ORIGINAL RESEARCH

Injury Perceptions of Bombing Survivors—Interviews from the Oklahoma City Bombing

Mary T. Glenshaw, PhD, MPH, OTR/L;[1] Jon S. Vernick, JD, MPH;[1]
Shannon Frattaroli, PhD, MPH;[1] Sheryll Brown, MPH;[2] Sue Mallonee, RN, MPH[2]

1. Center for Injury Research and Policy, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland USA
2. Oklahoma State Department of Health, Oklahoma City, Oklahoma USA

Correspondence:
Dr. Mary T. Glenshaw
Epidemic Intelligence Service
Centers for Disease Control and Prevention
1600 Clifton Road NE, MS E92
Atlanta, Georgia 30333 USA
E-mail: mglenshaw@cdc.gov

Keywords: bomb; injury; interview; Oklahoma City bombing; qualitative research; risk factor; terrorism

Abbreviations:
OSDH = Oklahoma State Department of Health

Received: 11 February 2008
Accepted: 02 April 2008
Revised: 07 April 2008

Web publication: 29 December 2008

Abstract

Introduction: Bombings, including the 1995 Oklahoma City bombing, remain an important public health threat. However, there has been little investigation into the impressions of injury risk or protective factors of bombing survivors.

Objective: This study analyzes Oklahoma City bombing survivors' impressions of factors that influenced their risk of injury, and validates a hazard timeline outlining phases of injury risk in a building bombing.

Methods: In-depth, semi-structured interviews were conducted within a sample of Oklahoma City bombing survivors. Participants included 15 injured and uninjured survivors, who were located in three buildings surrounding the detonation site during the attack.

Results: Risk factor themes included environmental glass, debris, and entrapment. Protective factors included knowledge of egress routes, shielding behaviors to deflect debris, and survival training. Building design and health status were reported as risk and protective factors. The hazard timeline was a useful tool, but should be modified to include a lay rescue phase. The combination of a narrative approach and direct questioning is an effective method of gathering the perceptions of survivors.

Conclusions: Investigating survivors' impressions of building bombing hazards is critical to capture injury exposures, behavior patterns, and decision-making processes during actual events, and to identify interventions that will be supported by survivors.

Glenshaw MT, Vernick JS, Frattaroli S, Brown S, Mallonee S: Injury perceptions of bombing survivors—Interviews from the Oklahoma City bombing. ***Prehospital Disast Med*** **2008;23(6):500–506.**

Introduction

Terrorist bombings produce significant injury morbidity and mortality. Since 1991, >15,800 bombings have resulted in more than 89,000 injuries and 26,000 deaths worldwide.[1]

The Oklahoma City bombing was a devastating act of domestic terrorism. On 19 April 1995, >4,000 pounds (1,841 kg) of explosive material was detonated near the North entrance of the Alfred P. Murrah building in Oklahoma City, Oklahoma, causing 166 deaths and injuring >440 persons.[2] Although the outcomes of this event and other bombings have been documented previously,[3–25] little investigation into bombing survivors' impressions of injury risk and protective factors has been conducted.

Qualitative research methodology has been used to investigate post-traumatic stress and other psychiatric sequelae of bombing victims, rescuers, and similarly affected populations,[26,27] and can be used to better understand risk and protective factors for death and injury from bombing events identified in more quantitative analyses.[28,29] This study uses qualitative data collected through in-depth telephone interviews with Oklahoma City bombing survivors to: (1) identify impressions of factors that influenced the risk of injury in the Oklahoma City bombing; (2) develop and validate a hazard timeline

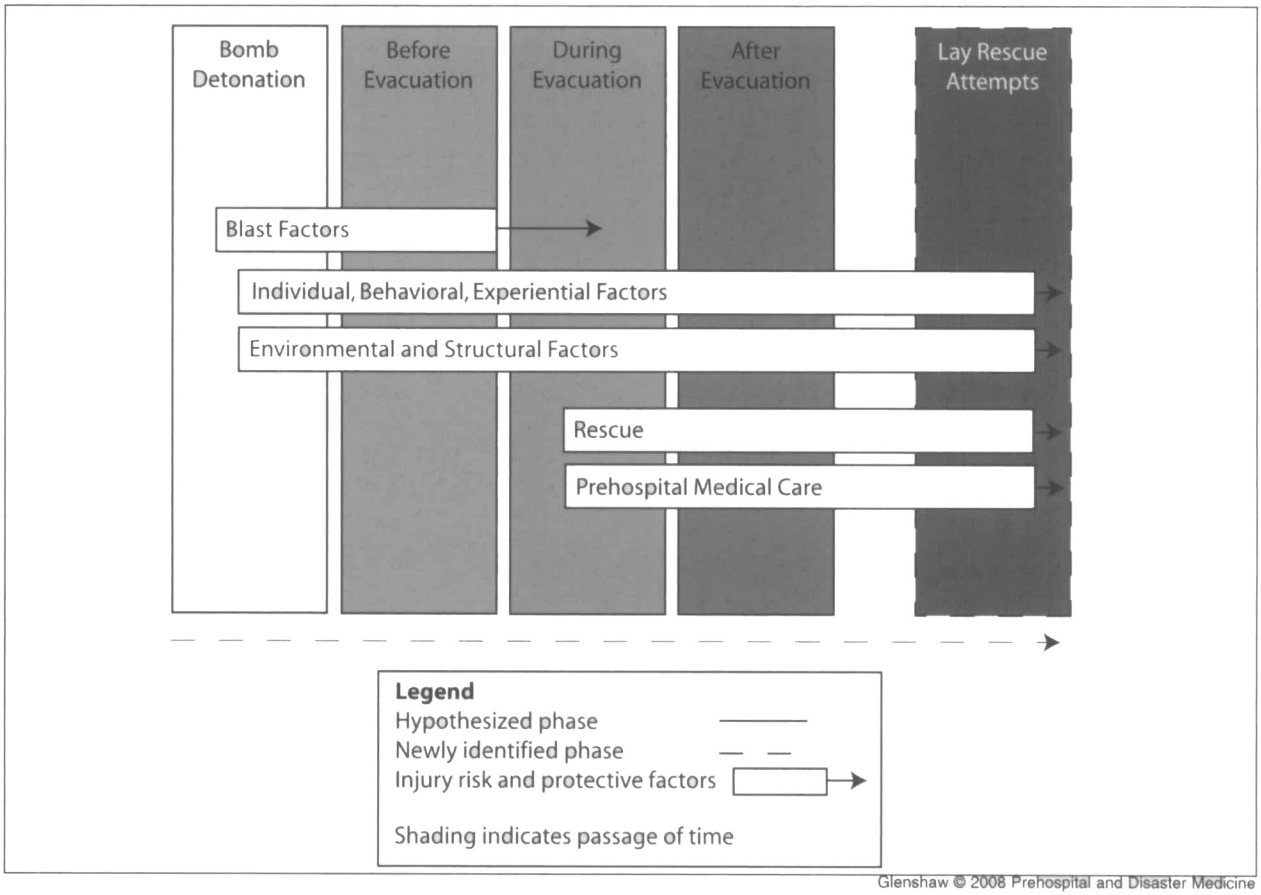

Figure 1—Hypothesized hazard timeline during building bombing events

that outlines four phases of injury risk in a building bombing; and (3) inform data collection efforts for future bombing events.

Methods

Data Collection

This study involves the occupants of buildings severely affected by the Oklahoma City bombing, where injuries and deaths occurred: the Murrah Federal Building, the YMCA, the Journal Record building, the Water Resources Board, the Athenian building, and the Regency Towers Apartments. Survivors were eligible to participate if they were English speaking, able to be contacted by both postal mail and telephone, were ≥25 years of age in 2005 (≥15 years of age at the time of the bombing), and previously had expressed to the Oklahoma State Department of Health (OSDH) their willingness to be contacted for research studies.

A sample of eligible participants was chosen to approximate the distribution of survivors in the six study buildings. Occupants of the Murrah Federal Building and the Journal Record Building were selected at random; however, due to the small number of survivors from the other buildings, the OSDH purposefully selected participants from these buildings to ensure adequate representation in the sample. Selection criteria included choosing an equal number of injured and uninjured survivors, and equal numbers of male and female survivors among those willing to be contacted for research studies. The goal was to complete 12–18 interviews.

In-Depth Interviews

In-depth, semi-structured interviews were used to elicit the survivors' perceptions of factors that influenced injury during the bombing event. One author (MG) served as the interviewer for the study. All interviews were audio-recorded and later transcribed for analysis.

An open-ended interview protocol was used to guide the interviewer through areas of questioning (Appendix). The first component followed the sequence of the hazard timeline model (Figure 1). Survivors were asked to recount their experiences during the hypothesized injury risk phases in narrative format. All survivors were asked questions about their location, behavior, perceptions, and thought processes during each phase. If a survivor discussed experiencing or witnessing an injury, questions regarding the nature of those injuries and their impressions of the causes followed.

During the second component of the interview, respondents were asked more directly about their impressions of factors that affected injury incidence. Injured survivors were asked about factors that contributed to their injury; uninjured survivors were asked about factors that prevented them from being injured.

Analysis: Coding and Theme Development

Transcribed interviews were reviewed for accuracy and downloaded into N6, a qualitative data software management system [NUD*IST 6, QSR International, Melbourne,

Australia]. Each interview was coded using "tree" and "free" nodes. Free nodes allowed data to be coded inductively without generating relationships to other data in the interview, while tree nodes were organized into hierarchical categories. The hazard timeline guided the tree node organization. This method allowed survivors' activities, experiences, and impressions to be captured within the natural timeline of the day. By comparison, free nodes were used to capture data independent of the timeline.

Themes emerged through repeated, intensive reviews and analyses of the coded data segments. Their inter-relationships were examined, and data were assessed comparing different groups of survivors. Quotations were selected from transcripts to further illuminate findings.

This study was approved by the Institutional Review Boards of both the Johns Hopkins Bloomberg School of Public Health and the Oklahoma State Department of Health.

Results

Sixty survivors were selected and mailed interview invitations; 15 (25%) interviews were completed. Forty-two survivors who were invited to participate did not respond, and three expressed interest in participating, but were unable to do so within the data collection timeframe. No survivors actively declined participation. All interviews were conducted using the telephone, and lasted between 60 and 150 minutes.

Interviewees included survivors from the Murrah Federal Building, the YMCA, and the Journal Record buildings. No survivors of the Athenian or Water Resources buildings responded to interview requests. Interviewees from the Murrah Building were located in, near, and outside of the north-facing region that collapsed moments after detonation. The six-story Journal Record and YMCA buildings were located within one block of the detonation site. Both buildings sustained structural damage, but neither experienced structural collapse.

Several themes emerged from both components of the interview (narrative portion as well as directed questions regarding risk and protective factors). Some of the themes discussed during narrative segments were elaborated further during direct questioning; others emerged only in narrative reporting or only in direct questioning. This validated the need for both interview components to obtain complete information. The hazard timeline, with modifications discussed later, also proved to be a useful tool in conducting the interviews and organizing the risk and protective factors identified by respondents.

Risk Factor Themes

Glass—Glass was the most prevalent theme from the pre-evacuation phase, and recurred in the evacuation phase data. All participants from the Journal Record building and approximately half the participants of the Murrah and YMCA buildings reported glass as a significant injury risk factor. As an injured occupant of the Journal Record building noted, "The main potential for injury happened when the glass broke because it blew through the building. It didn't blow out, it blew through... So what we had was glass shrapnel blowing into the building."

Flying Debris—Flying debris was reported as a cause of injuries during the pre-evacuation phase, and debris in the environment was reported as hazardous during evacuation. Occupants described a variety of objects mobilized by blast forces as hazardous, particularly office furniture and objects from desks.

Rubble—Rubble from destroyed structural components also was cited frequently as a risk factor for injury during the pre-evacuation and evacuation phases. Destroyed walls, ceilings, and floors created an environment that one interviewee described as a "rock field." Structural debris noted by survivors of each building included ceiling tile fragments and light fixtures. One uninjured survivor described the hazardous rubble she encountered as she evacuated from the fifth floor of the Journal Record building, "There were at least five foot [1.5 meter] tall marble panels... lining the staircase. As we went down the stairs, more of those had been knocked off, there was more debris, and it continually got worse as we went down each floor... by maybe the second floor, there were areas where we had to crawl over stuff to get out of the staircase."

A prevalent hazard noted by injured and uninjured occupants of each building was the experience of being trapped by rubble, which impeded evacuation. Entrapment experiences ranged from temporary delays because of blocked exits, to being buried by rubble and debris. All interviewees that discussed entrapment noted these experiences during the pre-evacuation and evacuation narratives.

Other environmental factors cited as injury risks included smoke, darkness, water from broken pipes, hanging debris from ceilings, and slippery stairs.

Protective Factor Themes

Behavioral Factors—A number of behavioral factors were commonly described as protective against injury and fatality. Survivors discussed behaviors performed instinctively and those that resulted from formal training. Instinctive behavior included using furniture to shield oneself from glass or flying debris. Two severely injured, trapped occupants credited their survival to lessons learned through past military training. As one noted, "[In military training] they teach us while you're going through the practice courses, and there's explosions going on all around you and all this kind of stuff, that you cannot quit; you cannot get tired; you must go on. So all of this training is combining to tell me that I can't quit, I can't just go to sleep. So that's why I'm trying to make noise and that's why I'm trying to lift this heavy stuff off of my head."

Evacuation Drills—Several survivors mentioned evacuation drills as contributing to their knowledge of egress methods. One injured occupant reported participating in two fire drills per year at the Murrah building, "The stairs, I think and the fire drills were the main thing... that saved as many people's lives as it did, because we instinctively knew we had to get to the stairs and unless you were disoriented you knew where the stairs were...you knew instinctively, because of the fire drills."

Rescue and Response—Several occupants discussed rescue and response efforts described by survivors as critical to reducing injury severity and fatality. Rescue efforts were performed by fellow building occupants, and medical treatment was performed by civilians and emergency response personnel. Nearly all interviewees reported assisting others or receiving assistance from other building occupants during the evacuation. Four interviewees were rescued by fellow survivors who had evacuated then returned to the building to find their colleagues. These occupants credited their colleagues for their survival and expedited access to medical care. Two other interviewees were among those who returned to buildings to rescue others; both discussed their awareness of increasing injury risk by returning to the buildings.

Other Factors—Non-modifiable factors reported by survivors from all of the buildings that did not fit into the hazard phase model were those related to luck, randomness, and providence. One injured occupant, located near the collapsed region of the Murrah building commented, "... it was random. I mean, there was a guy that stood [a few] feet from me that had twenty stitches in his body, and then I did not expect to live to see the light of the next day, and then another guy four feet [1.2 m] from me is dead. A foot in either direction for any of us could have changed all of that."

Themes Described as Both Risk and Protective Factors

There were several factors reported by survivors as influencing injury outcomes that could be either risk or protective factors, depending on the context.

Building Design and Structural Factors—Building design and structural factors were prominent themes from Murrah building and Journal Record building survivors; all Journal Record survivors cited the strength of the building as an important protective factor. As described by an injured Journal Record occupant, "It was a very well-built building. The building itself, I think, helped save a lot of people. It had a lot of glass but it was so well constructed that it was able to withstand that kind of a blow." Similarly, an uninjured occupant of the Journal Record building described her perceptions of proximity to a structurally sound part of the building: "My office, at least, was right behind the elevator shaft, which was brick. So that kind of gave extra protection."

Conversely, nearly all Murrah occupants reported the progressive structural collapse of the North face of the building as a leading injury risk factor. An injured occupant noted his proximity to the collapsed region of the Murrah building, "Where I was standing when the bomb went off was about three feet [0.9 m] from where the building fell off." Several Murrah occupants particularly highlighted the differences between the collapsed North face, composed largely of glass, and the more reinforced South face. One of these survivors was a maintenance engineer in the building at the time of the bombing, and described his impressions of building design:

> *[The building] was designed for what it was designed for, and not for a bomb. In the Murrah building... everything was column supported and floor supported. So there were no structural walls going from the 1st floor up to the 9th floor. No East-West structural wall. Nothing... The North side is all glass and the South side has those big concrete walls, slanted walls, so there's the difference right there.*

Individual-Level Factors—Individual-level factors also were described throughout the interviews as risk and protective factors. Impressions regarding occupants' size and health generally were reported during the direct questioning portion of the interview. These factors were discussed largely as protective, although one occupant discussed his obesity and use of a wheelchair as impeding his evacuation. Survivors also discussed clothing they were wearing—including long-sleeved shirts, jackets, and durable pants—as protective in nature. Another occupant, who was buried partially by rubble and debris, commented on what he perceived to protect him: "Because I was in maintenance, I had to have safety lenses in my glasses. Without safety glass, my left eye would be gone."

Many occupants' closing thoughts were suggestions for other interventions to reduce injury in future events. An injured occupant of the Murrah building noted:

> *We had had telephone bombing threats to the building and to state buildings but nothing came of them. We should have had barriers in front of the building to prevent cars from parking there. We should get rid of windows or put something behind them, have drills... We should have had a psychology group talk to survivors in a short period of time after it happened. That happens now at schools, but it did not at that time.*

Discussion

Several modifiable risk and protective factors frequently were identified by respondents as contributing to injury incidence and severity, including: (1) building design; (2) the presence of glass or environmental debris; (3) shielding behaviors; (4) physical fitness; (5) protective clothing; (6) knowledge of egress methods; and (7) first aid or survival training.

All injuries sustained by Oklahoma City bombing survivors participating in this study were sustained immediately following the detonation of the bomb, prior to evacuation. However, nearly all survivors also identified significant risk factors for injury during evacuation, and many discussed the importance of assistance and rescue as factors that minimized the consequences or severity of injury.

The structure of the interview, with narrative portions based on the hazard timeline followed by a direct questioning portion, allowed participants to discuss injury factors with and without prompting. While many survivors discussed injury factors in both portions of the interview, some reported highly modifiable factors during the narrative portion, but reported only non-modifiable factors during direct questioning.

The hazard timeline was a useful tool to guide the narrative portions of the interview, as it followed the natural timeline of the day. Survivors reported sustaining injuries in this timeline format, and were able to freely discuss impressions of injury factors in each hazard phase, as it correlated with the natural sequence of events they experienced.

The only phase of the hazard timeline that did not correspond with the experiences of the survivors was the time

period when some survivors evacuated the building and returned to rescue colleagues. The presence of lay rescuers was reiterated throughout several interviews. This is an important finding as injury risks can increase from fire, toxic gases, secondary explosions, and unstable structural components for lay rescuers who return to buildings after evacuation.[30] In accordance with the [US] Occupational Safety and Health Administration (OSHA), employers can designate staff to receive special training to assist with evacuation efforts,[31] and the American Heart Association recommends lay rescuer training in cardiopulmonary resuscitation (CPR) and automatic external defibrillator skills to improve chances of survival in emergencies.[32] However, the Federal Emergency Management Administration (FEMA) strongly recommends against returning to hazardous environments such as burning or collapsing buildings for persons without proper training and safety equipment.[30] The heightened injury risks associated with lay rescuers returning to bombed buildings is an important addition to the timeline and should be incorporated into a new hazard model.

The results from this study have several important implications for preventing injuries in future bombing events. Blast resistant glass, reducing the use of unstable building components, and the reinforcement of structural features have been identified in prior bombing research,[4] and this study verifies that many survivors support these endeavors. The importance of maintaining a healthy and fit workforce is being explored as a factor to reduce the severity of traumatic, unintentional occupational injuries.[33] Physical fitness also may mitigate the effects of violent injuries in the workplace, and many participants credited these individual-level factors for their survival. Personal protective equipment and clothing also should be explored as an injury reduction intervention in targeted buildings. Survivors reported that existing injury prevention policies, such as the use of safety lenses among engineering staff, the training of military personnel in first aid, and participation in regular evacuation drills, were important in mitigating the injurious effects of the bombing. These policies could be expanded to cover a broader population of personnel of targeted buildings and industries.

Limitations

The findings of the present study are not necessarily generalizable to all survivors of the Oklahoma City bombing, and were subject to survivors' recall. The Oklahoma City bombing occurred 10 years prior to the interviews; however, all survivors reported that the bombing had changed their lives, suggesting that recall bias may be minimal. Finally, risk and protective factors relating to fatality may have been different from those relating to non-fatal injury. This limitation was tempered by interviewing occupants in all areas of the Murrah building, including the collapsed region, and occupants who sustained life-threatening injuries.

Conclusions

Experiences of bombing survivors are crucial to understanding injuries sustained in these increasingly prevalent events. Survivors can provide a first-hand account of the events that unfold in these unexpected and violent events. Investigation of survivors' impressions of building bombing hazards can illuminate injury exposures, behavior patterns, and decision-making processes. As the targets of many building bombings are civilians, analysis of this population may identify differences with other groups exposed to explosives, such as military and law enforcement populations.

To decrease the burden of over-researching this population, qualitative methods are useful in selecting voluntary participants and establishing a safe atmosphere for information sharing. While immediate post-event surveys are useful for acquiring data for quantitative analysis, qualitative methods allow for deeper understanding of survivors' impressions in context. The use of both structured and unstructured questions, guided by an organic sequence of events, was a useful data collection strategy in the present study. These methods can be replicated to gain better understanding of the exposures and experiences involved in building bombings for use in future injury prevention interventions.

Acknowledgements

The authors sincerely thank the Oklahoma City bombing survivors who participated in this study.

References

1. Memorial Institute for the Prevention of Terrorism: Terrorism Knowledge Base. Available at http://www.tkb.org/AnalyticalTools.jsp. Accessed 09 January 2008.
2. Mallonee S, Shariat S, Stennies G, Waxweiler R, Hogan D, Jordan F: Physical injuries and fatalities resulting from the Oklahoma City bombing. *JAMA* 1996;276:382–387.
3. City of Oklahoma City: *Final Report: Alfred P. Murrah Federal Building Bombing*. Stillwater, OK: Fire Protection Publications, 1996.
4. Thompson D, Brown S, Mallonee S, Sunshine D: Fatal and non-fatal injuries among U.S. Air Force personnel resulting from the terrorist bombing of the Khobar Towers. *J Trauma* 2004;57:208–215.
5. Cooper GJ, Maynard RL, Cross NL, Hill JF: Casualties from terrorist bombings. *J Trauma* 1983;23:955–967.
6. Helling ER: Otologic blast injuries due to the Kenya embassy bombing. *Mil Med* 2004;169:872–876.
7. Wightman JM, Gladish SL: Explosions and blast injuries. *Ann Emerg Med* 2001;37:664–678.
8. Kluger Y, Peleg K, Daniel-Aharonson L, Mayo A, *et al*: The special injury pattern in terrorist bombings. *J Am Coll Surg* 2004;199:875–879.
9. Frykberg ER, Tepas JJ,3rd: Terrorist bombings: Lessons learned from Belfast to Beirut. *Ann Surg* 1988;208:569–576.
10. Mines M, Thach A, Mallonee S, *et al*: Ocular injuries sustained by survivors of the Oklahoma City bombing. *Ophthalmology* 2000;107:837–843.
11. Thach AB, Ward TP, Hollifield RD, *et al*: Eye injuries in a terrorist bombing: Dhahran, Saudi Arabia, June 25, 1996. *Ophthalmology* 2000;107:844–847.
12. Hill JF: Blast injury with particular reference to recent terrorist bombing incidents. *Ann R Coll Surg Engl* 1979;61:4–11.
13. Frykberg ER, Tepas JJ 3rd, Alexander RH: The 1983 Beirut Airport terrorist bombing: Injury patterns and implications for disaster management. *Am Surg* 1989;55:134–141.
14. Rodoplu U, Arnold JL, Yucel T, *et al*: Impact of the terrorist bombings of the Hong Kong Shanghai Bank headquarters and the British Consulate on two hospitals in Istanbul, Turkey, in November 2003. *J Trauma* 2005;59:195–201.

15. Arnold JL, Halpern P, Tsai MC, Smithline H: Mass casualty terrorist bombings: A comparison of outcomes by bombing type. *Ann Emerg Med* 2004;43:263–273.
16. Quenemoen LE, Davis YM, Malilay J, *et al*: The World Trade Center bombing: Injury prevention strategies for high-rise building fires. *Disasters* 1996;20:125–132.
17. Aharonson-Daniel L, Waisman Y, Dannon YL, *et al*: Epidemiology of terror-related versus non-terror-related traumatic injury in children. *Pediatrics* 2003;112:e280.
18. Quintana DA, Parker JR, Jordan FB, *et al*: The spectrum of pediatric injuries after a bomb blast. *J Pediatr Surg* 1997;32:307–310; discussion 310–311.
19. Fahy RF, Proulx G: Collective common sense: A study of human behavior during the World Trade Center evacuation. *NFPA Jrnl* 1995:59.
20. Leibovici D, Gofrit ON, Stein M, *et al*: Blast injuries: Bus versus open-air bombings—A comparative study of injuries in survivors of open-air versus confined-space explosions. *J Trauma* 1996;41:1030–1035.
21. Dellinger AM, Waxweiler RJ, Mallonee S: Injuries to rescue workers following the Oklahoma City bombing. *Am J Ind Med* 1997;31:727–732.
23. Hogan DE, Waeckerle JF, Dire DJ, Lillibridge SR: Emergency department impact of the Oklahoma City terrorist bombing. *Ann Emerg Med* 1999;34:160–167.
24. Oklahoma Department of Civil Emergency Management: *After Action Report, Alfred P. Murrah Federal Building Bombing, 19 April 1995 in Oklahoma City, Oklahoma*. Oklahoma City: Department of Central Services Central Printing Division, 1995.
25. Almogy G, Luria T, Richter E, *et al*: Can external signs of trauma guide management?: Lessons learned from suicide bombing attacks in Israel. *Arch Surg* 2005;140:390–393.
26. Pfefferbaum B, Vinekar SS, Trautman RP, *et al*: The effect of loss and trauma on substance use behavior in individuals seeking support services after the 1995 Oklahoma City bombing. *Ann Clin Psychiatry* 2002;14:89–5.
27. North CS, Nixon SJ, Shariat S, *et al*: Psychiatric disorders among survivors of the Oklahoma City bombing. *JAMA* 1999;282:755–762.
28. Glenshaw MT, Vernick JS, Li G, *et al*: Fatalities in building bombing injuries. What can we learn from the Oklahoma City bombing? *Disaster Med Public Health Prep* 2007:1:27–31.
29. Glenshaw MT, Vernick JS, Li G, *et al*: Factors associated with injury severity in Oklahoma City bombing survivors. *J Trauma* (in press).
30. Occupational Safety and Health Administration: Evacuation plans and procedures. Available at http://www.osha.gov/SLTC/etools/evacuation/evac.html#Procedures. Accessed 07 February 2008.
31. Hazinski MF, Idris AH, Kerber RE: Lay rescuer automated external defibrillator ("publicaccess defibrillation") programs, lessons learned from an international multicenter trial. *Circulation* 2005:111:3336–3340.
32. Federal Emergency Management Association: Escape from fire—Once you're out, stay out! Available at http://www.usfa.dhs.gov/downloads/pdf/publications/fa-246-508.pdf. Accessed 07 February 2008.
33. Pollack KM, Cheskin LJ: Obesity and workplace traumatic injury: Does the science support the link? *Inj Prev* 2007;13:297–302.

Appendix—Interview guide summary: Oklahoma City bombing survivors, 2005–2006

A. This interview will ask you about the events that took place at the scene of the Oklahoma City bombing on April 19, 1995, in sequence from beginning to end. This interview will also ask you about what you think caused people in buildings to get hurt at the time of the bombing. It will also ask you about what you think protected people from getting hurt, or from dying. Finally, this interview will ask about your experiences since the bombing, and ways that you have coped or had trouble coping. If at any time you feel uncomfortable and would like to pause or end the interview, please let me know. If you would like a referral to a counselor if you become distressed by this interview, I will be happy to provide that for you.

B. Please describe how your day began, before the bombing occurred.

C. Please describe what you were doing and where you were at 9:02 a.m., at the time the bombing occurred.
   C1. Please describe your location.
   C2. Please describe the locations of people, furniture, objects in the area at the time.

D. Please describe what you experienced at 9:02 am, at the time the bombing occurred.

E. Please describe what happened after 09:02.
   E1. How did you leave the building?
   E2. Did you assist anyone or receive assistance from anyone? Please describe

F. Please describe what happened on April 19, 1995, at 9:02 a.m., after your evacuation from the building.

G. Please describe any injuries you sustained.
   G1. When were you injured?
   G2. Did you know that you were injured? How did you know?

H. [If injured] In your opinion, what were the main factors that caused your injuries?
   H1. Were there any other factors that contributed to your injury?
   [If uninjured] In your opinion, what were the main factors that protected you from being injured?
   H2. Were there any other factors that helped you survive without physical injuries?

I. In your opinion, what were the main factors that prevented you from being killed?

J. In your opinion, what were the factors that caused other building occupants to be injured?
In your opinion, what were the factors that caused other building occupants to be killed?

K. [If injured] Is there anything else you would like to tell me about factors that contributed to your injuries, or other people's injuries?
[If uninjured] Is there anything else you would like to tell me about factors that protected you or others from being injured, more severely injured, or killed?

L. Please describe your coping strategies, or ways you have dealt with things since the bombing.
   L1. What strategies have helped you?
   L2. How did you learn these strategies?
   L3. Have you done anything to cope that was not helpful?
   L4. Have your drinking habits changed since the bombing? How?
   L5. Has your cigarette smoking changed since the bombing? How?

J. Is there anything else you'd like to share with me about the bombing, your injuries, or coping strategies?

https://doi.org/10.1017/S1049023X00006312 Published online by Cambridge University Press