

# The Association of Prolonged Grief Disorder and Posttraumatic Stress Disorder with Quality of Life Domains in Bereaved Survivors of the 9/11 Terrorist Attacks



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## INTRODUCTION

- 9/11 survivors (building occupants, passers-by, and residents in Lower Manhattan) are at increased risk for mental health disorders and reduced health-related quality of life (HRQoL) <sup>1</sup>
- PTSD is one of the most common mental health outcomes experienced by survivors <sup>2</sup>
- Adults bereaved by 9/11 may also suffer from prolonged grief disorder (PGD), a newly-defined clinical condition of unremitting and functionally-impairing grief
  - Between 2.5-3.5 years after 9/11, ~40% of bereaved adults met criteria for PGD<sup>3</sup>
- Both PGD and PTSD are often comorbid and have been associated with lower HRQoL <sup>4-6</sup>
- No studies have examined the effects of comorbid PTSD and PGD on HRQoL, which is expected to be greater than either alone
- Current study examined associations between PTSD, PGD, and HRQoL among 9/11 survivors to determine whether comorbidity has a multiplicative effect

## METHOD

### Sample

- Participants ( $n = 1033$ ) lived or worked near the World Trade Center on 9/11, and were bereaved on or after 9/11

### Procedure

- Completed 30-45 minute online survey using REDCap
- Data collected August 2023 - December 2024

### Measures

- HRQoL domains (physical, psychological, social relations, environment): WHOQOL-BREF-100
- Threshold for PGD: PG13-R  $\geq 30$  and Work and Social Adjustment Scale  $\geq 10$
- Threshold for PTSD: PCL5  $\geq 31$

### Statistical Analysis

- Participants were categorized into 4 groups: *PGD only* (1.7%); *PTSD only* (17.6%); *comorbid PGD and PTSD* (6.4%); and *neither PGD or PTSD* (74.3%)
- Linear regression analyses used to examine associations between group membership and HRQoL domains, controlling for age, sex, and time since loss

## PGD and PTSD were each negatively associated with several HRQoL domains.



Figure 1. Seth Harrison. (2021). Retrieved from: <https://www.usatoday.com/picture-gallery>

## The combined effect of PGD and PTSD reduced HRQoL more than either condition alone.

## RESULTS

- Mean age of participants was 61.4 years (SD = 9.6), 51% were female, 77.8% were White, and the mean time of bereavement was 13.6 years (SD = 11.0)
- Compared to participants in *neither PGD or PTSD*, those in *PTSD only* reported significantly lower scores (i.e., by 0.8-1.0 SD,  $p$ -values $<0.01$ ) on all HRQoL domains
- Similarly, those in *PGD only* reported lower HRQoL scores (by 0.7-0.9 SD,  $p$ -values $<0.05$ ) across all domains, except social relations
- Lower scores in the *comorbid PGD and PTSD* were almost double in magnitude (by 1.2-1.5 SD,  $p$ -values $<0.01$ ) across all HRQoL domains

## DISCUSSION

- This is the first study to examine the independent and combined associations of PTSD and PGD with HRQoL among 9/11 survivors
- Results indicated that PGD and PTSD are each negatively associated with several HRQoL domains
- When PGD and PTSD co-occur, the association with HRQoL is greater than the associations of either condition alone
- As data were collected more than 20 years after 9/11, findings demonstrate the long-term effects of this terrorism event within this population
- Additional research that examines the specific characteristics and symptoms of PGD and PTSD that affect HRQoL is necessary to aid in development of treatment and intervention strategies for 9/11 survivors struggling with these conditions

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