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**Author Version**

**Unintended pregnancy among women in the  
U.S. military**

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## **Abstract**

**Background:** The study was conducted to examine the extent of unintended pregnancy among female active-duty military personnel in the U.S. Armed Forces.

**Study design:** Data consisted of representative data from active-duty women ages 18-44 years ( $n=3,745$ ) from the 2005 Department of Defense Survey of Health Related Behaviors Among Active Duty Military Personnel. The proportion of women with an unintended pregnancy in the last 12 months, the pregnancy rate and the percentage of all pregnancies in the last 12 months that were unintended were calculated.

**Results:** An estimated 54% of pregnancies were unintended, based on self-reports. After accounting for likely underreporting for abortion, the adjusted unintended pregnancy rate was 117 per 1,000 women. Younger and less educated women had higher rates, as did enlisted women when compared to officers.

**Conclusion:** Further efforts are needed to reduce unintended pregnancy among women in the military.

**Keywords:** Military personnel; unintended pregnancy; reproductive health

## **1. Introduction**

Unintended pregnancy among women in the U.S. Armed Forces has implications not only for women and their families, but also for the military operational effectiveness of service members, potentially compromising troop readiness and deployment. Accordingly, the Department of Defense (DoD) has adopted the national *Healthy People 2010* (HP2010) objective of reducing the proportion of servicewomen's pregnancies that are unintended to no more than 30% [1,2]. In 2001, 49% of pregnancies among civilian women 15–44 years in the U.S. were unintended and the unintended pregnancy rate was 51 per 1,000 women [3]. Although select studies have suggested unintended pregnancy may be more common among women in the military, efforts to monitor unintended pregnancy in the military have been hampered by a range of methodological limitations [4-7].

The present study used recent representative data from women across all branches of the U.S. military to estimate unintended pregnancy rates, and the proportion of pregnancies that were unintended, overall and for key subgroups.

## **2. Materials and methods**

Data for this analysis were drawn from the 2005 DoD Survey of Health Related Behaviors Among Active Duty Military Personnel [2]. The survey was designed to measure progress towards HP2010 objectives for select health behaviors, including unintended pregnancy, among active-duty personnel. A two-stage sampling procedure was used to ensure representativeness of the active-duty force worldwide. First-stage sampling randomly selected military installations or ships within service (Army, Navy, Marine Corps, Air Force) and world region (within and outside the continental United States). Second stage sampling randomly selected individuals stratified by gender and pay grade, oversampling officers and women to ensure adequate sample sizes. Sampling weights adjusted for probability of selection and nonresponse. The survey

instrument was a self-administered paper-and-pencil questionnaire; respondents were informed it was anonymous, confidential and voluntary. The 2005 survey comprised 16,146 completed interviews, with an overall response rate of 51.8%. This analysis focuses on the 3,745 interviews with women ages 18–44 years.

In two separate survey questions, female respondents were asked if they had been pregnant at any time in the last 12 months (including at the time of the interview) and if they had had an unintended pregnancy in the past 12 months. Based on these self-reports, the pregnancy rate, the unintended pregnancy rate, and the percentage of all pregnancies in the last 12 months that were unintended were calculated. Independent group T-tests of differences were used to test for statistically significant differences between key subgroups (age, education, union status, race/ethnicity, Service branch and pay grade). All analyses were conducted using Stata Statistical Software version 11.1, using the *svy* command to account for the clustered sample design [8].

To better mirror methods used to measure unintended among the civilian population [3], estimates were calculated that adjust for the likely underreporting of both unintended pregnancies and pregnancies overall, due to the sensitivity of these items [9]. Analyses of nationally representative household surveys have found that nearly half of abortions were underreported [10,11]; these unreported induced abortions represented 11.9% of the total number of reported pregnancies. Based on this pattern, the number of pregnancies reported in the DoD survey were adjusted (i.e., increased) by 11.9%. Since these additional pregnancies represent induced abortions, 95% were assumed to be unintended [3].

### **3. Results**

In 2005, the overall pregnancy rate was 179 per 1,000 women ages 18–44 years in the military (Table 1). Fifty four percent of these pregnancies were reported as unintended. The self-reported unintended pregnancy rate was 97 per 1,000 women, meaning that about 10% of this group had an unintended pregnancy during 2005.

The unintended pregnancy rate was significantly higher among younger women, women with less completed education, nonwhite women, and those in a cohabiting union, as compared to reference groups. The unintended pregnancy rate varied by Service branch: women in the Air Force had significantly lower rates of unintended pregnancy than women in the Army or Marine Corps. The rate of unintended pregnancy was 110 per 1,000 among enlisted women as compared to 28 per 1,000 among female officers. The adjusted measures were higher, but the pattern of differentials remained the same.

### **4. Discussion**

Nearly one in five women ages 18–44 years in the military was pregnant during 2005, more than the rate among civilian women [12]. The proportion of pregnancies that were unintended among women in the military, 54%, greatly exceeds the *HP2010* goal of 30%. Few subgroups (officers and women ages 30–44 years) met this national goal. Moreover, with adjustments for abortion

underreporting, more than one in 10 women in the military experienced an unintended pregnancy in the last year, twice the rate of 51 per 1,000 among civilian women.

These findings indicate that further efforts are needed to reduce unintended pregnancy among women in the military. The DoD already has a strong foundation: because the military has to ensure that active duty personnel are healthy and fit for duty, it has a long history of educating military personnel about their sexual health and providing them and their families with near-universal health care [5]. Continued tracking of unintended pregnancy is needed to monitor progress.

## 5. Acknowledgements

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**Table 1. Unintended pregnancy in the last 12 months among women aged 18–44 years in the U.S. military, by women's demographic and service characteristics, 2005**

Characteristic <sup>a</sup>	Overall pregnancy rate per 1,000 women		Percentage of pregnancies that were unintended		Unintended pregnancy rate per 1,000 women	
	Self- reported	Adjusted <sup>b</sup>	Self- reported	Adjusted <sup>b</sup>	Self- reported	Adjusted <sup>b</sup>
<b>All military women</b>	179	200	54	59	97	117
<b>Age, years</b>						
18–24	232 *	260	65 *	68	151 *	177
25–29	153	171	48 *	53	73 *	90
30–44 (ref)	116	130	27	35	32	45
<b>Education</b>						
High school or less	246 *	275	59 *	63	146 *	174
Some college	174 *	195	57 *	61	100 *	120
College graduate or higher (ref)	111	124	32	39	36	49
<b>Union status</b>						
Not married	96 *	107	81 *	83	78	89
Cohabiting	241	270	72 *	74	173 *	200
Married (ref)	259	290	39	45	102	131
<b>Race/ethnicity</b>						
White non-Hispanic (ref)	179	200	48	53	85	105
Black non-Hispanic	180	201	62	65	111 *	131
Hispanic	226	253	63 *	67	143 *	169
Other	141	158	55	58	76	92

<b>Service branch</b>							
Air Force ( <i>ref</i> )	160	179	46	51	74	92	
Army	197	220	61	64	119 *	141	
Navy	174	195	53	57	92	112	
Marine Corps	224 *	251	67 *	70	150 *	175	
<b>Pay grade</b>							
Enlisted	193 *	216	57 *	61	110 *	132	
Officer ( <i>ref</i> )	100	112	28	35	28	39	

<sup>a</sup> All characteristics measured at time of interview.

<sup>b</sup> Adjusted for estimation of abortion underreporting.

\*Significantly different from reference category at p<.05.