A qualitative longitudinal study of workplace issues, authorities and media, and relationships recounted by Oklahoma City bombing survivors after nearly a quarter century

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Abstract

Objective.—To examine the long-term course of disaster-related experience among survivors of a terrorist bombing and the long-term recollection of initial workplace effects across nearly a quarter century.

Methods.—From an initial randomly-selected sample of highly trauma-exposed survivors of the 1995 Oklahoma City bombing, 103 participated in qualitative open-ended interviews about their bombing experience approximately 23 years post disaster.

Results.—The survivors described their bombing experience clearly with extensive detail and expression of persistent strong emotion. Their discussions reflected findings from earlier assessments and also continued over the course of the next decades to complete their stories of the course of their occupational and interpersonal postdisaster journeys.

Conclusions.—Long-term psychosocial ramifications in these survivors' lives continue to warrant psychosocial interventions such as occupational and interpersonal counseling.

Keywords

terrorism; longitudinal follow-up study; qualitative data; postdisaster workplace; authorities; media; personal relationships

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Introduction

On April 19, 1995 at 9:02 am, a domestic terrorist detonated a homemade truck bomb at the Oklahoma City Murrah Federal Building, destroying the front half of the building and extending the damage to nearby structures. A total of 168 people were killed and many more were injured. This was the worst terrorist attack on American soil up to that time.

A large disaster mental health literature has accumulated, including several studies of effects of disasters on the workplace. However, terrorism is a limited subset of the typology of disasters, and thus the literature on effects of terrorism represents a subset of research on disasters in general. Few studies specific to terrorism in the workplace have been conducted. Research on a car-bomb terrorist attack on Norwegian ministerial employees[1-3] in the first 1-3 years after the incident revealed 3 main findings. First, employees' perceptions of workplace safety were positively associated with perceptions that security measures at work have been prioritized, and positive health outcomes were associated with perceptions control over decisions and work demands. Second, support from superiors and coworkers were found to be positive influences to help employees be present at work. Third, supportive leadership was found to be associated with lower employee distress following a terrorist attack, but conversely, distress affected employee perceptions of their leaders' effectiveness. Similarly, a review article on terrorism in the workplace[4] concluded that terrorist attacks initiate substantial fear that may contribute to the development of negative work attitudes, including loss of esteem for employers and the workplace. In turn, these negative attitudes can lead to decreased job performance, job dissatisfaction, and job turnover.

A study of employees of businesses affected by the September 11, 2001, (9/11) attacks on New York City's World Trade Center conducted nearly 3 years after the attacks emphasized the importance of organizational disaster planning and response. Effective responsiveness to employee needs and cultivation of positive organizational culture and environment helped workers adjust to the postdisaster workplace environment and promoted personal healing and recovery. Specific identified elements of effective response were risk communication, flexibility in postdisaster productivity expectations, provision of mental health care, and compassionate gestures and communications.[5] These findings were consistent with recommendations from a previous article[6] to ensure the physical presence of leadership, promote effective communication, model compassion and concern, address employees' immediate issues including resources to aid employee needs, re-establish work routines, formalize time-off accommodations, facilitate employee discussion and processing, and memorialize and commemorate the event and those lost.

Few prior articles have addressed associations of media contact with disaster survivor responses. A general population survey of people with disaster experience in Japan found that 58% had negative emotions toward media.[7] Research on survivors of the Oklahoma City bombing conducted 7 years after the incident found that they followed media for an average of 6 hours a day in the first week, 22% reported fear reactions to the media, and 15% stopped following media because of this fear.[8] A few shorter-term qualitative studies of disaster survivors have delivered opinions of disaster-related news media. Capitol Hill workers exposed to an anthrax bioterrorist attack participating in research focus

groups 3 months after the incident expressed annoyance with inaccuracies and inconsistent information in the media and its sensationalism, but they did not report being upset or emotionally bothered by the depiction of the disaster.[9,10] Similarly, discussion by employees of workplaces affected by the 9/11 attacks in focus groups conducted in the second year after the attacks described the media coverage as sensationalistic and focused on horrific images, but they did not discuss emotional upset over those media images.[11] Beyond these few studies conducted in the early postdisaster years, relatively little is known about longer-term perceptions of media coverage decades after disaster.

Qualitative research methods have been underutilized in examining the consequences of terrorism in the workplace. A focus group study of employees of businesses affected by the 9/11 attacks on New York City's World Trade Center was conducted in the second year after the attacks. Published in a series of articles,[11-13] the study found employees' main issues to be transition back to work, workplace response to psychological issues, communication, flexibility and tolerance toward productivity expectations, and workplace disruption and displacement. A focus group study of survivors of the 2001 bioterrorist attacks on Capitol Hill in the first postdisaster months involved considerable discussion of authorities and the news media, most of which was quite critical, as well as descriptions of effects on their personal relationships.[9,14] These qualitative studies revealed severe work disruption and hardships as well as vigorous concerns about their safety at work. A most remarkable finding was the extent and depth of the survivors' expressions and descriptions of their personal experience of these postdisaster issues spontaneously expressed in their own words.

Little is known about how these earlier postdisaster concerns of survivors of terrorism hold up or evolve over longer periods of time such as more than a decade. More information is needed about the workplace effects of terrorism from the point of view decades later. In particular, qualitative longitudinal follow-up studies can advance understanding of how surviving a terrorist attack affects personal and work lives across future decades through spontaneous, detailed explanations of what the survivors have been through.

Terrorist incidents continue to occur worldwide,[15] and workplaces are common targets for terrorism.[4] Survivors of such events therefore represent a substantial population whose personal relationships and future with the workplace may be shaped by a single terrorist incident. The extent and importance of terrorism in our world warrant knowledge of its long-term effects on populations acquired through systematic research.

To address gaps in knowledge about such circumstances, this longitudinal qualitative study of a terrorist bombing of a workplace, the Oklahoma City Murrah Federal building, and its effects on a sample of directly-exposed survivors, was conducted decades after the disaster. The extraordinary severity of the Oklahoma City bombing has provided the potential to demonstrate some of the most intense effects of disaster in the workplace, and specifically the effects of a devastating terrorist incident. Open-ended descriptions of disaster survivors were sought regarding workplace effects, authorities and media, and personal relationships. This study attempted to determine what disaster-related experiences survivors continue to report or if new material emerges, their long-term recollection of initial workplace effects,

and the long-term course of their disaster experience of terrorism across nearly a quarter century.

Methods

The source of the baseline sample of 182 bombing survivors was a state registry of 1,092 bombing survivors, who were randomly selected for enrollment, with 71% study participation approximately 6 months after the bombing. An earlier publication provides details of the original study methods, characteristics of the sample, and psychiatric disorders at baseline.[16] Of the 182 baseline bombing survivors, 103 completed the long-term follow-up interviews; 39 were known to be deceased, 25 could not be located, and 15 declined participation. The follow-up interviews were conducted between November 9, 2016 and August 15, 2019 at a median of 23 years (range, 21.5-24.3 years) post bombing. Institutional Review Boards (IRBs) approved the research for the baseline study at Washington University and for the follow-up study at the University of Texas Medical Center, prior to initiation of the research. All study participants provided written informed consent upon study enrollment.

Open-ended interviews invited participants to recount their experience in their own words, unconstrained and undirected by the interviews, allowing collection of information beyond quantitative methods restricted to limited categories. In non-directed open-ended interviews, survivors were asked to describe in their own words their personal experience of the bombing and its effects on their lives, providing as much or as little discussion as they desired. The interviews were audiorecorded and professionally transcribed.

Data analysis

SAS 9.4 (SAS Institute, Cary, NC) was used to summarize quantitative data describing participant characteristics and test multivariate models to identify variables associated with study attrition. The qualitative data analysis was conducted using ATLAS.ti software (ATLAS.ti Scientific Software Development, GmbH, Berlin, Germany). The qualitative analysis commenced with one researcher reading the open-ended text from all the interviews, leading to the identification of 12 main themes. Next, pairs of researchers independently rated sections of the text, and their ratings were compared with the achievement of excellent inter-rater reliability for each theme as defined by a Cohen's kappa statistic of .80, with kappa values ranging between .88 and 1.00. Inter-rater reliability procedures involved the creation and refinement of detailed inclusion/exclusion criteria for each theme. Discrepancies in ratings of definitions of themes were resolved through discussion among raters and the principal investigator together, which was an ongoing process throughout all of the themes. Consensus of discrepant ratings was reached by through discussion among raters, and final consensus was provided in only 1-2 cases by the principal investigator. Finally, individual raters coded the qualitative text into the established themes, coding multiple themes if warranted for individual text passages, yielding 4,958 total coded items.

The 12 themes in this study included: 1) Location (2%, n=107 items), 2) Bombing experience (17%, n=825 items), 3) Initial actions (11%, n=522), 4) Injuries and medical

care (18%, n=911), 5) Assistance received and given (9%, n=468), 6) Losses (2%, n=112), 7) Workplace issues (6%, n=302), 8) Authorities and media (4%, n=192), 9) Relationships (3%, n=154), 10) Coping (8%, n=417), 11) Making meaning/perspectives (7%, n=348), and 12) Thoughts and feelings (12%, n=600). Themes were divided into subsections, necessitated by the volume of the qualitative data. The large volume of the qualitative material collected necessitated limitation of this article's content to only 3 selected themes: *Workplace Issues*, *Authorities and media*, and *Relationships*.

Results

Of the original 182 participants, 103 (72% of those identified as being alive based on 39 known to be deceased) completed the longitudinal follow-up study, and these survivors represent this study's sample. The sample was 55% (n=57) female, with 88% (n=91) non-minority race/ethnicity and a mean (SD) age of 39.0 (9.1) years, 34% (n=35) completing college degrees, 97% (n=100) having current employment, 69% (n=71) currently married. Bombing injuries were sustained by 84% (n=87), and 47% (n=48) contemplated their death during the disaster. To assess for potential attrition bias, a multiple logistic regression model predicting completion of follow-up interviews (dependent variable) was tested using independent covariates entered simultaneously into the model including baseline variables of sex, age, minority race/ethnicity, college education, and married status, and known deceased status at follow up. In this model, only older age was significantly associated (df=1, β=.05, SE=.02, Wald χ^2=5.57, p=.018) with noncompletion of follow-up interviews.

Table 1 lists each of the 3 themes and their subdivisions, along with the numbers of coded items in each. The qualitative content within these themes and subthemes is summarized in text, accompanied by relevant illustrative quotes.

Workplace issues

The *Workplace issues* theme had the largest number of coded items among these 3 themes. Approximately one-half of its content pertained to life in the postdisaster workplace, especially the experience of returning to work after the bombing. Some survivors reported to work the day after the bombing, either because they had responsibilities such as meeting payroll, or because their boss requested their presence. Several survivors expressed resistance to demands from their workplace to return to work within the first few days after the bombing: "My office was…wanting me back at work on Friday, and I told them, no, I wasn't ready to go back to work on Friday. I think I went back on Monday." "I always felt like they rushed us back, just tried to—you know, just pick up things and move on." "I went back to work…and I think it was probably either too soon and it was just discombobulated." "Our department we worked in was the records, so we would see documents come through with debris from that and blood on the papers…so I think it was too soon."

Expressions of anger were directed at early mandated return to work. "Barely a day or 2 later [they] wanted us to start pulling things together and deciding how we were going to go on….That did anger me." "If you were not in the hospital, you needed to be there….That made me very angry, because I didn't understand why we needed to do that." "Work called

and said we were supposed to…report for duty the next day. I was like, 'Are you people crazy, you know, like seriously, you want us to show up to work?'"

Survivors faced many difficulties with working conditions and many emotions among workers in the postdisaster workplace. "I reported to work…on Tuesday after the bombing, and it was a very emotional scene for the other employees there." "It was just difficult to do the kind of work we do when you didn't have access to all your equipment and your files." "It was just an exhausting time just trying to get where you could do your work, because the work didn't stop, but the conditions that we were trying to work in were just really bad." "Your computers are gone. Your files are gone. Everything is gone. Whatever you were working on is not important….'Just forget it,' which was kind of nice but kind of frustrating too, thinking…'Why did I like this work? Do I still want to do this? I need to do something."

Many survivors did not return to work for at least a month. Some survivors reported continuing to receive pay while away from work. A few survivors had to delay return to work for medical issues, such as "On the eighth day, I got out [of the hospital]. And I took the 45 days' leave that you get and followed doctors' directions, had several follow-up appointments, and went back to work after 45 days." "After the bombing, I dealt with a lot of issues, not being able to go back to work. I went back to work in July after the bombing on a part-time basis, and I actually never worked a full 40-hour week for the rest of my career." Some comments reflected a desire to return to work. "I felt like I needed to have some regularity to my life again, and so I started going back to work." "After I went back to work I started to get a small sense of normalcy." "It was nice to get back together; I don't know that we enjoyed being elbow to elbow but it was nice to get back to a routine."

Because many offices were destroyed and employees had no place to work, "We were told to sit at home and wait for a phone call." Many agencies "did not require anything but the people in the building that survived get better." Accommodations were made to help the survivors adjust to the post-bombing workplace, such as starting with reduced work hours and limited activities. "I got a call from my office saying, 'Well, you don't have to worry about work or anything….Just take care of yourself. Just rest.'" "We didn't have to really work, just show up…..'Just start getting back into a routine, just going to work from 8:00 to 4:30. It won't be much work, but [you can start doing] a little correspondence. But don't worry about any of your projects that we know are now gone." "Temporarily, I would go in and see what was going on and talk to people and answer phones or just anything I could do to be productive, because I just didn't want to sit home and think about everything else that was going on." "I didn't really do much real work, you know. I don't think they really expected me to do a lot." "There wasn't really a lot of work being done for a couple months." Many comments reflected such extensive work disruption that there was not much they could do at the beginning: "It felt like there was nothing there that we could help with, there was nothing they could do to help us." Some survivors were allowed to work from home temporarily, but one survivor did so long term: "I was fortunate enough with my job that I could work from home and do the same job that I was employed at while during the bombing from my home, so I did that for a total of 28 years."

A number of comments reflected emotional and cognitive difficulties at work after the bombing, and difficulties tolerating the workplace. "I never wanted to go back to work….I couldn't even leave my house for months." "I just could not go in and sit next to that bloody furniture. As soon as the elevator doors would open, I would just turn around and leave." "After I went back to work, it was very difficult. There was a lot of people that were on edge; they had trouble doing their job." "It finally got to the point that I just couldn't handle it anymore and I just woke up one morning and I just couldn't get out of bed." Many survivor comments acknowledged impairment in functioning at work. "It was really a struggle when I went back to work. Because I couldn't remember…my writing was really impaired and my ability to just handle life's things was so impaired." "I've kind of really got hurt here. I can walk, I can do things, but I can't function." "I was a lot slower because of my head injury….But I was still at the same job, and it wasn't my fault, so I didn't let it bother me….They knew the reason why, and so it wasn't that big of a deal." "Our production was like way down because we felt like we were moving in slow motion and it [was] harder to concentrate….Your brain is trying to process 'Hey, you almost died'….Very frustrating."

Restoring workplace functions began with efforts to clean up the workspace, such as sweeping up glass, removing dust and dirt, and assessing the damage. It was hard to know what to do: "So what do you do when you're head of an office and you don't have an office and you don't know what's going on?" Some immediate tasks were to secure equipment to allow resumption of activities. "We had no equipment and no computers but we were such supposed to sit around and show up at this place." Workers were sent to their former offices to recover files and computer equipment and "everything that we could salvage." One workplace resumed business the day after the bombing by having the employees work at the business owner's home. During the startup process, some people were "working like 14-, 16-hour days every day" to set up new office space. New staff had to be hired, and interviewing candidates began.

Employers attended to their employees' emotional wellbeing for as long as several months and even years. "I got all the agency heads back together, and I organized a survivors group so that we could help one another." The workplaces provided counseling services for workers and paid for it. "I had meetings after meetings with the different agency heads, had meetings with different problems that came up because of the bombing," which is all this employee did for the next 2 years. Some employers took a very personal approach: "I visited every parent that lost a child and talked to them, expressed my sorrow and expressed my agency's sorrow, and I wrote a letter to each one of them." Other employers were said to be inadequately attentive to their employees' emotional needs. There were complaints that employers "didn't…think about their employees dealing with the emotional side of it." "A lot of people wanted my boss and this other boss in particular to be in there, and they really resented [their unavailability]….[The employees] just wanted their support." There were comments that the boss did not want people talking about the bombing when they returned to work, and some were explicitly forbidden to talk about the bombing or their experience of it.

Workplaces that were assigned to temporary accommodations were in cramped, unsuitable spaces such as old lab offices. In one office, "All our desks were all crunched up in one area together because that's the way the existing electricity was, and we had wires coming down from the ceiling, definitely a temporary-looking situation." Initially, "People would have to share [computers] until we eventually got enough." "It didn't work out especially well, but we were there for, oh, a couple of years. It's kind of a dilapidated building. It kept falling, caving in, and [had] water problems and…it was a mess." Some businesses later moved to more suitable work spaces such as rented offices of business towers: "We were transferred out to a different building that was no longer in the downtown area, so we didn't have to face that site or that building every day." Eventually permanent office space was obtained: "The best thing was when we finally got our own real office." "We did get a permanent office later and stayed there until I retired." Some comments reflected employee resistance to working in offices near the bombing site, on high floors of towers, in all-glass buildings, or in offices with windows. "I didn't want the building to be in line of sight with the bombing area." "They wanted our new offices to be on the 18th floor, and I believe it was almost unanimous across our office [that we did not want] to go up that high." "I would never have a window office."

Many comments referred to job and career changes brought about by the bombing. Several survivors left current employment, lost their jobs, changed to different jobs, retired early, and filed for disability benefits. "One of the biggest reasons I left is that…it was so heavy in my heart to drive downtown….I just needed a fresh start." There were "too many reminders, seeing all the people, and I just needed to move on." One survivor stated that her supervisor asked if she was coming in to work, and she said, "'I've kind of really got hurt here….I can't function.'" This survivor was told that not being able to get back to work right away might prompt the company to hire someone else to do the job. The survivor reflected, "To me that was threating my family, our income. I told her, 'I'll be there.' So that following Friday morning I went to work.'"

Some employees with severe functioning problems were eventually terminated from their jobs. There were "2 or 3 [who] tried to come in for 3 or 4 weeks and they just couldn't. They would break down and couldn't work, couldn't do anything. They would make repeated attempts, but it was just futile for them. None of those people…ever went back to work for that for the government." In one office, most of the women "tried to come back, but they never could, so they basically went on workers' comp for a long period of time." Some people took early retirement, including one employee who "just couldn't take it" and retirement was her only choice. Another employee made a "life-changing decision [to take] retirement at age 62."

Some businesses had to lay employees off, as many as 60 in one company and having to let employees go every day in another. The worst scenario was that "everybody had to get new jobs." One employee lamented, "I was one that got cut from the company." Employees were aware that their jobs were in jeopardy: "Every day when you went to work, you didn't know if you were going to have a job." Some companies did not survive after the bombing or were bought out by other entities: "Within 2 years, then, all of the business functions of the old entity were shut down, and then both of us…were focusing on our new jobs and roles

with the new agency." Some survivors did not have to worry about losing their jobs, with employers telling them, "'Take as much time as you need,' whatever. So I didn't have those like financial worries that hurt a lot of people." "[I] put in the [disability] paperwork, and they said, 'Well, just try to keep working and see how it goes first, and we can revisit this….' So…I kept working, and things were better."

Many employees continued working for their same employers after the bombing, with favorable long-term outcomes. "I spent the next 5 years of my work life restructuring that office. I was probably recognized nationally by my office, was given the highest award [the office] can give…for putting that office back together." A few survivors described staying at the original jobs for the remainder of their careers.

Some bombing survivors decided to give up or change their careers entirely. One went back to school and obtained a master's degree. Another characterized giving up a long career after the bombing as "the biggest thing [in my life]."

Authorities and media

Because the *Authorities and media* theme has conceptual parallels to authority in the workplace such as resistance to or refusal of their employers' mandates to return to work right away, this broader theme was included in this analysis. Most of the discussion regarding authorities described visits of high-level leaders and politicians visiting and giving speeches, such as President Clinton and Governor Keating, as well as visits to meet national leaders and politicians in Washington, DC, and to testify before Congress. There were a number of negative comments about the governor being unavailable and unknowledgeable. Positive opinions were expressed about the Department of Justice and their assignment of an attorney to the Victims Assistance Unit. Several survivors were interviewed by the Federal Bureau of Investigation (FBI); others described their own efforts to provide the FBI with all the information they could. Comments about the FBI were quite laudatory, for example, "I was very impressed with how the FBI handled that investigation, and they were very, very accommodating to the survivors and kept us informed all along the way." Survivors expressed high regard for the agencies that provided them assistance, including "law enforcement, because they helped me that day, they were there" and donation of needed funds for immediate needs and car repairs by the Federal Emergency Management Agency (FEMA). One survivor reported losing confidence in federal but not local authorities, adding, "I know that they both have very difficult jobs but the federal government [has] a lot of bureaucracy that ties things down and you can't get things accomplished."

One survivor expressed frustration with police who admonished survivors seeking to regain their belongings: "'You can't go any further. This is a crime area.' They already had the yellow tape around all the cars but [I explained], 'My briefcase is in the car. My mom gave it to me. My mom's dead now. I'd really like to have my briefcase.'" The survivors were told, "'You can't take anything. That's all part of the crime scene.'" Regardless, one survivor reflected, "I've always been respective of authorities. And I know that authorities are made of other people and…I know there is good and bad out there so I just hope if it's an authority figure and they are on something important it's one of the good guys and not one of the bad good guys."

Commentary about media was more comprehensive than commentary about authorities. An extensive media presence appeared rapidly at the bombing site, in the hospital, and in the schools to interview children. "How all those people got there so quick is beyond me, but they were all over the place with their cameras….It was going to be a worldwide notification real quick." "Helicopter television news coverage had begun within a very few minutes." "There were [media] helicopters flying around everywhere." One survivor trying to retrieve a car found it was about to be towed away because all the news media wanted that space. Some media personnel were described as being quite intrusive: "This guy stuck a microphone in my face when I'm holding my kid and asked me what I thought about it. Now, you've got to understand, this hasn't been more than 3 minutes since that bomb went off." "Back then nobody had the digital cameras….I could hear cameras, which really irritated me….I didn't like knowing I was being filmed when I couldn't see."

Many survivors were contacted by media for interviews, beginning even while they were trying to escape the bombed-out building, were being transported to ambulances on scene, and were still hospitalized for their injuries. "Channel 4 had filmed our [office] floor, and they zoomed in…I could see myself in our office as we were trying to figure out how to get out." Later this survivor contacted Channel 4 "and they were very gracious. They…gave me…a pretty long segment [of the footage]; I had no idea there was a recording of especially me." "I watched a news report later, and it showed us sitting on that curb." "I actually saw myself in some news footage of me laying on the ground, getting carted off….I could tell… the person that was laying there…was me." Media personnel were described as persistent and "calling from just around the country. And the last call came about midnight, was from Associated Press." "My wife said, "You've been on TV all day." One survivor was told about being seen on TV news coverage by a close acquaintance in Russia. Media sources reported as having interviewed the survivors included CNN, the BBC, PBS, the *Today Show*, *Sally Jessy Raphael*, Sam Donaldson, Greta Van Susteren, the *New York Times*, the *Chicago Tribune*, *Dallas Morning News*, the *Los Angeles Times*, the *Daily Oklahoman*, *The Edmond Sun*, newspapers from Tulsa and Kansas City, *Newsweek*, and *Reader's Digest*. One survivor was sent home from a media interview "because I was bleeding on their computer." Many of the film segments and interviews from the bombing now reside in a media coverage collection in the Memorial bombing museum.

Some media misinformation was noted: "There was a lot of confusion, because the next day some relatives called and said they were starting to see that I had been killed in the bombing, because one of the newspapers had listed me as dead." "It seemed like that's all you ever heard on television, was how everyone who was there was a hero and went around saving people." Survivors followed media coverage of the bombing, mostly to learn the news of what had transpired. "They had televisions on in the ER, and I thought at the time that was extremely odd, because they were already broadcasting the news coverage of this event." "I just remember the TV blaring all night long talking about the bombing, seeing everybody's names at the bottom of the TV, and phones ringing." One survivor remembered watching the news stories on TV and crying. "I just remember sitting in front of the TV all the rest of that day." Some media personnel continued coverage of the aftermath of the bombing for a long time: "CNN…set up an office here for almost a year."

The media coverage aired nonstop for days and weeks, and for some, was mesmerizing and difficult to turn off. Survivors described themselves as initially "glued to the TV, watching every channel" for days and "all we did was watch TV." "I sat down in the living room and watched the coverage on…2 color TVs…so we watched it on 2 different channels." "I couldn't leave the television. I had to see everything that was going on." Others had to turn the TV off, as "it was just too much." Some survivors recalled others telling them, "You shouldn't be watching too much of this."

Relationships

The *Relationships* theme included material pertaining not just to coworkers but also other people in their lives, considering that changes in relationships with family and friends may parallel or complicate workplace relationships and productivity. Many comments indicated positive effects of the bombing on relationships. In the workplace, the experience of the bombing "probably brought a lot of people in the office together, closer." "Those were the kind of moments, I think, that bound those of us who went through it together." "I enjoy the people I work with more…so I try to be as good to them as I can be and enjoy the moment." "Every month I have lunch with my former coworkers….And we have a good time." "We've stayed very, very close since, communicate regularly." "You feel a bond, you feel a connection, and you will forever."

Comments about positive effects on relationships outside of coworkers were limited to intimate partners and families. Several comments indicated that the bombing experience had drawn the survivors closer to their family members. "I was carried along, in many ways, by a family that loved me and friendships that were deep and important to me." Survivors explained that they now more often told family members that they loved them and cared about them. "From that point forward, I never left the house that I didn't wake them up and kiss them and tell them I loved them and goodbye. Ever."

A few comments expressed negative consequences to coworker relationships. Most obviously, relationships with coworkers who were killed in the bombing were automatically terminated. Some survivors reported loss of relationships with the living, e.g.: "I lost contact with all the people that I had worked with." Some relationships developed rifts with expression of harsh judgment of others, especially inability to tolerate people's expressed difficulties with their bombing experiences. "It was, at times, walking on eggshells to be with the other people in your office." "I just had a hard time with people just sitting there moaning and groaning, and I guess I was real short with a lot of them, because I'd tell them to go to another table. I said, 'Only overachievers at my table.'" "Our IT guy… sent me a scathing email saying, 'I don't want to hear any more of your bombing-related propaganda.'"

Some comments indicated negative effects on relationships with intimate partners, family, and friends. "[When] my wife tried to talk to me about anything, I would listen, clamming up." "Without understanding how I felt, and I had no clue how she felt, we just went through it, and I think there was a whole lot of resentment that built up in there." One survivor said her husband "just couldn't understand the feelings that I had." "I think a big part of why my marriage fell apart is because my ex was…just like, 'Get over it. Just get over it.' He just got

tired of me." One survivor's "son really didn't understand and he felt like I should get over it sooner than I did."

Some relationships were distanced by survivors' avoidance and social withdrawal after the bombing: "I go nowhere. I rarely leave my house, and I really rarely leave my room. That has caused an enormous amount of relationship issues, and I've missed out on a lot of stuff with my boys and my family." "I kind of clammed up from friends. It took me years to even get to hang around friends and people that I had known before. Some comments reflected new impatience or irritation with friends: "It affects friends….I get aggravated when they tell the wrong joke, off-color. I get very upset with them….I'm real anxious [and] afraid somebody will say the wrong thing and I'll get upset." "The people that I knew thought something in me had just changed….It was finally about—it was about 8 or 9 years after the bombing before I really began to accept friends again." "We had good friends that we don't have anymore." One survivor described the permanent loss of a friend: "To this day she still blames me and is not my friend anymore….She talks about her story with me in it, but the last time I tried to contact her, she told me I was never a friend and I should never contact her again."

Several comments consisted of vigorous assertions that the bombing had no effect on the survivors' relationships with their spouses, family, or friends. Nevertheless, many comments reflected concerns that the survivors' experiences in the bombing may have adversely affected their children. "A couple of weeks after the bombing, my son's first grade teacher called and told my wife that he had been very clingy and that he just wanted to stay around her, so she thought that he had definitely been affected by what had happened." "I didn't know how much it affected my kids, but it did a lot." "[My son] has written about [my bombing experience] as a young adult. [The bombing] had some effect on my children, but they're both doing fine now." "[My] kids…know that I was in the bombing and both of them are very interested in trauma studies which I thought was very interesting because I don't [talk a about it very often]….Both of them have said how I've coped with it has made them more interested in how other people cope with trauma."

Discussion

This is one of the longest prospective longitudinal studies ever conducted to collect qualitative descriptions of workplace issues, authorities and media, and relationships among highly trauma-exposed survivors of a terrorist bombing. This kind of detail is not available from studies using quantitative methods to collect categorical data with limited response choices. Qualitative studies decades after disaster have not been conducted to understand how survivors fare over a large portion of their future lives.

An important finding of these interviews is how clearly survivors recalled and articulated their workplace experiences after the bombing. The survivors remembered vividly how their return to work was fraught with logistical and emotional difficulties as the workplaces had to be re-established and operations restored. They recalled exactly how soon after the bombing they returned to work. Those required to return to work early before they felt ready had not forgotten their unhappiness about it. Their recollections of how emotional or even

impossible it was to return to work were fresh. Employees clearly recalled the difficulties of having none of their work equipment and files and working conditions, and how this limited their productivity. New information about long-term employment status over the decades following the bombing emerged in these follow-up interviews. Many job and career changes eventually resulted in some employees moving on and others losing their jobs, although others remained in their same jobs for many years or decades until they retired, and others changing or advancing their careers.

These survivors spoke mostly about their own personal contacts with media surrounding the bombing. Nearly a quarter of a century after the bombing, the survivors continued to express vivid negative impressions of the media presence and activity at the time of the bombing. Comparatively little discussion pertained to the psychological effects of contact with broadcast media coverage on the survivors. Many survivors recalled following media coverage closely, and some recognized that the early media coverage and their attention to it were excessive. A few survivors recalled the media coverage to be so disturbing and excessive that they avoided it, but most did not discuss feeling bothered or upset by the content of this coverage, having watched the television coverage primarily for current information about the bombing and its aftermath. Similar to survivors of the bioterrorism attacks on Capitol Hill[9,14] and the 9/11 attacks[11-13] within the first few months or 2 years after these disasters, survivors of the Oklahoma City bombing in this 23-year follow-up study were critical of the media's presence and portrayal of the disaster. Other salient memories provided by these survivors included descriptions of largely positive contacts with national leaders and largely negative contacts with media. There were few criticisms of government agencies although law enforcement received some mixed reviews.

The survivors recalled changes in relationships with coworkers, families, and friends after the bombing, many of which were positive but some were negative. Many recalled being brought much closer together with their coworkers and families. They still harbored hurt feelings that some family members and friends were unable to understand or connect with their bombing experience, causing conflict and divisions. Some relationships were permanently and ruinously altered, including divorces and loss of former friendships. Positive life-altering relationship transformations included getting married and developing important new relationships as a direct consequence of the bombing.

This study found that effects of the bombing on the survivors' postdisaster workplace experience and relationships described in the earlier years largely resonated with findings of a few other studies.[10,17,18] Studies with briefer follow-up periods, however, have not previously captured the long-term occupational trajectories across the survivors' work lives and permanent effects on relationships such as destruction vs. longstanding closeness of friendships and dissolution vs. strength of marriages after decades. Material obtained in this study nearly a quarter century after the bombing has provided a very long view over a large portion of survivors' subsequent lives, providing rich detail of the longitudinal perspective of occupational effects and relationships through qualitative interviews. This type of evidence has not been available in prior literature. In essence, this study has uniquely completed the qualitative course of the story over time across much of a lifetime.

The length of the current study's prospective longitudinal postdisaster follow up of a highly-exposed sample of survivors almost a quarter of a century later is a major strength of this study. There are few longitudinal disaster studies decades after disaster, and fewer of terrorist events. Qualitative data allowing participants to speak their minds freely and spontaneously is virtually nonexistent so long after a terrorist incident. A methodological advantage of this study is that the open-ended interviews were audiotaped and professionally transcribed rather than the paraphrases recorded by hand by interviewers that may overlook important information and introduce error.[19,20] The random sampling with 71% baseline participation rates and 72% follow up of non-deceased survivors in this study was an important strength, with little evidence of potential attrition bias. Cessation of employment at the pre-bombing workplace likely had no effect on follow-up attrition, as the follow-up enrollment was conducted independent of the workplace by following up a baseline cohort selected from a state bombing registry.

A potential limitation to this study was the amount of time elapsed between the bombing and the collection of the follow-up data, allowing for the possibility of loss or alteration of memories. The findings may not generalize to other disasters because only one disaster cohort of one disaster type (terrorism) in one site was studied. Thus, additional very long-term follow-up research will be needed to replicate and compare or contrast these findings with other disaster populations.

The clinical relevance of this study's findings pertain to 2 main issues. First, because the study found that disaster survivors remembered details of extreme events such as terrorism and its aftermath, including the workplace environment and effects on relationships with others, with vivid clarity nearly a quarter century later, then the early postdisaster workplace experience may possibly affect the course of the rest of their lives. These findings emphasize the critical long-term importance of early management of workplace issues and needs of employees after a terrorist bombing. Second, although this study provided little new information about early postdisaster workplace experience to suggest new early interventions, the longitudinal findings suggest that after decades, survivors still have psychosocial needs. Based on findings from qualitative data collected nearly a quarter century after the disaster in this study, although these needs appeared to represent little sustained psychopathology, there were continuing important lifetime psychosocial ramifications that warrant continued interventions such as occupational and interpersonal counseling over a very long time. The psychosocial outcomes even resonated across generations with discussion of how their disaster experience might have affected their progeny, implicating a cascade of potential psychosocial consequences through family lines.

Direct comparison of this long-term study's qualitative data collected almost a quarter century after the disaster with qualitative data collected in the early postdisaster period could provide new insights into how early perceptions of the highly salient experience of terrorism hold up over time. Future studies could also provide new knowledge by comparing long-term qualitative findings across different types of disasters and populations.

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Table 1.

Themes and groupings of items within them

Theme	Column totals (n of items coded)		
Workplace issues	**Theme**	**Subtheme**	**Component**
Postdisaster Workplace		147	
Re-establishing work routine			87
Restoring workplace functions			44
Emotional attention to employees			16
Office Relocations		88	
No offices			7
Temporary offices			17
New/permanent office space			52
New federal building/unacceptable space			12
Personal Occupational Changes/Decisions		67	
Quit job			11
Job loss			14
No longer employable			11
Company bought out by another			5
New/same position in same workplace			4
Different job			9
Career change			13
Total of above	*302*		
Authorities and media			
Government/Authorities/Celebrities		70	
Media Personnel Onsite		35	
Personal interactions with media			24
Media presence onsite			11
Media Coverage		84	
Self in news broadcast/coverage			26
Connecting with media coverage			58
Miscellaneous		3	
Total of above	*192*		
Relationships			
Positive Effects on Relationships		36	
Negative Effects on Relationships		88	
Marriage/intimate relationships			30
Children			19
Friends			9
Coworkers			15
General/nonspecific relationships			13

Theme	Column totals (n of items coded)		
Workplace issues	**Theme**	**Subtheme**	**Component**
Later interactions with survivors			2
No Effects on Relationships		10	
Effects on Family Members		20	
Total of above	*154*		