

## Introduction

- U.S. Army Mortuary Affairs (MA) Specialist Soldiers recover, identify, and evacuate the remains of the dead from the battlefield
- Their unique mission exposes them to violent death, personal effects (information and belongings) of the deceased, work in a combat environment, and other deployment-related stressors
- These exposures can be stressful<sup>1</sup> and have been associated with increased risk for psychological distress and psychiatric disorders,<sup>2,3</sup> which can diminish military readiness
- This study examines posttraumatic stress symptoms and probable posttraumatic stress disorder (PTSD) in pre- and post-deployment questionnaires from MA Soldiers over a 13-year period

## Methods

### Participants

- U.S. Army Soldiers ( $N = 1517$ ) were recruited from active duty and reserve component Quartermaster Companies that deployed to the Middle East (e.g., Iraq, Afghanistan) between 2005 and 2019
- Analyses include Soldiers ( $N = 1,304$ ) with the military occupational specialty “92M - Mortuary Affairs Specialist” and data from 2006-2018
- Demographics
  - **Age:** 17-57 ( $M = 26.7$ ,  $SD = 7.5$ )
  - **Gender:** male: 70.9%, female: 29.1%
  - **Married:** 46.2%
  - **Education:** high school or less: 37.8%, some college or more: 62.2%
  - **Race:** Black, non Hispanic: 14.9%, Hispanic: 38.7%, White, non Hispanic: 34.9%, other: 11.5%
  - **Pay grade:** E1-E3: 36.9%, E4-E5: 51.3%, E6-E9: 11.8%

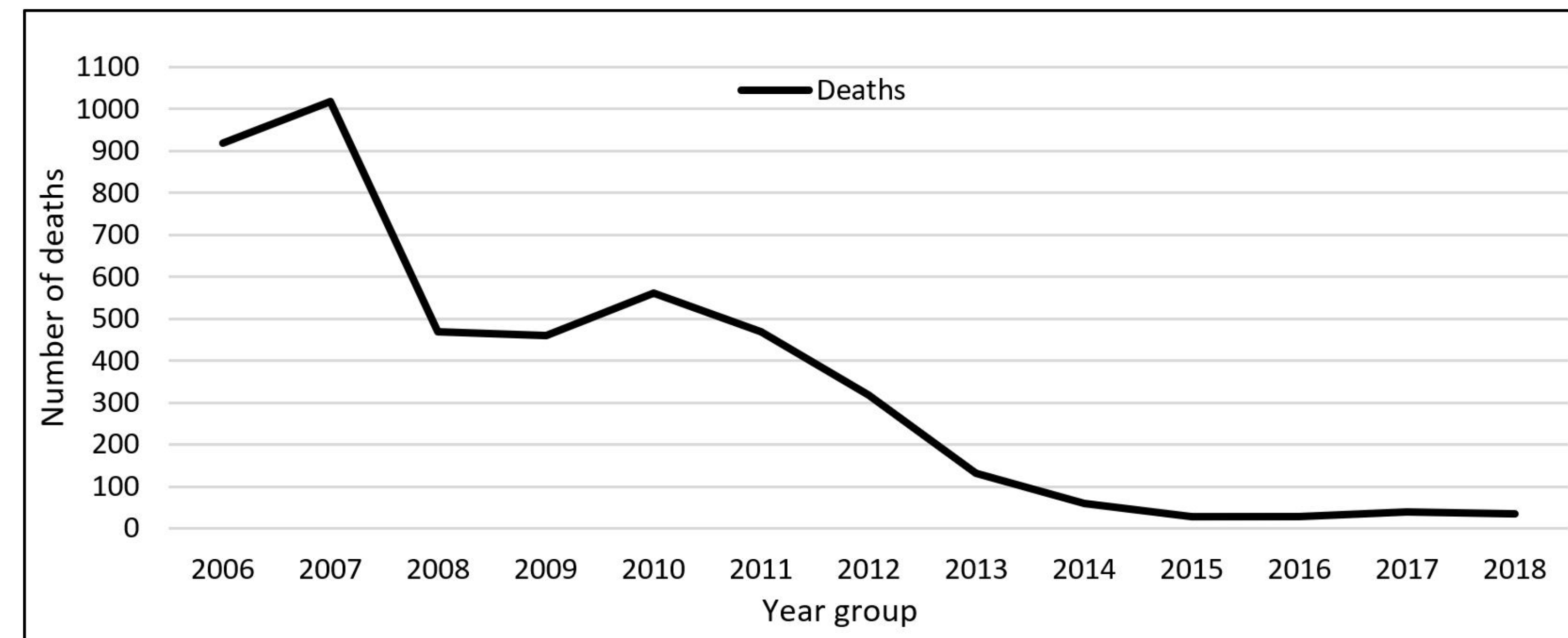


### Measures

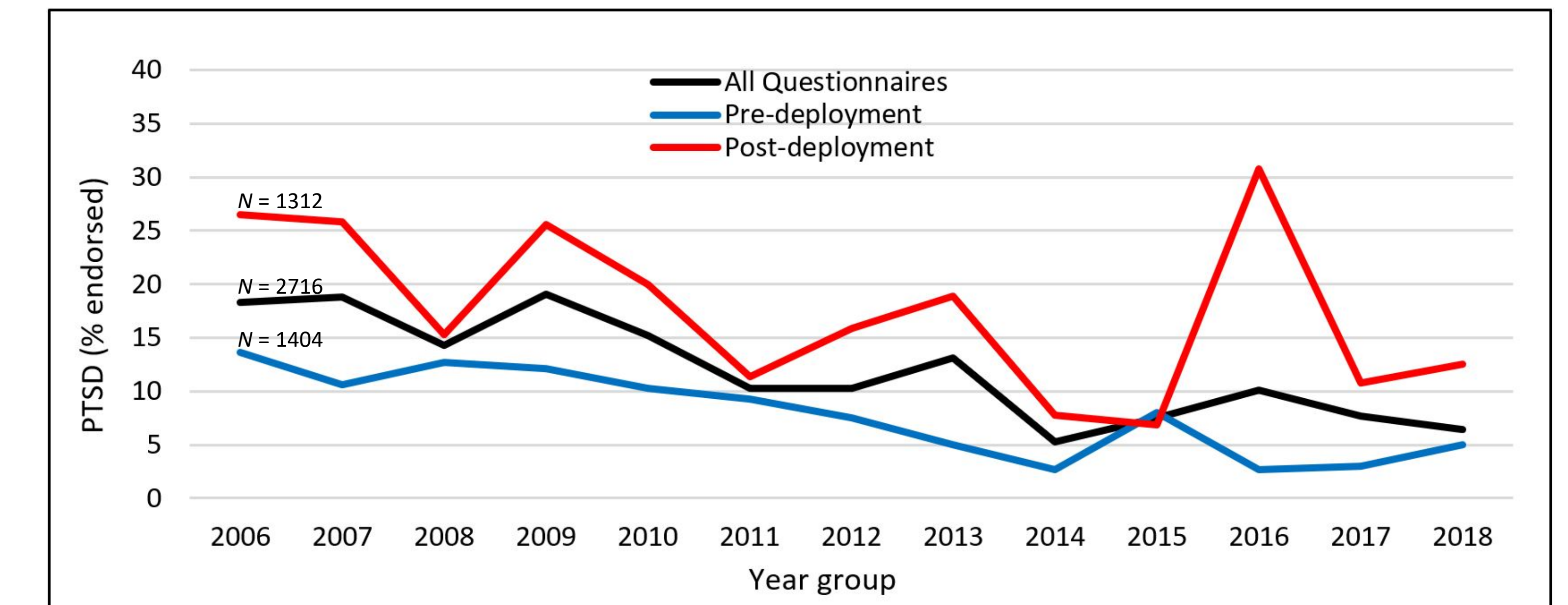
- Questionnaires ( $N = 2,834$ ) were group-administered 1-2 weeks prior to deployment (Pre) and 1-2 weeks after deployment (Post). The number of questionnaires collected from each Soldier ranged from 1 to 9
  - **Traumatic exposures:** 70 items (e.g., exposure to remains, combat experiences, violence, blast) developed or adapted for use in this study
  - **Posttraumatic stress (PTS) symptom severity score:** 17-item PTSD Checklist (PCL-17),<sup>4</sup> scored 1 = *Not at All* to 4 = *Extremely*, range 17-85
  - **Probable PTSD (Yes/No):** Required at least 1 traumatic exposure, a PCL-17 symptom severity score  $\geq 44$ , and at least 1 intrusion, 3 avoidance, and 2 hyperarousal symptoms endorsed at 2 = *Moderately* or higher

## Results

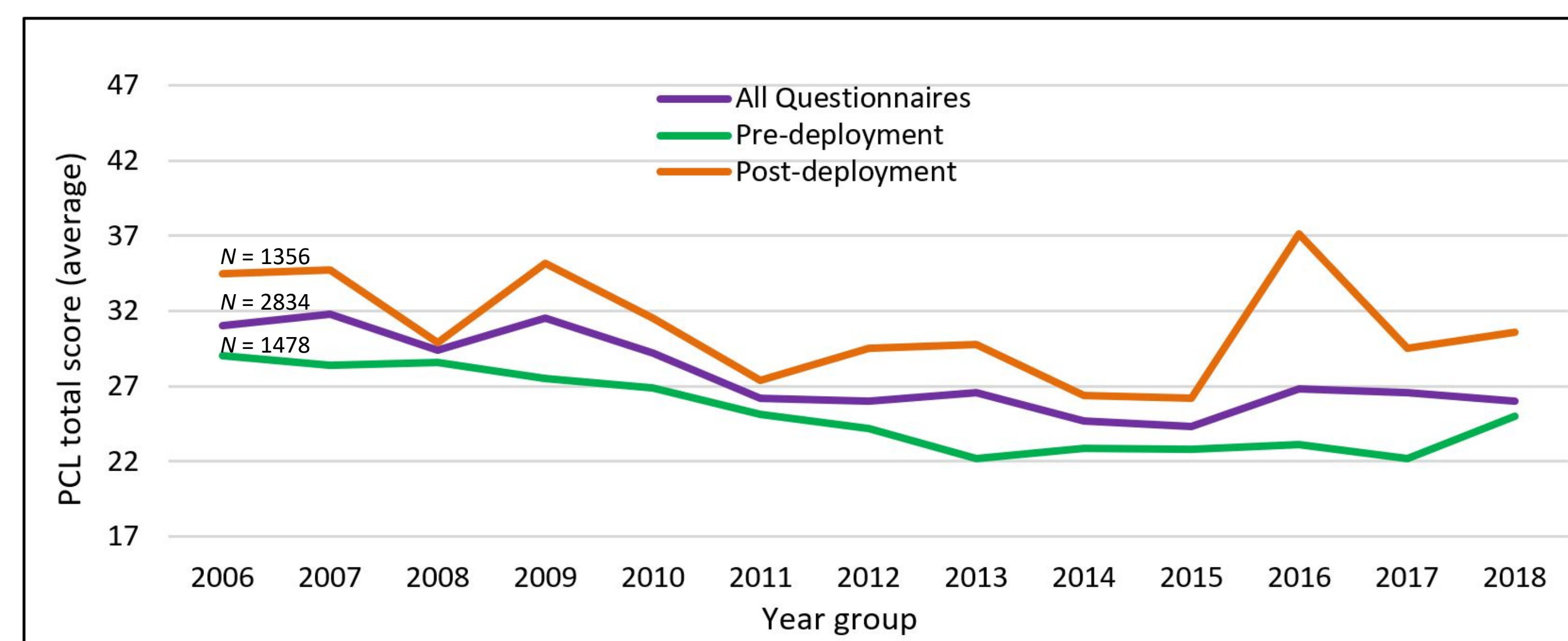
### U.S. Military Deaths in Conflicts in the Middle East by Year<sup>5</sup>



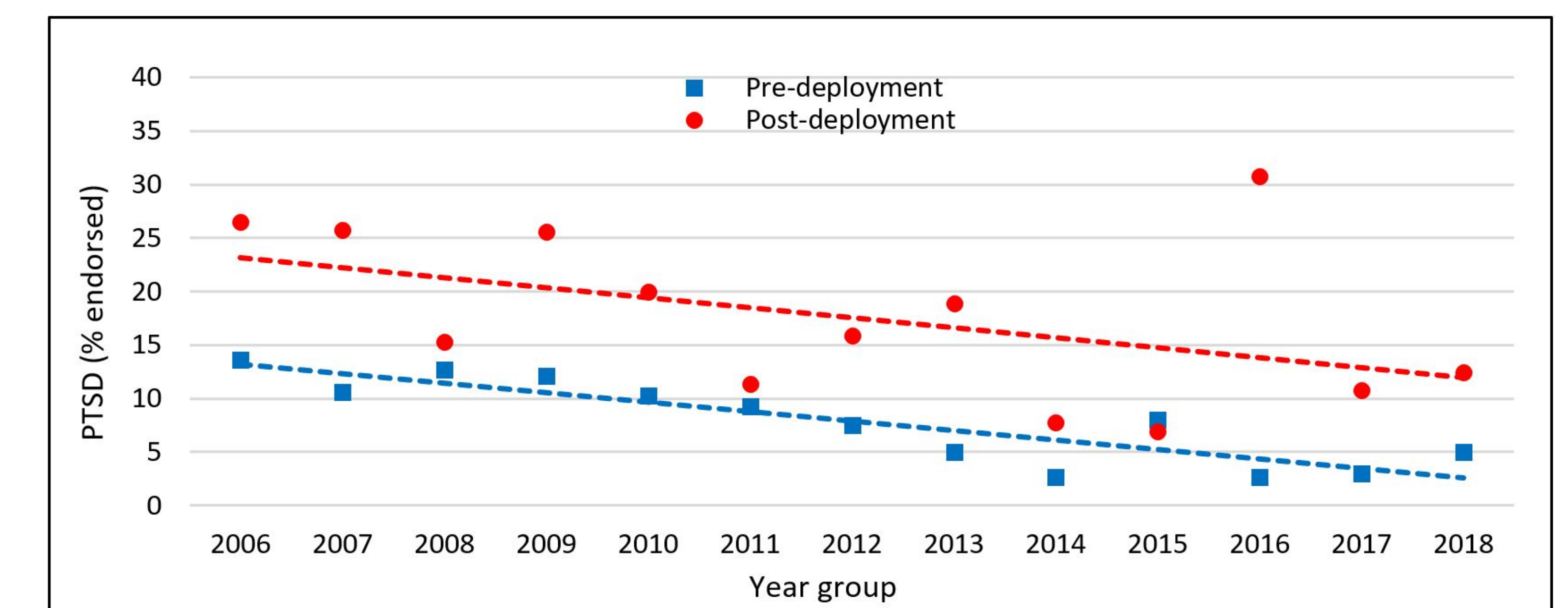
### PTSD Cases by Year: All, Pre, and Post Questionnaires



### PTS Symptom Severity Score by Year: All, Pre, and Post Questionnaires



### Linear Trend of PTSD Cases by Year: Pre and Post Questionnaires



- Among all questionnaires, there was a significant difference across years 2006 to 2018 in both average PTS symptom severity,  $F(12, 2607) = 7.23$ ,  $p < .001$ , and rates of PTSD,  $F(12, 2607) = 4.36$ ,  $p < .001$
- PTSD rates were as high as 18.8% in the earlier years of the Middle East conflicts and as low as 5.3% in the latter years (all questionnaires)
- Both pre- and post-deployment questionnaires showed a similar declining trend in PTSD
- Trend lines suggest that, on average, post-deployment rates of PTSD were about 10% higher across years

## Conclusions

- PTS symptom severity and PTSD cases declined from 2006 to 2018
- Pre- and post-deployment PTSD rates show a parallel trend of decline and, on average, rates of PTSD are much higher post-deployment
- U.S. military deaths declined from 2006 to 2015 and although similar to the decline in PTSD rate, a causal relationship cannot be inferred
- These findings are relevant to developing training, assessment, and intervention programs for high-risk groups including service members, first responders, disaster workers, and others who are exposed to human remains

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- References:
1. Flynn, B. W., McCarroll, J. E., & Biggs, Q. M. (2015). Stress and resilience in military mortuary workers: Care of the dead from battlefield to home. *Death Studies*, 39(2), 92-98.
  2. McCarroll, J. E., Ursano, R. J., & Fullerton, C. S. (1995). Symptoms of PTSD following recovery of war dead: 13-15-month follow-up. *American Journal of Psychiatry*, 152(6), 939-941.
  3. Sutker, P. B. et al. (1994). Psychopathology in war-zone deployed and nondeployed Operation Desert Storm troops assigned graves registration duties. *Journal of Abnormal Psychology*, 103(2), 383-390.
  4. Weathers, F. W. et al. (1993). The PTSD Checklist (PCL): reliability, validity, and diagnostic utility. Paper presented at the *Annual Convention of the International Society for Traumatic Stress Studies*, San Antonio, TX.
  5. Military deaths. Available from <https://dcas.dmdc.osd.mil/dcas/app/conflictCasualties> (Accessed 23 January 2024)

Photo credit: Mortuary Affairs Soldiers at the Uniformed Services University, Bethesda, Maryland, 25 May 2021, photo by Quinn M. Biggs

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