

Learning Objectives

Following this presentation, the participants will be able to:

- Identify differences in child health outcomes among biological offspring of Vietnam theater and non-theater veterans and non-veterans.
- Explain existing gaps in research relating to paternal military deployment in Vietnam and adverse child health outcomes in biological offspring.
- Describe the potential influence of veterans' health perceptions on assessments of offspring health.

Abstract

Title: Associations between paternal military deployment in Vietnam and adverse child health outcomes among biological offspring

Research question. For decades, U.S. Vietnam veterans have expressed concerns about possible service-related health problems in offspring. Prior studies demonstrated that Vietnam theater veterans, relative to non-theater veterans or non-veterans, are more likely to report adverse health among offspring. We compared prevalence of selected adverse health outcomes in biological children and examined their associations with paternal military deployment status using multivariable techniques. **Methods.** A nationally representative, probability sample of veterans and non-veterans was administered a survey in the 2016-2017 Vietnam Era Health Retrospective Observational Study; military service, health, and other self-reported characteristics were collected. The analytical sample (n=18,817 males) included 5,729 (11%) theater and 9,686 (21%) non-theater veterans, as well as 3,402 (68%) non-veterans. Multivariable logistic regression tested associations between paternal military deployment and each of five child health outcomes: developmental disorders, reproductive system disorders, genetic disorders,

autoimmune disorders, and childhood cancers. Analyses were weighted to account for the complex survey design. An interaction between paternal health perception and deployment status was tested. **Results.** With exception of cancer, odds of adverse outcomes in offspring were significantly greater in theater and non-theater veterans, relative to non-veterans: developmental disorders (aOR_{Theater}=1.48, 95% CI: 1.29-1.70; aOR_{Non-Theater}=1.21, 95% CI: 1.08-1.35), reproductive system disorders (aOR_{Theater}=2.27, 95% CI: 1.68-3.07; aOR_{Non-Theater}=1.56, 95% CI: 1.20-2.03), genetic disorders (aOR_{Theater}=2.48, 95% CI: 1.99-3.08; aOR_{Non-Theater}=1.65, 95% CI: 1.33-2.05), autoimmune disorders (aOR_{Theater}=2.69, 95% CI: 1.84-3.94; aOR_{Non-Theater}=1.75, 95% CI: 1.28-2.39). For the veteran subset, paternal health perception modified deployment and offspring birth defect associations, with stronger association observed among theater veterans reporting poor health, relative to fair or better health (aOR=1.74, 95% CI: 1.24-2.45).

Conclusion. Results suggest that theater veterans' biological offspring may be disproportionately burdened by adverse health, relative to non-theater veterans or non-veterans. However, whether observed disparities in children's health based on deployment status are directly attributable to differences in military exposures or other unaccounted for confounders cannot be resolved, as data was self-reported. Nevertheless, our finding that theater veterans with poor self-reported health were more likely than those with better health to report adverse child health suggests that differences in health perceptions may contribute to differential reporting of offspring health outcomes.

