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Fear of Terrorism in New York After the September 11 Terrorist Attacks: Implications for Emergency Mental Health and Preparedness

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Abstract

To examine the public's response to future terrorist attacks, we surveyed 1,001 New Yorkers in the community one year after the September 11 attacks. Overall, New Yorkers were very concerned about future terrorist attacks and also concerned about attacks involving biological or nuclear weapons. In addition, while most New Yorkers reported that if a biological or nuclear attack occurred they would evaluate available information before evacuating, a significant number reported they would immediately evacuate, regardless of police or public health communications to the contrary. The level of public concern was significantly higher on all measures among New York City and Long Island residents (downstate) compared to the rest of the state. A model predicting higher fear of terrorism indicated that downstate residents, women, those 45 to 64 years old, African Americans and Hispanics, those with less education/income, and those more likely to flee, were more fearful of future attacks. In addition, making disaster preparations and carefully evaluating emergency information also predicted a higher level of fear as well. A second model predicting who would flee suggested that those more likely to evaluate available information were less likely to immediately evacuate, while those with a higher fear of future attacks were more likely to flee the area. Given these findings and the possibility of future attacks, mental health professionals need to be more involved in preparedness efforts, especially related to the psychological impact of attacks involving weapons of mass destruction.

Keywords

terrorism; bioterrorism; public mental health; collective behavior; preparedness; evacuation behavior

On September 11, 2001, a terrorist attack in New York City killed 2,800 persons, caused massive destruction, and had an adverse economic impact in the region (Barry, 2001; Eaton, 2001; *The New York Times*, 2001). It has been noted that the use of terrorism occurs when there

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is an imbalance of power between two antagonists and one of these, usually the weaker, employs clandestine methods of attack to inflict casualties and fear among members of the other group (Jones & Fong, 1994). Apart from the terrorists and the terrorist act itself, the goal of the terrorist attack is to instill fear and panic in a population in order to achieve political goals (Jones & Fong, 1994; Wessely, Hyams, & Bartholomew, 2001). Furthermore, a modern society, with its dependence on sophisticated institutions and services, international trade, and mass communications, is vulnerable to such attacks (Jones & Fong, 1994). This fact—together with the spread of weapons of mass destruction (WMD)—make prevention of terrorist attacks involving significant casualties difficult.

Incidents of acquisitive panic and near panic in crowds, and their deleterious effects, have been documented (Brown, 1965; Proshansky & Seidenberg, 1965). Incidents of epidemic panic and sociogenic illnesses also have been described (Boss, 1997). In addition, the potential psychological impact of WMD deployment have not gone unnoticed (Jones, 1994). In the field of military medicine, the prevention and treatment of psychiatric casualties associated with WMD deployment is recognized to be as important as managing medical casualties (Jones, 1994). During World War I, the U.S. military learned to treat soldiers with "gas hysteria," acute symptoms that mimicked those of gas poisoning yet were psychological in nature (Jones, 1994). Recent evidence from attacks among civilian populations provides further documentation on the psychological impact of WMD deployment. For example, of the 5,510 persons who sought medical treatment following the Tokyo sarin attack in 1995, 12 died, 17 were critically injured, and 4,000 had minor or no apparent injuries (DiGiovanni, 1999; Ohbu et al., 1997). During the 1991 Scud missile attacks in Israel during the Gulf War, it was reported that the overwhelming majority of people presenting to emergency rooms, nearly 80%, were psychiatric casualties (Karsenty et al., 1991).

While understanding how to prevent, identify and treat psychiatric casualties and control panic are imperative in military operations, from a public health point of view, managing adverse psychological reactions during WMD threats among the general population also is imperative (Glass & Schoch-Spana, 2002). A recent study related to the September 11 attacks in New York City indicated that nearly 13% of Manhattan adults suffered a peri-event panic attack during this event (Boscarino, Galea, Ahern, et al., 2003). Other studies, conducted nationally and within the New York metropolitan area following the September 11 attacks, also found psychological distress to be fairly widespread (Boscarino, Galea, Ahern, Resnick & Vlahov, 2002; Galea et al., 2002; Schlenger et al., 2002; Schuster et al., 2001; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). It is reasonable to expect that an incident involving WMD in a major metropolitan area would have a considerable psychological impact (DiGiovanni, 1999). In spite of this, however, much of the recent terrorism preparedness activities in the United States have primarily focused on the technological and medical aspects (Bravata et al., 2002; Keim & Kaufmann, 1999; Khan, Levitt, & Sage, 2000). Below we present findings from a recent survey conducted in New York State during September 2002, which provide insights on the potential psychological sequelae associated with terrorism that might be useful in developing better emergency mental health plans.

METHODS

Study Participants

We undertook a telephone survey of New York State residents in September 2002. All English or Spanish-speaking adults (over 17 years old) with telephones were potential study participants. The sample was selected using random-digit dialing. One adult per household was randomly selected for an interview. Since this study was part of a larger survey related to health care issues in New York State, only adult householders who had awareness of household healthcare service use were selected for interviews. This resulted in a slightly older sample of

New York adults. The mean interview length for the survey was 19 minutes. Sampling weights were developed and applied to our data to adjust for the number of household telephones and persons in the household, plus an age weight to adjust for over-sampling somewhat older adults. The cooperation rate for the survey was 54%, based on American Association for Public Opinion Research's standards (American Association for Public Opinion Research, 2000). Demographically, 42.8% of participants were from New York City, 51.3% were female, and 61% were white. The mean age of the participants was 46.8 [SD=19]. In order to reduce sampling error, our sampling frame was stratified in to 5 generally homogenous New York State regions. These included: New York City, Long Island, Hudson Valley (central) region, Upstate Eastern region, and Upstate Western region. Compared with the 2000 U.S. census data for New York State (U.S. Bureau of the Census, 2000), our survey participants were comparable in terms of age, gender, race, and geographic regions (Table 1). The Institutional Review Board of the New York Academy of Medicine reviewed and approved the study protocols.

Survey Instrument and Measurement

In the survey, study participants were asked about health care issues in New York State (NYS). They were also interviewed about their concerns related to flying on U.S. commercial airlines, consuming food purchased at a supermarket, and going to a hospital for care. In addition to standard demographic measures (e.g., geographic region, gender, age, race, ethnicity, household income, and respondent education), we also gathered data related to marital status, number of children in the household, household employment, and whether there was anyone with a chronic medical condition in the household.

Survey, participants were asked about their level of concern related to the following happening in New York: (i) another major terrorist attack, (ii) a terrorist attack involving biological weapons, such as smallpox or anthrax , and (iii) a terrorist attack involving a "nuclear device." Survey response options included a Likert scale that had the following categories: "very concerned," "somewhat concerned," "not too concerned," "not concerned at all," and "don't know." Consistent with attitude assessment methods (Dawes, 1972), we coded these response categories to range from "5" (for very concerned) to "1" (for not concerned at all). The "don't know" response was codes as a "3," to reflect the center-point on this attitude scale (DeVellis, 2003). We then summed the results for all three terrorism concern items, producing an overall summary score. We then dichotomized this terrorism summary scale, classifying respondents with a score of 15 (i.e., they responded "very concerned" on all three items) as having very high fear related to future terrorist attacks in New York. The Cronbach alpha coefficient for these scale items (Cattell, 1986), a measure of internal consistency, was good (alpha = 0.88). In addition, the correlation of this scale with a global terror fear scale (measured on a 10-point analog scale) used in a survey of NYS adults in March 2003 (N=500) was high (r = 0.63) (Boscarino, Figley, & Adams 2003a). Finally, in a survey conducted among New York City residents in September through December 2002 (N = 2,368), results indicated that high scores on this global terrorism fear scale were associated with having a panic attack during the World Trade Center (WTC) disaster, current posttraumatic stress disorder (PTSD), current anxiety, and having greater exposure to WTC disaster-related events (all ps <0.05) (Boscarino, Figley, & Adams, 2003b).

We also asked three questions related to different evacuation behaviors during a possible attack "involving a biological or nuclear device." We again used standard Likert scale response categories, as we did with our terrorism scale. These included "very likely," "somewhat likely," "don't know," "not too likely," and "not likely at all." The evacuation questions asked participants whether they: (i) would wait for instructions from police or health department officials, (ii) immediately leave the area, regardless of police or health department instructions,

and (iii) would carefully evaluate available information before deciding what to do. Next, participants were asked if they had done anything to protect themselves from future biological or nuclear attacks and, if so, what they have done. All the terrorism questions in this survey were pre-tested before being used, had face and context validity, and had been used in other surveys in New York. In addition, our terrorism fear scale was shown to have not only internal consistency, but also concurrent, predictive and discriminant validity as well (Boscarino, Figley, & Adams, 2003b). (These survey questions and attitude scales are available from the corresponding author).

Statistical Analyses

Statistical analyses in our study included descriptive statistics and multiple logistic regressions. These regressions included one model predicting those with the highest overall fear about a future terrorist attack in New York and another predicting those likely to flee should a bio-terrorism attack occur. In each of these predictive models, we included geographic region, gender, age, race/ethnicity, household income, respondent education, marital status, number of children in the household, employment in the health sector, and whether there was anyone with a chronic medical condition in the household. In our fear model, we also included whether the participant made any preparations for future attacks, would carefully evaluate available information during an attack, and whether the participant would likely flee the area during such an event. In our flee model we included whether the participant made any attack preparations, would carefully evaluate available information during an attack, and whether the participant had very high levels of fear about future attacks. Our logistic multivariate models were assessed for goodness-of-fit using the Hosmer-Lemeshow test and the receiver operating characteristic (ROC) curve statistic (Hosmer & Lemeshow, 2000). We used the survey estimation (svy) commands in Stata, Version 7 (Stata Corporation, 2001) to generate the point estimates, the confidence intervals, and regression results reported. This was required to adjust the data for the sampling design, which included geographic stratification into five regions (to minimize sampling error) and case weights to adjust the data for the number of telephone lines per adult in the household and for over-sampling older adults. All p-values shown are based on 2-tail tests.

RESULTS

Altogether, 42.8% of respondents resided in New York City, 14.9% in Long Island, 9% in the Hudson Valley region, 18.1% in the upstate eastern region, and 15.2% in the upstate western region. In addition, 51.3% were women. In terms of race/ethnicity, while 61% were classified as white, 12.5% were African American, 17.5% were Hispanic and 8.9% were classified as “other” (Table 1). This demographic profile is comparable with the 2000 U.S. census data for New York State (U.S. Bureau of the Census, 2000).

In terms of concerns about future terrorist attacks in the state, we found that 45.7% of New Yorkers reported being “very concerned” about another major attack, 50.4% very concerned about biological attacks, and 42.5% reported being very concerned about nuclear attacks (Table 2). Altogether, 33.4% were classified as having very high terrorism fears, because they were very concerned about all three possibilities. Comparison of downstate residents (New York City and Long Island) with those from the rest of the state, indicated that downstate residents had significantly higher levels of terrorism fears (all Chi-square p values <0.001). For example, 41.7% of downstate resident were classified as having very high terrorism fears vs. only 22% for upstate residents ($p<0.001$). With respect to evacuation-related responses, 47.3% reported that they would likely wait for communications from police or health officials before acting, and 64.5% reported that they would likely evaluate available information for deciding what to do next. Unlike what we found for terrorism concerns, however, there were no statistical

differences for these self-reports between downstate and upstate residents. This was not the case for the reported likelihood of fleeing the area without waiting for communications from police or health officials. While 29.8% of New Yorkers reported they would likely evacuate immediately, this figure was 33.6% for downstate resident vs. 24.7% for upstate residents (p=0.01). Although overall concerns about future terrorist attacked were significant, only 6.1% of New York State residents reported taking any precautions. In addition, there were no significant differences between downstate and upstate residents on this preparedness measure (Table 2).

The results for our multivariate model predicting high terrorism fears are presented in Table 3. For this we included both individual-level (i.e., residential location, age, gender, race, marital status, and education) and household-level (i.e., household income, children in household, health care worker in household, and person with chronic disease in household) predictor variables in the model. We also included three behavioral and attitudinal variables as well. These included reported preparations for future attacks, the likelihood of information evaluation before acting, and the likelihood of fleeing the area during an attack. Our results indicated that higher fears of terrorism were predicted by downstate residence (odds ratio [OR] = 2.0, p=0.001), female gender (OR=1.5, p=0.043), being 45–64 years old (vs. 18–29; OR=2.0, p=0.037), being African American or Hispanic (vs. white; OR=2.2, p=0.006 and OR=2.5, p<0.001, respectively), being in the lowest income group (vs. highest; OR=2.3, p=0.016), and being a high school graduate or less (vs. graduate school; OR=2.3, p=0.002 and OR=2.1, p=0.039, respectively). In addition, higher fear also was predicted by three behavioral/attitude variables: reporting a higher likelihood of fleeing regardless of available information (OR=1.9, p<0.001), having made at least some disaster preparations (OR=1.9, p=0.049), and reporting that available evacuation information would be carefully evaluated before acting (OR=1.9, p=0.039).

For a second model, predicting who would likely evacuate in NYS *without* waiting for instructions, we used the same model as above, except “fleeing” was now the dependent variable and higher terrorism fear was now a predictor variable (Table 4). This model suggested that those who were more likely to carefully evaluate available information (OR=0.4, p<0.003) were *less* likely to immediately evacuate. Again, as with the previous model, those with a higher level of fear about future attacks were much more likely to attempt to evacuate the area (OR=1.9, p<0.001), even though this action may be unwarranted or detrimental.

The assessment of goodness-of-fit for our fear model indicated that it was acceptable, with the Hosmer-Lemeshow test p = 0.57 and a ROC statistic = 0.77. The assessment of goodness-of-fit for our flee model indicated that it also was acceptable, with the Hosmer-Lemeshow test p = 0.09 and a ROC statistic = 0.70. In addition, in order to assess the potential impact that multicollinearity might have had on our predictive models, we ran “stepwise” logistic regressions for each model and compared the results to those with all variables retained. Results for both stepwise models were virtually the same as those shown in Table 3 and Table 4, respectively, except that the nonsignificant variables shown were eliminated. Finally, we also assessed both models for interaction effects for age, gender, and race, but none of these effects was significant.

COMMENT

We found that there was significant public concern about future terrorist attacks in New York. While most New Yorkers reported that if an attack occurred, they would likely evaluate available information provided by local or state officials before evacuating, a significant number reported otherwise. In addition, we found the level of concern was significantly higher among New York City and Long Island residents. Furthermore, these residents were more

likely to report they would attempt to leave the area immediately following a biological or nuclear incident. Multivariate analyses suggested that overall higher fears about terrorism were associated with downstate residents, women, residents 45 to 64 years old, African Americans, Hispanics, residents with a high school diploma or less, and residents who would flee before evaluating available information. In addition, higher terrorism fear also was associated with those who would evaluate available information before evacuating, as well as those who made at least some disaster plans. Multivariate analysis, predicting who would flee and who would not, suggested that those who were more likely to evaluate available information, were *less* likely to attempt immediate evacuation. In addition, as suggested in our fear model, those with a higher level of fear about future attacks were much more likely to attempt a hasty evacuation.

One year after the terrorist attacks in New York, fear about future attacks was high and this was especially true among downstate residents, African Americans, Hispanics, and among those with less education and lower household incomes. In addition, residents with high levels of fear were more likely to attempt evacuation, even if alerted by police or health officials to the contrary. Given the possibility of future attacks, public health efforts should focus on those at higher risk for potential panic and on individual- and community-level preparedness. In particular, concerns about future terrorist attacks need to be addressed and the reasons why African Americans, Hispanics, and those with less education have higher levels of fear need to be better understood. The fact that residents more likely to evaluate available public information were less likely to flee is clearly a positive discovery. This suggests that effective communication and public education efforts may be very worthwhile emergency mental health and homeland defense endeavors.

Other research conducted following the September 11 attacks suggested that psychological distress tended to extend beyond the areas immediately affected (Schlenger et al., 2002; Schuster et al., 2001; Silver et al., 2002). In addition, outbreaks of sociogenic illnesses also have been reported following these kinds of events (Wessely, Hyams, & Bartholomew, 2001). As noted, the level of peri-event panic in New York City following the September 11 attacks was substantial (Boscarino, Galea, Ahern, Resnick & Vlahov, 2003). Clearly, a terrorist attack deploying a WMD is likely to generate a wide range of psychiatric outcomes and disabling conditions (Engel & Katon, 1999; Jones, 1994). As suggested, in the field of military medicine, the neuropsychiatric implications of WMD deployment have been recognized (Jones, 1994). In addition, following the lessons of the Vietnam War (Boscarino, 2000), a comprehensive psychological model of traumatic stress has been developed by the military that may have some utility for the public mental health sector (Gal & Jones, 1995). Briefly, this model incorporates antecedent variables (individual, unit, and field factors), mediating variables, modes of response, and modes of coping (Gal & Jones, 1995). While some of this knowledge may not be directly applicable to the public health sector, some of it may be transferable to population-level mental health management efforts. Furthermore, in addition to recent advances in our understanding of anxiety disorders (Stein & Hollander, 2002), our knowledge of the psychopathology, screening, diagnosis, and treatment of traumatic stress disorders has increased substantially in recent years (Foa, Keane, & Matthew, 2000; Wilson & Raphael, 1993; Yehuda, 1999). In addition, knowledge emerging from research on the psychology of terrorism (Pyszczynski, Solomon, & Greenberg, 2002), as well as on populationlevel health education methods (Glantz, Rimer, & Lewis, 2002), adds to the knowledge base available to affect positive outcomes in the area of emergency mental health.

Given this emerging knowledge—and potential threat—population-level pre-attack interventions should be encouraged, including workplace and family-based education and public service announcements (Engel & Katon, 1999). Post-attack mental health surveillance interventions also should be planned (Engel & Katon, 1999). Drawing on experiences from the West Nile virus epidemic, it has been suggested that public education and communication

can reduce population panic and fear (Covello, Peters, Wojtecki, & Hyde, 2001). Effective "risk communication" can have the effect of not only reducing fear, but it can also promote self-protecting behaviors, build trust, and prevent the spread of misinformation (Covello et al., 2001). Without this information, potentially vulnerable groups, such as suggested in our survey, may increase the level of social disruption and panic in the community. The very nature of these threats, and their impact, clearly make both mass media coverage and mass communications critical, warranting careful planning considerations (North & Pfefferbaum, 2002).

As has been noted, however, research on the mental health effects of terrorism is difficult to conduct (Slone, 2000). The research reported was undertaken on the one-year anniversary of the September 11 attacks in New York City, which was still a vivid memory among the resident in New York. In addition, the psychological implications of WMD deployment among civilian populations are great. Nearly 13% of adults in Manhattan suffered a peri-event panic attack during the events of September 11 (Boscarino et al., 2003). Psychological distress in the event of WMD deployment would likely be many times greater. Even during a contained incident, whether from chemical, biological, or even radioactive agents, large numbers of individuals, exposed or not, who seek medical treatment likely will exhibit anxiety, tachycardia, increased respiration, tremors, and other nonspecific signs and symptoms that could be confused with the toxic effects of the agent itself (DiGiovanni, 1999). Finally, following WMD deployment, long-term neuropsychiatric civilian casualties should be expected (Jones, 1994), hampering recovery efforts.

A limitation of this study was the fact that it was based on a household telephone survey and, therefore, may not represent those who were institutionalized or were unavailable to be interviewed. Others are that our terrorism survey only involved New York residents and was limited in scope. Related to the latter is the fact that the current study did not include extensive behavioral data on how individuals actually responded—something that needs to be remedied in future research. Nevertheless, our study findings were consistent with a similar study recently conducted in New York by other investigators (National Center for Disaster Preparedness, 2003).

In summary, while there was substantial concern in New York related to future terrorism following the September 11 attacks and the collective psychological impact of WMD deployment could be substantial, the knowledge base is available to mitigate the impact of these threats and enhance mental health preparedness. To achieve this, we need to better prepare our civilian populations for future threats and plan for public health scenarios not considered several years ago. Psychiatrists, psychologists, physicians, and others in the health care and mental health fields need to be aware of these developments and become more involved with future preparations related to the psychological impact of terrorism. Our recent New York survey and analytic models suggest some areas within which they may want to start this effort.

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Table 1

Profile of New York State survey respondents vs. U.S. Census. (N = 1,001)

Characteristics	% From 2000 U.S. Census For NY	Weighted % From Sample†	Chi-Square	P-Value
Region				
New York City	42.5	42.8	0.135	1.00
Long Island	14.4	14.9		
Hudson Valley	8.5	9.0		
Upstate East	19.7	18.1		
Upstate West	15.0	15.2		
Age				
18–24	12.3	12.4	0.00	1.00
25–34	18.4	18.4		
35–44	21.0	21.1		
45–54	18.4	18.4		
55–64	12.8	12.8		
65+	17.1	17.1		
Gender				
Male	47.2	48.7	0.08	0.78
Female	52.8	51.3		
Race				
White	62.1	61.0	0.88	0.83
African American	15.9	12.5		
Hispanic	15.1	17.5		
Other	7.3	8.9		

†Sample data shown are the results of weighted data using weights to adjust the sample for the number of telephone lines and adults in the household, plus age weights to adjust sample for over-sampling older New York State adults.

Table 2

Reported concerns and reactions related to future terrorist attacks among New Yorkers one year after the September 11 attacks. (N = 1,001)

	Total			Downstate			Upstate			
Survey Measure	**N**[†]	**%**	**95% CI**[*]	**N**	**%**	**95% CI**[*]	**N**	**%**	**95% CI**[*]	**P-Value**[**] **for difference**
Concern about another major terrorist attack % Very Concerned	454	45.7	42.1–49.3	303	54.2	49.4–58.9	151	34.1	29.1–39.4	p<0.001
Concern about terrorist attack with biological weapons % Very Concerned	495	50.4	46.8–54.0	311	56.2	51.4–60.8	184	42.6	37.3–48.1	p<0.001
Concern about terrorist attack with nuclear weapons % Very Concerned	421	42.5	39.0–46.1	283	51.2	46.4–56.0	138	30.5	25.8–35.8	p<0.001
Overall fears about future terrorist attacks % High	332	33.4	30.1–36.9	231	41.7	37.1–46.6	101	22.0	17.9–26.8	p<0.001
If attack occurs, would wait for instructions from police/health officials % Very Likely	468	47.3	43.7–50.3	262	47.3	42.6–52.2	206	47.2	41.8–52.7	p = 0.98
If attack occurs, would evaluate available information before making decision about what to do % Very Likely	645	64.5	61.0–67.9	368	65.7	61.1–70.2	277	62.9	57.4–68.1	p = 0.43
If attack occurs would leave area immediately, without waiting for information from officials % Very Likely	306	29.8	26.6–33.3	201	33.6	29.2–38.3	105	24.7	20.2–29.9	p = 0.01
Made any preparations for future attacks % Yes	75	6.1	4.7–7.1	38	5.4	3.8–7.7	37	7.0	4.9–9.7	p = 0.30

[†] All N's shown represent the unweighted frequencies for categories presented. All other data shown are the results of weighted data using weights to adjust the sample for the number of telephone lines and adults in the household, plus age weights to adjust sample for over-sampling older New York State adults.

[*] CI = Confidence interval.

[**] Based on Chi-square test.

Table 3

Multivariate model predicting highest fears about future terrorist attacks from demographic, attitudinal, and behavioral factors. (N = 1,001)

Variables Assessed	N[†]	% Total	% Highest Fear	Unadjusted OR[*]	Unadjusted 95% CI[*]	Unadjusted P-Value	Adjusted OR[*]	Adjusted 95% CI[*]	Adjusted P-Value
Region									
Upstate	433	42.3	22.0	1.0	—	—	1.0	—	—
Downstate	568	57.7	41.7	2.5	1.8–3.5	<0.001	2.0	1.4–2.9	0.001
Gender									
Male	470	48.7	28.9	1.0	—	—	1.0	—	—
Female	531	51.3	37.7	1.5	1.1–2.0	0.004	1.5	1.0–2.1	0.043
Age									
18–29	132	19.5	25.5	1.0	—	—	1.0	—	—
30–44	323	33.7	36.9	1.7	1.0–2.9	0.05	1.7	0.9–3.2	0.099
45–64	372	29.7	34.6	1.5	0.9–2.6	0.11	2.0	1.0–3.9	0.037
65+	174	17.1	33.4	1.5	0.8–2.7	0.21	1.5	0.7–3.1	0.32
Race/Ethnicity									
White	631	61.0	24.0	1.0	—	—	1.0	—	—
African American	121	12.5	51.5	3.4	2.1–5.5	<0.001	2.2	1.3–4.0	0.006
Asian	39	4.3	31.8	1.5	0.7–3.2	0.33	1.5	0.7–3.3	0.28
Hispanic	151	17.5	54.4	3.8	2.4–5.9	<0.001	2.5	1.4–4.2	<0.001
Other	59	4.7	30.6	1.4	0.7–2.6	0.31	1.1	0.5–2.3	0.80
Household Income									
<$30,000	248	25.2	48.0	3.3	1.9–5.9	<0.001	2.3	1.2–4.0	0.016
$30,000–$49,000	167	16.5	31.8	1.7	0.9–3.1	0.075	1.4	0.7–2.6	0.33
$50,000–$75,000	214	19.9	19.3	0.9	0.5–1.6	0.66	0.9	0.5–1.6	0.61
>$75,000	136	14.3	21.6	1.0	—	—	1.0	—	—
Not reported	236	24.1	37.9	2.2	1.3–3.9	0.004	1.8	1.0–3.3	0.056
Education Level									
<High School	102	12.0	54.0	4.8	2.6–8.9	<0.001	2.1	1.4–4.2	0.039
High School Grad	233	24.1	43.0	3.1	2.0–4.9	<0.001	2.3	1.4–3.8	0.002
Some College	202	22.9	28.5	1.6	1.0–2.7	0.057	1.3	0.7–2.1	0.40
College Grad	217	21.8	27.9	1.6	1.0–2.6	0.061	1.3	0.8–2.2	0.31

Variables Assessed	N†	% Total	% Highest Fear	Unadjusted OR*	Unadjusted 95% CI*	Unadjusted P-Value	Adjusted OR*	Adjusted 95% CI*	Adjusted P-Value
Graduate School	229	19.3	19.5	1.0	—	—	1.0	—	—
Married									
No	523	48.4	33.6	1.0	—	—	1.0	—	—
Yes	478	51.6	33.2	1.0	0.7–1.3	0.901	1.1	0.7–1.6	0.66
Children At Home									
No	632	60.7	30.8	1.0	—	—	1.0	—	—
Yes	369	39.3	37.4	1.3	1.0–1.8	0.070	1.1	0.7–1.7	0.58
Medical Employment									
No	822	83.5	33.3	1.0	—	—	1.0	—	—
Yes	179	16.5	34.1	1.0	0.7–1.4	0.842	1.2	0.7–1.9	0.48
Person With Chronic									
Illness In Home									
No	710	73.9	33.3	1.0	—	—	1.0	—	—
Yes	291	26.1	33.7	1.0	0.7–1.4	0.921	1.1	0.7–1.6	0.72
Made Preparations									
For Future Attacks									
No	926	93.9	32.5	1.0	—	—	1.0	—	—
Yes	75	6.1	42.5	1.5	0.9–2.6	0.135	1.9	1.0–3.6	0.049
Would Carefully									
Evaluate Information									
Not Likely	116	11.0	30.5	1.0	—	—	1.0	—	—
Somewhat Likely	240	24.4	21.0	0.6	0.3–1.1	0.095	0.9	0.5–1.7	0.75
Very Likely	645	64.5	38.6	1.4	0.9–2.3	0.15	1.9	1.0–3.3	0.039
Would Likely Flee Area									
No	695	70.2	28.5	1.0	—	—	1.0	—	—
Yes	306	29.8	44.8	2.0	1.5–2.8	<0.001	1.9	1.3–2.8	<0.001

†All N's shown represent the unweighted frequencies for categories presented. All other data shown are the results of weighted data using weights to adjust the sample for the number of telephone lines and adults in the household, plus age weights to adjust sample for over-sampling older New York State adults.

*OR = Odds ratio; CI = Confidence interval.

Table 4

Multivariate model predicting likelihood of fleeing terrorist attacks from demographic, attitudinal, and behavioral factors. (N = 1,001)

Variables Assessed	N †	% Total	% Would Likely Flee Area	Unadjusted OR*	Unadjusted 95% CI*	Unadjusted P-Value	Adjusted OR*	Adjusted 95% CI*	Adjusted P-value
Region									
Upstate	433	42.3	24.7	1.0	—	—	1.0	—	—
Downstate	568	57.7	33.6	1.5	1.1–2.1	0.01	1.2	0.9–1.8	0.25
Gender									
Male	470	48.7	30.6	1.0	—	—	1.0	—	—
Female	531	51.3	29.1	0.9	0.7–1.3	0.66	0.8	0.6–1.2	0.33
Age									
18–29	132	19.5	35.7	1.0	—	—	1.0	—	—
30–44	305	33.7	34.0	0.9	0.6–1.5	0.77	0.9	0.5–1.6	0.79
45–64	390	29.7	26.3	0.6	0.4–1.1	0.084	0.7	0.4–1.3	0.27
65+	174	17.1	21.2	0.5	0.3–0.9	0.023	0.5	0.3–1.1	0.078
Race/Ethnicity									
White	631	61.0	25.5	1.0	—	—	1.0	—	—
African American	121	12.5	47.6	2.6	1.6–4.3	<0.001	1.7	1.0–3.0	0.057
Asian	39	4.3	41.2	2.0	0.9–4.4	0.072	1.4	0.6–3.3	0.46
Hispanic	151	17.5	29.6	1.2	0.8–2.0	0.401	0.7	0.4–1.3	0.25
Other	59	4.7	28.9	1.2	0.6–2.3	0.606	1.0	0.5–1.9	0.99
Household Income									
<$30,000	248	25.2	34.3	1.6	0.9–2.9	0.11	1.5	0.7–2.9	0.27
$30,000–$49,000	167	16.5	28.4	1.2	0.7–2.2	0.63	1.1	0.6–2.2	0.70
$50,000–$75,000	214	19.9	26.4	1.1	0.6–2.0	0.32	1.1	0.6–2.1	0.76
>$75,000	136	14.3	24.6	1.0	—	—	1.0	—	—
Not reported	236	24.1	32.1	1.4	0.8–2.6	0.21	1.4	0.7–2.6	0.29
Education Level									
<High School	102	12.0	36.2	1.8	1.0–3.3	0.060	1.3	0.7–2.0	0.47
High School Grad	233	24.1	32.5	1.5	1.0–2.4	0.075	1.2	0.7–1.9	0.53
Some College	202	22.9	30.6	1.4	0.9–2.3	0.19	1.1	0.7–1.9	0.68
College Grad	217	21.8	27.7	1.2	0.7–2.0	0.45	1.1	0.7–1.8	0.71
Graduate School	229	19.3	24.1	1.0	—	—	1.0	—	—

Variables Assessed	N †	% Total	% Would Likely Flee Area	Unadjusted OR*	Unadjusted 95% CI*	Unadjusted P-Value	Adjusted OR*	Adjusted 95% CI*	Adjusted P-value
Married									
No	523	48.4	31.9	1.0	—	—	1.0	—	—
Yes	478	51.6	27.9	0.8	0.6–1.1	0.25	0.9	0.6–1.4	0.76
Children At Home									
No	632	60.7	26.1	1.0	—	—	1.0	—	—
Yes	369	39.3	35.7	1.6	1.0–2.2	0.006	1.3	0.9–2.0	0.15
Medical Employment									
No	822	83.5	29.2	1.0	—	—	1.0	—	—
Yes	179	16.5	32.8	0.8	0.6–1.3	0.40	1.2	0.8–1.9	0.42
Person With Chronic Illness In Home									
No	710	73.9	30.5	1.0	—	—	1.0	—	—
Yes	291	26.1	28.1	0.9	0.6–1.3	0.52	1.1	0.8–1.7	0.51
Made Preparations For Future Attacks									
No	926	93.9	30.3	1.0	—	—	1.0	—	—
Yes	75	6.1	23.1	0.7	0.4–1.2	0.22	0.6	0.3–1.2	0.17
Highest Fear									
No	669	66.6	24.7	1.0	—	—	1.0	—	—
Yes	332	33.4	40.1	2.0	1.5–2.8	<0.001	1.9	1.3–2.8	<0.001
Would Carefully Evaluate Information									
Not Likely	116	11.0	45.1	1.0	—	—	1.0	—	—
Somewhat Likely	240	24.4	29.0	0.5	0.3–0.9	0.012	0.5	0.3–1.0	0.042
Very Likely	645	64.5	27.6	0.5	0.3–0.7	0.002	0.4	0.3–0.7	0.003

† All N's shown represent the unweighted frequencies for categories presented. All other data shown are the results of weighted data using weights to adjust the sample for the number of telephone lines and adults in the household, plus age weights to adjust sample for over-sampling older New York State adults.

* OR = Odds ratio; CI = Confidence interval.