

Vulnerability and Resilience:
New Yorkers Respond to 9/11

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I. INTRODUCTION

The terrorist attack on the World Trade Center (WTC) took the lives of nearly 3000 people in New York City, resulted in huge economic losses,ⁱ intensified fears of international terrorism, and launched the “American war on terrorism.” The 9/11 attack and its continuing aftermath have disrupted, traumatized and upturned the lives of many around the world.

In this chapter, we quantify a few of the effects of the WTC attack on the well-being of adults and children who live in New York City. Our study is based on the New York City Social Indicators Survey, the third wave of which was conducted six months after the attacks. We cannot gauge the extent of loss or grief of the families who lost relatives in the attacks. The Social Indicators Survey sample is too small to capture the effects on those who suffered most directly and grievously. Similarly, the sample is too small to characterize the impact of 9/11 on residents of the small geographic areas that were most directly affected. The sample is better suited to describe effects of the attack on representative New Yorkers, and to quantify some of the effects on their well-being. More specifically, we use the survey results to answer the following questions: What proportion of adults suffered adverse effects? How many lost jobs or had family members who lost jobs because of the attacks? How were children affected? Were the effects widespread or limited to particular groups? Did the effects persist half a year later?

Most important, this chapter places the effects of the attacks within the context of recent trends in the well-being of New Yorkers. We use data from the New York Social Indicators Surveys (NYSIS) conducted in 1997, 1999-2000, and 2002 to analyze the trends over time and special modules of the 2002 NYSIS to describe the effects of the WTC attack on New York City.

II. SURVEY DESCRIPTION

The New York Social Indicators Survey (NYSIS) is a biennial survey of New York City residents. The survey is conducted by telephone with a representative sample of approximately 1500 families from the five boroughs of the City. The first wave of the survey was conducted in 1997, followed by a second wave in 1999-2000 and a third wave in 2002. Each wave of NYSIS consisted of two parts. A core survey was designed to document individual and family well-being across multiple domains - economic, social, behavioral and environmental. These core elements of the survey were kept identical from year to year to allow comparability over time. The second part of the survey consisted of a supplemental survey intended to address issues specific to each wave.

Six months after the attacks, the well-being of New York City residents could not be separated from the tumultuous event. The supplemental survey in the third wave, therefore, included questions about whether adults or children experienced any new health problems as a result of 9/11, and questions to those affected about whether they sought help and if these effects persisted at the time of the 2002 interview. We also asked adults if they or their children experienced particular symptoms of anxiety and insecurity, such as having trouble sleeping and preferring to stay home. The supplemental survey also investigated the immediate employment effects of the attacks on our representative sample.

The core survey is rich in individual characteristics such as age, race, ethnicity, immigration status, religion, income, marital status, family size, number of children and place of residence. It also provides information on whether the respondent is a single parent. We use this information to identify more vulnerable groups.

The 2002 NYSIS survey was conducted between March and June 2002. In total, 1501 adults were interviewed by telephone. Of them, 791 had children and were asked about the health, behavior and academic performance of one randomly selected child.ⁱⁱ Interviews lasted an average of 24 minutes for families without children and 34 minutes for families with children. The final sample we obtained accurately reflects the New

York City population in terms of socio-demographic composition. In order to adjust for sampling design and minor discrepancies in sample composition, the data were weighted to 2000 Census data.ⁱⁱⁱ

New York City is a microcosm – a mini-replica of the world. People from countries from around the world live and work here. Our survey reflects the cultural richness and diversity of the Big Apple. In our wave three sample, we interviewed adults from 85 different countries. Forty percent of the sample consisted of immigrants. The first and second waves of the survey were conducted in English and Spanish; and the last wave in five languages: English, Spanish, Mandarin, Cantonese and Korean.

III. NEW YORKERS' REACTIONS TO 9/11

A. How Widespread Were the Adverse Effects?

The third wave of the NYSIS study reveals high levels of adverse physical, emotional and economic reactions to the World Trade Center attacks (Table 1). A sizeable minority of respondents - 14% - reported that they or a family member had lost work as a result of 9/11. Fifteen percent of adults reported new health problems, including problems trying to sleep, depression, anxiety, fear, headaches, stomach aches, breathing, cough, skin problems, allergies, emotional problems, problems eating and stress. Though only 15% of adults reported new health problems, much larger percentages reported specific symptoms of anxiety and mental health problems when asked about them directly. About one third reported sleeping poorly, one third reported having problems concentrating at work, and 37% also said that since 9/11 they preferred to stay home and not go to work or other places. Slightly over half (55%) of the adults interviewed reported having experienced at least one of these health problems since 9/11.

Clearly, 9/11 changed many people's sense of security. Not only did more than one third of adults report that they preferred to stay at home and not go to work or other places, but 43% of parents also cut back on their children's freedom to travel around the City.

A number of parents reported that their children experienced problems as a result of 9/11. Eight percent of adults with children reported their child had a new health problem attributable to 9/11. Twelve percent reported that their child had trouble sleeping as a result of 9/11 and 14 percent said their child had problems concentrating as a result of the attacks. Slightly higher percentages of parents reported other symptoms of anxiety: seventeen percent of children were afraid in crowded places and nineteen percent often wanted to stay at home and not go to school or other places without a parent. Most striking, twenty eight percent of parents reported that their child was afraid the parent might go away and not come back. In all, 45% of parents reported that their child experienced at least one of these outcomes

B. Who Experienced the Adverse Effects?

The analyses reported in Table 1 are based on means, and therefore, describe the problems faced by New Yorkers on average. Did 9/11 affect people with different ethnicity, age, religion or immigration status differently? To answer these questions, we turn to a multivariate regression analysis. Regression analysis enables us to isolate the effects of one variable on vulnerability while holding constant all other variables. For example, we can study the vulnerability of respondents from different religions but with the same other personal characteristics such as age, race, education, immigration status, family size, gender, and income.

The results of the multivariate analysis are presented in Table 2. The three column headings describe the three dependent variables—whether the respondent or a family member lost a job, the number of ill health/symptoms experienced by adults, and the number of ill health/symptoms experienced by children. The number of symptoms experienced by adults ranges from 0 to 4 and the number experienced by children ranges from 0 to 6. The samples for the first two columns are adult respondents. The sample for the last column(s) is limited to adults with children. Each column is a separate regression and controls for the respondent's gender,

age, education, race/ethnicity, religion, family type, family size, immigration status, place of residence, whether the respondent has a work-limiting disability, and family income. We define four categories of education: less than high school, high school, some college, and at least a bachelor's degree, with the latter as the category of comparison. The sample is distributed in six groups on the basis of religion: Protestants (comparison category), Roman Catholic, Other Catholic, Jewish, Muslim and others. Families are grouped in four categories: Married or cohabiting with kids, married or cohabiting with no kids, single with kids and single with no kids (comparison group). We have five age groups: 18-24, 25-34, 35-44 (comparison group), 45-59 and 60 and above, and four categories of race: non-Hispanic white (comparison group), non-Hispanic black, Hispanic and others. Family income is divided into five categories—below poverty level, between the poverty level and twice poverty level, between two to three times the poverty level, between three to five times the poverty level and more than five times the poverty level. The regression coefficients and standard errors in parentheses are reproduced in the table. Statistically significant differences in the table are flagged by one, two or three asterisks, indicating respectively that the probability of finding a coefficient so different from zero, by chance, is less than 10% but more than 5%; less than 5% but more than 1%, and less than 1%.

The coefficients in the first column indicate that the effect of September 11 on whether a respondent (or family member) lost a job did not differ by respondent's age, gender, religion, family type or whether the respondent had a work limiting disability. (We did not include family income in this regression because losing a job is expected to lead to lower family income and we cannot therefore isolate the effect of income on job loss.) Three groups of people most adversely affected on this account were: those without a college degree, immigrants, and Hispanics. High school dropouts and those with some college education were about 6% more likely to lose a job than college graduates. Similarly, immigrants and Hispanics were each about 5% more likely to lose a job compared to native born and white adults.

The findings on reports of health problems or symptoms (column 2) are similar in a few respects to those on job loss. Adults with less than a high school education also report a greater number of 9/11 related health problems than college graduates. Marital and parental status and number of children have no effect “controlling for other factors” on the number of health problems. On the other hand, although immigrants and Hispanics were more likely to lose a job, neither group reports a significantly greater number of health problems. But a more detailed analysis of particular questions reported in Appendix 1 and 2 indicates that Hispanics were significantly more likely to have problems concentrating at work, more likely to prefer to stay home, and more likely to limit the freedom of their children. (The more detailed results also indicate that blacks were more likely than whites to report preferring to stay home.) Furthermore, when we do not control for employment in the regressions, Hispanics were more likely than whites to report health problems, suggesting that they did suffer disproportional health effects *because* of job losses. What differentiates the findings on job loss and health effects is the large number of significant group differences in the prevalence of health problems. Adults with a work disability, adults who lost a job, Catholics, and especially Muslims report significantly greater number of symptoms. Male respondents, those over age 60, and residents of Brooklyn report significantly fewer problems.

That those with a work disability would have suffered disproportionately from 9/11 is understandable. Their disability is likely to make them more vulnerable in general to dislocating events. Similarly, we expect and the results confirm that losing a job or having a family member who loses a job provokes stress and anxiety. The largest negative health effects are for Muslims. They report nearly one problem more than Protestants. Increased hate crime and ethnic and religious profiling of Muslims and Arabs and those perceived to be like them, such as South Asians (particularly Sikhs) have triggered additional worries and fears among these groups.^{iv} The effect for Roman Catholics is more difficult to explain. The coefficient for Roman Catholics is only about one-fourth the size of the Muslim coefficient, but it is significant at the .1 level. One possibility is

that because police and firemen are disproportionately Catholic, Catholics may have been more likely to know someone who died in 9/11.^v Unfortunately, we did not ask a question to ascertain whether or not respondents knew of someone who had died. Another possibility is that we are picking up a difference between Protestants and other groups. Jews and Other Catholics were also more likely to report symptoms of distress, but the sample sizes of these groups are quite small and the differences are not statistically significant. Still, more detailed analyses indicate that Jewish adults were significantly (at the $p < .10$ level) more likely to prefer staying at home than Protestants. We did not measure pain and suffering directly so cannot tell whether the lower levels of reported health problems among Protestants reflects actual differences in how much they suffered ill-effects of 9/11 or differences in levels of stoicism (i.e., how they report about these experiences). Though the differences between Protestants and Catholics and Jews may approach and even be statistically significant, the magnitude of these differences is swamped by the difference between all three groups and Muslims.

That male respondents report fewer mental health symptoms is consistent with previous literature. The extent to which this is a real or reporting phenomenon is considered below in conjunction with the discussion of children. Surprisingly, people aged 60 or more were also less adversely affected. One possibility is that problems relating to concentrating at work or staying home may be less relevant to the aged. But the aged also report fewer new health problems in general and report fewer problems sleeping as a result of 9/11. Perhaps older people are more used to handling adversity and therefore endured the 9/11-trauma with greater resilience. It is also possible that many of them were already experiencing the types of health symptoms they were asked about, prior to 9/11. Hence, they were less likely to report that the problems were *new*. Finally, adults in Brooklyn suffered significantly less than adults living in Manhattan. However, closer inspection indicates that residents of all the other boroughs also suffered less, though not significantly so in this regression. Note also that all of the other borough coefficients for the children's regression in column 3 are negative, but in this case,

the Queen's coefficient is statistically significant. These results suggest that controlling for other characteristics, residents of the island of Manhattan, the site of the World Trade Center bombing, experienced more distress.^{vi}

Many of the patterns for ill effects on adults are echoed with children. Children of adults with less than high school education, or with family members who lost a job, and Catholics and Muslims, and children with a disability experienced significantly more symptoms than their counterparts. Once again, more detailed analyses produce evidence that Jewish children were more affected than Protestant children, that Hispanic children were more affected than non-Hispanic children, and that black children are more likely than white children to prefer to stay at home after 9/11. And, as with adults, being a Muslim had the single largest effect. As noted above, children resident in Manhattan also appear to have suffered more than children in all the other boroughs, but only one of the coefficients (for living in Queens) approaches statistical significance.

Early adolescents appear to have been more vulnerable to 9/11 than their younger or older counterparts. This is not surprising because child development research suggests this is a particularly vulnerable age. That male respondents report that their children suffer fewer problems than female respondents suggests that part of the gender difference in effects of 9/11 are due to reporting rather than actual differences, though it is also possible that children in households in which men were more likely to be home and answer the phone suffered fewer symptoms than children in other households. An investigation into this question, based on the subset of families in which the parent was randomly selected, suggests that both factors contribute to the parental gender effects.

The most surprising result in Table 2 is that children of high-income parents (greater than 300% of poverty) are more likely to report symptoms than those in poorer families. Why were children in high-income families particularly vulnerable? One possibility is that children in upper income groups are less resilient to effects of environmental traumas because they are less exposed to hardship and adversity and therefore have a greater sense of security, generally. The 9/11 World Trade Center attack was so vivid and such an equal

opportunity reaper of death that children from the most privileged backgrounds may have had the most to lose in terms of their sense of security, and may have been the least well equipped to handle adversity. Another possibility is that wealthier parents may have been more likely than others to perceive or report effects on their children.

To sum up, the results of the NYSIS 2002 supplemental survey show that 9/11 created new health problems and anxieties for New York City residents. Some groups suffered these problems more than others. In general, already vulnerable populations suffered most—the least educated, the disabled, Hispanics, to some extent immigrants, and to a very limited extent blacks, and first and foremost, Muslims. Among children, the children of vulnerable adults were themselves the most vulnerable and early adolescents were the most affected. Two exceptions are the relative invulnerability of those over age 60 and the relative vulnerability of children in high income families.

C. Whose Problems Persisted and Who Sought Help?

Unfortunately, we asked questions about problem persistence and help seeking only of the 15% of adults who reported experiencing new problems and of the 8% of parents who reported that their children had experienced new problems. As indicated above, we know that the general question about new problems paints a more favorable view of the impact of 9/11 than the questions about specific problems. In light of the underestimate of problems that our filter question yields, it is probably safe to assume that we also underestimate the proportion of adults and children who sought and received treatment for 9/11-related symptoms.

One indication of the severity of problems reported is their perseverance. Overall, 65% percent of adults who reported having experienced new problems after 9/11 said that those problems persisted when they were interviewed – about 6 months after 9/11. Many parents (44%) also reported that their child's problem persisted. There is some indication that persistent problems were more common among children whose parents sought

treatment for them than among those who did not (59% versus 36%, respectively), but not among adults. A New York Times survey conducted two years after 9/11 indicates that about a third of New Yorkers continue to feel nervous or edgy because of Sept. 11 (Kleinfield and Connelly, 2003).

The seeking help questions also point to the severity of new problems that were reported. Among adults reporting new problems, two thirds said that they had sought help for those problems; among parents reporting that their child experienced new problems, 40% sought help. Overall, 6% of adults reported having sought help for new problems, and 4% of parents reported having sought help for their children. These proportions, which are likely to be underestimates, represent a considerable number of people in the city--about 350,000 adults and 57,000 children--and confirm anecdotal reports from health and social service agencies that they experienced sharp increases in the number of client visits subsequent to 9/11. Adults sought help for themselves and their children from a wide variety of professionals, including social workers, psychologists, psychiatrists, counselors, therapists, and others.

Table 3 presents an analysis of those whose problems persisted and sought help that is parallel to the analyses presented in table 2. Because the persistence and help-seeking questions were limited to the 15% of adults and 8% of parents who responded affirmatively to the new health problems question, the samples are much smaller in table 3 than table 2. Consequently we expect many fewer statistically significant results. Columns 1 and 2 present results for adults and children respectively in terms of the degree to which problems persisted. The results for persistence of problems amongst adults parallel the results in table 2. The disabled, the poorly educated, Muslims, those living outside Manhattan, and those living in a family that experienced a job loss are more likely to report persistence, and those over age 60 are less likely to report persistence. Note, however that only about half these coefficients are statistically significant. The story is the same for persistence among children, but here the sample size is even smaller and the statistical significance even weaker.

Although several of the more vulnerable groups also disproportionately sought help, there are some notable exceptions. Adults and children with a disability, most non-Protestant adults, and adults in families that experienced job loss were more likely to seek help. On the other hand, though they were more vulnerable in terms of experiencing problems, immigrant adults and Hispanic adults were significantly less likely than native born and white adults to seek help. Similarly, although older adults were less likely to suffer from 9/11 and single parents were no more likely to experience suffering than adults of other ages and family types, both the elderly and single parents were more likely to seek help. We suspect that both sets of anomalies are explained by the degree to which the different groups were already integrated into social service networks where help is readily accessible. Immigrants and Hispanics are less likely, and single parents and the elderly more likely, to be already served by social service agencies.

IV: COMPARISON TO OTHER RESEARCH

A number of other studies have attempted to measure a wide variety of direct and indirect effects of the WTC attack. Some have focused on behavioral responses including coping, time use, volunteering and charitable activity, and religiosity. Others have looked at attitudes towards national security, government, and work. Finally, a few studies have measured the financial and economic impact of 9/11 on the nation and New York City (see Appendix 3). Our purpose here is not to summarize this rich literature, but to point out if their findings are similar to those from the NYSIS. Nearly all of the previous research is consistent with and therefore reinforces our NYSIS findings. Consistent with our finding of widespread job loss as a result of 9/11, estimates from other sources indicate that the number of jobs lost in the fourth quarter of 2001 in New York City range from 74,000 (Fiscal Policy Institute, 2002) to 100,000 (New York State Assembly of Ways and Means, 2002).

Similarly, many other studies document widespread indirect adverse physical and mental health effects among adults, including post traumatic stress disorder (PTSD), depression and anxiety. Two months after the attack, 9.7% of adults in New York City reported symptoms consistent with depression (Galea et al., 2002), 7.5% reported symptoms consistent with a diagnosis of current post traumatic stress disorder (PTSD) (Galea et al., 2002) and one third were at increased risk of PTSD (American Red Cross in Greater New York, 2002). A study from the Center for Urban Epidemiologic Studies conducted 5 to 8 weeks after the attack found that 29% of Manhattan residents below 110th Street reported an increase in the use of cigarettes, alcohol or marijuana, and that persons who increased smoking of cigarettes and marijuana were more likely to experience PTSD than those who did not (Vlahov et al., 2002). Of course, effects of 9/11 on mental health were not limited to New York. A series of polls documented high rates of depression and problems sleeping nationally (Haddy, Khatib and Capelos, 2002).

Other studies also show only a minority of those with symptoms seeking out help. The American Red Cross in Greater New York reports that in February 2002, 76% of New Yorkers were willing to seek help for support services but only 1/3 actually did. At the national level, only 1 in 5 who said they were depressed or anxious as a direct result of the terrorist attack reported having seen a mental health professional (American Psychological Association, 2002). In terms of persistence of adverse effects, a New York Times survey conducted two years after 9/11 indicates that about a third of New Yorkers continued to feel nervous or edgy because of Sept. 11 (Kleinfield and Connelly, 2003).

The American Red Cross Study in Greater New York found that proximity to ground zero increased the severity of the impact and risk for trauma related distress and behavioral changes (Galea et al., 2002; American Red Cross in Greater New York, 2002). This study found that residence below Canal St. was a significant predictor of PTSD. Unfortunately, NYSIS data do not include sufficient cases to look at such a specific area; it is also possible that many of the most affected residents of lower Manhattan had moved away by the time we

were in the field. It should be noted that the Red Cross study defined proximity very broadly to include people who worked below Canal St., members of the downtown business community, and volunteers.

Other studies, like the NYSIS, indicate that children in New York City were affected by the World Trade Center attack. A Citizen's Committee for Children study revealed that immediately after the attack parents observed fears and symptoms of stress in their children. Although these symptoms decreased over time, one year after the attack still more than one third of children in the City were worried about their parents' safety, 21 percent were anxious about leaving home and 16 percent were having sleep disturbances (Citizens' Committee for Children, 2002). Interviews with students in grades 4-12 conducted six months after 9/11 by Applied Research and Consulting for the New York City Board of Education indicate that somewhat less than 30% of students reported mental health symptoms (Applied Research and Consulting, 2002).

Finally, in spite of all these negative outcomes, a national survey of Americans indicates that the attack of 9/11 did not destroy confidence in America or elicit shame and national self-denigration. To the contrary, anger was the most profound response (Smith et al., 2001). This is consistent with a finding reported below that after 9/11 New Yorkers became even more positive about the City.

With the exception of some economic impact studies most reports have relied on data collected only after the World Trade Center attack. Using New York City Social Indicators Survey data, in the next section we report on *changes* in a variety of social indicators among New Yorkers before and after September 11 of 2001.

V: BEFORE AND AFTER 9/11 CHANGES IN INDICATORS OF WELLBEING

In this section, we compare indicators of New Yorker's wellbeing in the Spring of 2002 to indicators of New Yorkers' well-being in 1997 and 1999-2000. The national and local economy and labor markets changed profoundly during this period. In response to the longest national economic boom in US history in the 1990's, unemployment in New York City continued declining until January of 2001 to a low of 5.2 percent^{vii}, at which

point the trend reversed. By Spring of 2002 employment and unemployment rates had reached levels very similar to those in 1999. In fact, by the time wave 3 interviews were conducted, employment had dipped slightly below the levels seen during wave 2 interviews. All else being equal, we would therefore expect New Yorkers to be faring similarly in 2002 as in 1999. Of course, not all else was equal. On the one hand, there was the tragic destruction of the WTC on 9/11. We interviewed respondents about 6 months after that, and, as the data discussed in section 3 demonstrate, the collapse of the WTC had a widespread impact on adults' and children's sense of security. On the other hand, the long decline in crime rates in the City extended into 2002 and reduced insecurity. Data from all three waves of NYSIS allow us to investigate the extent to which indicators of wellbeing changed during this period, and the extent to which the prior trends (from 1997 to 1999) were modified. We look specifically at several indicators in three areas of well-being: health, economic well-being, and perceptions of New York as a place to live. First we examine changes in well-being for the entire population of New York adults and children. Then, we examine whether there are departures from the general trend among those New Yorkers identified in Section 3 as being particularly vulnerable.

A. What are the trends in the well-being of all New Yorkers?

Table 4 presents the changes in indicators of well-being over the 3 waves of the survey -- 1997, 1999-2000 and 2002. Column 1 presents the mean value of the well-being measure in 1997, while columns 2 and 3 present, respectively, the regression adjusted mean value for 1999-2000 and 2002. The estimates presented in these rows are derived from pooling all three waves of the survey and regressing the dependent variable on the same set of demographic control variables as in tables 2 and 3.^{viii} Statistically significant differences between 1997 and 1999 and between 1997 and 2002 are denoted by asterisks.

What stands out in the table is an overall improvement in most indicators of well-being over time. Incomes and ability to borrow increased significantly between 1997 and 1999, then dipped very slightly by 2002, but remained significantly higher than 1997 levels. Though not statistically significant, the percentage of families with at least one full-time worker exhibited an even more pronounced curvilinear trend, such that employment levels, alone among our indicators, were lower in 2002 than in 1997. Despite lower employment, hunger declined steadily during the entire period, from just over 8% to less than 5%. Adults rated their health as better in 2002 as compared to 1999, reversing a previous trend.^{ix} The proportion of New Yorkers who reported being victims of robbery, housebreaking, or mugging also declined significantly between 1997 and 2002. Ratings of New York as a place to live also improved by a substantial and significant amount. Over 80% of New Yorkers rated the City as a good to excellent place to live in 2002, compared to about 70% in 1999-2000 and about 60% in 1997. Though perceptions of neighborhoods did not change during this period, the proportion of New Yorkers who believed the police were doing a good job in the City continued to improve after 1999-2000 (by over five percentage points).

Two of the four indicators of child well-being also show improvement from 1999-2000 to 2002. Neither overall child health nor the prevalence of depression or sadness changed significantly during this period. But suspensions from school declined by three percentage points between 1997 and 2002. And the proportion of parents reporting that their child didn't get along with others declined substantially after the 1999-2000 interviews. Finally, although not shown in the chart because we only started measuring these variables in 1999-2000, the proportions of children with behavioral problems and with D's and F's on their report cards declined significantly between 2000 and 2002.

In sum, despite some evidence that employment suffered after 2000, on other indicators, New Yorkers appeared to be better off after 9/11 than they had been 2.5 to 5 years ago. Is there an incongruity between the large proportions of New Yorkers who report experiencing negative symptoms of anxiety and distress from

9/11 as discussed in section 3 of this report and the positive trends in the social indicators discussed in this section? Upon reflection, we think not. The economy of the late 1990's was so strong that its effects on individuals' well-being persisted into the economic downturn at least through 2002. Incomes and ability to borrow were higher and hunger lower in 2002 than they had been in 1997. Similarly, crime rates were lower in 2002 than previously and confidence in the police and the City more broadly increased steadily between 1997 and 2002. In short, despite the recession that began in late 2000, many good things were happening in New York City, even into 2002. On balance, for New Yorkers as a whole, six months after 9/11 the effect of positive changes seem to have more than countered some of the negative effects of 9/11 on the indicators that the Social Indicator Survey measures.

B. Do the trends differ for vulnerable groups?

These findings combined with our findings on vulnerability to 9/11 suggest another hypothesis: that the vulnerable groups identified may have benefited less from the positive trends of the late 1990s as compared to other groups and to themselves before 9/11.

In order to determine how vulnerable populations fared over this period, relative to others, we estimated interactive models to assess the extent to which particular groups diverged from the overall trends in well-being using our social indicators. We did this by interacting the wave 2 and wave 3 dummy variables with variables representing the vulnerable population subgroups and controlling for the demographic characteristics in tables 2, 3, and 4, as well as wave dummies. These models measure the extent to which trends in the outcome measures between the first two waves and between the first and last waves differed across subgroups. Table 5 provides the logistic regression coefficients of the interactions from these regressions and the tests of statistical significance (The full regressions are available upon request from the authors.) Results are presented for five different vulnerable groups: immigrants, Muslims, the poorly educated, the disabled, and any of the above. As

before statistically significant differences between the 1997 survey and the 1999 survey, and between the 1997 survey and the 2002 survey are indicated by asterisks. And statistically significant differences between the 1999 and 2002 surveys are indicated by plusses. A negative coefficient in the wave 2 column indicates that the trend between 1997 and 1999 was less positive (or more negative) for the vulnerable group than for others. A positive coefficient indicates that the trend was more favorable (or less unfavorable) for the vulnerable population than for others. Similarly, the coefficients in the wave 3 column compare trends from 1997 to 2002, among vulnerable and non-vulnerable populations.

Table 5 indicates that vulnerable adult groups generally gained less than others after 2001. Eight of the thirty-six wave three interaction coefficients for the individual groups are negative and significant. Furthermore, all but one of the coefficients for *any* vulnerable adult group comparing 2002 to 1997 (in the last column) are significant and negative for the adult outcomes indicators. In other words, there is strong evidence that the groups most vulnerable to 9/11 reaped fewer benefits of the positive economic momentum and decline in crime than non-vulnerable populations, or were more greatly affected by the economic downturn after 2000. That all but one of the wave 3 coefficients are more negative than the comparable wave 2 coefficients and that two of these differences are statistically significant also provides evidence that the vulnerable adults fared worse post 9/11, relative to other adults, than they had previously.

The picture for children is different. The second panel in table 5 provides no evidence that children from vulnerable populations experienced smaller improvements in the indicator outcomes than children from other populations. Indeed, one of the few significant differences in the table indicates that Muslim children gained ground, relative to non-Muslims, in terms of our mental health indicator (often or sometimes feels sad or depressed). Bear in mind, however, that our data on Muslim children and children more generally are limited. Only 34 Muslim children were included in wave 3, only three of whom reported sadness or depression, so that little weight should be given to this result. More generally, recall from Table 1 that the sample size for the

children's analyses in wave 3 is about half the sample size for the adult analyses—791 vs 1501. In addition, a smaller proportion of children than adults report adverse reactions to 9/11. Thus our data have less power to detect group differences among children as compared to adults. This lack of power helps explain our failure to find that children in groups more vulnerable to 9/11 gained less from the positive effects of the economic boom and decline in crime. Note also, that 4 of our adult indicators--increase in family income and ability to borrow and reduction in hunger and crime—apply to children as well as adults.

VI. SUMMARY AND CONCLUSION

The New York City Social Indicators Survey provides an assessment of the impact of the attack on the World Trade Center on a variety of indicators. In addition to dealing a severe economic blow to the City, the NYSIS indicates that the destruction of the World Trade Center heightened anxiety and insecurity among slightly more than half of New York City adults and slightly less than half of New York City children. The single most widespread indicator of anxiety for adults was not wanting to leave home. For children the most common expression of anxiety was fear that their parents would go away and not return.

Some groups suffered more than others. In general, already vulnerable populations experienced more mental health symptoms—the least educated, the disabled, Hispanics, to some extent immigrants, and to a very limited extent blacks, and first and foremost, Muslims. Among children, the children of vulnerable adults were themselves the most vulnerable and early adolescents were the most affected. Two exceptions are the relative invulnerability of those over age 60 and the relative vulnerability of children in high income families.

The NYSIS also indicates that the negative effects of 9/11 occurred in the context of a city undergoing many positive changes. The long period of economic growth and prosperity and declining crime immediately preceding 2001 significantly improved the living conditions of many New Yorker. The overall positive effects of these improvements appear to have largely offset the negative impact of 9/11 on many indicators of well-

being. Had New York been experiencing a long decline in prosperity and living conditions when the attacks took place, it is likely that the change in indicators pre- and post- 9/11 would have told a very different story. In the absence of 9/11, the NYSIS indicators might have improved even more between 2000 and 2002. Similarly, if 9/11 had been only the first of many attacks, the NYSIS indicators would likely have deteriorated more than they did. Finally, it is possible that our analyses of changes over time would have picked up stronger negative effects had we conducted the interviews immediately after the event. Time is a great healer. Thinking about these hypothetical alternatives helps to reconcile what may appear at first blush to be inconsistent findings. That the groups who were most vulnerable to 9/11 benefited less from the positive trends after 9/11 as compared to other groups and to themselves before 9/11 also helps to make sense of these findings.

Although much of this chapter has focused on the differential impact of 9/11 on vulnerable populations, one could characterize the entire population of New York as having been particularly resilient at the time of the attack because of a general sense that the City was on an upward trajectory. In fact, the attack may well have brought the City closer together, fostered a greater sense of community, a more positive view of city institutions, and, generally, greater satisfaction about being part of the City. In other words, despite having a clear negative impact on mental health, the attacks may also have had *positive* effects on other indicators of well-being.

References

- American Psychological Association (APA). 2002. *Many Americans still feeling effects of September 11th; are reexamining their priorities in life*. Press Release, February 11.
- American Red Cross in Greater New York. 2002. *Findings from Surveys: Two Months and Five Months Later*. Report, retrieved May 20, 2002 from the World Wide Web:
http://nyredcross.org/wtcrecovery/wtcrecovery_execsummary.html.
- Applied Research and Consulting, Columbia University Mailman School of Public Health and New York State Psychiatric Institute. 2002. *Effects of the World Trade Center Attack on NYC Public School Students: Initial Report to the New York City Board of Education*. Report, May.
- Bram, Jason, James Orr, and Carol Rapaport. 2002. *Measuring the Effects of the September 11 Attacks on New York City. Economic Policy Review*. Report, November, 5-20.
- Citizens' Committee for Children of New York. 2002. *Children and Crisis: NYC's Response After 9/11*. Report, September 5.
- Fiscal Policy Institute. 2002. *The Employment Impact of the September 11 World Trade Center Attacks: Updated Estimates based on the Benchmarked Employment Data*. Report, March 8th.
- Galea, Sandro, Jennifer Ahern, Heidi Resnick, Dean Kilpatrick, Michael Bucuvalas, Joel Gold, and David Vlahov. 2002. Psychological Sequelae of the September 11 Terrorist Attacks in New York City. *New England Journal of Medicine*. 346 (13): 982-987
- Huddy, Leonie, Nadia Khatib, and Theresa Capelos. 2002. The Polls-Trends:Reactions to the Terrorist Attacks of September 11, 2001. *Public Opinion Quarterly*.
- Human Rights Watch Report. 2002. "We Are not the Enemy": *Hate Crimes Against Arabs, Muslims and Those Perceived to be Arab or Muslim after September 11*. Report, November. 14 (6G).
- Kleinfield, N. R. & Marjorie Connelly. 2002, September 8. Two Years Later: Public Opinion; 9/11 Still Straining New York Psyche. *The New York Times*, pp. A1.
- New York State Assembly Ways and Means Committee Staff. 2002. *New York State Economic Report*. March.
- Ruhm, Christopher J. 2003. Good Times Make You Sick. *Journal of Health Economics*. 24 (4): 637-658.
- Ruhm, Christopher J. and William E Blank. 2002. Does Drinking Really Decrease in Bad Times? *Journal of Health Economics*. 21 (4): 659-678.
- Ruhm, Christopher J. 2000. Are Recessions Good For Your Health? *Quarterly Journal of Economics*. 115 (2): 617-650.

Smith, Tom W., Kenneth A. Rasinski, and Marianna Toce. 2001 *America Rebounds: A National Study of Public Response to the September 11th Terrorist Attacks, Preliminary Findings*. National Organization for Research at the University of Chicago (NORC). Report, Oct. 25.

Vlahov, David, Sandro Galea, Heidi Resnick, Jennifer Ahern, Joseph A. Boscarino, Michael Bucuvalas, Joel Gold, and Dean Kilpatrick. 2002. Increased Use of Cigarettes, Alcohol, and Marijuana among Manhattan, New York, Residents after the September 11th Terrorists Attacks. *American Journal of Epidemiology*. 155 (11): 988-996.

Notes:

¹ Jason Bram, James Orr, and Carol Rapaport (2002) have computed the economic cost of the 9/11 attacks for New York City at \$33 to \$36 billion which includes the life time earnings loss for the workers killed in the attacks, employment impact in the key affected sectors—such as finance, air transportation, hotels, and restaurants, and cost of repairing and replacing the damaged physical capital stock and infrastructure. Earlier, more quickly put together, estimates were higher: New York City Partnership estimated a total economic impact of \$83 billion (including a lost GCP of \$39 billion); the New York City Office of the Comptroller estimated a total economic impact of \$82.8 - \$94.8 billion (including a lost GCP of \$52 - \$64 billion).

¹ Child with the most recent birthday prior to the interview was selected as focal child for the interviews.

¹ For 1997 and 2002, we interpolated and extrapolated respectively, population distributions from the 1990 to 2000 trends in census figures.

¹ According to the 2001 FBI hate crimes report, the number of anti-Muslim hate crimes rose from 28 in 2000 to 481 in 2001. A Human Rights Watch report (November 2002) cites data from local and state agencies that indicate growing hate crime against Muslims. In Chicago, for instance, the police department reported 51 anti-Muslim hate crimes during September-November 2001, as compared with only four such cases during the entire year 2000. In Los Angeles County, there were only 12 hate crime cases against people of Middle-Eastern descent in 2000, as compared with 188 in 2001 (Human Rights Watch Report 2002).

¹ **Mitchell Moss verbally confirmed the hypothesis of disproportionate representation, but we need to document this.

¹ In results not reported in the table, we identified sub-samples of Manhattan residents and of other borough residents that live close to the site of the World Trade Center but could find no significant differences between nearby residents and other city residents. SIS sample size is too small to detect such small neighborhood effects.

¹ Bureau of Labor Statistics data (Seasonally adjusted unemployment rates from Local Area Unemployment Statistics, series LASPS36040003). Extracted on September 22, 2003)

¹ Income and employment measures are not included in the regressions.

¹ That overall health should be counter cyclical appears at first to be counter-intuitive. But Ruhm (2000, 2002, and 2003) presents evidence that physical health is counter cyclical and suggests that the effect may be explained by on the job injuries. Ruhm also finds that changes in behaviors such as drop in tobacco use, fall in body weight among severely obese and increase in exercise among those completely inactive supply one mechanism for the pro-cyclical variation in mortality and morbidity observed in recent research.

Table 1. New problems faced by adults and children since the September 11 terrorist attacks

| Problems | Weighted Mean (%) |
|--|-------------------|
| Economic Hardship | |
| Respondent or Family Member Lost Job | 14 |
| Adult Health | |
| New Health Problems Since 9/11 | 15 |
| Problem Sleeping Since 9/11 | 30 |
| Problem Concentrating at Work Since 9/11 | 31 |
| Prefers to Stay at Home After 9/11 | 37 |
| Any Health Problem | 55 |
| Cut Freedom of Children After 9/11 | 43 |
| Child's Health | |
| New Health Problems Since 9/11 | 8 |
| Problem Sleeping Since 9/11 | 12 |
| Problem Concentrating Since 9/11 | 14 |
| Child Prefers to Stay at Home | 19 |
| Child is Worried that Parent might Go Away | 28 |
| Child is Afraid of Crowded Places | 17 |
| Any Health Problem | 45 |
| Sample Size | |
| Adults | 1501 |
| Children | 791 |

Table 2. Predictors of new problems faced by adults since the September 11 terrorist attacks.

| Dependent Variable/ | Respondent or family member lost job | Number of ill-health symptoms experienced by adults | Number of ill-health symptoms experienced by children |
|--|--------------------------------------|---|---|
| Explanatory variables | | | |
| Education/Parent's education (omitted: BA Plus) | | | |
| Less than high school | 0.057 (0.031)* | 0.262 (0.118)** | 0.431 (0.180)** |
| High school | 0.036 (0.025) | 0.030 (0.094) | 0.270 (0.153)+ |
| Some college | 0.060 (0.025)** | 0.012 (0.090) | 0.178 (0.142) |
| Work/activity limiting disability | -0.007 (0.028) | 0.551 (0.104)*** | 0.296 (0.171)* |
| Religion (omitted: Protestant) | | | |
| Roman catholic | -0.010 (0.031) | 0.214 (0.109)* | 0.449 (0.182)** |
| Other catholic | 0.031 (0.034) | 0.093 (0.121) | 0.314 (0.200) |
| Jewish | -0.026 (0.041) | 0.089 (0.145) | 0.303 (0.258) |
| Muslim | 0.010 (0.060) | 0.806 (0.216)*** | 0.899 (0.286)*** |
| Other | 0.015 (0.032) | 0.028 (0.113) | 0.159 (0.188) |
| Family Type (omitted: Single, no kids) | | | |
| Married/cohabiting, With kids | 0.023 (0.039) | -0.193 (0.142) | |
| Single, with kids | -0.006 (0.035) | -0.058 (0.123) | 0.159 (0.134) |
| Married/cohabiting, no Kids | 0.003 (0.029) | -0.071 (0.107) | |
| Family size | -0.001 (0.011) | 0.023 (0.040) | 0.023 (0.045) |
| Immigrant | 0.045 (0.020)** | 0.023 (0.072) | 0.141 (0.111) |
| Age of the respondent (omitted: 35-44 yrs) | | | |
| 18-24 years | -0.017 (0.033) | -0.157 (0.119) | |
| 25-34 years | 0.003 (0.024) | 0.068 (0.086) | |
| 45-59 years | -0.025 (0.026) | -0.078 (0.092) | |
| >= 60 years | -0.015 (0.034) | -0.511 (0.124)*** | |
| Child's Age (omitted group: 0-10 years) | | | |

| Dependent Variable/ Explanatory variables | Respondent or family member lost job | Number of ill-health symptoms experienced by adults | Number of ill- health symptoms experienced by children |
|--|---|---|---|
| 11-14 years | -- | -- | 0.219 (0.119)* |
| 15-18 years | -- | -- | -0.027 (0.132) |
| Respondent is male | 0.016 (0.019) | -0.367 (0.069)*** | -0.333 (0.113)*** |
| Child is male | | | 0.021 (0.097) |
| Race (omitted: non-Hispanic White) | | | |
| Non-Hispanic Black | -0.008 (0.028) | -0.010 (0.101) | 0.246 (0.169) |
| Hispanic | 0.048 (0.028)* | -0.001 (0.100) | 0.218 (0.160) |
| Other | 0.043 (0.039) | 0.148 (0.138) | -0.054 (0.227) |
| Borough of residence (omitted: Manhattan) | | | |
| Bronx | -0.038 (0.031) | -0.074 (0.110) | -0.172 (0.175) |
| Kingsborough | 0.007 (0.028) | -0.220 (0.098)** | -0.260 (0.167) |
| Queens | -0.024 (0.028) | -0.118 (0.098) | -0.317 (0.167)* |
| Staten Island | -0.011 (0.043) | -0.198 (0.156) | -0.368 (0.241) |
| Family Income (omitted: >=500 % poverty line) | | | |
| FI < poverty line | | -0.062 (0.111) | -0.467 (0.193)** |
| 200% poverty line > FI >= poverty line | | -0.138 (0.113) | -0.226 (0.175) |
| 300% poverty line > FI >= 200 % poverty line | | -0.183 (0.122) | -0.539 (0.183)*** |
| 500% poverty line > FI >= 300 % poverty line | | -0.133 (0.098) | 0.012 (0.159) |
| Respondent or family member lost job | | 0.417 (0.099)*** | 0.244 (0.141)* |
| N | 1416 | 1327 | 678 |

*0.05<p<=0.10, ** 0.01<p<=0.05, *** p<=0.01

Table 3. Predictors of seeking help for and persistence of problems since the September 11 terrorist attacks.

| Dependent Variable/ | Child sought help | Adult sought help | Child problem persisted | Adult problem persisted |
|---|-------------------|---------------------|-------------------------|-------------------------|
| Explanatory variables | | | | |
| Education (omitted: BA Plus) | | | | |
| Less than High School | -0.401 (0.498) | 0.052 (0.120) | -0.00976 (0.029) | 0.027 (0.030) |
| High School | -0.283 (0.552) | 0.119 (0.105) | -0.0164595 (0.025) | -0.013 (0.024) |
| Some College | -0.124 (0.368) | 0.007 (0.096) | -0.0266403 (0.023) | 0.021 (0.023) |
| Work Limiting Disability | 0.214 (0.278) | 0.138 (0.085) | 0.05294 (0.028)* | 0.219 (0.026)*** |
| Religion (omitted: Protestant) | | | | |
| Roman Catholic | 0.139 (0.614) | 0.281 (0.125)** | 0.03199 (0.029) | -0.010 (0.028) |
| Other Catholic | -0.083 (0.622) | 0.298 (0.144)** | -0.00549 (0.033) | -0.030 (0.031) |
| Jewish | 0.188 (0.511) | 0.192 (0.170) | 0.0793* (0.042) | -0.007 (0.037) |
| Muslim | -0.436 (0.588) | 0.289 (0.195) | 0.0473 (0.046) | 0.082 (0.054) |
| Other | 0.158 (0.588) | 0.248 (0.134)* | 0.0129 (0.031) | -0.015 (0.029) |
| Family Type (omitted: Single, no kids) | | | | |
| Married/cohabiting, with kids | | 0.118 (0.137) | | -0.024 (0.037) |
| Single, with kids | 0.249 (0.292) | 0.269 (0.129)** | 0.0233 (0.022) | 0.006 (0.031) |
| Married/cohabiting, no kids | | -0.048 (0.113) | | 0.027 (0.027) |
| Family size | 0.086 (0.097) | -0.014 (0.036) | -0.00974 (0.007) | 0.003 (0.010) |
| Immigrant | -0.074 (0.239) | -0.200 (0.078)** | -0.00339 (0.018) | 0.009 (0.018) |
| Age (omitted: 35-44 yrs) | | | | |
| 18-24 years | | 0.128 (0.150) | | -0.064 (0.030)** |
| 25-34 years | | 0.159 (0.094) | | -0.016 (0.022) |
| 45-59 years | | 0.227 (0.087)*** | | -0.018 (0.023) |
| >= 60 years | | 0.234 (0.137) | | -0.102 (0.031) |
| Child's age | | | | |
| 11-14 years | -0.354 (0.286) | | -0.007 (0.019) | |
| 15-18 years | -0.295 (0.282) | | -0.020 (0.022) | |
| Respondent is male | -0.079 (0.337) | -0.014 (0.072) | -0.02027 (0.019) | -0.005 (0.017) |
| Child is male | | | | |
| Race (omitted: non-Hispanic white) | | | | |

| Dependent Variable/ | Child sought help | Adult sought help | Child problem persisted | Adult problem persisted |
|---|-------------------|---------------------|-------------------------|-------------------------|
| Explanatory variables | | | | |
| Non-Hispanic Black | -0.179 (0.400) | .044 (0.116) | 0.0100 (0.028) | -0.034 (0.026) |
| Hispanic | -0.058 (0.329) | -0.285 (0.111)** | 0.007667 (0.026) | 0.030 (0.025) |
| Other | -0.164 (0.561) | -0.112 (0.141) | 0.013898 (0.037) | 0.018 (0.035) |
| Borough of residence (omitted: Manhattan) | | | | |
| Bronx | 0.219 (0.312) | -0.034 (0.110) | -0.023651 (0.028) | 0.055 (0.028)** |
| Kingsborough | 0.201 (0.349) | -0.086 (0.108) | -0.02609 (0.027) | -0.007 (0.025) |
| Queens | 0.024 (0.363) | -0.170 (0.103) | -0.03879 (0.027) | 0.016 (0.025) |
| Staten Island | 0.107 (0.576) | -0.394 (0.165)** | -0.0149141 (0.039) | 0.004 (0.039) |
| Family Income (omitted: >=500 % poverty line) | | | | |
| FI < poverty line | 0.389 (0.430) | 0.070 (.121) | -0.0251244 (0.031) | -0.036 (0.028) |
| 200% poverty line > FI >= poverty line | 0.094 (0.301) | -0.159 (0.118) | 0.0112446 (0.029) | -0.015 (0.029) |
| 300% poverty line > FI >= 200 % poverty line | 0.490 (0.396) | -0.183 (0.132) | -0.0061595 (0.030) | -0.018 (0.031) |
| 500% poverty line > FI >= 300 % poverty line | 0.009 (0.352) | -0.086 (0.117) | 0.0306 (0.026) | -0.023 (0.025) |
| Respondent or family member lost job | -0.177 (0.296) | 0.235 (0.088)*** | 0.0209 (0.023) | 0.087 (0.024)*** |
| n | 56 | 216 | 670 | 1416 |

Note: * 0.05 < p <= 0.10, ** 0.01 < p <= 0.05, *** p <= 0.01

Table 4. Change over time in indicators of wellbeing.

| | Mean Value 1997 (weighted ¹) | Wave 2 (1999-2000) Adjusted | Wave 3 (2002) Adjusted | sample size |
|--|---|--------------------------------|---------------------------|----------------|
| Adult Indicators | | | | |
| Respondent/partner income | \$35,309 | \$38,767*** | \$38,086** | 4149 |
| Adult in good to excellent health | 81.32 | 76.12*** | 81.48 | 4144 |
| Family has at least one full time worker | 45.72 | 47.12 | 44.15 | 4143 |
| Family members did not experience hunger | 91.64 | 92.05 | 95.61** | 1941 |
| Family can borrow \$1000 | 60.67 | 68.55*** | 67.85*** | 4045 |
| Family members were not victims of crime | 89.56 | 91.65* | 91.93** | 4142 |
| Adult rates New York City as a good to excellent place to live | 60.60 | 70.96*** | 80.55*** | 4120 |
| Adult rates neighborhood as good or very good | 70.13 | 70.45 | 71.77 | 4138 |
| Adult rates police protection as good or very good | 63.74 | 65.83 | 71.22*** | 3989 |
| Child Indicators | | | | |
| Child in good to excellent health | 93.58 | 92.25 | 93.30 | 2392 |
| Child was suspended from school | 5.62 | 5.68 | 3.72 | 1718 |
| Child often or sometimes doesn't get along with others | 19.03 | 16.93 | 13.01*** | 2083 |
| Child often or sometimes feels sad or depressed | 19.76 | 21.52 | 21.82 | 2071 |

* p<0.10

** p<0.05

***p<0.01

Table 5. Interaction effects for survey wave by vulnerability

| | Immigrants | | Muslims | | Education | | Disability | | 10<Child Age <15 | | All Vulnerable Groups | |
|--|------------|---------|---------|---------|-----------|-----------|------------|--------|------------------|--------|-----------------------|-----------|
| | wave 2 | wave 3 | wave 2 | wave 3 | wave2 | wave 3 | wave 2 | wave 3 | wave 2 | wave 3 | wave 2 | wave 3 |
| Adult Indicators | | | | | | | | | | | | |
| Respondent/partner income | -2253 | -6148** | 9341 | 1005 | -6075 | -8952** | -4018 | -5201 | | | 3144 | 6910*** |
| Adult in good to excellent health | 0.22 | -0.23+ | -0.41 | -0.77 | -0.50* | -1.17***+ | 0.30 | 0.22 | | | -.02 | -0.65***+ |
| Respondent works or not | 0.08 | -0.04 | 0.32 | -0.02 | 0.12 | 0.16 | -0.57** | -0.51* | | | -.20 | -0.33** |
| Family members did not experience hunger | 0.15 | 0.32 | 0.62 | -0.45 | -0.28 | -0.03 | 0.37 | -0.05 | | | -.40 | -0.59 |
| Family can borrow \$1000 | 0.52*** | -0.17+ | 0.27 | -0.90*+ | -0.04 | -0.256 | -0.35 | -0.16 | | | .10 | -0.39**+ |
| Family members were not victims of crime | -0.25 | -0.24 | -1.28 | -1.02 | 0.74* | 0.10 | -0.12 | -0.66* | | | -.18 | -0.61** |
| Adult rates New York City as a good to excellent place to live | -0.41** | -0.32* | -0.71 | 0.01 | -0.22 | -0.45* | -0.16 | -0.25 | | | -.34** | -0.41** |
| Adult rates neighborhood as good or very good | -0.17 | -0.28 | -0.56 | -0.31 | 0.29 | -0.08 | -0.14 | -0.10 | | | -.26* | -0.34** |
| Adult rates police protection as good or very good | -0.24 | -0.12 | -0.58 | -0.003 | -0.52** | -0.33 | -0.54** | -0.34 | | | -.48*** | -0.25* |
| Child Indicators | | | | | | | | | | | | |
| Child in good to excellent health | 0.78* | 0.61 | 1.01 | | -0.44 | 0.08 | 0.43 | 0.39 | 0.12 | 0.25 | 0.29 | 0.47 |
| Child was suspended from school | 0.02 | 0.42 | -0.39 | | -0.22 | -0.21 | 0.07 | | 0.06 | -0.56 | 1.63*** | 0.25+ |
| Child often or sometimes doesn't get along with others | 0.20 | -0.10 | -0.59 | -0.23 | 0.02 | -0.20 | 0.34 | 0.27 | 0.40 | 0.10 | 0.21 | 0.01 |
| Child often or sometimes feels sad or depressed | 0.11 | 0.18 | -0.95 | -1.80** | 0.32 | 0.03 | 0.07 | 0.38 | 0.22 | 0.07 | 0.14 | 0.11 |
| unweighted n | | | | | | | | | | | | |

*0.05<p<=0.10, ** 0.01<p<=0.05, *** p<0.01

+ The coefficient for Wave 3 and Wave 2 interactions are statistically different at 10% significance level.

Appendix Table 1a. New Problems Faced by Adults and Children Since the September 11 Terrorists' Attacks

| Problems | Number | Sample Mean (%) |
|---|--------|-----------------|
| Economic Hardship | | |
| Respondent or Family Member Lost Job | 184 | 12.6 |
| Of which, families where: | | |
| Respondent did not work at the time of survey | 66 | -- |
| No family member worked at the time of survey | 42 | -- |
| Adult Health | | |
| New Health Problems Since 9/11 | 223 | 15.1 |
| New Post 9/11 Health Problems Continue | 152 | 10.1 |
| Problem Sleeping Since 9/11 | 394 | 27.6 |
| Problem Concentrating at Work Since 9/11 | 465 | 31.3 |
| Any Health Problem | 770 | 51.3 |
| Adult's Anxiety | | |
| Cut Freedom of Children After 9/11 | 329 | 42.0 |
| Prefers to Stay at Home After 9/11 | 590 | 39.6 |
| Child's Health | | |
| New Health Problems Since 9/11 | 65 | 8.4 |
| New Post 9/11 Health Problems Continue | 30 | 3.9 |
| Problem Sleeping Since 9/11 | 85 | 11.1 |
| Problem Concentrating Since 9/11 | 97 | 12.6 |
| Any Health Problem | 284 | 35.9 |
| Child's Anxiety | | |
| Child Prefers to Stay at Home | 151 | 18.7 |
| Child is Worried that Parent might Go Away | 219 | 28.5 |
| Child is Afraid of Crowded Places | 128 | 16.8 |
| Sample Size | | |
| Adults' | 1501 | 100 |
| Children's | 791 | 100 |

Appendix Table 1b. OLS Estimates of the Determinants of New Problems Faced by Adults since September 11 Terrorists' Attacks

| Dependent Variable/ | New health problems |
|--|---------------------|
| Explanatory variables | |
| Education (omitted: BA Plus) | |
| Less than High School | 0.027 (0.036) |
| High School | -0.018 (0.029) |
| Some College | 0.016 (0.028) |
| Work Limiting Disability | 0.206 (0.031)*** |
| Religion (omitted: Protestant) | |
| Roman Catholic | 0.028 (0.034) |
| Other Catholic | 0.000 (0.037) |
| Jewish | 0.025 (0.045) |
| Muslim | 0.096 (0.065) |
| Other | -0.013 (0.035) |
| Family Type (omitted: Single, no kids) | |
| Married/cohabiting, With kids | 0.005 (0.043) |
| Single, with kids | -0.006 (0.037) |
| Married/cohabiting, no Kids | 0.028 (0.032) |
| Family size | -0.003 (0.012) |
| Immigrant | 0.024 (0.022) |
| Age (omitted: 35-44 yrs) | |
| 18-24 years | -0.083 (0.036)** |
| 25-34 years | -0.031 (0.026) |
| 45-59 years | -0.010 (0.028) |
| >= 60 years | -0.084 (0.038)** |
| Respondent is male | -0.026 (0.021) |
| Race (omitted: non-Hispanic White) | |
| Non-Hispanic Black | -0.013 (0.031) |
| Hispanic | 0.051 (0.031)* |
| Other | 0.053 (0.042) |

| Dependent Variable/ | New health problems |
|--|---------------------|
| Explanatory variables | |
| Borough of residence ¹ (omitted: Rest of Manhattan) | |
| Proximity to Ground zero | -0.001 (0.039) |
| Rest of Bronx | 0.035 (0.035) |
| Rest of Kingsborough | -0.033 (0.033) |
| Rest of Queens | 0.002 (0.032) |
| Rest of Staten Island | 0.004 (0.058) |
| Family Income (omitted: >=500 % poverty line) | |
| FI <100 % poverty line | -0.031 (0.034) |
| 200% poverty line > FI | -0.013 (0.034) |
| >=100 % poverty line | -0.010 (0.037) |
| 300% poverty line >FI | -0.035 (0.030) |
| >= 200% poverty line | 0.098 (0.029)*** |
| 500% poverty line >FI | |
| >= 300% poverty line | |
| Respondent or family member lost job | |

Note: *0.05<p<=0.10, ** 0.01<p<=0.05, *** p<=0.01

Appendix Table 1c. OLS Estimates of the Determinants of Anxiety among Adults since September 11 Terrorists' Attacks

| Dependent Variable/ Explanatory variables | Any problem | Problem sleeping since 9/11 | Problem concentrating at work since 9/11 | Prefers to stay at home after 9/11 | Cut freedom of children after 9/11 |
|--|---------------------|-----------------------------------|---|--|--|
| Education (omitted: BA Plus) | | | | | |
| Less than High School | 0.056 (0.049) | 0.123 (0.045)*** | 0.072 (0.046) | 0.079 (0.048)* | 0.108 (0.067) |
| High School | -0.020 (0.039) | -0.005 (0.036) | 0.014 (0.037) | 0.047 (0.038) | 0.138 (0.057)** |
| Some College | -0.026 (0.038) | 0.032 (0.035) | 0.003 (0.035) | -0.015 (0.037) | 0.099 (0.053)* |
| Work Limiting Disability | 0.159 (0.043)*** | 0.173 (0.040)*** | 0.073 (0.040)* | 0.096 (0.042)** | 0.127 (0.064)** |
| Religion (omitted: Protestant) | | | | | |
| Roman Catholic | 0.048 (0.046) | 0.060 (0.042) | 0.075 (0.043)* | 0.106 (0.045)** | 0.013 (0.067) |
| Other Catholic | 0.023 (0.051) | -0.009 (0.046) | 0.028 (0.048) | 0.112 (0.050)** | 0.036 (0.075) |
| Jewish | 0.009 (0.061) | 0.049 (0.056) | 0.015 (0.057) | 0.117 (0.060)** | 0.126 (0.095) |
| Muslim | 0.229 (0.089)** | 0.233 (0.082)*** | 0.275 (0.084)*** | 0.270 (0.087)*** | 0.298 (0.108)*** |
| Other | 0.018 (0.048) | 0.054 (0.043) | -0.007 (0.045) | 0.018 (0.047) | 0.016 (0.070) |
| Family Type (omitted: Single, no kids) | | | | | |
| Married/cohabiting, with kids | -0.049 (0.060) | -0.073 (0.055) | -0.063 (0.056) | -0.009 (0.058) | |
| Single, with kids | 0.030 (0.052) | -0.025 (0.047) | -0.043 (0.048) | 0.057 (0.050) | 0.003 (0.050) |
| Married/cohabiting, no kids | -0.006 (0.045) | -0.061 (0.041) | 0.028 (0.042) | 0.000 (0.044) | |
| Family size | 0.006 (0.017) | 0.002 (0.015) | -0.002 (0.016) | 0.003 (0.016) | 0.024 (0.018) |
| Immigrant | -0.010 (0.030) | -0.012 (0.028) | 0.025 (0.028) | -0.004 (0.029) | 0.008 (0.042) |
| Age (omitted: 35-44 yrs) | | | | | |
| 18-24 years | 0.007 (0.050) | -0.036 (0.046) | -0.060 (0.047) | -0.051 (0.049) | -0.139 (0.075)* |
| 25-34 years | 0.076 (0.036)** | 0.009 (0.033) | 0.022 (0.034) | 0.029 (0.035) | -0.050 (0.044) |

| Dependent Variable/ Explanatory variables | Any problem | Problem sleeping since 9/11 | Problem concentrating at work since 9/11 | Prefers to stay at home after 9/11 | Cut freedom of children after 9/11 |
|--|----------------------|-----------------------------------|---|--|--|
| 45-59 years | -0.019 (0.038) | -0.000 (0.035) | -0.002 (0.036) | -0.039 (0.037) | 0.005 (0.049) |
| >= 60 years | -0.216 (0.052)*** | -0.151 (0.047)*** | -0.175 (0.049)*** | -0.144 (0.050)*** | -0.209 (0.147) |
| Respondent is male | -0.143 (0.029)*** | -0.145 (0.026)*** | -0.074 (0.027)*** | -0.137 (0.028)*** | -0.109 (0.042)*** |
| Race (omitted: non- Hispanic White) | | | | | |
| Non-Hispanic Black | 0.005 (0.043) | -0.035 (0.039) | -0.061 (0.040) | 0.122 (0.042)*** | 0.058 (0.064) |
| Hispanic | -0.008 (0.042) | -0.040 (0.038) | -0.062 (0.039) | 0.093 (0.041)** | 0.116 (0.061)* |
| Other | -0.020 (0.058) | -0.015 (0.053) | 0.007 (0.054) | 0.112 (0.057)** | 0.149 (0.084)* |
| Borough of residence ¹ (omitted: Rest of Manhattan) | | | | | |
| Proximity to Ground 0 | -0.059 (0.054) | -0.016 (0.049) | -0.083 (0.050)* | 0.021 (0.052) | 0.053 (0.081) |
| Rest of Bronx | -0.025 (0.048) | -0.041 (0.044) | -0.021 (0.045) | -0.020 (0.047) | 0.109 (0.070) |
| Rest of Kingsborough | -0.087 (0.046)* | -0.088 (0.042)** | -0.137 (0.043)*** | -0.049 (0.044) | 0.019 (0.070) |
| Rest of Queens | -0.061 (0.044) | -0.049 (0.040) | -0.050 (0.041) | -0.017 (0.043) | -0.035 (0.068) |
| Rest of Staten Island | -0.130 (0.078)* | -0.077 (0.072) | -0.078 (0.074) | -0.008 (0.076) | -0.086 (0.107) |
| Family Income (omitted: >=500 % poverty line) | | | | | |
| FI <100 % poverty line | -0.028 (0.047) | -0.014 (0.043) | 0.008 (0.044) | -0.047 (0.045) | -0.072 (0.071) |
| 200% poverty line > FI >=100 % poverty line | -0.034 (0.047) | -0.046 (0.043) | 0.008 (0.044) | -0.068 (0.046) | 0.029 (0.065) |
| 300% poverty line >FI >= 200% poverty line | -0.040 (0.051) | -0.062 (0.047) | -0.029 (0.048) | -0.064 (0.050) | -0.025 (0.069) |
| 500% poverty line >FI >= 300% poverty line | -0.043 (0.041) | -0.036 (0.038) | -0.022 (0.039) | -0.066 (0.040) | -0.062 (0.059) |
| Respondent or family member lost job | 0.124 (0.040)*** | 0.116 (0.038)*** | 0.146 (0.038)*** | 0.179 (0.039)*** | 0.151 (0.052)*** |

Note: ¹ An index of physical and mental health problems that goes from 0 to 4.

² Married/co-habiting with kids as the omitted category. *0.05<p<=0.10, ** 0.01<p<=0.05, *** p<0.01

Appendix Table 1d. OLS Estimates of the Determinants of New Health Problems Faced by Children Since September 11

| Dependent Variable/ Explanatory variables | New Health problems since 9/11 | Sought help for new health problems | New post 9/11 health problems continue | Any health problem since 9/11 | No. of new health problems ¹ |
|--|--------------------------------------|--|---|-------------------------------------|---|
| Parent's Education (omitted group: BA Plus) | | | | | |
| Less than High School | 0.018 (0.040) | -0.296 (0.495) | -0.012 (0.029) | 0.097 (0.068) | 0.420 (0.180)** |
| High School | -0.012 (0.034) | -0.159 (0.549) | -0.019 (0.025) | 0.092 (0.058) | 0.250 (0.153) |
| Some College | 0.005 (0.032) | -0.087 (0.381) | -0.025 (0.023) | 0.038 (0.054) | 0.190 (0.142) |
| Activity Limiting Disability | 0.104 (0.038)*** | 0.242 (0.279) | 0.052 (0.028)* | 0.027 (0.065) | 0.295 (0.171)* |
| Religion (omitted group: Protestant) | | | | | |
| Roman Catholic | 0.067 (0.041)* | 0.054 (0.662) | 0.033 (0.029) | 0.080 (0.069) | 0.446 (0.181)** |
| Other Catholic | 0.038 (0.045) | -0.169 (0.679) | -0.001 (0.032) | 0.072 (0.076) | 0.320 (0.200) |
| Jewish | 0.146 (0.058)** | 0.167 (0.533) | 0.089 (0.042)** | 0.069 (0.097) | 0.315 (0.257) |
| Muslim | 0.073 (0.064) | -0.412 (0.624) | 0.046 (0.046) | 0.180 (0.108)* | 0.918 (0.287)*** |
| Other | 0.044 (0.042) | 0.103 (0.662) | 0.016 (0.031) | 0.037 (0.071) | 0.174 (0.189) |
| Family Type (omitted group: two- parent family) | | | | | |
| Single Parent | 0.005 (0.030) | 0.313 (0.310) | 0.024 (0.022) | 0.102 (0.050)** | 0.150 (0.133) |
| Immigrant | -0.008 (0.010) | 0.085 (0.099) | -0.009 (0.007) | 0.018 (0.017) | 0.021 (0.045) |
| Family size | 0.032 (0.025) | -0.078 (0.239) | -0.001 (0.018) | 0.109 (0.042)** | 0.149 (0.112) |
| Age (omitted group: 0-10 years) | | | | | |
| 11-14 years | 0.024 (0.027) | -0.412 (0.298) | -0.007 (0.019) | 0.133 (0.045)*** | 0.231 (0.119)* |
| 15-18 years | -0.011 (0.030) | -0.280 (0.293) | -0.019 (0.022) | -0.004 (0.050) | -0.024 (0.132) |
| Responding parent is male | -0.037 (0.026) | 0.004 (0.318) | -0.024 (0.019) | -0.154 (0.043)*** | -0.348 (0.114)*** |
| Child is male | 0.003 (0.022) | -0.087 (0.218) | 0.007 (0.016) | 0.008 (0.037) | 0.028 (0.097) |

| Dependent Variable/ Explanatory variables | New Health problems since 9/11 | Sought help for new health problems | New post 9/11 health problems continue | Any health problem since 9/11 | No. of new health problems ¹ |
|---|--------------------------------------|--|---|-------------------------------------|---|
| Parent's Race (omitted group: non-Hispanic White) | | | | | |
| Non-Hispanic Black | 0.007 (0.039) | -0.233 (0.416) | 0.022 (0.028) | 0.067 (0.065) | 0.239 (0.172) |
| Hispanic | 0.006 (0.036) | -0.096 (0.337) | 0.014 (0.026) | 0.118 (0.061)* | 0.205 (0.162) |
| Other | -0.035 (0.051) | -0.111 (0.556) | 0.015 (0.037) | 0.014 (0.086) | -0.088 (0.228) |
| Borough of residence (omitted: Rest of Manhattan) | | | | | |
| Proximity to Ground zero | 0.008 (0.049) | -0.092 (0.412) | 0.024 (0.035) | 0.056 (0.082) | 0.034 (0.218) |
| Rest of Bronx | -0.036 (0.042) | 0.189 (0.388) | -0.033 (0.030) | 0.064 (0.071) | -0.126 (0.188) |
| Rest of Kingsborough | -0.078 (0.042)* | 0.048 (0.413) | -0.046 (0.030) | -0.076 (0.071) | -0.237 (0.187) |
| Rest of Queens | -0.037 (0.041) | -0.110 (0.385) | -0.040 (0.030) | -0.051 (0.069) | -0.264 (0.182) |
| Rest of Staten Island | 0.018 (0.064) | 0.002 (0.634) | 0.006 (0.047) | -0.127 (0.109) | -0.478 (0.288)* |
| Family Income (omitted: >=500 % poverty line) | | | | | |
| FI < 100% Poverty line | -0.049 (0.043) | 0.262 (0.424) | -0.021 (0.031) | -0.205 (0.073)*** | -0.455 (0.193)** |
| 200% poverty line >FI >= 100% poverty line | 0.020 (0.039) | 0.060 (0.309) | 0.014 (0.028) | -0.079 (0.066) | -0.217 (0.175) |
| 300% poverty line >FI >= 200% poverty line | -0.013 (0.041) | 0.461 (0.396) | -0.004 (0.030) | -0.155 (0.069)** | -0.518 (0.183)*** |
| 500% poverty line >FI >= 300% poverty line | 0.036 (0.036) | 0.003 (0.351) | 0.033 (0.026) | -0.017 (0.060) | 0.018 (0.159) |
| Parent or other family member lost job | 0.028 (0.032) | -0.220 (0.313) | 0.024 (0.023) | 0.049 (0.053) | 0.258 (0.141)* |

Note: ¹ An index of physical and mental health problems that goes from 0 to 6.

*0.05 < p <= 0.10, ** 0.01 < p <= 0.05, *** p <= 0.01

Appendix Table 1e. OLS Estimates of the Determinants of Anxiety among Children Since September 11

| Dependent Variable/ | Problem sleeping since 9/11 | Problem concentrating since 9/11 | Child prefers to stay at home | Child worried that parent might go away | Child is afraid of crowded places |
|---|-----------------------------------|--|----------------------------------|---|--------------------------------------|
| Explanatory variables | | | | | |
| Parent's Education (omitted group: BA Plus) | | | | | |
| Less than High School | 0.062 (0.047) | 0.041 (0.048) | 0.028 (0.057) | 0.168 (0.065)*** | 0.104 (0.055)* |
| High School | 0.043 (0.039) | 0.051 (0.041) | 0.008 (0.048) | 0.149 (0.055)*** | 0.040 (0.046) |
| Some College | -0.005 (0.037) | 0.027 (0.038) | 0.017 (0.045) | 0.084 (0.051)* | -0.016 (0.043) |
| Activity Limiting Disability | 0.113 (0.044)** | 0.054 (0.046) | 0.055 (0.055) | 0.093 (0.061) | 0.107 (0.052)** |
| Religion (omitted group: Protestant) | | | | | |
| Roman Catholic | 0.090 (0.047)* | -0.006 (0.048) | 0.133 (0.058)** | 0.000 (0.065) | 0.041 (0.055) |
| Other Catholic | 0.058 (0.051) | 0.041 (0.053) | 0.085 (0.064) | -0.004 (0.072) | 0.035 (0.061) |
| Jewish | 0.062 (0.067) | 0.071 (0.069) | 0.086 (0.081) | 0.031 (0.092) | 0.078 (0.078) |
| Muslim | 0.200 (0.074)*** | 0.060 (0.077) | 0.127 (0.090) | -0.012 (0.103) | 0.259 (0.086)*** |
| Other | 0.095 (0.049)* | -0.015 (0.050) | 0.028 (0.060) | -0.049 (0.068) | 0.042 (0.057) |
| Family Type (omitted group: two-parent family) | | | | | |
| Single Parent | 0.015 (0.035) | -0.016 (0.036) | -0.063 (0.042) | 0.081 (0.048)* | -0.032 (0.041) |
| Family size | 0.004 (0.012) | -0.007 (0.012) | 0.002 (0.014) | 0.011 (0.016) | -0.012 (0.014) |
| Immigrant | 0.012 (0.029) | 0.036 (0.030) | -0.008 (0.035) | 0.131 (0.040)*** | 0.082 (0.034)** |
| Age (omitted group: 0-10 years) | | | | | |
| 11-14 years | 0.057 (0.031)* | 0.083 (0.032)*** | 0.083 (0.038)** | 0.126 (0.043)*** | 0.121 (0.037)*** |
| 15-18 years | 0.031 (0.034) | 0.095 (0.035)*** | -0.024 (0.042) | -0.026 (0.047) | 0.014 (0.040) |
| Responding parent's gender | -0.084 (0.029)*** | -0.050 (0.030)* | -0.085 (0.036)** | -0.093 (0.041)** | -0.063 (0.034)* |

| Dependent Variable/ | Problem sleeping since 9/11 | Problem concentrating since 9/11 | Child prefers to stay at home | Child worried that parent might go away | Child is afraid of crowded places |
|---|-----------------------------|----------------------------------|-------------------------------|---|-----------------------------------|
| Explanatory variables | | | | | |
| Child is male | 0.003 (0.025) | 0.007 (0.026) | 0.035 (0.031) | -0.006 (0.035) | 0.021 (0.029) |
| Parent's Race (omitted group: non-Hispanic White) | | | | | |
| Non-Hispanic Black | 0.056 (0.044) | 0.049 (0.046) | 0.122 (0.054)** | 0.013 (0.062) | 0.018 (0.052) |
| Hispanic | 0.017 (0.042) | 0.110 (0.043)** | 0.062 (0.051) | 0.087 (0.058) | 0.051 (0.049) |
| Other | -0.079 (0.059) | -0.011 (0.061) | 0.053 (0.072) | -0.048 (0.082) | -0.028 (0.069) |
| Borough of residence (omitted: Rest of Manhattan) | | | | | |
| Proximity to Ground zero | -0.105 (0.056)* | -0.003 (0.058) | -0.025 (0.069) | 0.047 (0.078) | -0.122 (0.066)* |
| Rest of Bronx | -0.089 (0.048)* | -0.119 (0.050)** | 0.003 (0.059) | 0.031 (0.067) | -0.067 (0.057) |
| Rest of Kingsborough | -0.076 (0.048) | -0.095 (0.050)* | -0.086 (0.059) | -0.016 (0.067) | -0.118 (0.057)** |
| Rest of Queens | -0.075 (0.047) | -0.070 (0.049) | -0.040 (0.058) | -0.008 (0.065) | -0.136 (0.055)** |
| Rest of Staten Island | -0.061 (0.076) | -0.074 (0.078) | -0.037 (0.091) | 0.082 (0.105) | -0.141 (0.088) |
| Family Income (omitted: >=500 % poverty line) | | | | | |
| FI < 100% Poverty line | -0.085 (0.050)* | -0.021 (0.051) | -0.007 (0.061) | -0.143 (0.069)** | -0.011 (0.058) |
| 200% poverty line >FI >= 100% poverty line | -0.085 (0.045)* | 0.019 (0.047) | 0.026 (0.055) | -0.084 (0.063) | -0.011 (0.053) |
| 300% poverty line >FI >= 200% poverty line | -0.126 (0.048)*** | -0.066 (0.049) | -0.024 (0.058) | -0.104 (0.066) | -0.070 (0.055) |
| 500% poverty line >FI >= 300% poverty line | -0.025 (0.041) | 0.029 (0.043) | 0.019 (0.050) | 0.026 (0.057) | -0.014 (0.048) |
| Parent or other family member lost job | 0.062 (0.036)* | 0.075 (0.038)** | 0.009 (0.045) | 0.185 (0.051)*** | 0.064 (0.043) |

Note: *0.05<p<=0.10, ** 0.01<p<0.05, *** p<0.01

Appendix Table 2a. Estimates of trends in indicators of adult well-being.

| Dependent Variable/ Explanatory variables | Adult in good to excellent health | Respondent works or not | Family members did not experience hunger | Family can borrow \$1000 | Family members were not victims of crime | Adult rates NYC as good to excellent place to live | Adult rates police protection as good or very good | Adult rates neighborhood as good or very good |
|--|--|----------------------------|--|--------------------------------|--|---|--|--|
| Wave3 | 0.002 (0.014) | -0.016 (0.016) | 0.040 (0.018)** | 0.072 (0.018)*** | 0.024 (0.011)** | 0.199 (0.018)*** | 0.075 (0.019)*** | 0.016 (0.018) |
| Wave2 | -0.052 (0.014)*** | 0.014 (0.016) | 0.004 (0.018) | 0.079 (0.018)*** | 0.021 (0.011)* | 0.103 (0.018)*** | 0.021 (0.019) | 0.003 (0.017) |
| Education (omitted: BA Plus) Less than High School | -0.184 (.019)*** | -0.260 (0.023)*** | -0.059 (0.025)** | -0.244 (0.025)*** | -0.019 (0.016) | -0.068 (0.025)*** | 0.016 (0.027) | -0.118 (0.025)*** |
| High School | -0.070 (0.015)*** | -0.0147 (0.018)*** | -0.035 (0.023)* | -0.137 (0.020)*** | -0.014 (0.012) | -0.069 (0.020)*** | -0.020 (0.021) | -0.084 (0.019)*** |
| Some College | -0.020 (0.015)* | -0.058 (0.018)*** | -0.033 (0.024) | -0.116 (0.019)*** | -0.004 (0.012) | -0.016 (0.019) | -0.011 (0.021) | -0.052 (0.019)*** |
| Activity Limiting Disability | .455 (.017)*** | 0.315 (0.020)*** | 0.125 (0.018)*** | 0.117 (0.022)*** | 0.048 (0.014)*** | 0.052 (0.022)** | 0.055 (0.024)** | 0.058 (0.022)*** |
| Religion (omitted: Protestant) | | | | | | | | |
| Roman Catholic | -0.004 (0.017) | -0.014 (0.020) | 0.005 (0.022) | 0.025 (0.022) | 0.017 (0.014) | 0.021 (0.022) | 0.015 (0.024) | 0.030 (0.022) |
| Other Catholic | -0.014 (0.019) | 0.002 (0.024) | -0.020 (0.024) | 0.028 (0.026) | 0.020 (0.016) | 0.009 (0.026) | 0.040 (0.028) | 0.019 (0.026) |
| Jewish | -0.040 (0.025)* | -0.060 (0.029)** | 0.038 (0.039) | 0.060 (0.032)** | -0.010 (0.020) | 0.055 (0.032)* | -0.017 (0.035) | 0.085 (0.032)*** |
| Muslim | 0.036 (0.031) | -0.048 (0.037) | -0.006 (0.039) | -0.087 (0.040)** | -0.005 (0.025) | 0.042 (0.040) | 0.032 (0.043) | 0.065 (0.039) |
| Other | -0.009 (0.020) | 0.012 (0.024) | 0.024 (0.026) | 0.014 (0.026) | -0.017 (0.016) | 0.006 (0.026) | -0.0001 (0.028) | 0.056 (0.025)** |
| Family Type | | | | | | | | |
| Married/cohabitating, no kids | .028 (0.019) | 0.077 (0.023)*** | -0.010 (0.028) | 0.026 (0.025)* | 0.024 (0.016) | -0.017 (0.025) | 0.048 (0.027)* | 0.048 (0.025)** |
| Single, with kids | .002 (0.020) | 0.092 (0.025)*** | -0.032 (0.025) | -0.039 (0.027) | -0.007 (0.017) | -0.096 (0.027)*** | 0.015 (0.029) | -0.076 (0.026)** |
| Married/cohabitating, with kids | .009 (0.023) | 0.076 (0.028)** | 0.039 (0.030) | 0.056 (0.030) | 0.023 (0.019) | -0.060 (0.031)** | 0.016 (0.033) | 0.040 (0.030) |
| Immigrant | -0.024 (0.012)** | 0.024 (0.014) | -0.008 (0.015) | -0.069 (0.015)*** | -0.012 (0.010) | -0.047 (0.016)*** | 0.003 (0.017) | -0.069 (0.015) |
| Family size | 0.004 (0.006) | -0.041 (0.008)*** | -0.008 (0.008) | -0.007 (0.008) | -0.011 (0.005)* | 0.002 (0.008) | -0.008 (0.009) | -0.014 (0.008) |
| Age | | | | | | | | |

| Dependent Variable/ Explanatory variables | Adult in good to excellent health | Respondent works or not | Family members did not experience hunger | Family can borrow \$1000 | Family members were not victims of crime | Adult rates NYC as good to excellent place to live | Adult rates police protection as good or very good | Adult rates neighborhood as good or very good |
|--|--|----------------------------|--|--------------------------------|--|---|--|--|
| 18-24 years | 0.042 (0.020)* | -0.107 (0.024)*** | 0.031 (0.024) | 0.079 (0.026)*** | -0.023 (0.016) | 0.038 (0.026) | -0.001 (0.028) | 0.016 (0.026) |
| 25-34 years | .030 (0.014)** | -0.025 (0.017) | 0.028 (0.019) | 0.043 (0.018)** | 0.009 (0.011) | -0.0005 (0.019) | -0.0008 (0.020) | 0.009 (0.018) |
| 45-59 years | -0.021 (0.016) | -0.029 (0.019) | 0.022 (0.022) | 0.008 (0.020) | 0.021 (0.013) | 0.046 (0.020)** | 0.014 (0.022) | 0.070 (0.020)*** |
| >=60 years | -0.065 (0.022) | -0.456 (0.026) | 0.071 (0.027)*** | -0.126 (0.029)*** | 0.040 (0.018)** | 0.022 (0.029) | 0.043 (0.031) | 0.029 (0.028) |
| Responding parent is male | 0.029 (0.012)** | 0.175 (0.014) | -0.021 (0.016) | 0.039 (0.015)*** | -0.012 (0.010) | -0.001 (0.015) | 0.0008 (0.017) | 0.016 (0.015) |
| Parent's Race (omitted group: non-Hispanic White) | | | | | | | | |
| Non-Hispanic Black | -0.007 (0.017) | 0.035 (0.020) | -0.015 (0.024) | -0.146 (0.022)*** | -0.020 (0.014)* | -0.126 (0.022)*** | -0.264 (0.024)*** | -0.173 (0.022)*** |
| Hispanic | -0.081 (0.016)*** | -0.013 (0.020) | -0.023 (0.023) | -0.194 (0.021)*** | -0.027 (0.013)** | -0.134 (0.022)*** | -0.224 (0.023)*** | -0.212 (0.021)*** |
| Other | -0.081 (0.016)*** | -0.012 (0.029) | 0.011 (0.034) | -0.067 (0.031)*** | -0.024 (0.019) | -0.046 (0.032)* | -0.139 (0.034)*** | -0.077 (0.031)*** |
| Borough of residence | | | | | | | | |
| Bronx | -0.029 (0.026) | -0.033 (0.031) | -0.094 (0.038)** | -0.040 (0.034) | -0.020 (0.021) | -0.078 (0.034)** | -0.084 (0.036)** | -0.133 (-0.033)*** |
| Kingsborough | -0.015 (0.024) | -0.040 (0.029) | -0.047 (0.037) | -0.047 (0.032) | -0.051 (0.020)** | -0.085 (0.032)*** | -0.115 (0.034)*** | -0.116 (0.031)*** |
| Manhattan | -0.009 (0.026) | -0.025 (0.031) | -0.084 (0.040) | -0.043 (0.034) | -0.037 (0.021)** | -0.008 (0.034) | -0.052 (0.037) | -0.100 (0.034)*** |
| Queens | 0.004 (0.024) | -0.007 (0.029) | -0.062 (0.037)* | -0.035 (0.032) | -0.011 (0.020) | -0.046 (0.032) | -0.067 (0.034)** | -0.031 (0.031) |

Note: ¹ An index of physical and mental health problems that goes from 0 to 6.
+0.05<p<=0.10, * 0.01<p<=0.05, ** p<=0.01

Appendix Table 2b. Estimates of trends in indicators of youth well-being.

| Dependent Variable/ Explanatory variables | Child in good to excellent health | Child was suspended from school | Child often or sometimes doesn't get along with others | Child often or sometimes feels sad or depressed |
|---|---|---------------------------------------|---|---|
| Wave3 | -0.003 (0.012) | -0.019 (0.014) | -0.060 (0.021)*** | 0.021 (0.021) |
| Wave 2 | -0.013 (0.012) | 0.0006 (0.014) | -0.021 (0.021) | 0.018 (0.021) |
| Parent's Education (omitted group: BA Plus) | | | | |
| Less than High School | -0.059 (0.018)*** | 0.043 (0.020)** | 0.065 (0.030)** | 0.069 (0.030)** |
| High School | -0.019 (0.014)* | 0.032 (0.016)** | 0.039 (0.024) | 0.057 (0.024)** |
| Some College | -0.017 (0.014) | 0.029 (0.016)** | -0.013 (0.024) | 0.018 (0.024) |
| Activity Limiting Disability | 0.190 (0.021)*** | -0.054 (0.023)** | -0.188 (0.035)*** | -0.155 (0.035)*** |
| Religion (omitted group: Protestant) | | | | |
| Roman Catholic | -0.029 (0.016)* | -0.009 (0.017) | -0.014 (0.027) | -0.022 (0.027) |
| Other Catholic | -0.061 (0.018)*** | 0.028 (0.021) | 0.079 (0.031)** | -0.031 (0.031) |
| Jewish | -0.035 (0.025) | -0.002 (0.028) | 0.021 (0.044) | 0.011 (0.044) |
| Muslim | 0.009 (0.027) | -0.0003 (0.032) | -0.012 (0.047) | -0.005 (0.047) |
| Other | -0.014 (0.019) | -0.002 (0.022) | 0.024 (0.033) | -0.003 (0.033) |
| Family Type | | | | |
| Single, with kids | -0.024 (0.013)* | -0.009 (0.014) | 0.033 (0.021) | 0.104 (0.021)*** |
| Immigrant | -0.019 (0.011)* | -0.025 (0.012)** | -0.003 (0.019) | 0.012 (0.019) |
| Family size | -0.019 (0.011) | 0.0008 (0.005) | 0.001 (0.008) | 0.001 (0.008) |
| Age | | | | |
| =<10 years | 0.027 (0.013) | -0.031 (0.013)*** | 0.074 (0.022)*** | -0.101 (0.021)*** |
| 11-14 years | 0.017 (0.016) | Dropped | 0.070 (0.025)*** | Dropped |
| 15-18 years | Dropped | 0.032 (0.015) | Dropped | 0.038 (0.025) |
| Child is male | -0.011 (0.010) | 0.037 (0.011)*** | 0.042 (0.017)** | 0.012 (0.017) |
| Parent's Race (omitted group: non-Hispanic White) | | | | |
| Non-Hispanic Black | -0.014 (0.017) | 0.057 (0.019)** | 0.017 (0.029) | -0.067 (0.029)** |
| Hispanic | -0.027 (0.016)* | 0.016 (0.018) | -0.017 (0.027) | -0.031 (0.027) |
| Other | -0.038 (0.024)* | 0.007 (0.028) | 0.026 (0.041) | -0.005 (0.041) |
| Borough of residence | | | | |
| Bronx | -0.007 (0.023) | 0.047 (0.026) | 0.043 (0.039) | -0.015 (0.039) |
| Dependent Variable/ Explanatory variables | Child in good to excellent health | Child was suspended from school | Child often or sometimes doesn't get along with others | Child often or sometimes feels sad or depressed |

| | | | | |
|--------------|------------------|------------------|------------------|------------------|
| Kingsborough | 0.011 (0.022) | 0.009 (0.024) | 0.020 (0.037) | 0.009 (0.037) |
| Manhattan | 0.013 (0.025) | 0.033 (0.028) | 0.050 (0.042) | 0.067 (0.042) |
| Queens | 0.012 (0.022) | 0.013 (0.024) | 0.010 (0.037) | 0.007 (0.037) |

Appendix 3: Studies on the effects of September 11

- ?? 9/11 United Services Group: A Study of the Ongoing Needs of People Affected by the World Trade Center Disaster.
- ?? America Red Cross in Greater New York (ARCGNY) and Strategic Surveys International: Survey to assess critical needs in the aftermath of September 11 two months and five months after the attacks.
- ?? American Psychological Association (APA) and The Infinite Mind public radio: National survey on depression, anxiety, post-traumatic stress and coping behavior after September 11.
- ?? Asian American Federation of New York: Economic impact of 9/11 on Chinatown.
- ?? Center for Urban Epidemiologic Studies: use of cigarettes, alcohol, and marijuana among Manhattan, New York residents after the 9/11 terrorist attacks.
- ?? Center of Disease Control: Survey of Manhattan residents living below 110th Street on asthma and psychological impact of the attacks (life-stressors, depression, risk for PTSD).
- ?? Citizens' Committee for Children and Belden Russonello & Stewart: Survey about New York City children's and families' responses after 9/11.
- ?? City of New York Office of the Comptroller: Fiscal impact of 9/11 on NYC.
- ?? Fiscal Policy Institute: Impact of 9/11 on employment.
- ?? Fiscal Policy Institute: Impact of 9/11 on wage workers.
- ?? Food for Survival, NYC Foodbank: Changes in Food Assistance after 9/11.
- ?? Hunter College Graduate School Social Research on behalf of the New York City Coalition Against Hunger: Changes of the demand in food pantries in the 6 months following 9/11.
- ?? McPheters & Company, and Beta Research: Changing American Lives (national survey on use of time; religious behavior; attitudes towards media; attitudes towards work; leisure activities; financial behavior; fears and concerns after September 11).
- ?? Milken Institute: The Impact of September 11 on U.S. Metropolitan Economics.
- ?? National Opinion Research Center at Chicago University (NORC): National Tragedy Study (reactions after the attacks, physical and emotional responses to the tragedy, psychological well-being, and items included in the General Social Surveys).

- ?? National Public Radio, Henry Kaiser Foundation, and Harvard University's Kennedy School: Poll on Civil Liberties Study (national survey on trust and confidence in government; privacy, civil liberties and press freedom; fears and worries).
- ?? New York Academy of Medicine, Columbia University School of Public Health and Schulman, Ronca & Bucavalas Inc.: Research program to assess the psychological consequences of the WTC attacks in the entire New York metro area.
- ?? New York City Board of Education: Effects of the World Trade Center Attack on NYC Public School Students.
- ?? New York City Partnership: Analysis of economic impact of 9/11; how to accelerate New York City's recovery.
- ?? New York Governor and State Division of the Budget: Current estimated cost of rebuilding New York City.
- ?? New York State Senate Finance Committee: Financial Impact of the World Trade Center Attack.
- ?? RAND and University of California: National survey on reactions to the terrorist attacks and perceptions of their children's reactions.
- ?? Southern University: Survey on African American college students reactions to the terrorist acts of 9/11.
- ?? The Urban Justice Center: Ripple Effect. The Crisis in NYC's Low-Income Communities after September 11th.
- ?? United Way of New York City: Beyond Ground Zero. Challenges and Implications for Human Services in New York City Post September 11.
- ?? University of Michigan Institute for Social Research (ISR): How Americans Respond Survey (attitudes towards homeland security measures and civil liberties; attitudes towards immigrants, racial and ethnic groups; confidence in institutions; volunteering and charitable activity; use of time; depression, anxiety and distress).
