

Perceived Stress, Heart Rate, and Blood Pressure among Adolescents with Family Members Deployed in Operation Iraqi Freedom

Barnes, V. A., Davis, H. & Treiber, F. A. (2007). *Military Medicine*, 172(1), 5.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3289099/>



This exploratory study compares perceived stress, loss of psychosocial resources, PTSD symptoms and physiological measures (heart rate, blood pressure) among adolescents who had a family member deployed to Operation Iraqi Freedom to both civilian peers and military peers with a nondeployed parent. Self-report data were collected twice from the three sample groups (n=121). Adolescents in the military, particularly those with a deployed family member, had significantly higher levels of PTSD and heart rate measures than their civilian counterparts.

Key Findings:

- At both time points, military dependents, particularly those with deployed family member, had significantly higher levels of PTSD and heart rate measures than their civilian peers.
- At both time points, military dependents with a deployed family member had higher stress symptoms and greater loss of psychosocial resources than the other two samples groups.
- Among those with a deployed family member, European Americans had higher stress values than non-European American adolescents.

Implications for Programs:

- Programs that support military adolescent youth could incorporate stress management and relaxation exercises as part of promoting well-being, especially during deployments.
- Health care programs (civilian and military) could include screenings that look at the health impact of deployments on adolescents as part of on-going assessment and treatment of youth.
- School programs could be developed that identify stress reactions in adolescents with a deployed family member, and provide outlets for expressing and relieving stress.

Implications for Policies:

- Policies that support the training of school personnel to identify and respond to adolescents with a deployed family member and support the development of school-based programming are encouraged.
- Policies that encourage inter-disciplinary collaboration among health care, school systems, and community-based personnel to coordinate identification and treatment of military adolescents adversely affected by deployment could be considered.

Avenues for Future Research:

- Future research is warranted to determine whether stress reduction interventions may be effective in reducing stress levels and associated indices of sympathetic nervous system arousal in the children of military personnel.
- This research has significant potential implications; however, findings need to be replicated in larger, more representative samples.
- Longitudinal research, investigating the psychological and physiological stress responses of military youth, especially with a deployed family member, is warranted.

Background Information

Methodology:

- Self-reported perceived stress, loss of psychosocial resources (i.e., control, hope, perceived support, social embeddedness, coping, self-sufficiency, and optimism) and physiological (heart rate and blood pressure) data were collected at the onset and end of “major hostilities” of OIF across three groups of adolescents.
- Multivariate analysis of covariance was used to test the differences in heart rate, blood pressure, and perceived stress between the three groups at two different time points.

Participants:

- 121 adolescents: civilian adolescents (n=48), military dependents with non-deployed family members (n=53), and military dependents with a deployed family member (n=20).
- Average age of the sample was 15.8 years (SD=1.1).
- Sample included 60 (49%) female and 63 (51%) male.

Limitations:

- Small samples sizes in some groups, particularly when assessing ethnic difference, may have weakened the power to detect interaction effects.
- Other untested variables may be influencing the results. For example, media coverage viewed, discussion of events, other nonwar-related stressful events, perceived threat of additional terrorist attacks, and sources of support were not assessed.
- Other contributors to of some outcomes (i.e., perceived stress or loss of psychosocial resources) may have been missed because only self-reports were used.

Assessing Research that Works

Research Design and Sample				Quality Rating:	★★★☆☆
	Excellent (★★★★)	Appropriate (★★★☆☆)	Limited (★★☆☆☆)	Questionable (★☆☆☆☆)	
The design of the study (e.g., research plan, sample, recruitment) used to address the research question was....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Research Methods				Quality Rating:	★★★☆☆
	Excellent (★★★★)	Appropriate (★★★☆☆)	Limited (★★☆☆☆)	Questionable (★☆☆☆☆)	
The research methods (e.g., measurement, analysis) used to answer the research question were...	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Limitations				Quality Rating:	★★★☆☆
	Excellent Minor Limitations (★★★★)	Appropriate Few Limitations (★★★☆☆)	Limited Several Limitations (★★☆☆☆)	Questionable Many/Severe Limitations (★☆☆☆☆)	
The limitations of this study are...	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Implications				Quality Rating:	★★★☆☆
	Excellent (★★★★)	Appropriate (★★★☆☆)	Limited (★★☆☆☆)	Questionable (★☆☆☆☆)	
The implications of this research to programs, policies and the field, stated by the authors, are...	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/> Not applicable because authors do not discuss implications					
Overall Quality Rating					★★★☆☆