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Original research article

Unintended pregnancy among active-duty women in the United States military, 2011☆

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Abstract

Objectives: To estimate unintended pregnancy rates among a representative sample of active-duty women in the U.S. military aged 18–44 years in 2011.

Study design: Cross-sectional data came from the 2011 Department of Defense Health Related Behaviors Survey of Active Duty Military Personnel; 9038 women provided data on unintended pregnancy. Unintended pregnancy rates were calculated for all women and by available background characteristics, including military branch, marital status (married versus unmarried), pay grade (enlisted versus officer) and deployment in the previous 12 months. Multivariable logistic regression testing for associations between unintended pregnancy and subgroups was also performed.

Results: The unintended pregnancy rate was 72/1000 women. Married women (odds ratio (OR) 1.30, 95% confidence interval (CI) 1.11–1.54) and enlisted women (OR 2.71, 95% CI 1.99–3.69) had higher odds of reporting unintended pregnancy compared to their counterparts, as did women in the Navy (OR 1.51, 95% CI 1.19–1.91) and Marine Corps (OR 2.38, 95% CI 1.92–2.95) compared to women in the Air Force. Unintended pregnancy rates did not differ between women who were deployed in the previous 12 months and nondeployed women. Additionally, 10% of women who were deployed for 11–12 months in 2011 reported an unintended pregnancy in the previous year, suggesting that their pregnancies occurred during deployment.

Conclusion: Unintended pregnancy is higher in the military, including during deployment, compared to the general U.S. population (52/1000 women). All branches need to address the issue in a comprehensive manner including evidence-based provision of contraception and education among servicemembers.

Implications: Unintended pregnancy is high in the military, including during deployment; further efforts to improve evidence-based provision of contraception and education are needed.

Keywords: Military; Pregnancy; Unplanned; United States; Female

1. Introduction

Unintended pregnancy affects the health and well-being of women in the U.S. military. Additionally, pregnant women cannot be deployed, and if they are already in a deployment setting, they must return to their home base, which has implications for military operations and planning. It can also have financial burdens related to the costs of evacuation from deployment and from lost work time associated with pregnancy and postpartum [1,2].

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Unintended pregnancy rates in the military have been shown to be high and to have increased between 2005 and 2008. Data from the Department of Defense Survey of Health Related Behaviors among Active Duty Military Personnel (Health Related Behaviors Survey), a representative survey of active-duty military personnel, found that 10% of active-duty servicewomen aged 18–44 years experienced an unintended pregnancy in 2005 [3] and 11% experienced unintended pregnancy in 2008 [4]. These rates were considerably higher than those in the general U.S. population, in which 5% of women aged 15–44 years had an unintended pregnancy in 2006, the last year for which there are national data [5]. The analyses presented here were conducted to update unintended pregnancy estimates and associated risk factors among a representative sample of active-duty women in the U.S. military using data from the 2011 Health Related Behaviors Survey.

2. Materials and methods

2.1. Data source

Cross-sectional data from the 2011 Department of Defense Health Related Behaviors Survey of Active Duty Military Personnel were used to calculate rates of unintended pregnancy in the previous 12 months among active-duty women. The survey was conducted by ICF International under advisement by the Office of the Assistant Secretary of Defense for Health Affairs, TRICARE Management Activity and the United States Coast Guard. This survey, first conducted in 1980 and administered approximately every 3 years, aims to assess potential health issues among active-duty military personnel and the military's progress in meeting the Healthy People objectives [6,7]. The relevant variables used for this analysis were obtained via request from the Defense Health Cost Assessment and Program Evaluation office. Some variables from the 2011 Health Related Behaviors Survey dataset were omitted or recoded in the public use file we received. As a result, we were unable to obtain data on age, race and ethnicity, education level, cohabitation and reasons for returning from deployment early and for not being able to deploy. The dataset we received included males and females and was restricted to participants aged 18–44 years.

2.2. Survey design, sampling and data collection

Data were collected from August 2011 through January 2012. The target population included all nondeployed, active-duty members of the armed forces, including each Department of Defense service branch (Air Force, Army, Marine Corps and Navy) and the Coast Guard. National Guard and Reserve members in active-duty programs were excluded. The survey was conducted online.

Two different sampling approaches were taken for the Department of Defense services and the Coast Guard. For the Department of Defense service branches, the Defense Manpower Data Center's July 2011 Active Duty Master Edit File was used for sampling. An initial nonproportional stratified random sample of 281,872 members was selected from 1,222,627 eligible, nondeployed members. For each of the services, members were selected with equal probability and without replacement within substrata composed of males and females in the six pay grade levels. This initial sample was divided randomly into a primary contact group of 118,971 members and two secondary samples to be contacted in the event of low response rates in the primary group. All members of the primary sample were sent an initial survey invitation, and 36,797 members from the secondary sample were randomly selected disproportionately from strata to participate. In total, 155,768 members from the Department of Defense sample were contacted for online survey participation.

For the Coast Guard sampling, the June 2011 census file of all active-duty U.S. Coast Guard members was obtained. The total population of 39,624 eligible, nondeployed members was divided into two subpopulations. The first sample consisted of 11,405 members from 10 randomly selected installations (i.e., bases, posts) with at least 300 Coast Guard members, with probability of selection proportional to installation size. Among these members, half (n=5702) were randomly assigned to online survey participation; the other half were assigned to in-person survey participation and were not included in our dataset. The second sample (n=9069) drew from a geographically distributed Coast Guard population throughout the United States using stratified random sampling to disproportionately allocate to strata based on setting (air, afloat, ashore), pay grade and gender. In total, 14,771 members from the Coast Guard sample were contacted for online survey participation.

Respondents received one invitation email and four reminder emails. Ineligible members, defined as not being on active duty, were assessed with the first survey question and removed, resulting in 154,011 eligible Department of Defense members and 14,653 eligible Coast Guard members. Unusable questionnaires, defined as not having all key demographic questions and at least one question within the alcohol section completed, were also removed, resulting in 39,877 eligible members with usable questionnaires, including 27,446 males and 12,431 females. Among these, 10,475 were females between ages 18 and 44 years. We restricted the sample for our analyses to those who reported on unintended pregnancy, resulting in a final sample size of 9038 participants. See Fig. 1. Item nonresponse for the question on unintended pregnancy, 14%, was similar to the other questions asked at that point in the survey and was not question or topic specific. Rather, nonresponse increased as the survey progressed and was related to survey length, as the instrument included 168 items requiring 458 responses [7].

The survey response rates were derived from the proportion of usable questionnaires received. The