

Contraceptive use and access among deployed US servicewomen: findings from an online survey

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ABSTRACT

Background/introduction This study aimed to survey US servicewomen on their contraceptive access and use during deployment.

Methods Between June 2016 and July 2017, we conducted a cross-sectional online survey among a convenience sample of current and former members of the US Military, National Guard and Reserves who had a deployment ending in 2010 or later. Participants were asked open-ended and closed-ended questions about their demographics and contraceptive use and access before and during their last deployment. Descriptive statistics were run on closed-ended questions and responses to open-ended questions were inductively coded.

Results A total of 353 participants were included. Sixty-five per cent reported using contraception during all or part of their last deployment. Nearly half (49.3%) did not have or remember having a discussion with a military care provider about contraception prior to deployment. Both prior to and during deployment, the free or low cost of birth control and ability to get a full supply for deployment facilitated contraceptive use. Difficulty obtaining an appointment and the inability to get a full supply of birth control were barriers to contraception access both before and during deployment. Half (49.1%) of respondents who had to start or refill contraception during deployment said it was somewhat or very difficult to do so.

Conclusions For at least some servicewomen, there are barriers to contraceptive access and use prior to and during overseas deployment. Programmes to increase contraceptive access should be expanded and monitoring systems should be implemented to ensure all servicemembers receive predeployment contraceptive counselling.

INTRODUCTION

In 2011, the proportion of US servicewomen who experienced an unintended

Key messages

- Findings suggest that US servicewomen face barriers to contraceptive access and use prior to and during overseas deployment.
- Results suggest that programmes to increase contraceptive access to servicewomen and newly mandated predeployment contraceptive counselling should be widely adopted and monitored.

pregnancy was more than 1.5 times that of civilian women.^{1 2} Unintended pregnancy can negatively impact servicewomen and military operations.^{3–5} In 2011, 41% of servicewomen who experienced an unintended pregnancy were not using contraception.¹ An analysis of military medical and pharmacy data from 2008 to 2013 found that 54% of deployed servicewomen obtained a contraceptive method.⁶ In 2016, 56% of active duty servicewomen received a contraceptive method through the military.⁷ A study of Army women of reproductive age found that long-acting reversible contraception use was low, but increasing.⁸

Although TRICARE military health insurance fully covers the range of contraceptive methods, barriers to use may persist, particularly for deployment. A 2017 literature review found obstacles to access may contribute to contraceptive underutilisation in the military.⁹ In a survey of servicewomen deployed prior to 2010, over half reported not receiving predeployment contraceptive counselling.¹⁰ A qualitative study of experiences accessing contraception among active duty servicewomen who had had an abortion found that in addition to insufficient counselling, some could not access

their preferred method and/or experienced challenges accessing contraception due to military service requirements, inefficient military healthcare operations, poor continuity of care, lack of providers, stigma and confidentiality concerns.³ In another qualitative study, servicewomen reported that while deployed, stigma, a lack of trained providers and logistical challenges are barriers to contraceptive use.¹¹

In qualitative research on provision of servicewomen's healthcare, military medics have indicated a desire for additional contraceptive counselling training, and reported delays in servicewomen seeking contraception due to access barriers.¹² In a survey, military physicians reported barriers to prescribing contraception, including difficulty obtaining preferred methods and servicewomen's fear of punishment or stigma for sexual activity.¹³ A review focused on reproductive health of active duty servicewomen recommended additional research on factors that could improve contraceptive use during deployment.¹⁴

This study aimed to survey US servicewomen on their contraceptive access and use during deployment. We hypothesised that servicewomen face continued barriers to contraception use for deployment.

METHODS

Between June 2016 and July 2017, we conducted an open online survey to assess servicewomen's experiences with contraception for deployment among a convenience sample. Eligibility included being a current or former member of the US Military, National Guard or Reserves, having a deployment ending in 2010 or later and being assigned female sex at birth. The authors acknowledge that participants in this sample may hold a range of gender identities other than or in addition to woman. We use the term servicewomen throughout to refer to servicemembers assigned female at birth. Respondents were recruited to participate in an anonymous online survey about women's experiences accessing reproductive healthcare during deployment through Facebook advertisements and postings; Reddit, Craigslist, Twitter and military-related listserv postings; and flyers in communities and clinics near military bases. We administered the survey using SurveyMonkey¹⁵ and Qualtrics.¹⁶ In Qualtrics, we enabled Prevent Ballot Box Stuffing to prevent multiple completions from the same IP address. We also reviewed IP addresses for duplicates (none were found). All participants provided informed consent.

Participants were asked open-ended and closed-ended questions about their demographics and contraceptive use and experiences before and during their last deployment (online supplementary appendix A). Respondents were asked whether they used contraception during all or part of their last deployment, types of contraception used, reasons for non-use, whether they sought contraception from the military, ease of

access through the military and barriers and facilitators to access. Participants could report multiple contraceptive methods; we report the most effective (based on typical use annual pregnancy rates¹⁷). No identifying information was collected or stored. Those who completed the survey could enter a raffle for one of two US\$100 gift cards.

The final analytic sample included participants who indicated whether they used birth control during their last deployment. For analyses of ease of accessing contraception through the military, we excluded those who reported not using birth control due to not having sex with men, moral or religious opposition, concerns about side effects, desire for pregnancy, or other personal reasons.

The survey was tested by the study team before fielding and adaptive questioning was used. All questions except for those on military background included a 'prefer not to answer' option to ensure completeness; we included surveys that were terminated early and missing data.

Descriptive statistics were run on closed-ended questions using Stata V.15.1.¹⁸ Respondents' branch and pay grade were compared to the 2016 female active duty and reserve population.¹⁹ Open-ended responses were inductively coded and closed-ended responses were recoded based on open-ended responses, where appropriate. Quotes are accompanied by the respondent's branch, military status at the time of the survey and year their last deployment ended. The Allendale Investigational Review Board approved this study. Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) and Checklist for Reporting Results of Internet E-Surveys (CHERRIES) recommendations were used as reporting guidelines.

Patient and public involvement

Findings from previous research on US servicewomen's experiences accessing contraception informed the research questions and study design. Results are available on request via the research team's website.

RESULTS

In total, 353 participants were included; of those, 59.8% completed the survey. We excluded those who only completed screening (n=67) and did not indicate when their most recent deployment ended (n=21) or whether they used contraception during that deployment (n=33). Most (55.2%) respondents were active duty. Participants' branch at last deployment was comparable to all 362 801 active duty and selected reserve servicewomen in 2016 for the Army (45.3% vs 47.2%) and Coast Guard (0.6% vs 0.3%), but not for the Marine Corps (8.2% vs 4.5%), Navy (35.7% vs 20.1%) or Air Force (10.2% vs 27.8%)¹⁹. More respondents were officers than all servicewomen in 2016 (35.7% vs 17.9%)¹⁹. Half (50.1%) ended their last deployment in 2014 or later. On average,

participants were 30.5 years old. The largest proportion of participants was white (40.2%) and 8.8% reported Hispanic ethnicity. Roughly one-quarter (27.5%) were married during last deployment. Participant characteristics are shown in table 1.

Contraceptive use during deployment

Most (64.8%) respondents used contraception during at least some of their last deployment (table 2). Among those who used contraception during all of their last deployment, the most common methods were the pill (36.6%), intrauterine device (IUD, 22.3%) and implant (13.1%). We did not observe differences in long-acting reversible contraception use by branch. Among servicewomen not using contraception (n=120), the main reasons were not having sex with men (78.3%) and side effect concerns (18.3%).

Contraception access before and during deployment

Pre-deployment

Half of the respondents did not discuss (39.1%) or did not remember discussing (10.2%) contraception during their predeployment health assessment. Half (51.3%) tried to get contraception through the military ahead of their last deployment. Of those who did not (48.7%), in open-ended responses some (n=14) specifically noted that they were already using birth control, including several who were using long-acting methods that did not require counselling or refills.

Among the 238 respondents included in ease of access analyses, half (55.1%) said it was somewhat or very easy to obtain birth control through the military prior to deployment and 17.7% somewhat or very difficult (table 3). One active duty Army officer last deployed in 2016 characterised her ability to access birth control predeployment as 'easier than it is when you're not deploying'. Facilitators to access included the free or low cost (59.7%), ability to get a full supply of contraception for deployment (38.7%), services being close by or easy to get to (24.4%), and ease of making an appointment (20.6%).

Nearly one-third (30.3%) of respondents reported difficulty obtaining an appointment. One veteran Army officer last deployed in 2012 stated, '[there are] no such thing as appointments. You'd have to show up for 'sick call,' then go to the clinic as basically a walk-in and wait around until you could see a provider, even if all you needed was to get a refill'. Additionally, 17.6% said the inability to get a full supply of birth control made it difficult to access contraception predeployment. One-quarter (24.4%) reported that nothing made it difficult (table 3). One veteran Navy officer last deployed in 2013 reported she was 'prescribed enough birth control pills to last the entire deployment and did not need to acquire more during the deployment'.

Sixteen per cent of respondents felt they did not have access through the military to the full range of

Table 1 Participant demographics

	Survey sample n=353	
	n or mean±SD	%
Military characteristics		
Current military status		
Active duty	195	55.2
National Guard/Reserves	68	19.3
Retired/Veteran	89	25.2
Missing	1	0.3
Military branch at last deployment		
Air Force	36	10.2
Army	160	45.3
Coast Guard	2	0.6
Marine Corps	29	8.2
Navy	126	35.7
Pay grade at last deployment		
Enlisted	225	63.7
Officer	126	35.7
Missing	2	0.5
Year last deployment ended		
2010–2013	176	49.9
2014–2017	177	50.1
Demographic characteristics		
Current age (years)		
≤25	39	11.1
26–30	64	18.1
31–35	59	16.7
36–40	28	7.9
≥40	21	6.0
Missing	142	40.2
Mean±SD	30.5±6.2	
Race		
Asian or Pacific Islander	7	2.0
American Indian/Alaska Native	5	1.4
Black	28	7.9
More than one race	15	4.3
White	142	40.2
Missing	156	44.2
Ethnicity		
Hispanic	31	8.8
Non-Hispanic	171	48.4
Missing	151	42.8
Marital status at last deployment		
Married	97	27.5
Not married	113	32.0
Missing	143	40.5

Table 2 Contraception use during last deployment among all respondents (n=353)

	N	%
Contraceptive use		
Yes, entire time	175	48.4
Yes, part of the time	58	16.4
No	120	35.1
Method used, by most effective method reported among those who used contraception throughout deployment (n=175)		
Pill	64	36.6
IUD	39	22.3
Implant	23	13.1
Shot	15	8.6
Ring	9	5.1
Sterilisation	5	2.9
Patch	4	2.3
Condom	3	1.7
Missing	13	7.4
Reason for non-use* (n=120)		
No sex with men	94	78.3
Side effect concerns	22	18.3
Moral or religious reasons	6	5.0
Unable to obtain appointment	5	4.2
Wanted to become pregnant	4	3.3
Method unavailable on base	4	3.3
Ran out of supplies	3	2.5
Partner did not want to use	2	1.7
Healthcare provider advised against use	2	1.7
Missing	6	5.0

*Multiple responses accepted.
IUD, intrauterine device.

contraceptive methods, 51.3% felt the full range was available, 2.1% did not know and 30.7% did not respond (data not shown). Among those who felt not all options were available, in open-ended responses some (n=32) provided additional details, including being given no or limited options or methods, difficulty or inability to obtain an IUD, refrigeration requirements for the vaginal ring and prohibitions on sex during deployment. One active duty Army enlistee last deployed in 2011 explained the intersecting barriers to contraception access:

I was on the [vaginal ring] prior to deployment, and needed to switch to an option that did not require refrigeration. The physician's assistant I saw wanted to put me on Depo (the shot) but I wanted a pill because of reservations about weight gain. The PA then refused to prescribe me any other medication. I had to beg a medic to let me see another provider. The nurse practitioner that I saw then wouldn't

Table 3 Ease of access to contraception and facilitators and barriers to access predeployment and during deployment among respondents who did not report a moral or personal reason for not using contraception (n=238)

	Predeployment n (%)	During deployment n (%)
Ease of accessing contraception		
Very easy	79 (33.2)	50 (21.0)
Somewhat easy	52 (21.9)	41 (17.2)
Somewhat difficult	24 (10.1)	27 (11.3)
Very difficult	18 (7.6)	24 (10.1)
Missing or did not seek contraception	65 (27.3)	96 (40.3)
Facilitators*		
Free/low cost	142 (59.7)	96 (40.3)
Ability to bring a full contraceptive supply for my tour	92 (38.7)	56 (23.5)
Care is close by/easy to get to	58 (24.4)	42 (17.7)
Easy to get an appointment	49 (20.6)	30 (12.6)
My chain of command is supportive	20 (8.4)	24 (10.1)
Easy to use mail order pharmacy	13 (5.5)	12 (5.0)
Nothing	6 (2.5)	34 (14.3)
Missing or did not seek contraception	67 (28.2)	85 (35.7)
Barriers*		
Difficulty getting an appointment	72 (30.3)	44 (18.5)
Inability to bring enough contraceptive supplies for my tour	42 (17.6)	48 (20.2)
Don't want others to know I am having sex/judge me	22 (9.2)	18 (7.6)
Care is far away/difficult to get to	21 (8.8)	23 (9.7)
My chain of command is not supportive	18 (7.6)	13 (5.5)
I might get reprimanded for sexual activity	13 (5.5)	13 (5.5)
High cost	3 (1.3)	2 (0.8)
Nothing	58 (24.4)	53 (22.3)
Missing or did not seek contraception	71 (29.8)	85 (35.7)

*Multiple responses accepted.

prescribe me anything, because she didn't see why I needed it. Finally, I said I was deploying with my husband and she relented and gave me a birth control pill prescription.

During deployment

Among respondents (n=238), roughly one-third (38.2%) said it was somewhat or very easy to obtain birth control through the military during their last deployment, and nearly one-quarter (21.4%) somewhat or very difficult (table 3). Facilitators to access during deployment included the free/low cost of birth control (40.3%), ability to bring a full supply (23.5%), care being close by or easy to get to (17.7%), ease of getting an appointment (12.6%) and supportive chain of command (10.1%).

Nineteen per cent of respondents said that difficulty making an appointment and 20.2% the inability to bring enough supplies to deployment made obtaining contraception during deployment difficult. An active duty Navy officer last deployed in 2014 explained why not having sufficient supplies was challenging: 'My worry on deployment shouldn't be making plans to get an appointment for a refill...and then [having to] take time to pick it up. Takes my mind away from my main task at hand while deployed'. Nearly one-quarter (22.3%) of respondents said that nothing made it difficult to obtain contraception during deployment (table 3).

Fifty-three (22.3%) respondents reported starting or refilling birth control during last deployment (data not shown). Among these, 51.0% said it was somewhat (34.0%) or very (17.0%) easy, and 49.1% said somewhat (28.3%) or very (20.8%) difficult. In open-ended answers, 21 respondents provided additional details, noting barriers related to appointment wait times or scheduling; military health system issues, such as difficulty transferring medical records; lack of specific methods or contraception generally; and privacy concerns or perceiving judgement from medical providers regarding contraceptive use. One currently deployed active duty Air Force officer explained how limited contraceptive availability affected access: 'Deployed locations don't keep a large stock or variety of birth control pills on hand, and there is no way to get an IUD inserted. My location had to order my specific type of pill because my body reacts poorly to changes in medication. The pharmacist treated me like a problem child because I wanted a specific brand, and the doctor made me take a pregnancy test every time I came in for a refill'.

DISCUSSION

Among this sample of servicewomen whose deployment ended in 2010 or later, contraceptive use during deployment was comparable to a sample of servicewomen whose deployment ended prior to 2010 (64.8% vs 62.7%); however, the proportion of contraceptive users with an IUD was higher in our survey (22.3% vs 2.9%).¹⁰ Although less common until late in our study period, programmes aimed at increasing access to long-acting reversible contraception for servicewomen may explain this increase.²⁰ While nearly one-quarter of our study population reported using an IUD, open-ended responses revealed that some participants faced access barriers.

Only half of the participants reported a conversation about birth control with a military provider predeployment. Beginning in 2016, a new regulation mandated predeployment contraception counselling.²¹ This policy took effect at the end of our study period and likely affected few respondents, but may have contributed to an increase compared with past studies.¹⁰

Similar to other studies, cost and ease of accessing care were facilitators to contraception access,^{3 10 20} and

appointment availability and an inability to get a full supply of contraceptives were barriers.^{3 10 11 22} These results are in line with findings indicating multiple, intersecting barriers to contraceptive access for servicewomen.^{3 11}

There are limitations to this study. First, we recruited a convenience sample and servicewomen who encountered barriers to reproductive healthcare during deployment may have been more likely to respond. Second, we are unable to calculate a response rate, as we do not know the total number of active duty and reserve servicewomen between 2010 and the time our survey was fielded. In 2016, there were 362 801 active duty and reserve servicewomen,¹⁹ so our sample is a small proportion of the total. As a result of our sampling design and low response rate, generalisation to the military population or comparison with other studies may not be appropriate. Additionally, respondents who did not seek contraception from the military may have faced barriers that dissuaded them from seeking services and skipped related questions. Alternatively, these servicewomen may have faced barriers in a prior deployment that affected care seeking in their most recent deployment. If this is the case, limiting analyses to those who sought care may underestimate the proportion of servicewomen who face predeployment barriers. Finally, most respondents' last deployment ended before the 2016 implementation of mandatory predeployment contraceptive counselling, so we were unable to assess the impact of this policy.

CONCLUSIONS

These findings indicate continued barriers to contraception for deployment for some servicewomen. This unmet need, in conjunction with the growing use of and demand for long-acting contraception, suggests that continued expansion of programmes designed to increase contraceptive access for servicewomen is warranted. Furthermore, monitoring should be implemented to ensure adherence to the 2016 mandate requiring predeployment contraceptive counselling. Any expanded contraception provision programmes and predeployment counselling must be comprehensive and non-coercive and include side effects counselling, since side effect concerns deterred some respondents from using contraception. Many respondents highlighted the benefit of having access to low-cost, easily accessible contraception. As programmes are expanded, continued ease of access and low cost should be prioritised. Finally, given the challenges some servicewomen faced obtaining appointments and/or a full supply of contraception for deployment, the military should consider operational changes to make pathways to contraceptive use clearer.

Additionally, more research is needed to assess contraceptive access among a representative population of servicemembers. In 2015, a Congressional mandate required collection of contraceptive-related

data through the Department of Defense's Health-Related Behaviors Survey (HRBS). Unfortunately, the response rate for the 2015 HRBS survey is low.²³ More resources should be dedicated to collecting representative data, particularly after implementation of predeployment contraceptive counselling requirements. Such studies will identify potential intervention points to better serve servicemembers with unmet contraceptive needs.

Contributors DG and KG designed the study. JWS and LF collected the data. JWS, KG and LF analysed the data. JWS, KG, LF and DG interpreted the data and drafted the manuscript. All authors have reviewed and approved the manuscript.

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Competing interests None declared.

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Patient consent for publication Not required.

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Data availability statement No data are available. Survey respondents completed informed consent documents to participate in the study, with the understanding that any and all identifying information would remain confidential, including in the context of publication. Publishing the complete dataset would infringe on the confidentiality agreement we have made with the participants in our study. Beyond the relevant data included in the manuscript, we are happy to share our research instruments upon request.

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REFERENCES

- Grindlay K, Grossman D. Unintended pregnancy among active-duty women in the United States military, 2011. *Contraception* 2015;92:589–95.
- Finer LB, Zolna MR. Declines in unintended pregnancy in the United States, 2008–2011. *N Engl J Med* 2016;374:843–52.
- Seymour JW, Fix L, Grossman D, *et al.* Facilitators and barriers to contraceptive use among U.S. servicewomen who had an abortion. *Mil Med* 2019;184:e417–23.
- Ritchie EC. Issues for military women in deployment: an overview. *Mil Med* 2001;166:1033–7.
- Grindlay K, Yanow S, Jelinska K, *et al.* Abortion restrictions in the U.S. military: voices from women deployed overseas. *Womens Health Issues* 2011;21:259–64.
- Witkop CT, Webber BJ, Chu KM, *et al.* Contraceptive prescriptions for US servicewomen, 2008–2013. *Contraception* 2017;96:47–53.
- Stahlman S, Witkop CT, Clark LL, *et al.* Contraception among active component service women, U.S. armed forces, 2012–2016. *MSMR* 2017;24:10–21.
- Erickson AK, Nelson DA, Shaw JG, *et al.* Long-Acting reversible contraceptive placement among Active-Duty U.S. Army servicewomen. *Obstet Gynecol* 2017;129:800–9.
- Harrington LA, Shaw KA, Shaw JG. Contraception in US servicewomen: emerging knowledge, considerations, and needs. *Curr Opin Obstet Gynecol* 2017;29:431–6.
- Grindlay K, Grossman D. Contraception access and use among U.S. servicewomen during deployment. *Contraception* 2013;87:162–9.
- Manski R, Grindlay K, Burns B, *et al.* Reproductive health access among deployed U.S. servicewomen: a qualitative study. *Mil Med* 2014;179:645–52.
- Wilson C, Corrigan R, Reese S, *et al.* Military medics' insight into providing women's health care in deployed settings. *Mil Med* 2016;181:e1608–14.
- de Kanter CB, Roberts TA, Raiciulescu S, *et al.* Military family physicians' practices and perceptions about reproductive health services for deploying women. *Mil Med* 2019;184:e424–30.
- Krulwich CJ. Reproductive health of active duty women in medically austere environments. *Mil Med* 2016;181:63–9.
- SurveyMonkey Inc. *SurveyMonkey*. San Mateo, California.
- Qualtrics. *Qualtrics*. 2017 ED. Provo, Utah. 2019.
- Trussell J, Guthrie KA. Choosing a contraceptive: Efficacy, safety, and personal considerations. In: Hatcher R, Trussell J, Nelson A, *et al.*, eds. *Contraceptive technology*. New York: Ardent Media Inc, 2011: 19–47.
- StataCorp. *Stata statistical software. release 15.1 ED*. College Station: TX, 2017.
- Department of Defense. Demographics profile of the military community 2016.
- Adams KL. Operation PINC: process improvement for non-delayed contraception. *Mil Med* 2017;182:e1864–8.
- One hundred Fourteenth Congress of the United States of America 2015.
- Battista RM, Creedon JF, Salyer SW. Knowledge and use of birth control methods in active duty army enlisted medical trainees. *Mil Med* 1999;164:407–9.
- Meadows SO, Engel CC, Collins RL, *et al.* 2015 Department of Defense health related behaviors survey (HRBS). *Rand Health Q* 2018;8:5–8.