.

To define a disaster by the magnitude of the damage caused has many inconveniences. First, it may be difficult to evaluate the damages, especially in the initial stages. Second, such definitions are of no use for comparative studies in different countries or social situations and are affected by inflation [6]. Third, disasters have a different impact in different environments: an earthquake of an intensity to cause a fright in California nowadays would have been a catastrophe before 1989 and would be a catastrophe in many developing countries at present. There may even exist disasters with zero harm. The best example of this was the broadcast in 1935 by Orson Welles of *The War of the Worlds* [7]: more than one million persons showed intense panic reactions because of what they believed to be a Martian invasion. But, what is more important, these definitions fail to capture what is essential in a disaster.

EXCEPTIONAL EXTERNAL AGENT

Disasters are often considered as events from the physical environment which are harmful for human beings and are caused by forces which are unfamiliar to them [8,9]. Disasters are normally unforeseen and catch the populations and administrations affected off-guard. However, there are disasters that repeat themselves, for example in areas affected by flooding, and others which are persistent, as in many forms of terrorism. In these cases a culture of adaptation and resignation to disasters develops.

Disasters are normally considered as events that occur ''by chance'' and therefore unavoidable. In the past they were ascribed to divine punishment, and even nowadays it is not unusual to read that an event ''reached Biblical proportions'', or that nature's powers have been unchained as they were when God had to punish the evildoing of human beings with the Flood. In fact, the etymology of disaster, from Latin (*dis* ''lack'' or ''ill-'', *astrum* ''heavenly body'', ''star''), indicates bad luck or fortune.

An important characteristic of disasters is their centrality [10]. Catastrophes are disasters of a great centrality. A total breakdown of everyday functioning takes place in them, with the disappearance of normal social functioning, loss of immediate leaderships, and the insufficiency of the health and emergency systems, in such a way that the survivors do not know where to go to receive help.

THE NATURE OF THE AGENT

Human-made disasters are normally distinguished from those which are consequences of the inclemency of nature. Among the first sort, some are not intended, i.e., they are the consequence of human error. In this case, the responsibility is considered to be institutional, and compensations from insurance companies are granted.

There are also human-made disasters that are the consequence of a clear intention, as in the case of conventional war. In these cases, individuals are able to start up more or less legitimate or efficient coping or defence mechanisms to confront the aggression. The First World War was a war of fronts that affected little the rearguard, while in the Spanish Civil War and in the Second World War there were as many victims due to combat actions in the rearguard as in the front (settling of scores, bombing of the civil population, and so on). Therefore the psychological and psychopathological reactions were different. During the First World War, those evacuated from the front came to a safe rearguard, in which they were assisted in an attentive way, favouring the appearance of very dramatic conversion symptoms. During the Spanish Civil War [11,12], those evacuated came to a rearguard which was also affected and they presented more psychosomatic symptoms, i.e., more internalised ones. The same happened during the Second World War.

On other occasions, violence is due to terrorist attacks, assaults by rapists or similar events. This is an anonymous violence whose goal is to cause harm to whomever, something that prevents the people affected from developing any kind of defence. This kind of violence may affect any person, in any place of the world, at any time.

In disasters produced by the inclemency of nature, the kind of disaster normally determines the way the pain is perceived and the quantum of guilt. Some are more foreseeable, as for example in hurricane areas, volcano eruptions or floodings, and other are not so foreseeable, as in some earthquakes or massive fires.

However, it is not possible to accept that there are purely natural disasters, since the human hand is always present. This is the thesis of Steinberg [13], who studied a large series of disasters in the USA. It has to be

taken into account that the degree of development of a community is a determinant fact. Between 1960 and 1987, 41 out of the 109 worst natural disasters took place in developing countries, with the death of 758,850 persons, while the remaining 59% of disasters took place in developed countries, with the death of 11,441 persons [14]. It is curious enough that these proportions are similar to those in famine, HIV infection or refugee status [15].

THREAT TO THE SOCIAL SYSTEM

Definitions of disasters based on the idea of an exceptional agent are not fully satisfying. In fact, when reviewing them, other elements appear which are related to social conditions. The flooding of an uninhabited non-cultivated plain with no ecological value is not a disaster; human presence is needed. Carr [16] was the first to point out the importance of the social aspects: ''Not every windstorm, earth-tremor, or rush of water is a catastrophe. A catastrophe is known by its works; that is to say, by the occurrence of disaster. So long as the ship rides out the storm, so long as the city resists the earth-shocks, so long as the levees hold, there is no disaster. It is the collapse of the cultural protections that constitutes the disaster proper.''

Therefore, the impact of an event on a social group is related to the adaptive mechanisms and abilities that the community has developed. If they are efficient, we can speak of an emergency, not of a disaster. For instance, a traffic accident with ten victims is a disaster in a little village, but not in a city [17]. Disasters have been defined from this perspective as external attacks which break social systems [8], which exert a disruptive effect on the social structure [18]. The social, political and economic environment is as determinant as the natural environment: it is what turns an event into a disaster [19]. Social disruption may create more difficulties than the physical consequences of the event [20].

The United Nations Coordinating Committee for Disasters [21] stipulates that a disaster, seen from a sociological point of view, is an event located in time and space, producing conditions under which the continuity of the structures and of the social processes becomes problematic. The American College of Emergency Medicine [22] points out that a disaster is a massive and speedy disproportion between hostile elements of any kind and the available survival resources. The same appears in a definition by the World Health Organization [23]: ''A disaster is a severe psychological and psychosocial disruption, that largely exceeds the ability to cope of the affected community''. In the United Nations glossary [24] we find the same: ''A serious disruption of the functioning of society, causing widespread

human, material, or environmental losses which exceed the ability of affected society to cope using only its own resources''.

Crocq *et al.* [25] point out the importance of the loss of social organisation after a disaster. For them the most constant characteristic is the alteration of social systems that secure the harmonious functioning of a society (information systems, circulation of persons and goods, production and energy consumption, food and water distribution, health care, public order and security, as well as everything related to the corpses and funerary ceremonies in cemeteries).

In summary, disasters are events affecting a social group which produce such material and human losses that the resources of the community are overwhelmed and, therefore, the usual social mechanisms to cope with emergencies are insufficient.

The impact of the disaster can be cushioned by the ability of those affected to adapt psychologically, by the ability of the community structures to adapt to the event and its consequences or by the quantity and kind of external help.

Therefore, three levels of disaster have been described: level I (a localised event with few victims; with local health resources available, adequate to screen and treat; and with transportation means available for further diagnosis and treatment); level II (there are a lot of victims and resources are not enough; help coming from various organisms at a regional level is needed – the definition varies according to the size and kind of territorial organisation of the country); level III (the harm is massive; local and regional resources available are insufficient; and the deficiencies are so significant that national or international help is needed).

Thus, a disaster is something exceptional not only because of its magnitude. Mobilising more material and staff is not sufficient; unfamiliar tasks have to be carried out, changes in the organisation of the institutions are needed, new organisations appear, and persons and institutions which normally do not respond to emergencies are mobilised. Moreover, in some cases, the efficacy of teams and resources commonly utilised for emergencies decreases, and the normal processes aimed at coordinating the response of the community to the emergency may not adapt correctly to the situation.

Disasters induce huge social mobilisations and solidarity [26]. Sometimes a great part of this help is counterproductive, creating the so-called problems of the ''second disaster'', when excessive and unorganised help arrives causing a slowdown in recovery and interfering with the long-term evolution.

Several things are needed in order to produce a disaster: an extraordinary event capable of destroying material goods, of causing the death of persons or of producing injuries and suffering [27], or an event in the face of which

the community lacks adequate social resources to react [28]. This leads to the need for intervention and external support, to a personal sensation of helplessness and threat, to tensions between social systems and individuals [29], and to a deterioration of the links that unite the population and that generate the sense of belonging to the community [30].

SOCIAL VULNERABILITY

Disasters do not only affect social functioning; they are also the consequence of a certain social vulnerability hardly perceived until they occur. They reveal previous failures.

Vulnerability decreases with the degree of development of civilisation, which in essence precisely aims to protect human beings from the negative consequences of their behaviour and from the forces unleashed by nature [31].

This social vulnerability is present even in the pathological reactions to disasters. Among the risk factors for post-traumatic stress disorder most often identified in the USA are: female sex; Hispanic ethnicity [32]; personal and family history of psychiatric disorders; experiences with previous traumas, especially during childhood; poor social stability; low intelligence; neurotic traits; low self-esteem; negative beliefs about oneself and the world and an external locus of control [33]. Curiously enough, there is a preventing factor which is political activism.

In the toxic oil syndrome catastrophe [34], social vulnerability was particularly evident since the toxin did not cross the haemato-encephalic (blood–brain) barrier and those affected did not suffer from symptoms due to a direct cerebral harm. The factors related to the appearance of psychopathological sequelae were female sex, low socio-economic level, low educational level, and the previous history of ''nervous disorders'' and of psychiatric consultations.

POST-MODERN PERSPECTIVE

Quarantelli [1] introduced a post-modern perspective considering disasters from the subjective perspective of those affected, including rescue staff and all those who have been involved in any way or even showed interest. Any disaster affects intimately and stirs up the foundations of the world everyone builds for his/her own and where he/she lives. Moreover, a disaster affects a community and is like a magnifying glass that increases the appreciation of the lack of social justice and equity. From this perspective, disasters are part of a social change; they are more

an opportunity than an event; they are social crises which open new perspectives.

DISASTERS ARE POLITICAL EVENTS

If politics is an allocation of values, the link between politics and disasters is determined by the allocation of values by the authorities regarding security in the period previous to the event, the survival possibilities during the emergency stage and the opportunities to survive during recovery and reconstruction [35].

A disaster is also a political opportunity to develop innovative initiatives, essential to diminish the present and future consequences of the danger. However, not all events attract the same degree of attention and unleash a political reaction. Social vulnerability, as mentioned before, and politics play an important role here [36]. A thorough statistical study [37] on the relationship between the severity of a disaster and political stability showed that reactions to a disaster are affected by the repression exercised by an authoritarian regime or by a high level of development, but not by inequality of income.

There is also a political use of disasters, analysed by Edelman [38]. Governments usually behave in different ways when confronted with problems and with a crisis. In the case of problems they try to induce a systematic deflation of the attention to the inequality of the goods and services offered to the population. On the other hand, in the case of a crisis, they try to induce a systematic inflation of the attention to threats, allowing them to legitimise and demand an increase of authority. When a crisis occurs repeatedly, authoritarianism increases.

SCAPEGOATING IN DISASTERS

Disasters are a great opportunity to appoint scapegoats; efforts to lay the burden of guilt on a person or a group are constant. According to Allinson [39],

> Whenever a single cause for any event is sought in the human realm, it is thus very natural for one to look for who, as a singular agent, is responsible. If the event in question is a disaster, then the first inclination is to look for whose fault it is. Once blame can be assigned, the existence of the disaster will have been explained. Finding the guilty party or parties solves the disaster ''problem''. Of course it does not. What it does do, however, is to create the appearance of a solution, and this

appearance of a solution cannot assist one in the prevention of further disasters.

But scapegoating is not a means for finding and assigning responsibility. It is a means of avoiding finding and assigning true responsibility. Whenever the scapegoat mentality is at work, responsibility has been abrogated, not shouldered.

A DISASTER UNMASKS FALSE MYTHS

A disaster is an empirical falsification of human action, the proof of the incorrectness of human beings' conceptions on nature and culture [2] Not only structures and social functioning are affected; many mental schemes also break down. All of a sudden the loss of the sense of invulnerability becomes obvious [40]. Frankel [41], who survived a Nazi concentration camp, Brüll [42] and others have pointed out that, after such an experience, the vision of the world, of oneself, of the future, changes. Therefore, during the phase of overcoming the trauma, a process of re-adaptation to reality, a re-elaboration of the trauma [43], the establishment of new beliefs, and the overcoming of old and false beliefs (''the world is a safe place'') and of new negative ones (''all the worst always happens to me'') is needed.

VICTIMS OR DAMAGED?

The worst thing that can happen is the victimisation of those affected and here psychiatry can play an important role. Benyakar [18] has called attention to this. A ''victim'' is a person who remains trapped by the situation, petrified in that position, who passes from being an individual to becoming an object of the social reality, losing his/her subjectivity. ''Damnified'' is the person that has suffered a damage, prone to be repaired or irreparable, wholly or partly. The concept ''damnified'' connotes psychic mobility, as well as the preserving of the individual's subjectivity. Therefore, mental health services have to assist all those affected, not as victims but as damnified.

COMPENSATIONS IN DISASTERS

Reactions to disasters and their definition have always been marked by compensation. The literature on compensation neurosis is an old one [44]. In fact, the definitions that emphasise the presence of a stressing agent of

great magnitude which would affect almost any person, such as that proposed by the DSM-III, turn even witnesses into victims. Since a disaster destroys social frameworks, it is obvious that any individual will turn to society to ask that the harm suffered be repaired. This is why there is a tendency of the victims to maximise ''secondary benefits'', perpetuating the psychic harm in order to receive a compensation, be it economic, affective or of any other kind. This is reinforced by the fact that the psychic harm usually affects persons who functioned normally before the disaster.

Compensations in disasters are indispensable and have to include psychic harms. However, the repercussion on the mental health of the damnified must also be evaluated. It is true that anybody has the right to change his/her lifestyle and, if the opportunity is given, to change it for another one in which he/she becomes a passive individual prone to the protection (and mending) of the government. But it is also true that mental health professionals are there to avoid iatrogenic effects and should help the damnified to overcome this situation, preventing the disability from becoming chronic. It is also true that society can impose limits to prevent any possible victimisation abuses.

Mental health professionals should participate in the allotting of indemnification and in the decision to include the damnified in a programme of reintegration into their everyday activities [18].

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CHAPTER

2

Psychological and Psychopathological Consequences of Disasters

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INTRODUCTION

The majority of people exposed to trauma and disasters do well. However, some individuals experience distress, others have behavioral changes and some develop psychiatric illness post disaster. Such illnesses include those that are secondary to physical injury (e.g., organic brain disorders, psychological responses to physical disease) as well as specific trauma-related psychiatric disorders such as acute stress disorder (ASD), post-traumatic stress disorder (PTSD) and trauma-related depression [1]. The extent of the psychiatric morbidity depends on a number of factors, e.g., type of disaster, exposure, degree of injury, amount of life threat, and the duration of individual and community disruption. At times, traumatic events and disasters have beneficial effects by serving as organizing events and providing a sense of purpose and an opportunity for positive growth experiences [2,3]. The effects of trauma and disaster may be rekindled by new experiences that remind the person of the past traumatic event [4]. The effects of trauma and disaster also impact the community, the recovery environment for those affected by the traumatic event. In this chapter we examine the psychiatric responses to trauma and disasters including risk factors and mediators of the psychiatric, psychological and behavioral consequences of trauma and disaster.

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HISTORY

The study of emotional reactions to disasters began with observations of the oldest human-made disaster, war. In the United States during the American Civil War, combat psychiatric casualties were thought to be suffering from ''nostalgia'', which was considered to be a type of melancholy, or mild type of insanity, caused by disappointment and longing for home [5]. This was also known as ''soldier's heart''. In World Wars I and II, terms such as ''shell shock'', ''battle fatigue'', and ''war neuroses'' were more common descriptors of the emotional responses to trauma [6,7]. The ''thousand-mile stare'' described the exhausted foot soldier on the verge of collapse. The symptoms of combat stress varied with the individual and the context but included anxiety, startle reactions and numbness [8] Some of the earliest descriptions of what is now referred to as PTSD came from traumatic injury. For example, in 1871 Rigler described the effects of injuries caused by railroad accidents as ''compensation neurosis'' [7]. In 1892 Sir William Osler [9], first Chief of Medicine at Johns Hopkins University, described the condition that followed an accident or shock as traumatic neurosis (also known as ''railway brain'', ''railway spine'', and ''traumatic hysteria''). At the end of the nineteenth and beginning of the twentieth century, railway disasters, the World Wars, the Holocaust, and the atom bomb attacks on Hiroshima and Nagasaki prompted systematic descriptions of symptoms associated with traumatic stress. Labels included ''fright neurosis'', ''survivor syndrome'', ''nuclearism'', ''operational fatigue'' and ''compensation neurosis''. Charcot, Janet, Freud and Breurer suggested that psychological trauma caused hysterical symptoms; however, others at the time believed that a traumatic event was not sufficient to cause post-traumatic symptoms and organic causes were sought. This changed with the recognition that many veterans of the Vietnam War had long-term psychiatric and psychological problems and people without prior psychiatric difficulties could develop clinically significant psychiatric symptoms if they were exposed to horrific stressors. Following this the diagnosis of PTSD became a category in DSM-III [10].

Studies of the responses of various populations to traumatic experiences broadened our understanding of the psychiatric and psychological effects of trauma, e.g., concentration camp survivors [11–14], and rescue workers following the Hiroshima devastation [15]. The psychiatric and psychological consequences of several modern disasters have been studied in detail: the 1942 Coconut Grove Nightclub Fire [16,17], the 1972 Buffalo Creek Flood [18–20], the 1980 Mount St. Helens volcanic eruption [21,22], the Granville rail disaster, 1977 in a Sydney suburb [23], the imprisonment and torture of Norwegian sailors in Libya in 1984 [24], and the volcanic eruption in Colombia, 1985 that destroyed the town of Armero [25].

PSYCHIATRIC DISORDERS RELATED TO TRAUMA AND DISASTER

We are only in the infancy of understanding why some people exposed to traumatic events develop post-traumatic psychopathology and some people do not (for a meta-analysis of predictors of PTSD, see 26). Post-traumatic psychiatric disorders are most often seen in those directly exposed to the threat to life and the horror of a traumatic event. The greater the ''dose'' of traumatic stressors, the more likely an individual or group is to develop high rates of psychiatric morbidity. Certain groups, however, are at increased risk for psychiatric sequelae. Those at greatest risk are the primary victims, those who have significant attachments with the primary victims, first responders, and support providers [27]. Adults, children, and the elderly in particular who were in physical danger and who directly witnessed the events are at risk. Those who were psychologically vulnerable before exposure to a traumatic event may also be buffeted by the fears and realities of, for example, job losses, untenably longer commutes or eroded interpersonal and community support systems overtaxed now by increased demands. Persons who are injured are at higher risk, reflecting both their high level of exposure to life threat and the added persistent reminders and additional stress burden accompanying an injury. The Epidemiologic Catchment Area study of Vietnam veterans [28] documented a higher rate of PTSD in wounded than in non-wounded veterans. Similar findings were noted in the Veterans Affairs study [29,30].

Pre-existing psychiatric illness or symptoms are not necessary for psychiatric morbidity after a traumatic event, nor are they sufficient to account for it [31–34]. Nearly 40% of survivors of the Oklahoma City bombing with PTSD or depression had no previous history of psychiatric illness [35]. Therefore, those needing treatment will not all have the usually expected accompanying risk factors and coping strategies of other mental health populations. The less severe the disaster or traumatic event, the more important pre-disaster variables such as neuroticism or a history of psychiatric disorder appear to be [32,36–39]. The more severe the stressor, the less pre-existing psychiatric disorders predict outcome.

Overall, children and adolescents are at increased risk for psychiatric sequelae following trauma. Psychiatric disorders including PTSD, depression, and separation anxiety disorder [40] as well as the onset of a wide range of symptoms and behaviors [41,42] have been identified in children exposed to trauma. The re-experiencing symptoms common in ASD and PTSD may be evident in children through repetitive play with trauma themes, nightmares, and ''trauma-specific reenactment'' [43]. Children may also develop avoidant behavior to specific reminders of the tragedy (e.g., avoiding areas of the playground where someone has been killed) and the