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Services Provided by Volunteer Psychiatrists after 9/11 at the New York City Family Assistance Center: September 12--November 20, 2001

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Abstract

Objective—To characterize the experience of volunteer disaster psychiatrists who provided pro bono psychiatric services to 9/11 survivors in New York City, from September 12, 2001 to November 20, 2001.

Method—Disaster Psychiatry Outreach (DPO) is a non-profit organization founded in 1998 to provide volunteer psychiatric care to people affected by disasters and to promote education and research in support of this mission. Data for this study were collected from one-page clinical encounter forms completed by 268 DPO psychiatrists for 2 months after 9/11 concerning 848 patients served by the DPO 9/11 response program at the New York City Family Assistance Center.

Results—In this endeavor, 268 psychiatrist volunteers evaluated 848 individuals and provided appropriate interventions. The most commonly recorded clinical impressions indicated stress-related and adjustment disorders, but other conditions such as bereavement, major depression, and substance abuse/dependence were also observed. Free samples were available for one sedative and one anxiolytic agent; not surprisingly, these were the most commonly prescribed medications. Nearly half of those evaluated received psychotropic medications.

Conclusions—In the acute aftermath of the attacks of September 11, 2001, volunteer psychiatrists were able to provide services in a disaster response setting, in which they were co-located with other disaster responders. These services included psychiatric assessment, provision of medication, psychological first aid, and referrals for ongoing care. Although systematic diagnoses could not be confirmed, the fact that most patients were perceived to have a psychiatric diagnosis and a substantial proportion received psychotropic medication, suggests potential

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specific roles for psychiatrists that are unique and different from roles of other mental health professionals in the early post-disaster setting. In addition to further characterizing post-disaster mental health needs and patterns of service provision, future research should focus on the short- and long-term effects of psychiatric interventions, such as providing acute psychotropic medication services and assessing the effectiveness of traditional acute post-disaster interventions including crisis counseling and psychological first aid.

Keywords

disaster psychiatry; trauma; posttraumatic stress disorder; psychiatric services; terrorism; crisis counseling; psychological first aid; mental health outreach

Since the 9/11 attacks, disaster mental health has received tremendous attention. Acute post-disaster mental health triage and interventions have been provided by clinicians ranging from lay crisis counselors to board-certified psychiatrists and disaster mental health specialists. Although government agencies and disaster relief organizations have an interest in permitting only qualified clinicians to provide such services, little is known about what services are provided by psychiatrists as opposed to non-physician disaster mental health providers.

The scientific literature has devoted little attention to characterizing patterns of delivery of mental health triage and interventions and services in the acute aftermath of a disaster or to evaluating roles of different mental health providers in any of these processes. For example, based on rather limited empirical evidence, psychological first aid was endorsed in 2002 by a consensus panel of the National Institutes of Mental Health as the approach of choice in the acute phase of a disaster.[1] The scarcity of investigations into acute interventions is in part related to the many challenges associated with conducting research in the midst of an acute disaster setting.[2] These include problems with designing appropriate study methods, securing rapid research funding, expeditious approval by institutional review boards, and systematic access to highly affected samples of survivors. The fact that the role of psychiatrists within the spectrum of disaster mental health providers has not been fully articulated is a likely contributor to the lack of research on post-disaster psychiatric services, including the study of pharmacologic interventions in post-disaster settings.

In this paper, we describe an approach to providing disaster psychiatric services that involved collection of clinical information as part of service delivery. The findings described below provide some characterization of acute psychiatric phenomenology, interventions, and service patterns gleaned from clinical records of the Disaster Psychiatry Outreach (DPO) 9/11 response. These data can inform a discussion of future disaster interventions by psychiatrists and other mental health professionals and future research on these interventions.

METHODS

DPO is a non-profit organization founded in 1998 to provide volunteer psychiatric care to people affected by disasters and to promote education and research in support of this mission. Based in New York City, it developed its expertise and protocols across several disasters prior to 9/11. The explicit goal of DPO is to supplement existing mental health counseling available from the American Red Cross. This, together with an upsurge in volunteers after 9/11, positioned the organization to mount a substantial psychiatric response to the 9/11 terrorist attacks on New York City.

Specializing in acute, community-based response to disasters, DPO worked in conjunction with the New York City Department of Mental Health and the Red Cross to provide an organized cadre of volunteer psychiatrists to offer psychiatric assistance for individuals at the New York City Family Assistance Center (FAC). Hundreds of psychiatrist volunteers responded, and thousands of hours of pro-bono care were provided to people affected by the disaster at this site. Many volunteers (n = 75) attended a pre-deployment formal training session, consisting of a review of the psychiatric epidemiology of disasters, treatment of acute trauma, and collaboration with disaster service agencies; many others received on-site training in the setting of pressing need and a flood of spontaneous volunteers. At the FAC, from September 12, 2001 through November 20, 2001, DPO psychiatrists conducted outreach, crisis counseling, and full evaluations. Over 2000 brief encounters (which were largely anonymous and supportive in nature) were recorded in a log but are not the focus of this article. Contacts of DPO volunteer psychiatrists with disaster survivors for evaluations were initiated through a variety of mechanisms, including self-referral and referrals from other governmental and non-profit agencies. In addition to individuals who presented to the psychiatrists, some psychiatrists identified additional individuals who could benefit from an evaluation by approaching social service agencies within the FAC and identifying individuals who appeared to be having difficulty or who were visibly distressed. DPO provided frequent educational outreach about available services to many of the agencies within the FAC, which served as the main source of referrals. Goals of the psychiatric encounters were evaluation, support, limited treatment, triage, and referral.

The FAC was operated by the New York City mayor’s office and provided an array of social, economic, legal, and health services at a single site that was the length of several football fields. Other agencies that were present included the Federal Bureau of Investigation, the Red Cross, insurance companies, and the American Society for the Prevention of Cruelty to Animals. In the course of its 9/11 response at the FAC, DPO asked its psychiatrist volunteers to complete one-page evaluation sheets providing systematic information on all individuals for whom they completed a standard psychiatric evaluation. This evaluation sheet asked about history of current problems, psychiatric and social history, mental status examination, diagnostic impressions, and treatment recommendations. These forms were developed within days of the 9/11 attacks after it became apparent that efficient record keeping of clinical encounters was important within the high-intensity, high-volume environment of the FAC. Systematic diagnostic assessment was not conducted, and therefore the clinical diagnostic impressions collected merely reflect the observations of these psychiatrist clinicians in this post-disaster setting.

Psychiatrist volunteers were provided with a list of referral sources for individuals they encountered, and were encouraged to make appointments through existing mental health channels for patients needing additional services. Because the DPO psychiatrists would not be the providers of ongoing care, a decision was made to restrict samples available at the FAC to a sedative and anhypnotic to address short-term needs. Wyeth-Ayerst Pharmaceuticals donated samples of zaleplon, a nonbenzodiazepine sleep medication, and lorazepam, a sedative benzodiazepine anxiolytic, for short-term symptom management. DPO focused on acute triage and evaluation and referral of patients to pre-existing community providers for ongoing services whenever possible.

Beginning in April, 2002, volunteer psychiatrists made telephone follow-up calls to contacts from the FAC operation. These were conducted to assess the course of those who had received DPO services in the first weeks following 9/11 and to provide further assistance in obtaining additional care and accessing other resources.

The encounter form prompted volunteer psychiatrists to record their clinical impressions in open-ended text. Data were extracted from the completed forms and entered into an Access database containing demographic, credentialing, and professional information about volunteers, and identifiers matching providers with contacts for data analysis. Information about follow-up contacts was also entered into the patient database. To create the database for this study, Access files representing clinical information were transformed into SAS datasets and merged using identification codes unique for each individual and for each contact.

Results are summarized using tabulations, raw numbers, and percentages for categorical variables and means with standard deviations (SDs) and ranges for numeric data. Denominators providing the number of observations are indicated wherever there are missing data. Comparison of categorical variables involved chi-square analysis (substituting Fisher's exact tests for comparisons with one or more cells with expected values of less than 5). Comparison of categorical with numerical variables was performed with two-tailed Student's t-tests, using Satterthwaite comparisons when equality of variance assumptions were not met.

Human studies approval to conduct analyses on the clinical records from the FAC was obtained through the Institutional Review Boards of the Mount Sinai School of Medicine and The University of Texas Southwestern Medical Center.

RESULTS

Participating Psychiatrists

A total of 268 physicians participated in service provision for first encounters, 32 of whom also provided follow-up contacts; an additional 13 physicians participated only in follow-up contacts, for a total of 281 psychiatrists. The DPO psychiatrists averaged 3 first encounter contacts and 15 follow-up contacts. Two physicians had 52 contacts, and one physician had 63 contacts; the maximum was 98. Overall, the psychiatrists had a mean of 4.5 (SD = 9.7, n = 280) contacts each, and the median was 2.

Descriptive information on specialties was available for 274 DPO psychiatrists, only 9 of whom (3%) described themselves as psychiatric trauma specialists. Based on information provided by the psychiatrist volunteers, 34 (12%) specialized in pediatric psychiatry and 240 (88%) were adult psychiatrists. Of the 203 psychiatrists from whom data on home state were available, the vast majority (187, 92%) were from the state of New York, while 7 hailed from New Jersey, 4 from Pennsylvania, and one each from Connecticut, Florida, Maine, Ohio, and South Carolina. Of the 186 New York City physicians, 68% (127) were from Manhattan and 10% were from Brooklyn (12) or the Bronx (6). About half (51%) of the volunteer physicians were women.

Individuals Who Were Evaluated

The database contains entries on 848 unique individuals who underwent 923 full encounters with DPO psychiatrists from September 15, 2001 to November 20, 2001. The follow-up database contains data on 311 individuals who were contacted between September 17, 2001 and October 7, 2002. These 311 individuals received a total of 697 follow-up contacts (a mean of 2.2 follow-up contacts per person), for a total of 1,620 DPO-recorded contacts.

Of the 840 evaluated individuals affected by the disaster for whom gender was recorded, 478 (57%) were women and 362 (43%) were men. The mean age of the 802 individuals for whom age was recorded was 39.1 (SD = 12.5) years, with ages ranging from 3 to 78 years, with a median of 39 years. Few children under age 18 were given full evaluations (n = 31,

4% of the sample). Child psychiatrists saw 19 children and adult psychiatrists saw 10 children (data on specialty missing for 2 of the psychiatrists who evaluated children).

Data were available on ethnicity for 118 (14%) of the individuals seen, of whom 49 (42%) were Hispanic/Latin American, 36 (31%) were African/ African-American, 26 (22%) were Caucasian, 5 (4%) were Asian, and 2 (2%) were from the Indian subcontinent. Evaluations noted a total of 45 different ethnicities from Albanian to Uzbek.

Clinical Diagnostic Impressions

Data on clinicians' impressions of psychiatric diagnoses were available for 693 initial encounters. Most of the individuals (92%, n = 640) seen were assigned a post-9/11 psychiatric diagnosis. The most prevalent diagnosis was acute stress disorder, which was assigned in 38% (n = 260). Posttraumatic stress disorder (PTSD) was diagnosed in 14% (n = 99), another anxiety disorder in 9% (n = 59), and adjustment disorder in 20% (n = 137). Major depression was diagnosed in 11% (n = 76). Bereavement was identified in 12% (n = 84). Less prevalent diagnoses included bipolar I disorder in 1% (n = 9), bipolar II disorder in 1% (n = 6), alcohol abuse/dependence in 1% (n = 7), drug abuse/dependence in < 1% (n = 3), and personality or somatoform disorder in 1% (n = 9). Two percent (n = 12) were diagnosed with "normal" reactions. No one was diagnosed with schizophrenia. Other psychosis was observed in 4 individuals, while possible psychosis was suspected in another 3. Five individuals reported contemplating suicide after 9/11.

During the first month after 9/11, 6% (n = 30) of the 526 patients seen by DPO psychiatrists were diagnosed with PTSD, which notably is too short a duration of symptoms for the diagnosis to be made according to the criteria in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR).[3] In the second month, 23% (n = 62) of the 275 patients first seen during that month received a PTSD diagnosis. In the third month, 13% (n = 5) of the 39 patients first seen in that month were diagnosed with PTSD. Overall, of 99 PTSD diagnoses given by the DPO psychiatrists after the 9/11 terrorist attacks, 30 (30%) were made before October 11, 2001 (i.e., within 1 month of the event) so that these individuals did not meet the duration criterion in the DSM-IV-TR PTSD criteria.

Eight individuals were diagnosed with the following medical problems: fracture, post concussion syndrome, hypertension, hypothyroidism, breast lump, migraine, history of seizure disorder, history of herniated disk, and sexual dysfunction.

Pre-9/11 psychiatric diagnoses were recorded in only 9 individuals: major depression (n = 4), PTSD (n = 2), bipolar I disorder (n = 2), alcohol abuse (n = 1), generalized anxiety disorder (n = 1), unspecified anxiety disorder (n = 1), and attention-deficit/hyperactivity disorder (n = 1).

Symptoms

The 848 individuals who were evaluated described a total of 5,438 symptoms (mean = 6.4, SD 15.0, symptoms per person). More than half of these individuals described insomnia and anhedonia, and 20% or more reported problems with mood, anxiety, dreams, and appetite. The most commonly reported symptoms are shown in Table 1. Uncommon symptoms (<1% of reported symptoms) included panic attacks, shortness of breath, palpitations, physiological reactions to reminders, numbness/emotional distance, social isolation/ withdrawal, feeling distant from one's normal self, feeling things are unreal, trying not to think or talk about the event, and psychogenic amnesia for important parts of the event. Rarely reported symptoms (<0.1% of reported symptoms) included delusions, visual hallucinations, other hallucinations, ideas of reference, disorganized or catatonic behavior, extreme upset with reminders, sense of foreshortened future, increased alcohol use, and

somatic complaints. Substance abuse issues were noted in 9% (*n* = 78) of individuals. Specific substances of abuse identified included alcohol (6%), cocaine (1%), cannabis (2%), hallucinogens (<1%), opiates (1%), sedatives (<1%), and others (1%).

Virtually all symptoms were reported as starting on 9/11, with only 20 of the 5,438 symptoms having started later (all started within 2 months).

Medications Prescribed

Of the 848 individuals evaluated, 401 (47%) received psychotropic medications (a total of 549 prescriptions). A nonbenzodiazepine sleep aid was prescribed to 29% (n = 250) of those evaluated, and 23% (n = 199) received a benzodiazepine. Antidepressant prescriptions were provided to 27 individuals (3% of those evaluated.) Four people received prescriptions for risperidone, and two received prescriptions for narcotics.

The mean number of pills in each prescription was 5.7 (SD = 3.9) pills for benzodiazepines, 5.0 (SD = 2.8) pills for nonbenzodiazepine hypnotics, and 16.5 (SD = 11.3) pills for antidepressants. The number of pills prescribed was significantly higher for benzodiazepine than for nonbenzodiazepine hypnotic prescriptions (Satterthwaite unequal variance t = 2.05, df = 297, p = 0.041).

Medication by Diagnosis and Symptoms

As noted above, data on clinicians' impressions of psychiatric diagnoses were available for 693 individuals. Psychotropic medication was more likely to have been prescribed for the 640 individuals who received a post 9/11 diagnosis than for the 53 individuals without a post 9/11 diagnosis (52% [n = 332] vs. 23% [n = 12]; $chi^2 = 16.73$, df = 1, $p < 0.001$). Only 4% (n = 2) of those with no diagnosis received a benzodiazepine, while 19% (n = 122) of people with a diagnosis received a benzodiazepine ($chi^2 = 7.79$, df = 1, $p = 0.005$). The 260 patients with a diagnosis of acute stress disorder were more likely to be prescribed a nonbenzodiazepine hypnotic agent than the 433 patients without this diagnosis (35% [n = 91] vs. 22% [n = 96]; $chi^2 = 13.57$, df = 1, $p < 0.001$).

Data on symptomatology were recorded for all 848 individuals who were evaluated. The 519 individuals with complaints of insomnia were more likely than the 329 patients without such complaints to be prescribed a benzodiazepine (19% [n = 99] vs. 12% [n = 41]; $chi^2 = 6.57$, df = 1, $p = 0.010$) and to receive a nonbenzodiazepine hypnotic (35% [n = 183] vs. 10% [n = 32]; $chi^2 = 70.05$, df = 1, $p < 0.001$).

Follow-up Data

Initial follow-up contacts consisted of individuals returning to see psychiatrists at the FAC. However, as fewer and fewer individuals had other reasons to seek a variety of services at the FAC, psychiatric contacts dwindled and formal psychiatric operations were terminated in late November, 2001. Between April and October, 2002, psychiatrists made telephone contacts to obtain information about follow-up psychiatric status. Of the 174 individuals with follow-up records, 21% (*n* = 37) said they did not recall their initial contact with a DPO psychiatrist, 76% (*n* =132) said they felt better since their contact with DPO, and 41% (*n* = 72) said they had followed recommendations from their original contact with DPO psychiatrists. Medication was described as helpful by 53 persons (30% of those followed up).

DISCUSSION

We have characterized the coordinated deployment of a large number of volunteer psychiatrists in the aftermath of 9/11 at the New York City FAC. These services utilized an outreach model with a variety of mechanisms for identifying patients and the co-location of psychiatrists with other disaster responders in a non-medical setting. In the first 2 months after the 9/11 attacks, in addition to providing more than 2,000 brief counseling encounters, 268 volunteer psychiatrists provided professional services to 848 patients, including psychiatric assessment, medication, and referrals for ongoing care. The main utility of the findings from this study lies not in prevalence rates of clinical diagnoses rendered nor in determination of the effects of prescribing patterns by the volunteer psychiatrists, but in quantitative information concerning the experience of the psychiatrists based on an analysis of the collected clinical notes and records from their participation. A large number of psychiatrists volunteered, but three very productive psychiatrists contributed about 25% of all the work. Large numbers of patients who were clinically evaluated by the DPO psychiatrists were determined to have significant psychiatric illness and need for psychotropic medication, reinforcing the role and utility of psychiatrists in the post-disaster setting after incidents such as the 9/11 attacks.

The number of diagnoses of PTSD made less than a month after the trauma suggests that psychiatrists responding to future disasters could benefit from more intensive training prior to deployment and from the development and implementation of tools that ensure more systematic and accurate diagnostic assessment. Even without more definitive data, the fact that these psychiatrists identified a large number of individuals who were distressed and perceived as having diagnosable psychiatric disorders and being likely to benefit from medication and referral for ongoing care, suggests a potential need to expand acute disaster mental health services to specifically include services that can be provided by psychiatrists.

The experience of DPO after 9/11 demonstrates that both psychiatric clinicians and researchers may make meaningful contributions to their communities and to our collective understanding of people’s mental health responses to disasters. The scale of this volunteer service suggests the potential for humanitarian and scientific benefits when psychiatrists come together before events to plan and develop training, clinical infrastructure, record keeping, and practical and ethical scientific methodology. With further refinements—such as prompts to record specific symptoms and their onset—systematic clinical record keeping has the potential to serve as a model for future studies in settings where more rigorous research methodologies may not always be feasible.

Experience of the mental health response after Hurricane Katrina, described in a recent publication,[4] further substantiates that psychiatrists can be integrated into a disaster mental health response, and illustrates that provision of psychotropic medications is not only possible but important in the acute aftermath of disasters. Examination of acute psychiatric services provided to Hurricane Katrina evacuees demonstrated a distinct need for volunteers with psychiatric expertise. Many individuals served by mental health clinicians in this disaster had pre-existing severe and persistent mental illness, needed major psychotropic medications (antipsychotic, antidepressant, mood-stabilizing, and anxiolytic agents as well as specialized medications such as methadone maintenance), and had comorbid medical conditions, many of which (e.g., delirium, dementia, and substance abuse-related states such as psychosis) required differentiation from psychiatric illness. Provision of services for these needs is a function specific to psychiatrists.[4]

There are several important limitations of this study, most importantly the variable and limited quality of the clinical data collected. Given the lack of uniform data or systematic

sampling, this study cannot be used to determine epidemiological prevalence. The follow-up contacts were limited to unstructured impressions and no follow-up information was obtained for many individuals. Therefore, these follow-up data do not indicate the relative effectiveness of the interventions provided; substantially greater efforts to accomplish this would be needed to gather meaningful outcome results in evaluating future post-disaster outreach. The diagnosis of PTSD prior to 4 weeks of symptoms raises questions about whether clinicians were identifying pre-disaster cases or whether they were ignoring the DSM-IV-TR duration criteria. Clinicians' divergence from optimal practice in these chaotic situations deserves further attention in research on psychiatric response in post-disaster settings. The deliberate choice of available pharmacotherapeutic samples determined in advance constrained medication options, therefore subverting potentially meaningful generalizations about prescribing patterns from this program. Finally, the psychiatrists in this program used their clinical judgment to determine whether to complete an evaluation or whether to conduct a brief encounter. Without data on how these decisions were made, we cannot determine how the sample described in this study differs from other individuals who sought help in this setting.

Although expert consensus guidelines have recommend SSRIs as first-line agents for ongoing treatment of PTSD[5] and some reports have recommended medications for prevention of PTSD, samples of SSRIs were not stocked at the FAC given the early timeframe for these evaluations and a lack of certainty that these individuals would engage in the systematic follow-up that is indicated when starting ongoing medication. The goal of DPO's psychopharmacologic interventions was short-term relief of anxiety and insomnia, which could be viewed as a psychopharmacologic equivalent of "psychological first aid." There is no reliable randomized evidence about the effects of soporifics or anxiolytics in the acute post-trauma setting when the goal is short-term symptom relief. The short-term intent is underscored by the fact that the average number of pills prescribed was five. Despite the lack of reliable evidence either way, psychiatrists functioning in an acute post-disaster environment often do so in an atmosphere that is colored by notions that prescription of psychotropic medications may impair normal psychological processing of trauma and grief.[6] More systematic research is needed concerning the use of such medications in a real-world acute response, as well as further consideration of the ethics of involving pharmaceutical companies in the donation of samples.

Systematic examination of operations such as the one described here and supplementation of clinical disaster services with research funding and expertise would help ensure scientific rigor. Evaluation and research are an important part of disaster mental health service provision and should always be included so that past efforts can inform future practice.

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Table 1

Symptom prevalence N = 848 patients

	% (n)
Insomnia	61 (519)
Anhedonia	52 (438)
Depressed mood	34 (285)
Persistent general anxiety	26 (224)
Bad dreams or nightmares	23 (195)
Change in appetite	22 (185)
Intrusive memories of the event	18 (151)
Re-experiencing the event	11 (91)
Being easily startled	10 (87)
>5% weight change	10 (81)
Irritability	9 (80)
Avoids reminders	7 (61)
Diminished concentration	7 (60)
Hypervigilant	7 (58)
Worthless/guilt feelings	6 (55)
Feeling numb or emotionally distant	5 (45)
Alogia	5 (44)
Suicidal ideas/attempts	5 (43)
Social isolation/withdrawal	5 (43)
Hopelessness	5 (41)
Fatigue	5 (40)