

Lessons in Posttraumatic Stress Disorder From the Past: Venezuela Floods and Nairobi Bombing

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Identification and treatment of posttraumatic stress disorder (PTSD) are important following a disaster. Insights into how these aims can be achieved may be obtained from previous disasters. This article describes mental health initiatives following the 1999 flooding in Vargas State, Venezuela, and the 1998 U.S. Embassy bombing in Nairobi, Kenya. Following the Vargas State floods, a specialist mental health center devoted to the diagnosis, treatment, and follow-up of PTSD was established. Awareness and acceptance of the clinic was promoted by media campaigns and community-based activities. After 18 months, approximately 5000 people had been screened, of whom 62% were diagnosed with PTSD and treated. Moreover, the clinic's activities had expanded to include treatment of other medical conditions and assistance with nonmedical needs. Following the Nairobi bombing, a mass media campaign was initiated to create awareness of PTSD symptoms and help victims come to terms with their experience. This campaign was found to be well received and helpful. In addition, counselors were trained to support people living or working close to the blast. These examples show that mental health initiatives are feasible after a disaster and highlight a number of issues: (1) The intervention should be tailored to the needs of the target population; (2) Communication should be simple and appropriate; (3) Community-based activities are valuable in promoting awareness and acceptance of mental health initiatives; (4) Reducing the stigma often associated with mental health problems is important; and (5) The mass media can be helpful in promoting awareness of mental health issues following major trauma.

(J Clin Psychiatry 2006;67[suppl 2]:56-63)

Posttraumatic stress disorder (PTSD) and other psychiatric disorders are common after natural disasters and other forms of mass trauma.^{1,2} PTSD can have a severe effect on quality of life and normal functioning: compared with individuals who do not develop PTSD after exposure to trauma, people with PTSD show significantly higher rates of suicide attempts, alcohol or substance abuse, and hospitalization for psychiatric illness.³ Prompt identification and treatment of individuals with, or at risk for, PTSD

are therefore important elements of health care following major trauma.¹

Insights into how to achieve these efforts can be obtained from the experience gained following previous major traumas. Two such examples are presented in this article, which reviews initiatives undertaken after a natural disaster (the 1999 flooding in Vargas, Venezuela) and a violent trauma (the 1998 U.S. Embassy bombing in Nairobi, Kenya). In both cases, interventions were aimed at identifying and treating patients with PTSD and raising awareness of mental health problems resulting from major trauma. These initiatives have proved successful in encouraging people affected by PTSD to present for treatment, thus offering the potential for reducing the substantial burden of psychiatric and physical morbidity that follows major disasters.

It is important to note, however, that no 2 disasters are the same: different types of natural disaster impose differing stresses on the survivors,⁴ and, hence, patterns of psychiatric illness may also vary depending on the circumstances. As a result, it is essential that the response to a given disaster be tailored to the needs of the local population, taking into account cultural, social, logistic, and economic considerations.

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Presented at the symposium "After the Tsunami: Mental Health Challenges to the Community for Today and Tomorrow," which was held February 2-3, 2005, in Bangkok, Thailand, and supported by an educational grant from Pfizer Inc.

The authors acknowledge the valuable contribution of Pfizer to this community-based partnership and the commitment of Gabriela Espinoza, M.D., (former Medical Director, Pfizer Venezuela) to this project. The authors also thank the personnel of Salud y Familia, whose enthusiasm and perseverance made this project possible.

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INTERVENTIONS FOLLOWING THE VARGAS FLOODING

Impact of the Disaster

During December 1999, Vargas, in the northern coastal region of Venezuela, experienced exceptionally heavy rainfall, resulting in extensive flooding and a major landslide. During the 2 days before the landslide, the average rainfall was approximately 125 mm/m², which is approximately 5 times the normal annual rainfall for the region. The impact of the flooding was exacerbated by the mountainous nature of the region; by the fact that most of the population live in densely populated shanty towns on the outskirts of the capital, Caracas; and by the existence of only 1 major road in the region.

Together, the floods and landslide resulted in approximately 50,000 deaths. A total of 200,000 people were made homeless, with 20,000 homes destroyed and a further 40,160 affected. There was also substantial damage to the regional infrastructure, including disruption of power supplies and communication links.

Response to the Disaster

The initial response to the disaster focused on evacuating people from the affected area and restoring communications. Due to the lack of road links in the region, evacuation to refugee camps had to be performed by helicopter or boat. This evacuation imposed secondary stresses on the survivors due to enforced separation of family members; in some cases, parents were reunited with their children only after 2 months or more. Furthermore, violence and drug and alcohol abuse were widespread in the refugee camps, and regular translocation from one camp to another was also common.

Since these factors would have made long-term follow-up of individuals affected by PTSD difficult, it was decided to focus mental health initiatives in the aftermath of the disaster on those survivors who were relocated to the homes of family or friends living in the Catia La Mar region and Caraballeda. Catia La Mar is adjacent to the affected area but suffered less destruction of the infrastructure and, hence, became the principal site for settlement of those who had been made homeless in the disaster. Approximately 100,000 people were relocated to this area.

Establishing PTSD Clinics

Due to the likely high prevalence of PTSD after a disaster such as the Vargas floods, and the potentially devastating impact of this condition on patients' welfare and functioning, it was considered a priority to develop a community mental health center with a multidisciplinary team of psychiatrists, psychologists, and social workers. The primary aim of this center was to diagnose, treat, and follow up PTSD and comorbidities such as depression and anxiety disorders over a 1-year period and to perform

Table 1. Aims of the Mental Health Center Established at Catia La Mar, Venezuela, After the Vargas Floods of December 1999

Primary aim	To develop a postdisaster community mental health center with a multidisciplinary team of psychiatrists, psychologists, and social workers who will be able to diagnose, treat, and follow up posttraumatic stress disorder (PTSD) and comorbidities over 1 year, and to perform other community services
Secondary aims	<p>To restore the capacity of the victims to cope with and manage their traumatic experience and provide assistance to enable them to resume normal functioning</p> <p>To design and implement a program to promote awareness of the emotional consequences of trauma</p> <p>To conduct a prospective, descriptive, registry-based study of patients with PTSD and associated disorders in the mental health center</p> <p>To contribute to the study of the psychosocial effects of natural disasters</p> <p>To present a model of mental health care that can be applied to other areas affected by natural disasters</p>

other community services (Table 1). Secondary aims focused on helping the victims to cope with their traumatic experience and resume normal functioning, and on collecting data on mental health after the disaster that could be applied to other areas affected by such traumas (Table 1).

The main center was located at Catia La Mar (Plaza Paez), a secure, easily accessible site in an area with a high concentration of relocated victims. In addition, mobile centers were established throughout the region in public places such as schools, churches, police stations, and hotels.

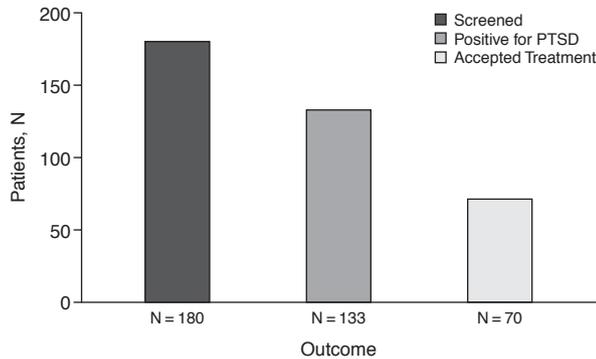
The first stage in the development of the project was a 3-day advisory board meeting involving international experts in postdisaster health care, local medical professionals and representatives from the Venezuelan Ministry of Health and Social Development, the Venezuelan Society of Psychiatry, the Central University of Venezuela, and the Venezuelan College of Neuropsychopharmacology. Local authorities, community leaders, and health centers in Catia La Mar were contacted to explain the objectives of the project and seek their cooperation. At the same time, detailed protocols for the diagnosis and treatment of PTSD were developed.

Details of the management of each patient were recorded on a 32-page multiple-choice questionnaire. To facilitate long-term follow-up, these data were stored in a registry-based database, which could be accessed via a secure Web site.

Local medical professionals were recruited to run the center and underwent a 5-day training course covering the diagnosis and treatment of PTSD. Further 1-hour training sessions were provided weekly throughout the project.

Once the center had been established, awareness and acceptance of the program were fostered by means of a media

Figure 1. Results of the Pilot Study of the Feasibility of Diagnosing and Treating Posttraumatic Stress Disorder (PTSD) in Specialist Clinics, Which Was Performed in Catia La Mar, Venezuela, Following the Vargas Floods^a



^aData from an unpublished pilot study (J.C.O., Perez W, Espinoza G, et al.).

campaign involving radio, TV, and newspapers and by community-based activities in locations such as churches, schools, and pharmacies.

Diagnosing and Treating PTSD in the Mental Health Center

The feasibility of treating PTSD in specialist clinics was investigated in an unpublished pilot study (J.C.O., Perez W, Espinoza G, et al.). The health-care team involved in this initial project consisted of 4 psychiatrists, 5 psychologists, 4 social workers, and 1 child psychologist, supported by a secretary, a maintenance employee, and a security guard. A total of 180 patients took part in the pilot study. After an explanation of the project, the patients were screened for PTSD by means of the SPAN (Startle, Physiologic arousal, Anger, and Numbness) questionnaire⁵ and Self-Report Questionnaire (SRQ).⁶

Overall, 74% of participants showed symptoms of PTSD according to these tests (Figure 1). This figure was higher than expected and reflects the fact that the participants were still living in the area affected by the disaster and hence were exposed to continuing reminders of the trauma. Indeed, some children were still showing symptoms of posttraumatic stress (e.g., a fear of water resulting from memories of the flooding) up to 3 years after the event. However, despite the high prevalence of PTSD in this sample, only 53% of participants were prepared to accept treatment at the center (Figure 1).

This unwillingness to accept treatment highlights the importance of reducing the stigma associated with mental illness in many societies, in order to promote acceptance of treatment among victims of PTSD (see later section: Reducing the Stigma of Mental Health Problems). In Catia La Mar, this was achieved by means of a poster campaign featuring the slogan "PTSD is a normal response to an abnormal condition." These posters, which were dis-

played in community buildings such as schools, police stations, churches, grocery stores, and pharmacies, described the symptoms of PTSD and emphasized that help was available. In addition, a further social worker was recruited to the mental health center to help increase awareness of PTSD among the local population. The schedule for the diagnosis and treatment of PTSD in the mental health center is shown in Figure 2.

Clinical psychologists and trained social workers screened members of the community for PTSD by means of the SPAN and the 20-item SRQ.⁷ In the event of a positive case result on 1 test, the patient was referred to the center.

At the center, demographic details and data on socioeconomic status were recorded by social workers. Socioeconomic data were collected because there is evidence that the risk of PTSD is higher among members of lower socioeconomic groups,² and members of these groups are more likely to have been previously exposed to trauma than individuals of higher socioeconomic status. Clinical staff took a full medical history and performed a psychiatric assessment.

Patients who were diagnosed with PTSD, depression, stress, or panic disorder according to the criteria of the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*⁸ were assigned to 2 parallel treatment regimens: weekly group psychotherapy for 3 months, and pharmacotherapy for up to 18 months with review at 2-week intervals for 8 weeks, then monthly for 3 months, and at 6-week intervals thereafter for up to 1 year.

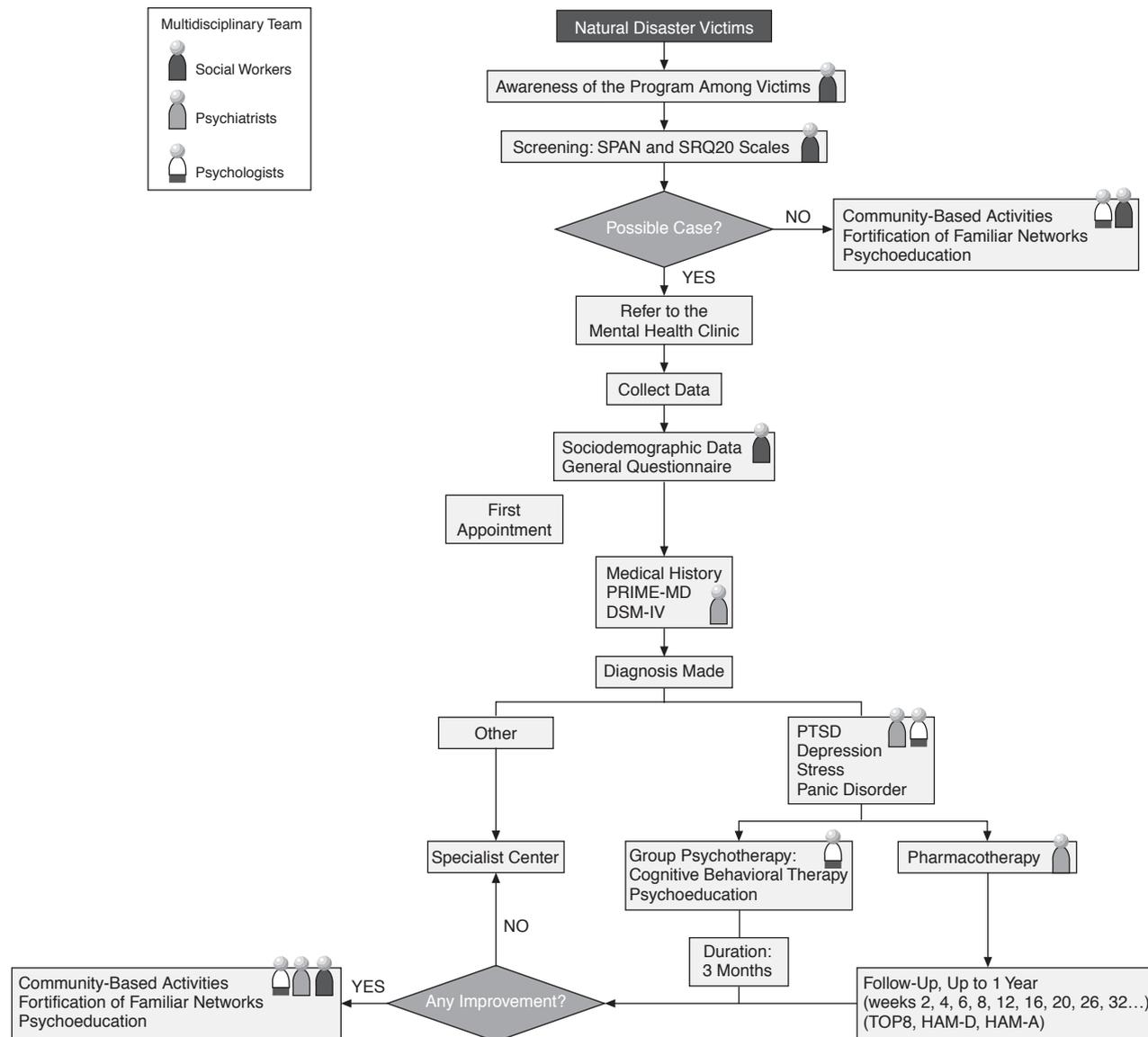
All patients were reviewed at 8-week intervals, and those who showed signs of improvement entered a program of community-based activities and psychoeducation; patients who did not respond to initial treatment were referred to a specialist center.

During long-term follow-up, the response to treatment was assessed by means of the 8-item Treatment Outcome PTSD scale⁹ and the Hamilton Rating Scale for Depression (HAM-D)¹⁰ and HAM-Anxiety.¹¹ An adequate response was defined as a reduction in symptoms of more than 75% maintained for at least 3 months; a partial response was defined as a 25% to 75% reduction in symptoms. Patients were considered to be refractory to treatment if they showed no response or only a slight response after drug treatment and multiple psychotherapeutic techniques.

After 1 year, a total of 1513 adults and 283 children had been treated at the center. Community-based activities, such as summer camps for children, were widely used during this period to maintain and strengthen support networks in individuals showing symptomatic improvement.

The initial multidisciplinary team was subsequently expanded to include other health-care professionals, such as general physicians and dentists, to facilitate treatment of physical and other disorders associated with PTSD. In addition, nonmedical personnel, such as lawyers and family

Figure 2. Schedule for the Diagnosis and Treatment of PTSD in the Mental Health Center at Catia La Mar, Venezuela^a



^aBased on an unpublished pilot study (J.C.O., Perez W, Espinoza G, et al.).
 Abbreviations: HAM-A = Hamilton Rating Scale for Anxiety, HAM-D = Hamilton Rating Scale for Depression, PRIME-MD = Primary Care Evaluation of Mental Disorders, PTSD = posttraumatic stress disorder, SPAN = Startle, Physiologic arousal, Anger, and Numbness questionnaire, SRQ20 = 20-item Self-Report Questionnaire, TOP8 = 8-item Treatment Outcome PTSD Scale.

consultants, were recruited as the extent and nature of the problems faced by victims of the floods became clear. For example, many victims had lost official documents, such as deeds of land ownership; the inclusion of lawyers in the team allowed victims to be given help in obtaining replacements for these documents.

After 18 months, a total of approximately 5000 people—about 5% of the local population—had been screened and 62% of them had been diagnosed with PTSD and treated; 230 children alone received psychotherapy.

The experience following the Vargas floods shows that initiatives to diagnose and treat PTSD are feasible after

major disasters. It is important to note, however, that such initiatives should include not only psychotherapy and pharmacotherapy but also community-based activities that enable patients to reach an acceptance of their experience and resume normal functioning.

INTERVENTIONS FOLLOWING THE NAIROBI, KENYA, BOMBING

Impact of the Disaster

On August 7, 1998, a 1-ton bomb was detonated outside the U.S. Embassy in Nairobi, Kenya. The blast, which

measured 2.7 on the Richter scale, killed 219 people and hospitalized a further 5000 as a result of injuries. Moreover, since the embassy was located in the financial district of Nairobi, the attack had a severe impact on Kenya's economy, with the total economic cost of the explosion estimated at 10% of Kenya's gross domestic product. Thus, in a broad sense, the entire Kenyan population was affected by the blast.¹² This is consistent with the experience from similar disasters, such as the Oklahoma City bombing,¹³ which shows that trauma may affect a wider population than those involved directly.

Using the Media to Ease Fears and Provide Information

Within hours of the explosion, the Kenya Medical Association had set up a program of mass counseling, entitled "Operation Recovery," which used radio and television broadcasts and articles in the press to help create awareness of the likely psychological consequences of the disaster.¹² These efforts played an important role in providing information and in helping those affected to come to terms with their experience. An interview on CNN (Cable News Network) within 3 hours of the explosion delivered a message of hope and encouragement to Kenyans who first heard of the attack on this channel. In addition, this interview proved invaluable in disseminating information to Kenyans living abroad who were unable to contact families and friends in Nairobi because the blast had destroyed the telephone system.

A subsequent radio phone-in program, which took place 10 hours after the explosion, provided an opportunity for listeners to express their initial feelings about the attack. This program had 2 distinct effects.¹² First, listeners received professional advice about the likely psychological consequences of the bombing, which emphasized that feelings of anger, frustration, and inadequacy were normal in the early stages after such an attack. Second, many callers expressed their anger (often for the first time) at the attack and the presumed role of religion as a motivation for terrorism. Subsequently, however, callers became less angry and expressed more hopeful and conciliatory messages, including expressions of solidarity with callers who had expressed similar fears and concerns.

During the 2 days following the bombing, mental health specialists summarized events at the disaster site after each televised news broadcast and discussed psychological concerns raised by rescue workers and friends and relatives of victims. This first-hand reporting by credible specialists had an important calming effect on the population. Similarly, mental health experts used local and national radio and television broadcasts to discuss the symptoms of acute stress reactions, and these broadcasts continued for 2 weeks after the bombing. The radio broadcasts were in 3 languages: English, Kiswahili, and Kikuyu.

The effect of these media initiatives was to provide accurate, trustworthy, and easily understood information to the population at a local level. The impact of this program was evaluated in a survey of 400 residents of Nairobi and surrounding areas, who were interviewed over a 6-week period 3 months after the bombing.¹² The sample was representative of the adult population of Nairobi. This survey found that television reached the widest audience, with 89% of respondents reporting watching TV during or after the blast. The corresponding figures for radio and newspapers were 85% and 79%, respectively. A total of 32 television or radio broadcasts or newspaper articles were mentioned by 224 of the 400 respondents. Overall, 47% of respondents were already aware of Operation Recovery. Importantly, more than 95% of respondents expressed positive thoughts about the media activities. Of these, 70% felt that the programs gave hope and encouragement to the blast victims, and 60% felt that they helped the victims overcome their trauma.

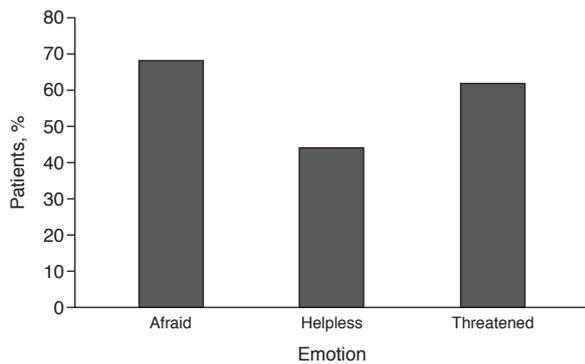
Posttrauma Counseling in Nairobi

An important issue after a disaster is that resources—both human and financial—may be limited, and, hence, it may be necessary to concentrate efforts on the highest priorities. For this reason, it was decided to focus counseling services after the bombing on members of the Nairobi population who were living or working within 1 kilometer of the explosion. This group was identified as a specific target for intervention because the injured often required psychiatric care in addition to the physical treatment received for their injuries and because many people within this group saw the event unfolding live on television.

Two groups of counselors were trained. The first group received 2 days' training in PTSD symptoms and basic support techniques; their training was carried out in churches and other places of worship. About 700 such counselors were trained during the first week after the bombing. Because Kenya has a large number of Nairobi-based, university-trained counseling psychologists, it was possible to use them as trainers. Under the supervision of psychiatrists and senior counselors, the first group was trained in groups of about 50. Trainees were taught basic skills related to debriefing, symptoms of acute stress disorder, and indications for referral, including severe depression, substance abuse, and suicidal ideation, among others. The second group was trained about 1 month after the explosion. This group included a number of pre-university students who proved to be very effective in working with children, particularly primary school children. This success was partly due to the use of local idioms by the students, which enabled them to explain the nature of PTSD and its symptoms in a way that the children could understand.

A number of community-based activities were implemented to facilitate access to counseling, involving the use

Figure 3. Emotional Reactions Associated With Symptoms of Posttraumatic Stress Disorder Following the Nairobi, Kenya, Bombing, Reported 1 to 3 Months After the Blast^a



^aData from Njenga et al.¹⁴ All associations are statistically significant ($p < .0001$).

of mass media campaigns, places of worship, market places, trade fairs such as the annual agricultural show, and road shows. Particular attention was paid to the use of appropriate communication techniques, such as storytelling and interactive sessions, in groups with low levels of literacy. Community leaders, such as tribal chiefs, headmen, and clan leaders, were closely involved in these activities from the outset. While these activities proved to be very successful in encouraging people affected by PTSD symptoms to present for treatment, it should be noted that not all such activities may be applicable to Southeast Asian communities.

Factors Associated With PTSD After the Nairobi Bombing

Most studies of PTSD following terrorist attacks have been performed in relatively small samples from industrialized countries and have been carried out several months or years after the attack. As a result, there is little information in the literature on PTSD symptoms soon after a terrorist attack in non-Western populations. For this reason, a study was performed to assess the prevalence of symptoms corresponding to the DSM-IV criteria for PTSD, and identify potential risk factors, in the aftermath of the Nairobi bombing.¹⁴ Symptoms were assessed 1 to 3 months after the bombing by means of a self-report questionnaire, which was completed by 2883 participants from 3 groups: patients attending a mental health clinic devoted to those affected by the bombing, workers in nearby office buildings who had requested mental health outreach services, and people who had visited information stands at various exhibitions and community events.

Complete data were available from 2627 participants. The mean age of this group was 33.6 years, and 47% were female; 46% had completed secondary school, and 40% had had some college education. Thus, this was predominantly a young, well-educated group. It was also a highly

Table 2. Potential Lessons From the Vargas Floods and Nairobi Bombing

Tailor intervention to local needs
Describe interventions in appropriate language
Use community activities to promote acceptance of mental health issues
Involve community leaders
Aim to reduce the stigma associated with mental health problems
Use the media to ease fears and provide information

traumatized group: 91% had experienced the blast directly, and 64% had been injured in the explosion.

The prevalence of self-reported PTSD in this group was 35%. There were significant ($p < .0001$) correlations between posttraumatic stress and feelings of fear, helplessness, or threat (Figure 3). Bereavement and not talking about the explosion to a workmate or close friend were also significantly ($p < .05$) associated with posttraumatic stress. Demographic factors that were associated with a risk of PTSD included female gender ($p < .0001$), unmarried status ($p < .01$), and low educational status ($p < .0001$). The extent of exposure to the blast also had a marked influence on the risk of posttraumatic stress. Individuals who were in the open air at the time of the blast or who witnessed the explosion were at significant (both $p < .05$) risk of PTSD, as were those who were injured in the blast or who did not recover completely from their injuries (both $p < .0001$).

The bombing had a number of financial consequences for the participants, all of which were significantly associated with PTSD symptoms. These included current or anticipated financial difficulties (both $p < .0001$), being unable to work because of injury ($p < .01$), and receiving financial assistance ($p < .05$).

IMPLICATIONS FOR SOUTHEAST ASIAN POPULATIONS AFFECTED BY THE TSUNAMI

The experience gained following the Vargas flooding and the Nairobi bombing offers a number of potential lessons for health-care workers dealing with the aftermath of the Southeast Asian tsunami (Table 2).

Assessing the Level and Feasibility of Intervention Needed

In any major disaster, the needs of the victims are likely to outweigh the available resources.¹ Thus, as noted earlier, it may be necessary to target interventions to specific groups or populations where the greatest benefits can be achieved. However, as noted previously, no 2 disasters are alike, and each imposes its own stresses on survivors in terms of physical injury and disruption of normal life.⁴ It is therefore essential that interventions should be specifically tailored to the needs of the target group or population. Doing so requires consideration of the particular stresses faced by the population, such as widespread mortality and bereavement, loss of home or livelihood, and disruption of

family and social life. Furthermore, the characteristics of the local population must be taken into account, considering such factors as educational and literacy status, cultural constraints (in some societies, for example, female health-care workers may not be acceptable to men), and social structures.

In Nairobi, for example, a special need was identified in a community located 25 kilometers from the city center. At the moment of the blast, 2 buses from that community were passing near the embassy, and many of the passengers were killed or injured. Another special-needs population comprised school children who had been participating in a music competition 1 block away from the epicenter of the blast. Many of the children were not from the city, were lost for many hours after the blast, and did not reestablish contact with their teachers or parents for several days in some cases.

The scale of the intervention will depend on the human and financial resources available. While international assistance may be available in the immediate aftermath of a disaster, long-term intervention and follow-up of victims will depend largely on local health-care workers. As a result, the capacity for long-term interventions may be limited in countries where access to specialist health-care is relatively limited. In Sri Lanka, for example, there are only about 30 psychiatrists to serve a population of 19 million, and most of these are based in the Western Province and the capital, Colombo.¹⁵ Financial support for long-term initiatives may also be limited. It can be anticipated that a proportion of the aid promised by the international community after a disaster will fail to materialize.

Logistic issues should be considered when planning initiatives in rural or semirural areas, since access to clinics and other health-care facilities may be limited in such areas. In some suburban regions of Nairobi, for example, it was often easier for people to reach counseling centers by foot or donkey rather than by motor transport. Such considerations are likely to be particularly relevant after a major disaster, when there is often substantial damage to infrastructure such as roads.

Nonmedical personnel have important roles to play in the provision of mental health services after a disaster, and so efforts should be made to identify and encourage potential collaborators. Liaison with accountants and other financial administrators, for example, can facilitate the smooth running of mental health clinics, while information technology specialists can provide invaluable aid in setting up and maintaining computer systems. As was seen in Venezuela, lawyers can play a useful role in helping and supporting people who have lost legal documents such as records of property ownership. Partnerships with multinational corporations can also be beneficial; pharmaceutical companies, for example, may be able to provide drugs for the pharmacotherapy of PTSD and related disorders. Such partnerships, whether with individuals or commer-

cial organizations, can foster a sense of involvement with, and contribution to, the affected community, thereby reducing the feelings of helplessness that are common after a major disaster.

The Importance of Appropriate Communication

The language used to discuss mental health issues with disaster victims should be simple and appropriate. For example, the reexperiencing symptoms of PTSD should be described in terms of “remembering” the trauma rather than “experiencing flashbacks.” Communication should be “down-up,” rather than “up-down,” and should use local language and idioms. As noted previously, the effectiveness of pre-university students as counselors following the Nairobi bombing was partly attributable to their use of local idioms when dealing with young children.

The use of storytelling techniques and interactive sessions can also be useful, particularly in groups with low levels of literacy. Even simple approaches such as asking people to tell where they were and what they were doing when the disaster happened can allow victims to express their fears and emotions concerning the event. Similarly, interactive sessions can be helpful in groups where displays of strong emotions such as grief are not considered acceptable.

It may be appropriate in some situations to match the counselor to the target group. For example, in some countries, it may be necessary to use female counselors in girls' schools.

The Role of Community Activities

Community-based activities in centers such as schools or places of worship are helpful in promoting awareness and acceptance of mental health initiatives. Such activities might include local publicity campaigns, displays of information and patient literature on mental health issues, or road shows where people have an opportunity to meet health-care professionals to discuss their concerns.

The support of community leaders, such as local government or religious leaders, is an important factor in promoting acceptance of mental health initiatives. It is therefore essential to obtain their support at the start of the project.

Reducing the Stigma of Mental Health Problems

In many societies, there is a stigma attached to mental disorders such as PTSD. This may be associated with a perception that PTSD represents a form of psychosis and that sufferers are “crazy.” The stigma may be increased and perpetuated if people with PTSD see themselves as ill—as patients with a disease. To reduce this stigma, it is important to emphasize that PTSD represents a normal response to an abnormal situation and that effective treatment can relieve the distressing symptoms and allow the individual to resume a normal life. Successful treatment of

PTSD can lead to a reduction in negative perceptions of mental illness over the course of several months after a disaster. Moreover, educational initiatives aimed at informing people without PTSD about the nature, cause, and treatment of the condition can also help to reduce the stigma associated with mental illness.

The Role of the Media

The role of the mass media in disaster management has been controversial, since some studies have suggested that vicarious exposure to trauma through television can itself produce PTSD symptoms.^{12,16,17} However, the experience from both Vargas and Nairobi indicates that judicious use of the media has a valuable place in the implementation of mental health initiatives. The media can help in explaining the symptoms of PTSD in simple terms, in emphasizing that such symptoms are a natural response to trauma, and in showing the community that PTSD can be successfully treated in most patients. Both in Venezuela and in Nairobi,¹² television and radio proved to be more effective media than newspapers.

Guidelines issued by the World Health Organization recommend that, following disasters, the media should be used to provide accurate, trustworthy, and easily understood information to the local population.¹⁸ This information should be provided in collaboration with local community leaders and representatives on the basis of dialogue between community leaders, scientists, and health-care professionals. For the media to be used most effectively, mental health workers and journalists may need training on how best to work together. Such training can be carried out locally. In Kenya, training the media is a continuous process carried out by psychiatrists with the support of industry and the media itself. Following the disaster, and recognizing that media practitioners are themselves a vulnerable group, training links were quickly made, as it is essential to ensure there are good links between mental health workers and the media before disasters.

Effective cooperation between mental health workers and the media can also be useful in assessing the scale of intervention needed after a disaster. For example, the experience from Nairobi showed that broadcasts on local radio stations could be used to help assess the extent of residual trauma after the bombing. In Nairobi, and in particular during the phone-in programs, the people clearly explained and described their pain and suffering over the radio in a way that gave a good indication of the anguish some were going through. Many callers described how their distress was similar to (or different from) a previous caller's distress.

CONCLUSIONS

The experiences from Vargas and Nairobi show that interventions to diagnose and treat PTSD after mass trauma are feasible and effective. To be most effective, however,

such interventions must be tailored to the needs and circumstances of the local community. This will require careful attention to social, cultural, logistic, and economic considerations and recognition that approaches that have proved useful in one setting may not be applicable to another. The involvement of community leaders and the media is essential for the success of mental health initiatives after mass trauma, and this involvement should be sought at the earliest possible stage.

It is important to note that the survivors of major disasters will have numerous other problems in addition to their medical needs. Many will have lost their homes and livelihoods and will face major difficulties in reestablishing a normal lifestyle as a result. Therefore, the successful treatment of PTSD after mass trauma will require a holistic approach, with attention to both the medical and psychological as well as the social needs of the survivors.

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents that is outside U.S. Food and Drug Administration–approved labeling has been presented in this article.

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