



ADVANCING HEALTH EDUCATION &amp; RESEARCH



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AVA Research Reviews provides AVA members with recent published, peer-reviewed articles in a broad array of violence and abuse topics. The goal is to highlight and disseminate violence and abuse research in a timely fashion, and to enhance healthcare providers' practice by fostering the educational mission of AVA

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# AVA Research Review

## ADVANCING HEALTH EDUCATION & RESEARCH

### Review Title:

Examining Posttraumatic  
Symptomatology following  
Direct and Indirect  
Exposure to the September  
11, 2001 Terrorist Attacks

### Reviewer(s):

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### Article:

Garfin, D.R., Poulin, M.J.,  
Blum S., & Silver, R.C.  
(2018). Aftermath of Terror:  
A Nationwide Longitudinal  
Study of Posttraumatic  
Stress and Worry Across the  
Decade Following the  
September 11, 2001  
Terrorist Attacks. *Journal of  
Traumatic Stress*,  
31:146-156.

### Introduction:

The September 11, 2001 (9/11) terrorist attacks have been linked with adverse psychological outcomes among residents of the United States who were exposed directly and indirectly, but little is known about the impact of this collective trauma over time. This article examined 9/11-related posttraumatic stress (PTS) symptomatology, as well as the presence of fear and worry about the possibility of future terrorism, in a nationally representative sample over time. By attending to direct and indirect exposure, as well as demographic features within the sample, the authors offer evidence for the multidimensional nature of trauma response.

**Brief Overview:**

The psychological effects of direct and indirect exposure to the 9/11 terrorist attacks in the United States have been well-documented by researchers, particularly in the early years following the attacks. These studies indicated that PTSD symptoms were widespread in the U.S. in the aftermath of 9/11, and in some cases persisted for several years after the attacks. Several studies have also examined the long-term psychological effects of 9/11 on residents of the New York metropolitan area and first-responders. Yet, there are no studies to date that examine the long-term effects of 9/11 media exposure in a national sample of U.S. residents. Studies conducted in the early months and years following the attacks found associations between 9/11 media exposure and PTSD symptomatology. This suggests that both direct and indirect exposure to the attacks may have long-term psychological consequences.

**Aims/Hypotheses:**

The study examined long-term consequences of 9/11 on U.S. residents by measuring 9/11-related PTSD and ongoing fear and worry over future terrorism in two nationally representative U.S. samples across 7 years (2002-2009).

The authors hypothesized that a small percentage of U.S. residents would report high levels of long-term 9/11-related PTSD for many years after the attacks, despite a decrease in overall prevalence. "Long-term," in this study, consisted of 5 to 7 years post-9/11. Additionally, the authors hypothesized that variables that predicted high post-9/11 PTSD in the short- and medium- term would continue to be associated with elevated PTSD over time. Finally, the authors hypothesized that long-term 9/11-related PTSD would be associated with fear and worry about future acts of terrorism over time.

**Method:**

The authors analyzed data from a longitudinal study of a nationally representative sample of U.S. residents. The sample was drawn from an internet-based survey research company's database whose distribution was tracked according to the U.S. census benchmarks with regard to age, gender, race, Hispanic ethnicity, geographical region, employment status, income, education, and other demographic variables. Using a stratified random sampling design, the authors identified two adult cohorts to be assessed via online surveys over the course of 7 years.

Both cohorts were assessed for 9/11-related PTSD using the Posttraumatic Stress Disorder Checklist (PCL). Cohort 1 (N=2,054) was assessed in 3 waves annually between 2002-2004; Cohort 2 (N=1,613) was assessed in two waves annually between 2006-2009. Cohort 2 was also assessed for prior mental health status, exposure to prior negative life events, 9/11 exposure, and ongoing fear and worry about terrorism. .

**Relevant Findings:**

The authors found that a consistent minority of U.S. residents (between 3.6-5.2% of the sample) endorsed moderate to high levels of 9/11-related PTSD symptoms within the first six years following the attacks. Of the participants who met criteria for high PTSD, approximately 60% did not report any prior mental health diagnoses. Less education, minority ethnicity, and lower income were associated with higher levels of PTSD symptoms at 5 to 6 years post-9/11. A prior mental health diagnosis and the presence of other negative life events were also associated with increased PTSD when the authors controlled for demographic effects. Both direct and media-based exposure to 9/11 were significant predictors of long-term, 9/11-related PTSD symptoms.

Finally, PTS reported 5 years post-9/11 was a significant predictor of ongoing worry about terrorism 6 to 7 years following the attacks.

#### Author's Conclusions:

The results of this study contribute to several areas within the study of trauma response at the individual and collective levels. Reports from individuals exposed to the attacks indicated significantly higher levels of PTS compared to those who learned of the attacks after they occurred. These reports confirmed that some predictors (previous mental health diagnosis, less education, lower income, minority ethnicity) that were associated with short- and medium- term posttraumatic reactions were also associated with long-term posttraumatic reactions. These reports also indicated that both direct and indirect (via media) exposure to 9/11 were significant predictors of long-term PTS. Evidence of distress among indirectly exposed individuals provides support for ongoing consideration of whether current diagnostic criteria for PTSD and related symptomatology are adaptation.

sufficient for identifying the range of adjustment processes to stressful events which exist along the continuum of posttraumatic adaptation. The importance of recognizing the multidimensional features of posttraumatic response is underscored by reports of fear and worry about future attacks, which are distinct from PTS about the 9/11 attacks themselves and represent an additional aspect of psychological stress related to the attacks. Findings demonstrating distress among indirectly exposed individuals supports ongoing critical thinking about whether ongoing exposure to graphic media coverage of traumatic events may be contributing to the emergence and persistence of PTS on a national level.

#### Limitations:

Although many participants in this study reported some symptoms of 9/11-related PTS several years after the attacks, the degree to which these PTS symptoms impacted the health and functioning of participants remains unclear. Additional research is therefore needed to determine the clinical and practical significance of long-term, 9/11-related PTS symptoms reported by participants in this study.

Other limitations include the potential for recall bias in the sample, as well as the correlational nature of the data. Because the survey data on 9/11 exposure was collected several years after the attacks, there is the potential for recall bias in the sample. The traumatic nature of 9/11 could also lead to recall bias, given that traumatic memories are sometimes suppressed given their distressing content. The correlational design of the study also prevented any conclusions about causality between 9/11 exposure and 9/11-related PTS symptoms. Because certain predictors of the study attrition have been linked to increased psychological distress (e.g., minority status), it is also possible that the long-term consequences of 9/11 were underestimated in this study.