



Published in final edited form as:

*Soc Psychiatry Psychiatr Epidemiol.* 2015 April ; 50(4): 569–578. doi:10.1007/s00127-014-0970-5.

## A Focus Group Study of the Impact of Trauma Exposure in the 9/11 Terrorist Attacks

**Carol S. North, MD, MPE,**

VA North Texas Health Care System and Departments of Psychiatry and Surgery/Division of Emergency Medicine at The University of Texas Southwestern Medical Center, 6363 Forest Park Rd., Dallas, Texas 75390-8828, USA

**Carissa J. Barney, PhD, and**

Private Practice, 10300 North Central Expressway, Suite 285, Dallas, TX 75231, USA

**David E. Pollio, PhD**

The University of Alabama at Birmingham, Department of Social Work, College of Arts and Sciences, Birmingham, AL, USA

### Abstract

**Purpose**—Much of the mental health research that has emerged from the September 11 (9/11) attacks has been focused on posttraumatic stress disorder and its symptoms. To better understand the broader experience of individuals following a disaster, focus groups were conducted with individuals from affected companies both at Ground Zero and elsewhere.

**Methods**—Twenty-one focus groups with a total of 140 participants were conducted in the second post-9/11 year. Areas of identified concern were coded into the following themes: Disaster Experience, Emotional Responses, Workplace Issues, Coping, and Issues of Public Concern.

**Results**—Discussions of focus groups included material represented in all five themes in companies both at Ground Zero and elsewhere. The emphasis and the content within these themes varied between the Ground Zero and other companies. Content suggesting symptoms of PTSD represented only a minority of the material, especially in the company groups not at Ground Zero.

**Conclusions**—This study's findings revealed an array of psychosocial concerns following the 9/11 attacks among employees of companies in New York City that extended far beyond PTSD. This study's results provide further evidence that trauma exposure is central to individuals' post-disaster experience and focus, and to individuals' adjustment and experience after disaster.

### Keywords

disaster; September 11 terrorist attacks; trauma exposure; mental health; psychosocial concerns; focus groups

---

Address all correspondence and reprint requests to: Carol S. North, M.D., M.P.E., The Nancy and Ray L. Hunt Chair in Crisis Psychiatry, Department of Psychiatry, UT Southwestern Medical Center, 6363 Forest Park Rd., Dallas, TX 75390-8828, USA, telephone: 214-648-5375, fax: 214-648-5376, carol.north@utsouthwestern.edu.

### Conflict of interest

The authors declare that they have no conflict of interest.

## Introduction

On the morning of September 11, 2001 (9/11), the United States experienced the worst terrorist attack in American history. Research on the 9/11 attacks has largely been conducted through quantitative studies using standardized interviews and questionnaires with a predetermined content, often focused on posttraumatic stress disorder (PTSD) and its symptoms [1–6]. Most exposures to 9/11 trauma in the attacks on the World Trade Center (“Ground Zero”) in New York City occurred very close to the Ground Zero site, within about a one-block radius.[7] The majority of people who were either in the World Trade Center (WTC) towers or nearby during the attacks, however, did not develop PTSD [7–9]. These individuals without PTSD and the very large numbers of people in the New York City area who were not exposed to trauma in the disaster were nevertheless profoundly affected. A narrow focus on trauma-related psychopathology may not adequately capture or represent the 9/11-related concerns and emotional responses of these populations [10–16].

Qualitative research facilitates the emergence of new concepts by allowing participants to identify and share what is of greatest concern to them [17]. This process was demonstrated in focus group discussions of survivors of the anthrax attacks on Capitol Hill, whose main issues related to authorities’ response to the attacks and personal safety concerns; in contrast, posttraumatic symptoms represented a small fraction of the concerns expressed in these groups [18,19].

This article describes a qualitative study conducted to examine the thoughts, feelings, perceptions, and concerns about the 9/11 terrorist attacks among individuals from affected companies at Ground Zero and elsewhere. The aim was to learn about the concerns of people who experienced the disaster either through direct exposure to 9/11 trauma or through other experience of it, in spontaneous discussion not directed by agendas of researchers. It is important to elicit people’s experience of the disaster and their concerns without the influence of researcher direction, because their observations and concerns may differ from the impressions of researchers and not be voiced in research-directed, structured interviews. Focus groups were held with members of several companies in New York City in the second year after the 9/11 attacks to compare and contrast the personal responses of individuals from affected companies at Ground Zero and elsewhere in the area.

## Methods

A volunteer sample of 140 participants was recruited to participate in a total of 21 focus groups conducted in six companies affected by the 9/11 terrorist attacks in the second year after the disaster. For this study, the companies from which members of the focus groups were recruited were separated into two broad trauma exposure categories characterized in a recent publication with careful examination and classification of 9/11 trauma exposures according to *DSM-IV-TR* Criterion A for PTSD [7]. Nine focus groups were conducted with workers from three companies located at Ground Zero (in the WTC towers or < 0.1 block away): three (n=28) from a company located in the North Tower of the WTC on 9/11, four (n=20) from a company in the South Tower and two (n=12) from a social service agency located across the street from the WTC. Another 12 focus groups were with workers from

three companies outside of the Ground Zero area (>0.1 mile from the site): two focus groups (n=18) conducted with employees of a social service agency located approximately 1.5 blocks away from Ground Zero, five (n=32) with employees from a social service agency approximately two miles from Ground Zero, and five (n=30) with trauma-unexposed flight attendants, aircraft mechanics, and managers of a commercial airline with major losses in the attacks.

In subsequent analyses from a previous survey study of these workplaces by this research group [7], 52% of participants from workplaces in the WTC towers had a 9/11-related PTSD-qualifying direct trauma exposure, and only 3% of individuals in the workplaces >0.1 mile outside of the Ground Zero complex had qualifying 9/11-related direct trauma exposures [7]. Thus, the classification of companies from which the focus group members were recruited as *at Ground Zero vs. outside Ground Zero* reflects a characterization of groups from companies with substantially different 9/11-related trauma exposure experiences. Readers should be careful to understand that these groupings refer to the companies from which the groups were formed, rather than to the individual members of the groups.

The participating companies allowed the researchers to conduct focus groups at the workplace and informed their employees of the opportunity. Interested employees met with a researcher who explained the study to them. Individual participation was voluntary, and written informed consent was obtained. Separate focus groups were conducted for managers and non-managerial employees, helping to avoid participants' reluctance to be candid in the presence of their superiors or subordinates in the groups. The Institutional Review Boards of the participating academic institutions approved this research. Further details of the sampling methods are available in other published articles [20–22].

The data collection protocols and qualitative analysis methods have been used by this research team in several disaster studies [18,19,21–24]. One group facilitator conducted all 21 focus groups in a nondirective fashion. Groups were given initial introduction on the purpose of the groups, and broad instructions were provided to elicit spontaneous discussion of members' thoughts, perceptions, feelings, responses, and concerns related to their experience of the 9/11 terrorist attacks. The groups lasted approximately one hour and were audiorecorded.

Qualitative analysis of the transcribed text was conducted with *NVivo* software (QSR International) for systematic organization and interpretation of its contents. The text was divided into passages demarcated by change of speaker. The transcripts were first reviewed for recurring themes and subthemes by a trained research assistant who was not involved in the rating of passages. Two other independent raters systematically and independently assigned codes for the single best-fitting themes and subthemes to all of the passages in the transcripts (excluding comments unrelated to the task). Inter-rater reliability was established for thematic coding of the passages (calculated only on scored response pairs with at least one rater assignment to at least one theme), with kappa values ranging from .83–.88, all in the excellent range. Inter-rater differences were subsequently discussed by the team and resolved by agreement for final thematic coding of passages. Comparisons between

discussions of –Ground Zero and other company focus groups were made by inspection and interpretation of the thematic content. Presentation of the material in the themes is accompanied by illustrative quotes from the focus group discussions, and for the Ground Zero groups, notation is provided as to which company’s focus group was the source of the quote.

## Results

The sample (N=140) was 67% female with mean age of 45 (SD=10) years (median=46, range=18–73). About half (51%) self-identified as Caucasian; African Americans (21%) and Hispanics (20%) together accounted for the next largest portion, and the remainder self-identified as Asians (7%) and Middle Easterners (1%). From the 2,205 passages recorded in the focus groups altogether, 1,000 (46%) were from Ground Zero groups and 1,205 (54%) from other groups (198 from the company 1.5 blocks away, 487 from the company 2 miles away, and 520 from the airline).

Five broad content themes with recurring content were identified: Disaster Experience, Emotional Responses (including two subthemes, Posttraumatic Stress Symptoms and Other Emotional Responses), Workplace Issues, Coping, and Issues of Public Concern. Definitions of each theme are provided in Table 1 along with inclusion and exclusion criteria for the material coded within them. All of these themes were represented in discussions of both –Ground Zero and other companies.

Table 2 provides the numbers and proportions of passages coded into the themes for –Ground Zero and other company groups. Emotional Responses was the most richly developed theme, representing about one-third of the total passages. Material in this theme included descriptions of various emotional responses, including posttraumatic symptoms. The Other Emotional Responses subtheme received considerably more discussion than the Posttraumatic Stress Symptoms subtheme in both groups, and especially in the groups outside of Ground Zero. Focus group members from –Ground Zero and other companies emphasized different themes, and the specific content of the themes differed qualitatively between –Ground Zero and other companies.

For the remainder of the Results section, the themes will be described using illustrative quotes. These quotes were chosen not as representative of numbers of quotations from different company groups, but as particularly descriptive of comments in the topic area.

### Disaster Experience

**Ground Zero company groups**—These participants described witnessing the planes hit the towers, feeling the jolt of the planes striking the buildings, fleeing from the danger, and witnessing the horrors of massive death and destruction at close range.

I was at my desk...in my office on the 100th floor...when the first plane hit...it felt like an earthquake....The building jolted incredibly...the aftershocks made the building sway....There was clearly an explosion...[Outside the window] all I saw were papers and smoke...and headed for the emergency stairwell.

My windows faced the Trade Center...[I saw] the hole that went through from the one side to the other...[and knew] they'd never get them out of there....And we just stood and looked at this in shock....People jumping....it was just so unbelievable.

When the second plane hit, I was on about [floor] 50. The stairs beneath me seemed to [shift] like a Slinky. The whole building waved....threw me from one side of the stairwell to the other. [For] what felt like a minute afterwards, the building [felt like it] was slowly falling over...stairs underneath me going back and forth....Complete chaos: people were pushing...jumping down flights of stairs....

They described initial shock and disbelief, which evolved into a growing awareness and understanding of the events as they unfolded, and a sense of utter horror.

When it hit, I still didn't believe it was terrorism. I just couldn't believe it. And then one of the supervisors, I remember [name] screaming, "We have to get the hell out of here!" And I say, "OK, OK." But by that time, I was in a daze. I didn't know what the hell was going on.

You felt like you was in the Twilight Zone because you couldn't run fast enough, because you're trying to dodge the bodies....the funny thing was when we got outside, everything was white....I couldn't run fast enough because I was so scared I might step on something.

They recounted scenes of horror and chaos they encountered while fleeing the collapse of the towers and making their way toward safety.

I started running, and the people who were stopped were, like older people, people who were burnt sitting down....

There were a few people I jumped over, and those faces you can always see...

**Company groups outside of Ground Zero**—In contrast to accounts of the Ground Zero company groups, many participants in the other company focus groups had learned of the attacks from others or from the media. Some participants from other companies also saw terrible images, although from a greater distance beyond horrific details were not directly discernable. They also described feelings of horror and disbelief and difficulties processing their immediate experience of the attacks.

I was in Chinatown, and somebody told me that they saw an airplane at the World Trade, and at that moment, I thought it was a joke....When I saw the fire, I hadn't seen the attack, so I thought they were still joking. But when I saw the scenes from the roof of my house, I was scared. (company 2 miles away)

The second one happened....It still didn't even occur to me that it would be some sort of terrorist attack. The news just kept on rolling....Then I'm thinking the world's coming to an end here. (airline)

I worried about the people who were in those buildings. How will they get out? Somebody should go and help them.... (company 2 miles away)

I think it was worse when I came down here to see it...Once you see it in person, there's nothing like seeing it on TV; you just really break down and cry. (company 1.5 blocks away)

### Emotional Responses

**Company groups outside of Ground Zero**—Members of these groups described intense emotional arousal after the attacks. They were haunted by repeated horrific images of scenes they had witnessed. They described physiological arousal to reminders and a general sense of foreboding and hypervigilance, exemplifying intrusive re-experience and hyperarousal symptoms.

I keep re-seeing what I saw. It doesn't stop. It's like a videotape that you play over and over again...it just won't go away.

Not a cloud in the sky and I look up: "Oh, my God, it's that kind of a day." Those bring it back...gorgeous days bother me.

...sleeping in 20-minute increments...wake up in that heightened panic, my heart racing.

Nightmares...that I was in the building, burning...screaming at them trying to get them on the elevators to try and get them out...

The next morning...I heard the military planes, and I literally went under the table.

I tense when I hear a plane. Is it going to...crash into the building?

You know in your heart that something else will happen again; that it's inevitable...you're just waiting for it....

Other emotional responses reflected profound bereavement and grief surrounding the loss of coworkers and friends as well as material losses.

I lost two people that I ate lunch with daily for almost the entire time I had been with the company. I have not replaced them today. I eat alone. I go out alone. It's tough. I felt a lot of guilt about not being there.

A hundred and seventy-five people [lost] is incomprehensible. People... still look at me and say, "How many did you lose?" and then just shake their head.

How do you mourn so many people at the same time?

It took me a little while to get past the fact that it was OK for me to mourn my stuff...I brought a lot of stuff [to] my office....After a while, it was OK for me to mourn my stuff. It was OK for me to want my stuff back.

Trade Town was so beautiful...truly magnificent. The art work, staircases....And then we were of course displaced into someplace which was not so beautiful....

You mourn the loss of your stuff. You mourn the loss of the place. You mourn the loss of your colleagues. You mourn the loss of your innocence.

**Company groups outside of Ground Zero**—Emotional responses in these groups also included intrusive re-experience and hyperarousal symptoms, including distress with reminders, difficulty sleeping, nightmares, jumpiness, feeling unsafe, expecting it would happen again, and being overly alert. Other responses reflected greater appreciation for others and concerns about the emotional well-being of their family members, especially their children.

I think, whenever I get on a flight, “This could be it.” (airline)

I can also see the Empire State Building from where I live, and I’m always looking at it, because it seems to me that I might see an airplane about to crash. (company 2 miles away)

My son was 15 at the time. He was in school, and his friends were all saying that you’re not safe anymore, and we’re all going to die. He came home one night, and he was crying...“Mom, are we going to die? Are we safe?...Are they going to do this again?” (airline)

### Workplace Issues

**Ground Zero company groups**—These participants described extensive difficulties readjusting to the post-9/11 workplace environment after the destruction of their former offices and the loss of coworkers. Companies formerly housed in the WTC towers struggled to acclimate to the new work environment, crowded temporary work spaces, and lack of resources and tools such as their work files that were destroyed in the 9/11 attacks. “My whole group was all in one room....for a month, we tried to operate in...five or six different locations, and we did the best we could.” In the new post-9/11 environment, workplace relationship dynamics changed as new employees were hired to replace those lost on 9/11.

There’s the pre-9/11 people and the post-9/11 people. Now, I started in May. I was only a couple months before and so I was relatively new to the company, but because I was there prior...they still saw me as an old-timer, because [9/11] was the defining moment.

Company managers felt responsibility for the readjustment of the employees back to the post-9/11 workplace. Readiness to return to work varied among employees. Managers described their attempts to reintroduce employees to the workplace in stages, trying to accommodate the varied emotional states of their employees and their employees’ capacity to function in the highly disrupted work environment. There was clearly a tension between need to promote productivity and tolerance of workers’ emotional responses and difficulties functioning after the 9/11 attacks.

[Over-crowding at work] demoralizes the staff, in terms of their work product and their attention to details and feelings toward the company, which were at that time getting more negative.

People are not nearly as productive as they used to be. They can’t concentrate. I have to give them instructions way more often than I ever used to.



These participants identified the coming together of coworkers and compassionate gestures of the workplace as playing a pivotal role in their recovery process. The mental health services provided in the workplace were generally positively received.

I think we had, if I'm not mistaken, 4 or 5 sessions of group therapy in the conference room. We also, on the anniversary, we also had social workers there on that day....So, I believe we had a lot of support.

I was personally very disappointed that I thought that all of the managers...should have set an example by presenting themselves at those sessions, and they didn't....I really thought that would have been important.

The counselors that we had...were very good.

Some managers felt that they were put in an awkward position by being expected to participate in the same process groups as their employees. They further described difficulties they experienced trying to help their employees with their emotional issues while they were simultaneously trying to deal with their own emotions.

I felt the sense of responsibility, the sense of leadership...there were times when it was difficult, because you couldn't let your guard down....You might be frightened to come to work...but you really couldn't show that, because how could you then expect your employees [to do so]?

**Company groups outside of Ground Zero**—Probably because their workplaces were not destroyed or even seriously disrupted, these groups provided little material in the theme of workplace issues. Many of their post-9/11 workplace concerns were not trauma-related but rather secondary disaster-related stressors or remotely related to the 9/11 attacks. For example, secondary concerns related to workplace inconvenience related to the cleanup or related only secondarily to the general aftermath of disaster in the city such as economic and financial difficulties.

## Coping

**Ground Zero company groups**—These discussions reflected almost exclusive reliance on the workplace and coworkers for coping and social and emotional support after the disaster. Participants explained that in part, this was because their families who were not directly exposed to trauma with them on 9/11 could not understand their experience with their coworkers in the attacks, and also because they felt the need to protect their families from the horrible things they had experienced during the attacks.

I totally threw myself into work. Like getting the office back together...and making a little office out of our conference room, and....I just worked.

We tend to support each other. One day, someone would be down and you had someone to go to who understood what you've been through, to just listen...

We had to be together because no one really understands unless you were there, and even now, talking to your family it's like, "Well, get over it...."



**Company groups outside of Ground Zero**—Coping in these groups was largely concerned with giving and receiving social support. In contrast to the trauma-exposed company groups, this support especially involved family members. Therapy and religion were identified as means of coping. Providing social support to others and altruistic volunteering in the community were described as not only helping others, but also helping to heal those who provided the support to others.

I took refuge in the Bible....I visited the homes of many people in Queens, and many people were affected by that. Sharing Biblical texts was a great help to these people and myself. (company 2 miles away)

I found local places to do volunteer work...packing up supplies to go down to Ground Zero, and joined the Red Cross....That was my way of coping. I couldn't sit still and I couldn't stay home. (company 2 miles away)

### Issues of Public Concern

**Ground Zero company groups**—Disaster preparedness and disruption of communication in the 9/11 attacks were issues discussed at length. These participants felt endangered by the lack of preparedness and disorganization of the emergency response teams and the country as a whole. Members questioned whether all of the appropriate measures had been taken in order to ensure their safety and described their frustrations with the difficulties they experienced trying to reach loved ones after the attacks.

I just thought that the US was a little more prepared. I just didn't know that this country was so disorganized....I guess they just thought this would never happen here....Where are the air traffic controllers? Who's tracking these things?

Cell phones were useless. I couldn't get ahold of a pay phone and then when I jumped into a building...I still couldn't dial out....I finally got a line to midtown Manhattan to my corporate office and I was like, "I'll tell you whatever you need to know, but somebody needs to call my wife and tell her I'm alive."

Participants also expressed distress over the media's portrayal of the 9/11 attacks and the recurrent airing of images of the disaster that they were in. They described the media's focus on horrific images as disproportionate to the amount of actual information that was provided.

I was furious at the media for months after that...because if I saw a plane [on a televised newscast] one more time, I was going to call someone. It was like those Coke ads they...put in movie commercials like every two seconds, it was too much...

I look at my granddaughter, and she's seven. She thought the Trade Center kept falling down, like there were many buildings, because they kept re-running it.

**Company groups outside of Ground Zero**—In contrast to the Ground Zero company groups, concerns in these groups focused outside of their own personal experiences of the attacks, and about their post-9/11 financial struggles and concerns about the nation's economic future.

Everybody knew someone. Some people lost friends, lost relatives, and they started to call me, because we were also in a housing crisis....There was a whole lot of stress and continuing phone calls about both of these things. (company 2 miles away)

I've been working three jobs, so I'm kind of tired. (company 2 miles away)

When you look at the newspaper, you see that people lose jobs everywhere. (company 2 miles away)

Allocation of resources to the public was perceived as inefficient, uneven, and unfair

We spend money going to war....I'm just angry that all of this money that could be used for social service programs [was diverted to other expenditures]. (company 2 miles away)

They drew their boundaries in all kind of funny ways. If you're on this side of the street, you can get some money, but if you're on this side of the street, you can't. (company 2 miles away)

[They] gave funds....But they do not give funds to people who are undocumented. We look who lives in the area of 9/11, and the ones who are most affected...are the people who are doubled up, tripled up in the house, immigrants....they're not eligible for any federal emergency funds. (company 2 miles away)

These participants expressed uncertainties about national safety after 9/11 and beliefs that future terrorist attacks are inevitable.

I think it'll happen again...even though we've beefed up security, but I still think if somebody really wants to terrorize, they probably will be able to do it again. (airline)

What will happen is that we will become complacent....And then that's when they'll probably strike us again. (airline)

These participants also reflected on the changes they observed in society following the 9/11 terrorist attacks.

Right after 9/11...people were so nice. Nobody was nasty. It lasted maybe a couple of weeks.... (airline)

Our attitudes have changed. Now, we look at everybody in a different light. We're looking at people in a more suspicious nature. (airline)

## Discussion

Consistent themes were found across discussions of Ground Zero and other affected companies in these focus group discussions, but the emphasis and content within these themes differed remarkably between the two groups of companies represented. The main differences in content across the themes related to person focus and time orientation. Members of the Ground Zero company groups concentrated on their own 9/11 experience and the immediate disaster time frame. Their rumination on their personal 9/11 experience

seems to be a reflection of the severity of the horror and terror they experienced during the attacks. The company groups outside of Ground Zero, however, expressed concerns for others rather than narrowly focusing on their own difficulties, embraced the overall picture, and contemplated the future. Although they had less intense personal experiences of the 9/11 attacks than those in Ground Zero companies, they also expressed considerable emotional distress.

Participants in both Ground Zero and other company groups described emotional responses suggesting PTSD symptoms, but this content represented only a minority of the material discussed, especially in the other company groups. Beyond PTSD symptoms, other responses described in the Results section were crying, bereavement and grief, guilt, disappointment, suspiciousness, demoralization, anger, and fatigue, as well as concerns about economic and financial problems, social support, media coverage, and personal problems. This result is not consistent with the focus on PTSD and its symptoms in the extant 9/11 literature [1–5].

The company groups outside of Ground Zero described fear, personal safety concerns, and emotional responses reminiscent of hyperarousal symptoms, but largely in the context of concerns about potential future incidents rather than regarding their own experiences of the 9/11 attacks. It is possible that this differential expression of posttraumatic symptom content may reflect basic differences in the 9/11 experiences of members of these different disaster exposure groups. Participants from the Ground Zero companies were directly endangered and witnessed horrific scenes up close, which apparently provided substance for the development of the vivid intrusive memories, in contrast to the experience of participants from other companies, who did not directly experience the trauma of the disaster scene as a basis for development of such memories.

The posttraumatic symptoms described by the Ground Zero company groups suggested intrusive re-experience and hyperarousal criteria for PTSD, but avoidance/numbing symptoms were not represented in these discussions. Previous research has determined avoidance/numbing responses to trauma to represent a marker for the psychopathology in PTSD, and intrusion and hyperarousal symptoms without avoidance/numbing symptoms to reflect normative responses [25–30]. Thus, posttraumatic psychopathology constituted only a minor part of the emotional responses described and a small fraction of the discussion related to the 9/11 experience in both sets of groups. Because the focus groups were non-directed and participants were not specifically asked about avoidance/numbing symptoms, however, it is possible that they had these pathological symptoms but were reluctant or did not think to discuss them in the groups.

The non-directed focus group discussions with a methodologically rigorous qualitative analysis otherwise represented a core strength of this study. Conducting these groups with participants from –Ground Zero and other companies is a strength that permitted examination of different experiences of disaster across these groups. A limitation of this study was that the sample was a volunteer sample and not systematically selected. Those who were most upset may be under-represented in the study sample, and this limitation may have contributed to the absence of avoidance/numbing symptoms and the relatively minor

contribution of PTSD symptoms. The overrepresentation of women in this volunteer sample would be expected to provide an abundance of PTSD symptoms that are known to be more prevalent in women than in men [31], making the relatively minor contribution of PTSD symptoms even more remarkable. It is recognized that not all participants from Ground Zero companies were directly exposed to 9/11 trauma, and possibly a few participants from other companies had actually been directly exposed, yielding groups without perfectly clean separation by 9/11 trauma exposure. Additionally, some participants may have been concerned about discussing their personal matters in front of their coworkers and consequently may have been less open and candid. Other methodological aspects of this study represent both strengths and limitations. Given the lapse of one to two years between the time of the 9/11 attacks and the time the focus groups were conducted, it is possible that the participants' perceptions had changed and they may have forgotten aspects of their experiences. The vividness of the descriptions, the richness of detail, the multiple concerns expressed, and the raw intensity of the emotions expressed, however, suggest that participants still had a great deal to share up to two years after the attacks.

This study revealed a wide array of psychosocial concerns following 9/11 among employees of companies in New York City that extended beyond PTSD to other psychosocial effects. Given these results, a narrow focus on PTSD in postdisaster response settings may promote interventions that are unresponsive or even counterproductive to survivors' actual needs [7,32]. For example, psychiatric treatment should be targeted for the minority of those exposed who develop psychiatric disorders after disaster; PTSD treatment is not appropriate for those who were not exposed to trauma, but interventions for other concerns, such as social services for economically distressed groups and effective risk communication from government leaders to address fears about personal safety, may be more helpful [33]. Regardless of whether affected individuals were or were not directly trauma-exposed, the 9/11 terrorist attacks left a lasting impact on everyone involved. Future research on disaster-affected populations should differentiate trauma-exposed and -unexposed groups in attempts to differentiate their concerns and needs for intervention so that resources can be directed most appropriately to different exposure groups. Informed by the results of these focus groups, quantitative research studies should address not just PTSD and other psychopathology among disaster-exposed groups, but also other psychosocial sequelae of more broadly affected groups without direct trauma exposures.

## Acknowledgments

This research was partially supported by National Institute of Mental Health Grants MH68853 and MH66628-S1 and the National Memorial Institute for the Prevention of Terrorism and the Office of State and Local Government Coordination and Preparedness, US Department of Homeland Security MIPT106-113-2000-020. Dr. North also acknowledges employment by VA North Texas Health Care System, Dallas, TX, USA in support of this work.

## References

1. Galea S, Ahern J, Resnick H, Kilpatrick D, Bucuvalas M, Gold J, Vlahov D. Psychological sequelae of the September 11 terrorist attacks in New York City. *N Engl J Med*. 2002; 346:982–987. [PubMed: 11919308]

2. Galea S, Resnick H, Ahern J, Gold J, Bucuvalas M, Kilpatrick D, Stuber J, Vlahov D. Posttraumatic stress disorder in Manhattan, New York City, after the September 11th terrorist attacks. *J Urban Health*. 2002; 79:340–353. [PubMed: 12200503]
3. Silver RC, Holman EA, McIntosh DN, Poulin M, Gil-Rivas V. Nationwide longitudinal study of psychological responses to September 11. *JAMA*. 2002; 288:1235–1244. [PubMed: 12215130]
4. Bonanno GA, Galea S, Bucciarelli A, Vlahov D. Psychological resilience after disaster: New York City in the aftermath of the September 11th terrorist attack. *Psychol Sci*. 2006; 17:181–186. [PubMed: 16507055]
5. Schlenger WE, Caddell JM, Ebert L, Jordan BK, Rourke KM, Wilson D, Thalji L, Dennis JM, Fairbank JA, Kulka RA. Psychological reactions to terrorist attacks: findings from the National Study of Americans' Reactions to September 11. *JAMA*. 2002; 288:581–588. [PubMed: 12150669]
6. Pietrzak RH, Feder A, Singh R, Schechter CB, Bromet EJ, Katz CL, Reissman DB, Ozbay F, Sharma V, Crane M, Harrison D, Herbert R, Levin SM, Luft BJ, Moline JM, Stellman JM, Udasin IG, Landrigan PJ, Southwick SM. Trajectories of PTSD risk and resilience in World Trade Center responders: an 8-year prospective cohort study. *Psychol Med*. 2014; 44:205–219. [PubMed: 23551932]
7. North CS, Pollio DE, Smith RP, King RV, Pandya A, Surís AM, Hong BA, Dean DJ, Wallace NE, Herman DB, Conover S, Susser E, Pfefferbaum B. Trauma exposure and posttraumatic stress disorder among employees of New York City companies affected by the September 11, 2001 attacks on the World Trade Center. *Disast Med Publ Health Prep*. 2011; 5:S205–S213.
8. DiGrande L, Neria Y, Brackbill RM, Pulliam P, Galea S. Long-term posttraumatic stress symptoms among 3,271 civilian survivors of the September 11, 2001, terrorist attacks on the World Trade Center. *Am J Epi*. 2011; 173:271–281.
9. Farfel M, DiGrande L, Brackbill R, Prann A, Cone J, Friedman S, Walker DJ, Pezeshki G, Thomas P, Galea S, Williamson D, Frieden TR, Thorpe L. An overview of 9/11 experiences and respiratory and mental health conditions among World Trade Center Health Registry enrollees. *J Urban Health*. 2008; 85:880–909. [PubMed: 18785012]
10. Li J, Brackbill RM, Stellman SD, Farfel MR, Miller-Archie SA, Friedman S, Walker DJ, Thorpe LE, Cone J. Gastroesophageal reflux symptoms and comorbid asthma and posttraumatic stress disorder following the 9/11 terrorist attacks on World Trade Center in New York City. *Am J Gastroenterol*. 2011; 106:1933–1941. [PubMed: 21894225]
11. Sayuk GS, Drossman DA. Gastroesophageal reflux symptoms in 9/11 survivors and workers: insights gained from tragic losses. *Am J Gastroenterol*. 2011; 106:1942–1945. [PubMed: 22056575]
12. Luft BJ, Schechter C, Kotov R, Broihier J, Reissman D, Guerrero K, Udasin I, Moline J, Harrison D, Friedman-Jimenez G, Pietrzak RH, Southwick SM, Bromet EJ. Exposure, probable PTSD and lower respiratory illness among World Trade Center rescue, recovery and clean-up workers. *Psychol Med*. 2012; 42:1069–1079. [PubMed: 22459506]
13. Bowler RM, Harris M, Li J, Gocheva V, Stellman SD, Wilson K, Alper H, Schwarzer R, Cone JE. Longitudinal mental health impact among police responders to the 9/11 terrorist attack. *Am J Ind Med*. 2012; 55:297–312. [PubMed: 22213367]
14. Adams RE, Boscarino JA. Perievent panic attack and depression after the World Trade Center disaster: a structural equation model analysis. *Int J Emerg Ment Health*. 2011; 13:69–79. [PubMed: 21957721]
15. Chiu S, Niles JK, Webber MP, Zeig-Owens R, Gustave J, Lee R, Rizzotto L, Kelly KJ, Cohen HW, Prezant DJ. Evaluating risk factors and possible mediation effects in posttraumatic depression and posttraumatic stress disorder comorbidity. *Public Health Rep*. 2011; 126:201–209. [PubMed: 21387950]
16. Wisnivesky JP, Teitelbaum SL, Todd AC, Boffetta P, Crane M, Crowley L, de la Hoz RE, Dellenbaugh C, Harrison D, Herbert R, Kim H, Jeon Y, Kaplan J, Katz C, Levin S, Luft B, Markowitz S, Moline JM, Ozbay F, Pietrzak RH, Shapiro M, Sharma V, Skloot G, Southwick S, Stevenson LA, Udasin I, Wallenstein S, Landrigan PJ. Persistence of multiple illnesses in World Trade Center rescue and recovery workers: a cohort study. *Lancet*. 2011; 378:888–897. [PubMed: 21890053]

17. Padgett, DK. Qualitative methods in social work research. 2nd edition. Newbury Park, CA: Sage; 2008.
18. North CS, Pollio DE, Pfefferbaum B, Megivern D, Vythilingam M, Westerhaus ET, Martin GJ, Hong BA. Capitol Hill staff workers' experiences of bioterrorism: qualitative findings from focus groups. *J Trauma Stress*. 2005; 18:79–88. [PubMed: 16281199]
19. North CS, Pollio DE, Pfefferbaum B, Megivern D, Vythilingam M, Westerhaus ET, Martin GJ, Hong BA. Concerns of Capitol Hill staff workers after bioterrorism: focus group discussions of authorities' response. *J Nerv Ment Dis*. 2005; 193:523–527. [PubMed: 16082296]
20. North CS, Pfefferbaum B, Hong BA, Gordon MR, Kim YS, Lind L, Pollio DE. Workplace response of companies exposed to the 9/11 World Trade Center attack: a focus-group study. *Disasters*. 2013; 37:101–118. [PubMed: 23066661]
21. North CS, Pollio DE, Hong BA, Surís AM, Westerhaus ET, Kienstra DM, Smith RP, Pfefferbaum B. Experience of the September 11 terrorist attacks by airline flight staff. *J Loss Traum*. 2012 ePub 6/14/12 as.
22. North CS, Pfefferbaum B, Hong BA, Gordon MR, Kim YS, Lind L, Pollio DE. The business of healing: focus group discussions of readjustment to the post-9/11 work environment among employees of affected agencies. *J Occup Envir Med*. 2010; 52:713–718.
23. King RV, North CS, Larkin GL, Downs DL, Klein KR, Fowler RL, Swienton RE, Pepe PE. Attributes of effective disaster responders: focus group discussions with key emergency response leaders. *Disast Med Publ Health Prep*. 2010; 4:332–338.
24. Pfefferbaum B, North CS, Pollio DE, Wallace NE, Smith R, Jeon-Slaughter H. Focus groups with children after the World Trade Center attacks. *J Loss Traum*. 2007; 12:349–363.
25. Maes M, Delmeire L, Schotte C, Aleksander J, Creten T, Mylle J, Struyf A, Pison G, Rousseeuw PJ. Epidemiologic and phenomenological aspects of post-traumatic stress disorder: DSM-III-R diagnosis and diagnostic criteria not validated. *Psychiatric Research*. 1998; 81:179–193.
26. Breslau N, Reboussin BA, Anthony JC, Storr CL. The structure of posttraumatic stress disorder: latent class analysis in 2 community samples. *Arch Gen Psychiatry*. 2005; 62:1343–1351. [PubMed: 16330722]
27. McMillen JC, North CS, Smith EM. What parts of PTSD are normal: intrusion, avoidance, or arousal? Data from the Northridge, California earthquake. *J Trauma Stress*. 2000; 13:57–75. [PubMed: 10761174]
28. North CS, Nixon SJ, Shariat S, Mallonee S, McMillen JC, Spitznagel EL, Smith EM. Psychiatric disorders among survivors of the Oklahoma City bombing. *JAMA*. 1999; 282:755–762. [PubMed: 10463711]
29. North CS, Surís AM, Davis M, Smith RP. Toward validation of the diagnosis of posttraumatic stress disorder. *Am J Psychiat*. 2009; 166:34–41. [PubMed: 19047323]
30. Ehlers A, Mayou RA, Bryant B. Psychological predictors of chronic posttraumatic stress disorder after motor vehicle accidents. *J Abnorm Psychol*. 1998; 107:508–519. [PubMed: 9715585]
31. Norris FH, Friedman MJ, Watson PJ, Byrne CM, Diaz E, Kaniasty K. 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981–2001. *Psychiatry*. 2002; 65:207–239. [PubMed: 12405079]
32. North CS, Pfefferbaum B. Research on the mental health effects of terrorism. *JAMA*. 2002; 288:633–636. [PubMed: 12150676]
33. North CS, Pfefferbaum B. Mental health response to community disasters: a systematic review. *JAMA*. 2013; 310:507–518. [PubMed: 23925621]

**Table 1**

Themes emerging from focus group discussions

Theme	Content	Coded material included	Excluded
Disaster Experience	Survivors' descriptions of learning about the terrorist attacks	Hearing about the attacks from others or the radio, watching the towers collapse on television or in person from a safe distance, and personally being in the WTC towers and directly witnessing or experiencing the attacks. Hearing about the attacks from others or the radio, watching the towers collapse on television or in person from a safe distance, and personally being in the WTC towers and directly witnessing or experiencing the attacks. Survivors' emotional experience during the attacks.	Emotions described in the days or extended time following the attacks (instead coded in the Emotional Responses theme)
Emotional Responses	Content in two subthemes: posttraumatic stress symptoms and other emotional responses	Survivors' emotional responses in the days or more extended time after the attacks, emotional responses of family members and peers described by the participants, and issues of bereavement and grief. Includes posttraumatic symptoms as well as other emotional responses.	
Workplace Issues	Discussion pertaining to the post-9/11 work environment	Need to adjust to changes in the workplace after 9/11, recovery services provided in the workplace, needs and concerns from both employees' and managers' perspectives, and perceived impact of the 9/11 attacks on careers and salaries.	
Coping	Content related to activities initiated by survivors to help process their feelings and experiences	Seeking psychotherapy and other measures such as seeking social support from family/friends/coworkers, and finding strength from religion.	Measures initiated by companies to help their employees cope in the workplace (instead coded in the Workplace Issues theme)
Issues of Public Concern	Matters of concern on a larger societal or national level	Discussion relating to politics, laws, conventions, cultural considerations, values, security, and the media.	



**Table 2**

Numbers and proportions of passages represented in themes among discussions of focus groups of Ground Zero and other companies

	Exposed		Unexposed	
	#	%	#	%
<b>Disaster experience</b>	210	18	103	11
<b>Emotional responses</b>	425	35	304	33
(posttraumatic stress symptoms)	(178)	(15)	(81)	(9)
(other emotional responses)	(247)	(21)	(223)	(24)
<b>Workplace issues</b>	139	12	60	6
<b>Coping</b>	144	12	122	13
<b>Issues of public concern</b>	280	23	338	36
<b><i>TOTAL</i></b>	<b><i>1198</i></b>		<b><i>927</i></b>	

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript