

Syracuse University

SURFACE at Syracuse University

Institute for Veterans and Military Families

Summer 5-27-2016

Research Brief: "Spousal Military Deployment during Pregnancy and Adverse Birth Outcomes"

Institute for Veterans and Military Families at Syracuse University

Follow this and additional works at: <https://surface.syr.edu/ivmf>



Part of the [Maternal and Child Health Commons](#), [Military and Veterans Studies Commons](#), and the [Women's Health Commons](#)

Recommended Citation

Institute for Veterans and Military Families at Syracuse University, "Research Brief: "Spousal Military Deployment during Pregnancy and Adverse Birth Outcomes"" (2016). *Institute for Veterans and Military Families*. 361.

<https://surface.syr.edu/ivmf/361>

This Brief is brought to you for free and open access by SURFACE at Syracuse University. It has been accepted for inclusion in Institute for Veterans and Military Families by an authorized administrator of SURFACE at Syracuse University. For more information, please contact surface@syr.edu.



Spousal Military Deployment during Pregnancy and Adverse Birth Outcomes

AUTHORS: Amy Spieker, M.P.H.
Melissa A. Schiff, M.D., M.P.H.
COL Beth E. Davis, M.D., M.P.H.; M.C.
USA (Ret.)

DATE: 2016

PUBLICATION: *Military Medicine*, 181 (3), 243-249

PUBLICATION TYPE: Peer-Reviewed Journal Article

PUBLICATION LINK: <http://dx.doi.org/10.7205/MILMED-D-14-00371>

KEYWORDS: Military spouse deployment, adverse birth outcomes, depression

ABSTRACT

“Pregnant women with a military-deployed spouse have increased risk of depression and self-reported stress. In nonmilitary populations, depression and stress during pregnancy are associated with adverse birth outcomes. This study assesses the association between a spouse’s military deployment and adverse birth outcomes. We conducted a retrospective cohort study at a large military medicine center in the Northwest and evaluated records of singleton deliveries to dependent Army spouses from September 2001 to September 2011. We used logistic regression to estimate relative risks and 95% confidence intervals (CI) of the associations between deployment and low birth weight (<2,500 g), preterm delivery (<37 weeks), small for gestational age (SGA, <10 percentile for gestational age), and cesarean delivery. We identified 10,536 births; 1,364 (12.9%) spouses were deployed at delivery. No associations were observed in the overall population. Among women with two or more children, we observed an 81% increased risk of SGA (95% CI 1.18-2.79). Women 30 to 34 years old had an 82% (95% CI 1.06-3.14) increased risk of low birth weight and an 84% increased risk of SGA (95% CI 1.13-2.98). Deployment’s effects vary by maternal age and the number of children in the household. These findings may inform programs and practitioners to best serve women with military-deployed spouses.”

RESEARCH HIGHLIGHTS

- Women with deployed spouses are at a 2.8-fold increased risk of depression during pregnancy and 1.9-fold increased risk of self-reported stress in the postpartum period in comparison to women who did not have deployed spouses. Increased stress and depression during pregnancy are associated with greater risk of a variety of adverse birth outcomes, including low birth weight (LBW) and preterm delivery (PTD). However, no study has conducted a primary analysis of the association of deployment and birth outcomes over the duration of the operations in Iraq (2003-2011) and Afghanistan (2001-present) in an Army population. Using primary data, this study estimates the association between a spouse’s deployment at delivery and risk of LBW, PTD, and small for gestational age (SGA).
- The study found no association in the overall population between deployment and adverse birth outcomes. However, the researchers found that women with two or more living children had a higher risk of SGA if a spouse was deployed at the time of delivery. Similarly, women who were between 30 and 34 years of age were at a higher risk of LBW and SGA when a spouse was deployed in compared to those without a spouse deployed at time of delivery. Mothers under 20 years old were at increased risk of a cesarean delivery when their spouse was deployed.
- The effect of a spouse’s military deployment on adverse birth outcomes appears to vary by maternal age. Future research should focus on the relationship between the timing of deployment and gestational age, social support and stress reduction during deployment, and differences between branches of service and military treatment facilities.

IMPLICATIONS

FOR PRACTICE

Expectant mothers with a deployed spouse may benefit from participating in military spouse support programs. Such programs could offer mental and emotional support to expectant mothers. Given that a deployment during pregnancy or delivery can negatively affect mother and baby, expectant mothers feeling overwhelmed, sad, or anxious should consider discussing with their healthcare provider strategies to ensure good mental and physical health. Expectant mothers should familiarize themselves with additional supports offered to them, including financial and food assistance. Healthcare practitioners serving women with deployed spouses within the military should discuss mental health and stress load with expectant mothers, and offer ways to manage stress, anxiety, and depression during delivery and in the postpartum period. Since young mothers appear to have an increased risk for preterm delivery (PTD), healthcare practitioners should discuss with young mothers early during the pregnancy strategies to reduce PTD. Previous studies have found that social support can serve as a protective factor for maternal wellbeing and pregnancy outcomes. Friends and family with an expectant mother with a deployed spouse should offer support, including basic conversations on expectant mother's wellbeing.

FOR POLICY

The Department of Defense (DoD) might continue encouraging service members to prepare their families for an impending or current deployment, especially expectant mothers. Recognizing the importance of mental health, the DoD and the U.S. Department of Health and Human Services (HHS) both offer several behavioral and mental health services to military families, including expectant mothers. The DoD and HHS might continue efforts to serve military families. Policymakers might allocate funds for additional research on the needs of expectant mothers with a deployed spouse, especially those currently stationed away from family and friends.

FOR FUTURE RESEARCH

Future studies of military populations should further evaluate maternal age and number of children as modifiers of the association between a spouse's military deployment and adverse birth outcomes. Additionally, since the authors found that deployment at birth is associated with cesarean delivery among women younger than 20 years old, more research is needed on how stressful life events, such as partner separation, experienced before and during pregnancy, affect PTD delivery. A limitation of this study is that identified confounders were not adequately adjusted for due to a large amount of missing data. Future researchers should evaluate smoking, alcohol use, and prenatal care adequacy as potential confounders and adequately adjust for them. Future researchers should include additional confounders of previous pregnancy outcomes and obstetrical outcomes associated with delivery in their studies. The authors measured deployment at the time of delivery. To improve the precision of the measurement, future researchers should include length, duration, and number of deployments in relation to timing of pregnancies, rather than just at delivery. Researchers should also include type of deployment. Cumulative deployment is a significant predictor of mental health diagnoses of women and children with deployed spouses or parents. Other associations that should be studied include timing of deployment and gestational age, social support and stress reduction during deployment, and differences between branches of service and military treatment facilities.

AUTHOR INFORMATION

Amy Spieker, M.P.H.¹

Melissa A. Schiff, M.D., M.P.H.²

**COL Beth E. Davis, M.D., M.P.H.; M.C.
USA (Ret.)**³

¹ amy.spieker@wyo.gov; Wyoming Department of Health; Harborview Injury Prevention and Research Center; University of Washington, School of Public Health, Department of Epidemiology

² Harborview Injury Prevention and Research Center; University of Washington, School of Public Health, Department of Epidemiology

³ University of Washington, Leadership Education in Neurodevelopmental and Related Disabilities Program