Pregnancy and Mental Health Care Among Women Veterans Returning from Iraq and Afghanistan

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Pregnancy and mental health

- Untreated mental health conditions during pregnancy may lead to poor maternal outcomes, including substance abuse, loss of employment, divorce, and suicidal ideation/suicide.

- May also lead to poor outcomes in offspring, including low birth weight and infant neglect/abuse.

- Maternal depression studied extensively, but less is known about PTSD during pregnancy.

Women's military exposure to combat/stress

- Women who have served in Iraq/Afghanistan may have been exposed to extensive combat-related trauma and stress, including:
  - Direct/indirect combat exposure
  - Difficult living/working conditions
  - Military sexual trauma
  - Exposure to potentially harmful chemical/biological/environmental agents
  - Multiple deployments

Pregnancy in the VA

- Examining pregnancy and concomitant mental health problems in the VA is complicated.

- Most prenatal care in the VA is provided by fee basis or contract providers <u>outside</u> the VA.

- Little information is available regarding the quality of prenatal care, the outcomes of pregnancy, or the degree to which obstetrical care is coordinated with VA primary care or mental health providers.

Study Objectives

1. Examine prevalence of pregnancy among OEF-OIF veterans in Veterans Administration (VA) care.

2. Compare mental health diagnoses among pregnant, and non-pregnant, women in VA care.

3. Examine the degree to which pregnant veterans receive VA mental health care during their pregnancy.

Methods

- Women Veterans Cohort Study
  - Phase I: Administrative cohort of OEF/OIF veterans enrolled in VA (n=452,405)
    - OEF/OIF roster provided by DOD Defense Manpower Data Center
      - Those with military discharges from 10/1/2001-04/30/2008.
      - <u>Veterans must have enrolled for VA services to be included on roster.</u>
  - <u>Roster includes: Race, age, gender, branch, component, SSN, DOB, marital status, education.</u>

Methods (continued)

- Roster linked to:
  - **VA National Patient Care Database (NCPD**): All diagnostic and encounter data including *ICD-9-CM* codes, CPT codes, V codes, and stop codes (VA system for tracking utilization).

  - **VA Decision Support Systems (DSS**): All VA/fee basis cost data; laboratory data; pharmacy data.

Defining/measuring pregnancy

- To ensure independence of observation (one pregnancy/veteran), an 'index pregnancy' was identified as unit of analysis.

- Index pregnancy was determined if a female veteran had any one pregnancy-related ICD9, CPT, or V code within the seven year observation period of the available NCPD/DSS data.

Defining/measuring mental health diagnoses

- Veterans were considered to have mental health diagnoses if they had 2 outpatient or 1 inpatient *ICD-9-CM* codes for depression, bipolar disorder, PTSD, or schizophrenia.

Measuring mental health care utilization during pregnancy

- Because the VA does not provide routine prenatal care or collect pregnancy outcomes, it can be difficult to measure tenure of pregnancy.

- Consequently, difficult to measure mental health care utilization during pregnancy.

- To do so, we created 'pregnancy window': +/- 10 months of first pregnancy-related code in VA.

Comparisons to non-pregnant women veterans

- To evaluate how pregnant women veterans may be different from their non-pregnant veteran counterparts, we created a comparator group of all non-pregnant women veterans between the ages of 18-50 who were enrolled in VA care.

- Enabled us to examine mental health diagnoses, but not utilization (in progress).

Analysis

- Univariate and bivariate statistics (e.g. the t test for continuous and χ^2 test for ordinal or dichotomous variables) were used to compare the demographic and clinical characteristics of women veterans with and without pregnancy.

- Logistic regression models were used examine the relationship between mental health diagnoses, adjusting for covariates including age, education, marital status, branch, rank, race, and substance abuse.

Results

- 43,078 women veterans between the ages of 18-50 utilized VA care at least once during the 2001-2008 study period.

- Of these women, 2966 (7%) were identified as having an index pregnancy during the study period (had at least 1 ICD-9, CPT, or V code).

  – Validation: 73% of the 2966 women had a second pregnancy-related code within 10 months of first code.

Characteristics of pregnant veterans in VA care

- Pregnant veterans were younger (24 vs. 29), and more likely to be Hispanic, unmarried, and have a high school education or less than non-pregnant women veterans (p<.0001).

- Pregnant veterans were also more likely to be enlisted service members rather than officers, and more likely to be active duty service members rather than members of the Guard or Reserves (p<.0001).

Table 1: Distribution of pregnancy among women veterans, by year

Year of index pregnancy	At least one pregnancy code (n)	2 or more codes within 10 months (n)	% with 2 or more codes in 10 months
2002	12	6	50%
2003	61	25	41%
2004	356	212	60%
2005	588	417	71%
2006	955	714	75%
2007	905	696	77%
2008*	89	89	100%

Table 2: Distribution of pregnancy-related codes among pregnant veterans (n=2966)

Type of pregnancy code (ICD-9-CM)	% pregnant women with code
Fee Basis Care (non-VA providers)	
Normal pregnancy/delivery	44%
Ectopic/molar pregnancy	5.8%
Miscarriage/spontaneous abortion	5%
V Code	75%
VA Care	
Normal pregnancy/delivery	0.8%
Ectopic/molar pregnancy	1.6%
Miscarriage/spontaneous abortion	3.4%
V Code	61%

Table 3: Mental health diagnoses among pregnant, and non-pregnant, veterans in VA care

Diagnosis	All female veterans (n=40,112)	Pregnant veterans (n=2966)	p	% pregnant women with condition prior to pregnancy
Major depression	5%	12%	<.0001	61%
Mild depression	10%	24%	<.0001	62%
PTSD	9%	21%	<.0001	66%
Bipolar disorder	1%	3%	<.0001	55%
Schizophrenia	0.11%	0.33%	<.0001	44%
Any MH diagnoses	20%	32%	<.0001	22%
Substance abuse disorder	2%	5%	<.0001	56%

Table 4: Final model of logistic regression of pregnancy on mental health diagnoses

Variable	Odds Ratio (95% CI)
Pregnancy	1.91 (1.75, 2.08)
Army	1.54 (1.43, 1.67)
Air Force	0.86 (.78, .95)
Marines	1.23 (1.06, 1.43)
Age	0.83 (.78, .87)
Enlisted	1.56 (1.07, 2.24)
Married	0.94 (.89, .99)
Substance abuse	25.51 (21.43, 30.36)

Table 5: VA mental health care utilization during pregnancy window

Type of visit	% pregnant women visiting during pregnancy window (average # of visits during window)
Mental health clinic—individual	33% (avg. 6.6 visits)
PTSD, individual or group	9% (avg. 6.9 visits)
Substance abuse treatment—individual	2% (avg. 9.1 visits)
Sexual trauma counseling	1% (avg. 8.1 visits)

Conclusions

- Pregnant women veterans utilizing VA care have a substantial mental health burden.

- Dual systems of care: VA care for mental health and community-based obstetrical care.

- Further research should examine the quality of community-based obstetrical care, and the degree to which care is coordinated between VA and non-VA providers.

- Opportunity for VA to develop enhanced system of coordinated, high quality care for its women veterans.