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TITLE: Combat Readiness: Hygiene Issues Related to Military Women

PRINCIPAL INVESTIGATOR: Barbara S. Czerwinski, Ph.D.

CONTRACTING ORGANIZATION: University of Texas Health Science
Center at Houston
Houston, Texas 77225

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TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

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13. ABSTRACT (Maximum 200 words) Objective: To examine variation in feminine hygiene practices in normal and combat (deployed) environments. Design: A non-experimental descriptive research design with study sample stratified by routine and deployed environments. Participants: Women 20-65 years of age (mode 41). Two thousand military women in all branches were surveyed with a response rate of 56%(n=1013), 880 were usable questionnaires as 133 were deployed Stateside; 53% were enlisted and 47% were officers. Main Outcome Measures: The Deployed Female Health Practice Questionnaire(c) was developed and implemented. Results: Significant differences were found in the areas of types of menses management products used, douching and handwashing practices. Conclusions: Continuing education about safe feminine hygiene practices, especially regarding douching and handwashing after genitourinary contact, will be important in deployed (field) environments. Recommendations: Further study is recommended on intervention strategies for hygiene management practices.					
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FOREWORD

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Barbara L. Cunningham, MD June 8, 1999
PI - Signature Date



The Committee for the
Protection of Human Subjects

NOTICE OF CONTINUING REVIEW APPROVAL

September 18, 1998

HSC-SN-95-039 - "Combat Readiness: Hygiene Issues Related to Military Women"
P.I.: Barbara Shelden Czerwinski, Ph.D.

PROVISIONS: Unless otherwise noted, this approval relates to the research to be conducted under the above referenced title and/or to any associated materials considered at this meeting, e.g. study documents, informed consents, etc.

APPROVED: At a Convened Meeting

APPROVAL DATE: September 18, 1998

EXPIRATION DATE: August 31, 1999

CHAIRPERSON: Anne Dougherty, MD

Upon review, the CPHS finds that this research is being conducted in accord with its guidelines and with the methods agreed upon by the P.I. and approved by the Committee. This approval, subject to any listed provisions and contingent upon compliance with the following stipulations, will expire as noted above:

CHANGES - The P.I. must receive approval from the CPHS before initiating any changes, including those required by the sponsor, which would affect human subjects, e.g./ changes in methods or procedures, numbers or kinds of human subjects, or revisions to the informed consent document or procedures. The addition of co-investigators must also receive approval from the CPHS.

INFORMED CONSENT - Informed consent must be obtained by the P.I. or designee using the format and procedures approved by the CPHS. Attached is the approved and validated informed consent form. You must discard previous informed consent documents being used for human subjects and replace them with this stamped validated version. The P.I. must instruct the designee in the methods approved by the CPHS for the consent process. The individual obtaining informed consent must also sign the consent document.

UNANTICIPATED RISK OR HARM, OR ADVERSE DRUG REACTIONS - The P.I. will immediately inform the CPHS of any unanticipated problems involving risks to subjects or others, of any serious harm to subjects, and of any adverse drug reactions.

RECORDS - The P.I. will maintain adequate records, including signed consent documents if required, in a manner which ensures confidentiality.

10-7-98 Received [Signature]

MCHE-CI

26 March 1998

MEMORANDUM THRU NURSING RESEARCH, DEPARTMENT OF NURSING

FOR Dr. Barbara S. Czerwinski, Ph.D., Houston Health Science
Center, University of Texas, 1100 Holcombe, Room 5.517,
Houston, Texas 77030

SUBJECT: Application for Clinical Investigation Project

1. Your application for clinical investigation project **"Combat Readiness: Hygiene Issues Related to Military Women"** has been approved and is assigned work unit number C-98-85.
2. As the principal investigator your responsibilities are as follows:
 - a. A change in the research plan must be reported to the DCI for submission to appropriate committees for approval prior to implementation.
 - b. If transferred, submit to the DCI the name of the individual who will continue the study.
 - c. If the study is terminated, submit a report to the DCI stating the study is terminated and the reason for termination.
 - d. If any serious adverse reactions occur during the study which were not expected, they must be reported to the Chief, DCI, within 24 hours.
3. An annual research progress report must be submitted to my office nlt 1 FEB 99 or upon completion, whichever comes first. Failure to comply could result in curtailment of funding for the project and/or termination.

for Helen J. Smith
JENICE N. LONGFIELD
Colonel, MC
Chairman, Institutional Review
Board

7 April 1998 Received [Signature]



DEPARTMENT OF THE ARMY
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS 78234-6200

REPLY TO
ATTENTION OF

6 March 1998

MCHE-CI

MEMORANDUM FOR Commander, Brooke Army Medical Center, Fort Sam
Houston, TX 78234-6200

SUBJECT: Minutes of the Institutional Review Board Meeting (IRB),
5 March 1998

1. **CALL TO ORDER:** The BAMC Institutional Review Board was called to order by COL Jenice N. Longfield, MC, on 5 Mar 98, at 1330, in the Department of Clinical Investigation Conference Room, Brooke Army Medical Center, in accordance with BAMC Memo 15-1, dated 29 July 1994. Protocols were distributed to the committee members for review on 23 Feb 98.

2. **MEMBERS PRESENT:**

COL Jenice N. Longfield, MC, DCI, Chairman
COL Arnold A. Asp, MC, Asst Ch, DCI
LTC James D. Starcher, MS, PAD

(Represented by CPT Theresa Vowels, MS)

LTC Thomas C. Shank, MS, Department of Pharmacy
MAJ John R. Caton, MC, Hematology-Oncology Service
MAJ Jeffrey F. Hines, MC, Department of OB-GYN
MAJ Robert L. Littleton, Jr, JA, Center Judge Advocate
CPT Lisa zahler, MC, WHMC
Prof Karin Zucker, JD, Bioethics Consultant
Bryan Jordan, RN, Institute of Surgical Research
Robbie Fuqua, Recorder Without Vote

MEMBERS ABSENT:

LTC John T. Cody, USAF, BSC, Clinical Investigation
Directorate, WHMC
MAJ Karen Brandon, Chaplain
CPT Michael Kwan, MC, Cardiology Service
Helen Smith, Recorder Without Vote

OTHERS PRESENT:

Barbara Czerwinski, PhD, Univ of Texas, Houston, TX
MAJ Daniel Gavin, MC, Pulmonary Disease Service
Betsy Higgins, CCRA, Hematology-Oncology Service

Carolyn Massarello, CCRA, Hematology-Oncology Service
Lorelei Gomez, Student Intern, Texas A&M Univ, College Station, TX

3. **OLD BUSINESS:** The minutes of the Institutional Review Board meeting, 5 Feb 98, were approved as written.

4. **NEW BUSINESS:** The following protocols were reviewed:

- (1) **Combat Readiness: Hygiene Issues Related to Military Women**
Principal Investigator: Barbara Czerwinski, PhD

DISCUSSION: The objectives of this study are: (1) to identify feminine hygiene practices under combat conditions; and (2) to make recommendations for requirements encompassing feminine hygiene practices under combat conditions to ensure the optimal health and combat readiness of female military personnel. The first part of this study (the initial screening test) was approved in Apr 97 with COL Abbott being the PI. COL Abbott was required to bring Phase II survey back to the IRB. COL Longfield will contact HSRRB for permission to omit the consent form for the questionnaire. The IRB requested that Dr. Czerwinski add someone from BAMC nursing service as an associate investigator. The study was approved.

RISK: Minimal; **MEDICAL MONITOR:** None required for minimal risk. **REVIEW:** Annually; **RECOMMENDATION:** Approved by a vote of 10 For; 0 Against.

ACTION: Submit to Clinical Investigation Regulatory Office, AMEDD Center & School, for review. (ACTION CLOSED)

- (2) **Clinical Usefulness of Serial Estimations of Carbon Monoxide Diffusion Capacity to Assess for Diffuse Alveolar Hemorrhage in the Bone Marrow Transplant Unit**
Principal Investigator: MAJ Daniel Gavin, MC

DISCUSSION: This is a prospective, blinded study, that will address the issue of whether performing daily carbon monoxide diffusion capacity measurements corrected for alveolar volume (DLCO/Va) on adult patients, who have recently undergone high-dose chemotherapy followed by bone marrow or stem cell transplant, will allow detection of a subgroup of patients with an abnormal rise in DLCO/Va. This study was approved with a few minor consent form corrections.

RISK: More than Minimal; **MEDICAL MONITOR:** COL Michael Berry, MC; **REVIEW:** Annually; **RECOMMENDATION:** Approved by a vote of 10 For; 0 Against.

ACTION: Submit to Clinical Investigation Regulatory Office, AMEDD Center & School, for review. (ACTION CLOSED)

- (3) **How Enlisted Women on Active Duty Manage Breast Cancer**
Principal Investigator: LTC Margaret Wilmoth, AN

6. **ADJOURNMENT:** The meeting adjourned at 1700. The next meeting will be held on Thursday, 9 April 1998, at 1330, in DCI's Conference Room.

Robbie E. Fuqua
ROBBIE E. FUQUA, CCRA, CIM
Recorder

Jenice N. Longfield
FOR JENICE N. LONGFIELD
COL, MC
Chairman

APPROVED ~~DISAPPROVED~~ 18 Mar 98

Harold L. Timboe
HAROLD L. TIMBOE
Brigadier General, MC
Commanding



DEPARTMENT OF THE ARMY
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS 78234-6200

March 25, 1998

REPLY TO
ATTENTION OF

Department of Clinical Investigation

Barbara S. Czerwinski, Ph.D.
Houston Health Science Center
University of Texas
1100 Holcombe, Room 5.517
Houston, Texas 77030

Dear Dr. Czerwinski:

SUBJECT: Waiver of Consent Form for Protocol "Combat Readiness:
Hygiene Issues Related to Military Women"

COL Jenice Longfield, MC, Chairman of the Brooke Army Medical Center Institutional Review Board (BAMC IRB), has spoken to Ms. Yvonne Higgins of the HSRRB regarding the consent form for this study. Ms. Higgins agrees there is no reason to require an informed consent since there are no identifiers or sensitive questions. The HSRRB approved Phase II with the informed consent waived. Therefore, the BAMC IRB also will waive the informed consent for this protocol.

Helen J. Smith
Recorder
Institutional Review Board
Brooke Army Medical Center

cc: LTC Linda Yoder, AN

April 1, 1998 Received [Signature]

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Introduction

Over the past 20 years, the number of women serving in the military has steadily increased. It is projected that women will constitute as much as 20% of the active duty forces by the year 2000, up from 2% in 1972. Women's health care needs have drawn increased attention because of the large numbers of women being deployed in combat related roles. The central mission of the United States Armed Forces remains focused on the preparation for combat of all military personnel. Combat readiness in military women creates a unique set of hygiene requirements to include the management of elimination products, such as urine, feces and menstrual discharge.

Deployment is defined by the Joint Deployment Training Center as the "positioning of forces into a formation for battle; the relocation of forces and material to the desired area of operation. Deployment encompasses all activities for origin or home station through destination, specifically including intra-continental United States, inter-theater and intra-theater movement legs, staging and holding areas" (*Joint Deployment Training Center*, 1998). Thus, in normal environments the threat to life is obscure; and in deployed environments the threat to life is obvious or real. For the purposes of this report, normal experiences are reported as those being of the home station environments. Deployed environment experiences are reported as those being ready for or during combat actions.

Military personnel need to be prepared for combat readiness at all times. For adult females, feminine hygiene practices constitute health care practices based on physiological necessities for the management of elimination products, including urine, feces, and menstrual discharge. This study was designed to investigate and to make recommendations for female health practices carried out in combat and non-combat environments by military women. Both qualitative and

quantitative research methodologies were used to explore feminine hygiene practices. Effective feminine hygiene practices were incorporated into the recommendations.

The focus of this study was feminine hygiene practices. The research questions addressed were as follows:

The first phase of the study answered the first two of five research questions proposed.

Question 1: What have been the experiences of maintaining feminine hygiene practices such as cleansing the body, collecting menses waste, and protecting against genitourinary infection in a combat (deployed) environment?

Question 2: What specific management strategies are recommended for feminine hygiene practices by healthcare professionals for military women in combat (deployed) and noncombat (home base) environments? This question was expanded to include all military women, not just the healthcare professionals. The information from the interviews to answer the first two research questions were used to develop the FHPQ.

Question 3: What specific management strategies are used by military women for feminine hygiene practice in combat and non-combat environments?

Question 4: What specific management strategies are used by military (combat experienced and/or trained for combat) women for feminine hygiene practices in non-combat environments?

Question 5: Is there a difference in management strategies used by military women for feminine hygiene practices in combat and non-combat environments?

Body

Methods

The Combat Readiness study was conducted in two parts. The first part comprised the initial interview portion for qualitative analysis (Czerwinski, 1997, October. Annual Report DAMD 17-96-2-6025). The subsequent quantitative part of the study pertaining to the development and implementation of the Deployed Female Health Practice Questionnaire © (FHPQ) (Appendix A) is the subject of this report. Examination of female hygiene practices in military women was accomplished using a descriptive non-experimental research design. The final sample of 880 English-speaking women who were 18 years of age or older was drawn from two databases of military women.

Instrument

An investigator-developed 191-item health practice questionnaire was used. The questionnaire items were based on a literature review, previous research by the principal investigator (Czerwinski, 1996), and evaluation by a panel of experts for content validity. Eight deployed experienced volunteers from the Veterans Administration Medical Center, Houston, Texas and ten trained-for-deployment volunteers from Fort Hood Army Base, Fort Hood, Texas, pilot tested the questionnaire for readability and return instructions. From the pilot-testing responses, changes were made to the questionnaire for clarification of deployment status and sequence of questions. A second panel of experts from military women's health graduate students and one civilian educator examined the FHPQ for content validity. Minor revisions were made based upon the recommendations of the panel.

The FHPQ instrument contains 191 items with 800 data elements and a page for comments (Appendix A). A holistic approach was taken in the design of the FHPQ. The FHPQ encompassed broad categories of health practices including health promotion, disease prevention and treatment, reproduction, and life style management, and demographic information.

The terminology used for the FHPQ is at the sixth to eighth grade reading level. These reading levels are consistent with the U. S. Army Medical Research and Materiel Command guidelines for all consent forms. Words used for bodily functions were gleaned from standard, medical, and slang dictionaries, thesauruses, public broadcasting, media and military references.

The FHPQ was mailed to the participants with a pre-printed self addressed and stamped envelope for return. The questionnaire was printed in a booklet form with a plain navy-blue cover. The cover of the questionnaire had a small cutout section in the lower right-hand quarter that displayed the questionnaire's title. The questionnaire was designed to be an invitation to the respondents to convey important personal information to the investigators.

For clarity of terms, the questionnaire was named Deployed Female Health Practices Questionnaire. The contents of the FHPQ were divided into two sections for responses. The first section pertained to normal health practices or what the participants do now in their normal home-base environments. The second section pertained to retrospective data recalled in the most current deployed environments.

The FHPQ used a paper and pencil format with check-off scales. The final item was an opened-ended statement for comments. Data were analyzed using the Statistical Package for Social Services (SPSS) software program. Scores were interpreted by descriptive summary of specific practices. Differences were assessed between normal practices and deployed practices for feminine hygiene practices using chi-square test of goodness of fit at $p < 0.05$.

Procedure

Approval for the study was obtained from the institutional review board of the researcher's institution and from the governing bodies of Department of Army, Brooke Army Medical Center, Fort Sam Houston; Veterans Affairs Medical Center-Houston; the Women in Military Service for American Memorial Foundation, Inc. (The Women's Memorial), Washington, D.C.; and the Department of Defense, Defense Manpower Data Center (DMDC), Seaside, California. The database listings were requested based on the following criteria:

300 U.S. Air Force (150 enlisted and 150 officers)

300 U.S. Army (150 enlisted and 150 officers)

300 U.S. Navy (150 enlisted and 150 officers)

100 U.S. Marines (50 enlisted and 50 officers)

Eligibility criteria included:

- Previously deployed to Panama, Haiti, Somalia, Cuba, Bosnia, or Persian Gulf (No deployments earlier than 1989). Deployment to more than one location permissible.
- Deployment defined as being sent to a location to fulfill mission other than normal assigned duty for one month or greater.
- Currently in the U.S. (or currently in the military).
- Status of reserve, active duty or veteran/retired.

The database provided the name, rank, branch of service, and current address.

The questionnaire survey was self-administered. A complete packet contained a consent letter (Appendix B), the Female Health Practice Questionnaire© (FHPQ), a stamped-addressed return envelope, and a 3x5 label to place name and address on for non-active duty participants

with a business size stamped-addressed return envelope to receive \$10 for participation.

Completion of the questionnaire constituted informed consent.

Expert panel reviewers were convened January 28, 1999; to review the study results specific to their area of expertise. The panel recommendations have been incorporated into this report.

The panel members were the following:

Czerwinski, B. (PI, civilian)

Wardell, D. (CO-PI, civilian)

Kouzekanani, K. (Consultant, methodology)

Pitts, K. (Research assistant, U.S. Army Reserve)

Connelly, L. (PI, U.S. Army)

Yoder, L. (CO-PI, U.S. Army)

Goldstein, D. (Consultant, U.S. Navy Reserve)

Ternus (formerly Mayrose), M. (PI, U.S. Air Force Reserve)

Trytten, D. (DACOWITS Representative)

Laday-Smith, S. (Coordinator, Women Veterans Program, VAMC, Houston, Texas)

del Junco, D. (University of Texas-Houston, Health Science Center, School of Public Health,
Research Epidemiologist)

Booher, C. (NASA, Human Factors specialist)

Peek, K. (Consultant, Anatomical and Physiological gender differences, TWU Research
Department)

Mellot, S. (Healthcare Administrator, U.S. Army Retired)

Sanders (formerly Goldsberry), B. (NASA Contractor, Human Factors specialist)

Carter, P. (Family Practice Physician, U.S. Army Retired)

Hector, B. (Consultant, U.S. Army Nurse Practitioner)

Starck, P. (Dean, University of Texas-Houston, Health Science Center, School of Nursing)

Hanneman, S. (Associate Dean, Research and Evaluation, University of Texas-Houston, Health Science Center, School of Nursing)

Marcus, M. (Department Chair, University of Texas-Houston, Health Science Center, School of Nursing)

Engbretson, J. (Associate Professor, University of Texas-Houston, Health Science Center, School of Nursing)

Otto, D. (Associate Professor, University of Texas-Houston, Health Science Center, School of Nursing)

and

Graduate Nursing Students:

Balque, A. (U.S. Air Force)

Dulaigh, J. (U.S. Navy)

Leech, C. (U.S. Army)

Lomenick, T. (U.S. Air Force)

Reilly, K. (U.S. Navy)

Lenz, M. (U.S. Air Force)

Santiago, D. (U.S. Air Force)

Findings

Two thousand women in all branches of the military were surveyed with a response rate of 62% (n=1029), 880 were usable as 149 were deployed Stateside (remained in the United States) or had been trained for deployment but had not been deployed. The remaining questionnaires

were returned for the following reasons: 136 did not want to participate in the study (an option offered in the consent letter), and 206 had no forwarding addresses.

- **Demographics**

The age of the respondents ranged from 20 to 65 years (mode 41 years). The typical respondent was 41 years old, was a college graduate, was Caucasian and Christian, resided in a home with one other person and had two bathrooms, was married and in the Army, and had been deployed to Saudi Arabia. At the time of the survey was completed, 73% (n=519 of 708) reported having “regular periods/flow/cycles (Williams, 1994)” or currently menstruating. The demographic variables are summarized in Table I. All branches of the military were represented and are summarized in Table II.

The majority of the respondents reported their most recent deployment experiences were to the middle-east, Persian Gulf or Saudi Arabia (62%, n=544 of 880). Other respondents had been deployed to Europe (10%, n=85) except for Bosnia and Croatia (6%, n=51), Somalia (3%, n=23), and Asia (2.5%, n=21). The remaining 16.5% (n=156) had been deployed to Haiti, Panama, Cuba, Puerto Rico, South America, Central American, Australia, Israel, and Egypt.

- **Feminine Hygiene Practices**

Feminine hygiene and menses management practices were reported by respondents using the FHPQ. All significant differences are reported at the $p < 0.05$ level. Percentages are followed by the number answering a specific portion of the total number who responded to a question (xx %, n= xx of xx).

TABLE I
DEMOGRAPHIC VARIABLES

Present Marital Status			Ethnicity		
		Percent			Percent
Married	331	53	Hispanic	35	4
Single	179	28	African-American	62	7
Divorced	92	15	Native American	13	2
Widowed	4	1	Asian-Pacific	9	1
Separated	11	2	Caucasian	724	84
Other	13	2	Other	20	2
TOTAL Replied	630		TOTAL Replied	863	
Religion			Education		
		Percent			Percent
Christian	744	86	GED	6	1
Jewish	4	0	High School	56	6
Hindu	2	0	>2 years college	106	12
Buddhist	5	1	2 college degrees	79	9
Non-Religious	74	9	<2 years college	86	10
Other	34	4	4 college degrees	184	21
TOTAL Replied	863		Some graduate school	97	11
Age			Graduate degree	257	30
Range 20-65 years			TOTAL Replied	871	
Mode 41years					

TABLE II
MILITARY BRANCHES

Branch	Officer	Enlisted
US Army	355	205
US Navy	196	71
US Marine Corp	49	34
US Air Force	244	140
TOTAL	844	450
Percentage	47%	53%
Missing data	36	
Total questionnaires	880	
(with deployed experiences)		

- Tampons

Overall, tampon usage during deployed conditions remained similar to normal conditions. The types of tampons used during normal conditions and deployed conditions did vary significantly. Under normal conditions respondents reported using unscented, regulars (medium absorbency), scented, plastic applicators, naturals (100% cotton), "lites" (junior absorbency), super absorbency, and paper applicators tampon types. During deployment there were significant decreases in the use of super absorbency, paper applicators, no applicators, scented, naturals (100% cotton), and "lites" (junior absorbency tampon types. During deployment, tampons used were unscented, regulars (medium absorbency), and with plastic applicators.

- Sanitary Pads/Napkins

Sanitary pads/napkins used during deployment remained similar to normal conditions for pad usage. During deployment there were significant decreases in the use of scented, "light days," and individually wrapped pads used. During deployed conditions, the respondents primarily used the following pad types: unscented, moderate, super (heavy), and other things for pads (toilet paper, paper towels, etc.).

- Panty-Liners

Overall, panty-liners were significantly used less during deployed conditions than normal conditions. Panty-liners were used less during deployment for "only certain days" and other reasons (underwear, etc.). During deployment there were significant decreases in the usage of individually wrapped, scented, unscented, and

bulk packages of panty-liners. There were significant increases of panty-liner usage during deployment "whenever they could" use them.

- Douching Practices

Douching practices during deployed conditions significantly decreased from those under normal conditions. There were decreases in usage of disposable, vinegar, betadine, and water douching solutions during deployment.

- Making Sure and Other Menses Practices

The making sure (Patterson & Hale, 1985) or the combination of tampons and pads/napkins used during menses (periods) significantly decreased during deployment. The combination usage of tampons and pads/napkins between menses (periods) remained similar under normal and deployed conditions. The use of pads/napkins, tampons, panty-liners, and other products remained similar under normal and deployed conditions.

- Limiting of showers or bathing during menses

Limiting of showers/bathing during menses significantly increased during deployed conditions from normal conditions. There were no reported changes in menses interference with work performance during normal and deployed conditions.

- Disposal of used tampons and pads/napkins

The disposal of used tampons and pads/napkins changed significantly during deployed conditions. There was decreased usage of receptacles by toilets during deployment. There was increased usage of receptacles outside toilet areas, wrapping and caring with one's self, dropping into the toilets, and other disposal means during deployed conditions.

- Changing and Handwashing Practices with Menses Collection Products

Tampons were changed every six (6) hours as recommended by the manufacture in normal conditions “most of the time” or “always” done by 89% (n=484 of 547) of women but declined to 78% (n=461 of 589) in deployed situations. Handwashing before inserting tampons during normal conditions “most of the time” or “always” were done by 48% (n=259 of 546) but declined to 39% (n=227 of 591) during deployed conditions. Handwashing after inserting tampons during normal conditions the responses were “most of the time” or “always” 95% (n=519 of 546) while the responses during deployed conditions were 79% (n=469 of 589).

Handwashing after changing sanitary pads/napkins during normal conditions were done “most of the time” or “always” by 93% (n=449 of 483) but declined during deployed conditions to 78% (n=334 of 429). After changing panty-liners, handwashing were done “most of the time” or “always” under normal conditions by 90% (n=449 of 500) and during deployed conditions declined to 79% (n=289 of 366).

- Underwear

The majority of the respondents 93% (n=812 of 877) reported utilizing cotton underwear, and changed their underwear daily by 82% (n=715 of 876). The majority of the respondents laundered their underwear by machine washing (46%, n=399 of 876), or by hand wash in the bathroom or shower (38%, n=336 of 876).

- Health Problems during Deployment

The most frequent health problems during deployment reported by the respondents were 32.7% (n=279 of 853) with constipation and 32.4% (n=276 of 851) with diarrhea. Other

health problems reported during deployment were painful cramps, periods of flow of cycle occurring by 22.7% (n=194 of 853), back pain by 21.0% (n=179 of 854), and skin problems by 20.5% (n=175 of 852).

Health problems specific to women reported were as follows: Urinary burning, pain, urgent, or frequency by 10.4% (89 of 853); and leaking by 6.6% (56 of 852). Other female related problems were reported as follows: skipped or late periods of flow of cycle 11.9% (101 of 852); spotting (bleeding) between periods 6.0% (51 of 853); heavy bleeding or clots 13.0% (111 of 853); vaginal odors 4.9% (42 of 853); yeast infections 10.4% (89 of 852); and other female problems 2.5% (21 of 851). Health problems reported during deployment are summarized in Table III.

- Preventive Measures

During deployed conditions 25% (n=211 of 849) of the respondents reported being sexually active. Of the sexually active respondents, 66% (n=139) reported using "nothing" for preventive measures against sexually transmitted diseases. The other sexually active respondents reported using preventive measures were 26% (n=55) male condoms (lubricated), 11% (n=23) male condoms (dry), 9% (n=18) male condom and spermicide. The remaining 12% (n=26) reported using other items (food wrappings, soft drinks, etc.), spermicide only, sponges, diaphragms with spermicide, or female condoms.

- Comments

The responses to the comment section of the questionnaire were more than anticipated. From the completed (n=880) questionnaires, 265 were returned with comments. The comments shared by the respondents were varied in length and subject matter. Written

TABLE III
HEALTH PROBLEMS DURING DEPLOYMENT

Problems	Total Replied	Number of Replies with problems	Percent
BREASTS			
Pain	854	52	6.1
Lump	852	23	2.7
Nipple discharge	852	6	0.7
STOMACH, INTESTINES			
Nausea, vomiting	851	155	18.2
Pain	852	108	12.7
Diarrhea	851	276	32.4
Parasites	852	5	0.6
Constipation	853	279	32.7
Hemorrhoids	852	57	6.7
URINARY			
Burning, pain, urgent, frequency	853	89	10.4
Leaking	852	56	6.6
FEMALE RELATED			
Painful cramps, periods/flow/cycle	853	194	22.7
Skipped or late periods/flow/cycle	852	101	11.9
Spotting (bleeding), between periods	853	51	6.0
Heavy bleeding or clots	853	111	13.0
Vaginal odors	853	42	4.9
Yeast infections	852	89	10.4
Others	851	21	2.5
BONE/MUSCLE			
Neck	853	119	14.0
Shoulder	853	98	11.5
Back	854	179	21.0
Hip	854	47	5.5
Knee	853	112	13.1
Ankle	853	52	6.1
FEET			
Athlete's foot	852	94	11.0
(Fungal) infections	850	21	2.5
OTHER			
Skin	852	175	20.5
Personal & Family	849	76	9.0

comments were varied and included personal vignettes of problems, ideas for change, and emotional tributes to the leadership.

Discussion and Recommendations

No systematic study of this number of women has been recorded in the published literature to date. This study was designed to investigate and to make recommendations for female health practices carried out in combat and non-combat environments by military women. Both qualitative and quantitative research methodologies were used to explore feminine hygiene practices. What was found to be and not to be effective feminine hygiene practices were incorporated into the recommendations. Overall, the military women who responded to the quantitative portion of this study had safe feminine hygiene practices in normal and deployed environments.

Descriptive analysis was done on data collected from 880 conveniently selected subjects using the Female Health Practice Questionnaire©. The sample for the study, although adequate in size, was homogenous and thus generalization to other populations must be made with caution.

- **Demographic Characteristics**

In the study, the typical respondent was married, a college graduate, Caucasian, Christian 41 years old, and had been deployed to Saudi Arabia. The study sample was drawn from two large databases of active duty, reservist, or retired military personnel. There was similar representation for all military branches in this study as compared to total military women in the United States Armed Forces. The current breakdown of women is 36% in the Army, 34% in the Air Force, 27% in Navy, and 4% in the Marine Corps (Davis & Woods,

1999). The respondents to this study were represented by 42% Army, 29% Air Force, 23% Navy, and 6% Marine Corps.

The larger group of enlisted responders may have been based on the constraints of having to ask permission to actually receive rest periods to perform basic bodily functions when necessary. Thus, participating in the survey was an opportunity to express their concerns. Asking permission and having time to attend to bodily functions in the workplace are pervasive problems in most work environments (Linder & Nygard, 1998).

Minority military women represent a significantly larger proportion of the total population than is found within the civilian sector. African-American women represent approximately 31%, Hispanics 5%, and those listed as "Other" 4% of the total military forces (Davis & Woods, 1999). The lack of ethnic minority responses to the study may have been related to cultural differences of not wanting to report such individual or personal bodily practices, or misunderstanding of the questionnaire's terminology. It might be that minority women do not relate to feminine hygiene needs because the target population of the visual media is primarily done with Caucasian women.

The respondents' self-reported female health problems compared similarly to other studies by Hines (1992) and Lyon (1996). The self-reported diarrhea and constipation problems were probability related to water and dietary intakes in deployed environments.

- Hygiene Practices

The overall definition of feminine hygiene practices, as described by Budoff (1980), Simons (1989), and Czerwinski (1996) were supported by the findings of this study.

Research questions three; four and five were examined in this part of the study. The following two sections are discussions of relevant findings and a comparison to the published literature.

Feminine Hygiene Practices

Research questions three and four were as follows: What specific management strategies are used by military women for feminine hygiene practice in combat and non-combat environments? What specific management strategies are used by military (combat experienced and/or trained for combat) women for feminine hygiene practices in non-combat environments? The two groups of women, those ready or trained for deployment and those who had been deployed managed their feminine hygiene needs similarly. This demonstrates the basic concern for safe practices and the impact of maintaining a routine standard of personal care.

Combat (Deployed) Feminine Hygiene Practices

Research question five was as follows: Is there a difference in management strategies used by military women for feminine hygiene practices in combat and non-combat environments? There were significant differences found in management strategies used by military women for feminine hygiene practices in combat and non-combat environments. The differences were found in feminine hygiene practices, types of menses management products used, and handwashing practices in deployed environments. Combat environments (deployed) alter the way women manage their routine hygiene needs. And in this case often lead to questionable practices, which might have been necessary to provide the "safest" practice. For example, a decrease in handwashing facilities might have made tampon use unwise. Similarly, the decrease in handwashing practices may have contributed to health problems experienced in the field in combination with water and food availability.

**Conclusions
(Implications and Recommendations)**

- Expert Panel Recommendations from meeting of January 28, 1999
 1. Provide educational training programs concerning feminine hygiene issues to the commanders and supervisors based on their facility and needs. For example, those in the field environments as compared to those in fixed facilities.
 2. Provide women with oral contraceptives pills (OCPs) for a least one year. Clinicians suggested that it would be helpful as being part of a readiness campaign to have women on OCP's to reduce menstrual irregularities often found in stressful environments.
 3. Field test reusable menses collection devices as tampons and pads cannot be recycled. Use of such products would eliminate supply and waste management issues. To support this recommendation, reusable menses collection devices are commercially available and were used by the Biosphere female crew members (Alling, Nelson, & Silverstone, 1993).
 4. For field exercises use latrines, toilets, and showers that would be used for actual deployed conditions to increase exposure to "real life" situations.
 5. The FHPQ could be used for a checklist and anticipatory guidance for orientation to the deployed (combat) area.
 6. Utilize the FHPQ and expand to include more comprehensive health status needs. For example, incorporate health promotion and preventive status by developing a regular schedule for: Monogram, pelvic examination with pap smear, screening for human immunodeficiency virus (HIV) and sexually transmitted diseases (STDs), cardiovascular screening (blood pressure, electrocardiogram (EKG), lipid level), immunizations, and tuberculosis (TB) screening.

This could be done on going and use a mandatory system of the birth month for review. Dental classification readiness could serve as a model format to accomplish this recommendation.

7. Offer an advance practice nurse (nurse practitioner) visit for educational and physical needs before deployment. This could attend to the individual needs of women and review current health status for education about STDs, urinary tract infections (UTIs), and other self-treating solutions.
8. There is a need to educate females about sexually transmitted diseases (STDs) as this is critical to reducing late sequel of infections that long-term could affect performance (time lost). The co-investigators suggest exploring the use of the Air Force STD program developed and implemented by two women's health care (WHC) Nurse Practitioners as graduate students at the University of Texas-Houston, Health Science Center, School of Nursing (Lenz & Santiago. 1998) to address this recommendation.
9. Research final recommendations to test their effectiveness in promoting health and combat readiness. Continue to update and review data across deployment to determine if conditions improve and feminine hygiene needs are met. (Place information in a database.)
10. Identity needs of the Reservist in relation to female health care needs and ways to promote health. Work to develop strategies for meeting this population needs. Explore the applicability of active duty procedures to this group of military women.
11. Prioritize health information through assessment of needs and develop materials to hand out. For example, develop additional content for booklets for soldiers specific to deployed feminine hygiene needs incorporating materials currently available (Hector, 1998; Owens & Callies, 1995; Vara, 1998).

12. Increase cultural sensitivity and increase awareness of specific feminine hygiene needs. In order to accomplish this task, it is suggested that information from other cultures all ethnic groups be done using a variety of strategies. For example, conduct focus groups.
13. Data from this study may be applicable to women living in a terrestrial environment, women with physical disabilities, or women living and working in the space environment. Therefore, fund and convene an expert panel of "hard" scientist and engineers to review the study's findings for potential hardware research and development.

Further Recommendations

1. Replicate the 1995 latrine faculties study (Bagdonovich, 1995) with female soldiers. The male soldier satisfaction variables of amount of space in stalls and privacy were areas for further improvement. These two variables along with ventilation, odor, cleanliness, light, toilet, sinks, and latrine facilities overall variables would also impact to female soldiers to a greater degree as they spend more time attending to urinary elimination.
2. Provide 100% white cotton underwear to military women. Suggest reviewing the laundering of such garments in the field with military resources as compared to the individual soldier.
3. Identification of the state-of-the-art technologies or the technology development that are relevant to designing and implementing a safer personal care system in deployed and combat environments. Such systems could include reusable or biodegradable menses collection devices, toilets or waste management facilities, facilities with space to ease donning and doffing outer clothing for doing elimination processes, and more handwashing facilities or supplies.
4. Make more handwashing faculties, equipment, and supplies available in deployed environments such as prepackaged wet-towelettes and waterless hand cleanser.

5. Provide advanced nurse practitioners in the deployed (combat) area for health promotion and treatment of minor ambulatory health alterations in the troops.

In summary:

The implications of this research have far reaching consequences for women in the general populace as well as women in combat and space habitation environments. The women who contributed to this study are to commended.

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Appendix A
Questionnaire

**Deployed
Female Health Practice Questionnaire**

DEPLOYED FEMALE HEALTH PRACTICE QUESTIONNAIRE (FHPQ)

37

DEPLOYMENT (check appropriate areas)

- Have you ever been deployed? ☐ Yes ☐ No (If "No," please return this packet in the enclosed envelope)
- If "Yes," where were you deployed to? (check all that apply)

☐ Bosnia (Former Yugoslavia)

☐ Mideast (Saudi Arabia)

☐ Panama

☐ Somalia

☐ Vietnam

☐ Haiti

☐ Other: _____
- For each deployment complete the following:

Deployment	First	Second	Third	Fourth
Location				
Year				
Length of Deployment (months)				
Deployed Unit				
Duty Title				
Rank				

MILITARY STATUS TODAY (check appropriate areas)

- Branch: ☐ USA ☐ USN ☐ USMC ☐ USAF ☐ Coast Guard
- Duty Status: ☐ Active Duty ☐ IRR ☐ ARR ☐ Veteran ☐ Retired
- Assignment/Station: _____
- Pay Grade: _____
- SSI/MOS/AFSC: _____
- Position Title: _____
- Years in Service: _____
- How many years of active-duty service have you completed (including enlisted, warrant officer, and commissioned officer time)? _____
- How many years of reserve service have you completed? _____
- Birth Date: (month/year) _____ 14. Age Now: (years) _____

PERSONAL

15. Marital Status: (check appropriate boxes)

1st Deployment: ☐ Married ☐ Single ☐ Divorced ☐ Widow ☐ Separated ☐ Other _____
 One Year Later: ☐ Married ☐ Single ☐ Divorced ☐ Widow ☐ Separated ☐ Other _____
 2nd Deployment: ☐ Married ☐ Single ☐ Divorced ☐ Widow ☐ Separated ☐ Other _____
 One Year Later: ☐ Married ☐ Single ☐ Divorced ☐ Widow ☐ Separated ☐ Other _____
 Now: ☐ Married ☐ Single ☐ Divorced ☐ Widow ☐ Separated ☐ Other _____

16. Education: (check highest achieved)

☐ Less than 12 years of school (no diploma) ☐ GED or other high school equivalency certificate
☐ High school diploma ☐ Less than 2 years of college credits
☐ 2-year college degree (AA/AS) ☐ More than 2 years of college credits, but no 4-year college degree
☐ 4-year college degree (BA/BS) ☐ Master's, doctoral, or professional school (MA/MS/PhD/MD/JD/DVM/DDS)
☐ Some graduate school, but no graduate degree

17. Ethnicity:

☐ Hispanic ☐ African-American ☐ Native American ☐ Asian/Pacific ☐ White
☐ Other: _____

18. Religion:

☐ Christian (Catholic or Protestant) ☐ Jewish ☐ Hindu ☐ Buddhist ☐ Muslim (Islam)
☐ Non-Religious ☐ Other: _____

19. Where were you born? (city, state, country) _____

20. How many people live in your home today, including yourself? _____

21. How many bathrooms are in your home today? (does not have to have a shower or a bath) _____

WOMEN'S HEALTH HISTORY

Menstrual History

22. Age at first menstruation/period/flow/cycle: (years) _____

23. Number of days in cycle: _____

If your periods have stopped for one year or more, go to #36.

24. Is it regular? ☐ Yes ☐ No

WOMEN'S HEALTH HISTORY

Menstrual History (con't)

25. How often does it come? Every _____ to _____ days
26. On the chart below, mark how heavy your period/flow/cycle is for each day:

Day 1	Day 2	Day 3	Day 4	Day 5
☐ Spotting	☐ Spotting	☐ Spotting	☐ Spotting	☐ Spotting
☐ Very light bleeding	☐ Very light bleeding	☐ Very light bleeding	☐ Very light bleeding	☐ Very light bleeding
☐ Light bleeding	☐ Light bleeding	☐ Light bleeding	☐ Light bleeding	☐ Light bleeding
☐ Moderate bleeding	☐ Moderate bleeding	☐ Moderate bleeding	☐ Moderate bleeding	☐ Moderate bleeding
☐ Heavy bleeding	☐ Heavy bleeding	☐ Heavy bleeding	☐ Heavy bleeding	☐ Heavy bleeding
☐ Very heavy bleeding (gushing)	☐ Very heavy bleeding (gushing)	☐ Very heavy bleeding (gushing)	☐ Very heavy bleeding (gushing)	☐ Very heavy bleeding (gushing)

27. Are your periods/flow/cycle usually longer than 5 days? ☐ Yes ☐ No
28. Do you have clots during your period/flow/cycle? ☐ Yes ☐ No
29. Do you have painful periods/flow/cycles? ☐ Yes ☐ No (If "No," go to #36).
30. Describe the pain: (check all that apply)
- ☐ Sharp ☐ Constant ☐ Stabbing ☐ Intermittent ☐ Throbbing ☐ Cramping or Crampy
- ☐ Other: _____
31. How long does the pain last (minutes, hours, days)? _____
32. Does the pain occur with each cycle? (Frequency) ☐ Yes ☐ No
33. When does the pain start (e.g., before bleeding starts, 1st day, 2nd day, etc.)? _____
34. Do you use any of the following relief measures?
- | | |
|---|--|
| ☐ Heat pad | ☐ Warm bath |
| ☐ Over-the-counter medications,
(like Motrin®, Aspirin) | ☐ Prescription medications |
| ☐ Herbs, teas | ☐ Alcohol (wine, whiskey, brandy, "toddlies") |
| | ☐ Other: _____ |
35. What do you think about your periods/flow/cycles? (check all that apply)
- ☐ An inconvenience/a nuisance
- ☐ Natural/part of being a woman/necessary for fertility
- ☐ No problem ("doesn't worry me")
- ☐ Proof of adulthood ("makes me feel grown up")
- ☐ A relief that the body is functioning/of not being pregnant

WOMEN'S HEALTH HISTORY

Obstetric History

36. Number of Pregnancies: _____

37. Number of Births: _____

Contraceptive Method (Birth Control Method)

38. What method of contraception do you currently use? _____

39. What method of contraception did you use during deployment? _____

Menopause

40. Do you still have regular periods/flow/cycles? ☐ Yes ☐ No

41. If "No," at what age did you stop?(years) _____

42. Was there a surgical menopause (hysterectomy)? ☐ Yes ☐ No

43. Are you taking any hormone replacement therapy (HRT) for your menopause? ☐ Yes ☐ No
If "Yes", do you use pads or tampons? ☐ Yes ☐ No

44. Are you taking anything else for your menopause? ☐ Yes ☐ No

If "Yes", what? _____

Urinary Functions

45. I urinate (pee) _____ to _____ times a day.

46. I get up at night _____ to _____ times to go to the bathroom.

47. Do you ever leak or dribble urine (pee) or wet yourself? (check all that apply)

☐ No, I don't ☐ When I get close to the bathroom ☐ When I wait too long

☐ When I laugh or cough ☐ Other: _____

48. Do you suppress or hold the desire to pee? ☐ Yes ☐ No

49. If "Yes", where? _____

☐ Work ☐ Home ☐ When traveling ☐ Other: _____

WOMEN'S HEALTH HISTORY

Bowel Functions

50. I have a bowel movement (poop)? (check the one that applies to you)
- ☐ Everyday ☐ Every other day ☐ About once per week ☐ Other: _____
51. Do you have problems with constipation (hard/no bowel movements or poop)? ☐ Yes ☐ No
52. Do you have problems with diarrhea (runny/many bowel movements or poop)? ☐ Yes ☐ No
53. Do you use medication to help with constipation/diarrhea? ☐ Yes ☐ No If "No," go to #55.
54. If "Yes," check one of the following: ☐ Prescription ☐ Over-the-Counter ☐ Both
55. Does your daily food include any of the following high fiber foods? (check all that apply)
- ☐ Cereals ☐ Breads ☐ Fruits ☐ Vegetables

Prior History

56. Have you been treated for any of the following?
- | | Yes | No |
|--|--------------------------|--------------------------|
| Urinary tract/bladder infections/kidney infections | ☐ | ☐ |
| Sexually transmitted diseases (such as herpes,
gonorrhea, chlamydia, trichomonas, venereal warts, etc.) | ☐ | ☐ |
| Vaginal infections (such as bacterial vaginitis, yeast, etc.) | ☐ | ☐ |

Cleansing Routines

57. Do you use or do the following after urination (pee)/defecation (bowel movement/poop)?
- | | <u>Never</u> | <u>Sometimes</u> | <u>Always</u> |
|--------------------------------|--------------------------|--------------------------|--------------------------|
| Wipe front to back | ☐ | ☐ | ☐ |
| Wash with soap and water | ☐ | ☐ | ☐ |
| Blotting | ☐ | ☐ | ☐ |
| Wash hands | ☐ | ☐ | ☐ |
| Nothing | ☐ | ☐ | ☐ |

58. Do you use any of the following personal care products? (check all that apply)

Product	<u>Never</u>	<u>Sometimes</u>	<u>Always</u>
Comb/brush/pick	☐	☐	☐
Shampoo	☐	☐	☐
Cream Rinse/Conditioner	☐	☐	☐
Hair oil/grease/moisturizer	☐	☐	☐
Hair spray/Gel	☐	☐	☐
Facial Lotion/Cream	☐	☐	☐
Facial Makeup	☐	☐	☐
Eye Makeup	☐	☐	☐
Eyedrops	☐	☐	☐
Contact solution	☐	☐	☐
Sleeping Eye mask	☐	☐	☐
Ear plugs	☐	☐	☐
Q-Tips®	☐	☐	☐
Lipstick/Lip Protectant	☐	☐	☐
Perfume/Cologne	☐	☐	☐
Nail Polish	☐	☐	☐
Hand Lotion/Cream	☐	☐	☐

WOMEN'S HEALTH HISTORY

Cleansing Routines (con't)

58. (con't) Do you use any of the following personal care products? (check all that apply)

Product	<u>Never</u>	<u>Sometimes</u>	<u>Always</u>
Body Cream/Moisturizer Lotion	☐	☐	☐
Antiseptic Soap/Cleanser	☐	☐	☐
Liquid Soap	☐	☐	☐
Bar Soap	☐	☐	☐
Body Powder/Talc	☐	☐	☐
Baby Wipes	☐	☐	☐
Body Sprays	☐	☐	☐
Deodorant/Underarm	☐	☐	☐
Deodorant Vaginal Spray	☐	☐	☐
Deodorant Vaginal Suppositories	☐	☐	☐
Feminine Hygiene Spray/ Vaginal Towelettes	☐	☐	☐
Foot Powder/Talc/Anti-Fungal	☐	☐	☐
Razor/Shaver	☐	☐	☐
Nail Clippers	☐	☐	☐
Hair Removal Creams	☐	☐	☐
Mosquito/Bug/Insect Repellents	☐	☐	☐
Sun Screen Cream/Gel/Lotion	☐	☐	☐
Anti-Itch Products	☐	☐	☐
Anti-Fungal Products	☐	☐	☐

59. When do you generally take a shower/bath?

- Morning ☐
 Evening ☐
 No special time ☐
 Depends on activity that day ☐
 Other: _____ ☐

Period/Flow/Cycle

The following questions are about how you care for your periods/flow/cycles (blood). If your periods have stopped for one year or more, go to #66.

60. Do you use tampons? ☐ Yes ☐ No If "No," go to #63.

61. What type of tampons do you use? (check all that apply)

- ☐ Unscented ☐ Scented ☐ Natural (100% cotton)
☐ Lites (junior absorbency) ☐ Regulars (medium absorbency) ☐ Other: _____
☐ Super absorbency ☐ Plastic applicator
☐ Paper applicator ☐ No applicator

62. Check the appropriate boxes below

	<u>Rarely</u>	<u>Sometimes</u>	<u>Most of the time</u>	<u>Always</u>
Do you change your tampons at least every 6 hours?	☐	☐	☐	☐
Do you wash your hands before inserting your tampon?	☐	☐	☐	☐
Do you wash your hands after inserting your tampon?	☐	☐	☐	☐

63. Do you use sanitary pads (napkins)? ☐ Yes ☐ No If "No," go to #66.

WOMEN'S HEALTH HISTORY

Period/Flow/Cycle (con't)

64. What type of sanitary pads (napkins) do you use ? (check all that apply)

- ☐ Light Days ☐ Moderate ☐ Super (Heavy) ☐ Scented
☐ Unscented ☐ Individually wrapped ☐ Other things used for pads: _____

65. Check the appropriate box below

- | | <u>Rarely</u> | <u>Sometimes</u> | <u>Most of the time</u> | <u>Always</u> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Do you change your pads at least every 6 hours? | ☐ | ☐ | ☐ | ☐ |
| Do you wash your hands before changing your pad? | ☐ | ☐ | ☐ | ☐ |
| Do you wash your hands after changing your pad? | ☐ | ☐ | ☐ | ☐ |

66. Do you use panty-liners? ☐ Yes ☐ No If "No," go to #77.

67. How often do you use panty-liners ? (check all that apply)

- ☐ Daily ☐ When I am on my cycle ☐ Only on certain days
☐ Whenever I can ☐ Other: _____

68. How are your panty-liners packaged? (check all that apply)

- ☐ Individually wrapped ☐ Scented ☐ Unscented ☐ Bulk packages

69. Check the appropriate box below

- | | <u>Rarely</u> | <u>Sometimes</u> | <u>Most of the time</u> | <u>Always</u> |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Do you change your panty-liners at least every 6 hours? | ☐ | ☐ | ☐ | ☐ |
| Do you use panty-liners to absorb vaginal discharge? | ☐ | ☐ | ☐ | ☐ |
| Do you use panty-liners to collect urine (pee) in case of an accident? | ☐ | ☐ | ☐ | ☐ |
| Do you use panty-liners to decrease the need for changing underwear? | ☐ | ☐ | ☐ | ☐ |
| Do you use panty-liners to feel clean and comfortable? | ☐ | ☐ | ☐ | ☐ |
| Do you wash your hands before changing your panty-liners? | ☐ | ☐ | ☐ | ☐ |
| Do you wash your hands after changing your panty-liners? | ☐ | ☐ | ☐ | ☐ |

70. Do you use other products for periods/flow/cycle collection? ☐ Yes ☐ No
 If "Yes," please specify:

- ☐ Natural sponges ☐ Depends (adult diapers) ☐ Reusable cotton pads
☐ Disposable briefs ☐ Other: _____

WOMEN'S HEALTH HISTORY

Period/Flow/Cycle (con't)

71. Do you use tampons/pads between periods/flow/cycle? ☐ Yes ☐ No
72. Do you use tampons and pads together during periods/flow/cycle? ☐ Yes ☐ No
73. Check the product that you use most often for periods/flow/cycle collection.
☐ Pads ☐ Tampons ☐ Panty-liners ☐ Other: _____
74. Do you limit your showering/bathing during your periods/flow/cycle? ☐ Yes ☐ No
75. How do you dispose of your used tampons/pads? (check all that apply)
☐ In the receptacle by the toilet ☐ In the receptacle outside the immediate area
☐ Wrap it up and carry it with me ☐ Drop it in the toilet ☐ Other: _____
76. Do your periods/flow/cycles interfere with your job? ☐ Yes ☐ No

Mouth Care

77. Do you wear dentures or a partial plate? ☐ Yes ☐ No
78. How often do you care for your teeth?
☐ Once daily when I get up ☐ Once daily before I go to sleep ☐ Twice daily
☐ After each meal ☐ When I have time ☐ Seldom
☐ Other: _____ (for example more than 3 times a day)
79. Do you use any of the following when caring for your teeth? (check all that apply)
☐ Toothpaste ☐ Baking soda ☐ Water only
☐ Toothpowder ☐ Mouthwash ☐ Denture Cleaner
☐ No, I do not use any of them
80. How often do you floss your teeth?
☐ Once daily when I get up ☐ Once daily before I go to sleep ☐ Twice daily
☐ After each meal ☐ When I have time ☐ Seldom
☐ Never ☐ Wear dentures

WOMEN'S HEALTH HISTORY

Other Body Parts

81. Do you douche? ☐ Yes ☐ No If "No," go to #85
82. How long have you been douching? (years) _____
83. What douching solution do you use? (check all that apply)
- ☐ Disposable ☐ Vinegar ☐ Betadine ☐ Water ☐ Other: _____
84. What are your reasons for douching? (check all that apply)
- ☐ Want to be clean ☐ Stop the smell ☐ Stop the vaginal discharge
☐ After periods/flow/cycles ☐ After intercourse (sex) ☐ Other: _____
85. How often do you shave the following? (check all that apply)
- | | Daily | Wkly | Mthly | Sometimes | Never |
|-------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Underarms | ☐ | ☐ | ☐ | ☐ | ☐ |
| Legs | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other areas such as:
_____ | ☐ | ☐ | ☐ | ☐ | ☐ |
86. Do you use foot powder? ☐ Yes ☐ No If "No," go to #88.
87. What are your reasons for using foot powder?
- ☐ Want to be clean ☐ Want to reduce wet (perspiration of) feet
☐ Want to reduce foot odor
88. Where did you learn about feminine hygiene? (check all that apply)
- | | |
|--|---|
| ☐ Mother | ☐ Religious Organizations |
| ☐ Other member of family | ☐ Self Help Organizations |
| ☐ School | ☐ United States Governmental Organizations |
| ☐ Friend | ☐ Magazines |
| ☐ Nurse | ☐ Books |
| ☐ Physician (Doctor) | ☐ Newspapers |
| ☐ Other Health Professional | ☐ TV (Television) |
| ☐ Health Clinic | ☐ Radio |
| ☐ Product Packaging Inserts | ☐ Internet |
| ☐ Manufacturer's Consumer Information | ☐ Basic Military Training |
| ☐ Professional Organizations | ☐ Other: _____ |

WOMEN'S HEALTH HISTORY

Overall Health

89. Taking into account what has happened in the last year and what you expect in the near future, how do you feel about your health? Please check appropriate box.

☐ Delighted ☐ Pleased ☐ Mostly Satisfied ☐ Mixed (About equally satisfied and dissatisfied) ☐ Mostly Dissatisfied ☐ Unhappy ☐ Terrible

☐ No feelings at all ☐ Never Thought About It

90. Below you will find a list of ten values listed in alphabetical order. We would like you to arrange them in order of their importance to you, as guiding principles in your life.

Study the list carefully and pick out the one value that is the most important for you. Write the number "1" in the space to the left of the most important value. Then pick out the value that is second-most important to you. Write the number "2" in the space to the left. Then continue in the same manner for the remaining values until you have included all ranks from 1 to 10. Each value will have a different rank.

We realize that some people find it difficult to distinguish the importance of some of these values. Do the best you can, but please rank all 10 items. The end result should show how you truly feel.

- ___ A COMFORTABLE LIFE (a prosperous life)
- ___ AN EXCITING LIFE (a stimulating, active life)
- ___ A SENSE OF ACCOMPLISHMENT (lasting contribution)
- ___ FREEDOM (independence, free choice)
- ___ HAPPINESS (contentedness)
- ___ HEALTH (physical and mental well-being)
- ___ INNER HARMONY (freedom from inner conflict)
- ___ PLEASURE (an enjoyable, leisurely life)
- ___ SELF-RESPECT (self-esteem)
- ___ SOCIAL RECOGNITION (respect, admiration)

Please complete questions #91- #191
based on your Last Deployment Experience.

Your last deployment was to:

LAST DEPLOYMENT

Cleansing Routines

91. Did you use any of the following personal care products when you were deployed?
(check all that apply)

Product	Never	Sometimes	Always
Comb/brush/pick	☐	☐	☐
Shampoo	☐	☐	☐
Cream Rinse/Conditioner	☐	☐	☐
Hair oil/grease/moisturizer	☐	☐	☐
Hair spray/Gel	☐	☐	☐
Facial Lotion/Cream	☐	☐	☐
Facial Makeup	☐	☐	☐
Eye Makeup	☐	☐	☐
Eye drops	☐	☐	☐
Contact Solution	☐	☐	☐
Sleeping Eye Mask	☐	☐	☐
Ear Plugs	☐	☐	☐
Q-Tips®	☐	☐	☐
Lipstick/Lip Protectant	☐	☐	☐
Perfume/Cologne	☐	☐	☐
Nail Polish	☐	☐	☐
Hand Lotion/Cream	☐	☐	☐
Body Cream/Moisturizer Lotion	☐	☐	☐
Antiseptic Soap/Cleanser	☐	☐	☐
Liquid Soap	☐	☐	☐
Bar Soap	☐	☐	☐
Body Powder/Talc	☐	☐	☐
Baby Wipes	☐	☐	☐
Body Sprays	☐	☐	☐
Deodorant/Underarm	☐	☐	☐
Deodorant Vaginal Spray	☐	☐	☐
Deodorant Vaginal Suppositories	☐	☐	☐
Feminine Hygiene Spray/ Vaginal Towelettes	☐	☐	☐
Foot Powder/Talc/Anti-Fungal	☐	☐	☐
Razor/Shaver	☐	☐	☐
Nail Clippers	☐	☐	☐
Hair Removal Creams	☐	☐	☐
Mosquito/Bug/Insect Repellents	☐	☐	☐
Sun Screen Cream/Gel/Lotion	☐	☐	☐
Anti-Itch Products	☐	☐	☐
Anti-Fungal Products	☐	☐	☐

92. Did you wear dentures or a partial plate? ☐ Yes ☐ No

93. How often did you care for your teeth?

- | | | |
|--|--|--------------------------------------|
| ☐ Once daily when I got up | ☐ Once daily before I went to bed | ☐ Twice daily |
| ☐ After each meal | ☐ When I had time | ☐ Seldom |
| ☐ Other: _____ (for example: more than 3 times a day) | | |

LAST DEPLOYMENT

Cleansing Routines (con't)

94. Did you use any of the following when caring for your teeth? (check all that apply)

- ☐ Toothpaste ☐ Baking soda ☐ Water only
☐ Toothpowder ☐ Mouthwash ☐ Denture Cleaner
☐ No, I do not use any of them

95. How often did you floss your teeth?

- ☐ Once daily when I got up ☐ Once daily before I went to bed ☐ Twice daily
☐ After each meal ☐ When I had time ☐ Seldom
☐ Never ☐ Wear dentures

Period/Flow/Cycle

The following questions are about how you cared for your periods/flow/cycle (blood) when you were deployed. If your periods HAD stopped for one year or more, go to #119.

96. Did you use tampons? ☐ Yes ☐ No If "No," go to #99

97. What type of tampons did you use? (check all that apply)

- ☐ Unscented ☐ Scented ☐ Natural (100% cotton) ☐ Lites (junior absorbency)
☐ Regulars (medium absorbency) ☐ Super absorbency
☐ Plastic applicator ☐ Paper applicator ☐ No applicator
☐ Other: _____

98. Please check the appropriate boxes below

	<u>Rarely</u>	<u>Sometimes</u>	<u>Most of the time</u>	<u>Always</u>
Did you change your tampons at least every 6 hours?	☐	☐	☐	☐
Did you wash your hands before inserting your tampon?	☐	☐	☐	☐
Did you wash your hands after inserting your tampon?	☐	☐	☐	☐

99. Did you use sanitary pads (napkins)? ☐ Yes ☐ No If "No," go to #102.

100. What type of sanitary pads (napkins) did you use? (check all that apply)

- ☐ Light Days® ☐ Moderate ☐ Super (Heavy) ☐ Scented
☐ Unscented ☐ Individually wrapped ☐ Other things used for pads: _____

LAST DEPLOYMENT

Period/Flow/Cycle (con't)

101. Check the appropriate box below

	<u>Rarely</u>	<u>Sometimes</u>	<u>Most of the time</u>	<u>Always</u>
Did you change your pads at least every 6 hours?	☐	☐	☐	☐
Did you wash your hands before changing your pad?	☐	☐	☐	☐
Did you wash your hands after changing your pad?	☐	☐	☐	☐

102. Did you use panty-liners? ☐ Yes ☐ No If "No," go to #110.

103. How often did you use panty-liners? (check all that apply)

- ☐ Daily
 ☐ When I was on my cycle
 ☐ Only on certain days
- ☐ Whenever I could
 ☐ Other: _____

104. How were your panty-liners packaged? (check all that apply)

- ☐ Individually wrapped
 ☐ Scented
 ☐ Unscented
 ☐ Bulk packages

105. Check the appropriate box below

	<u>Rarely</u>	<u>Sometimes</u>	<u>Most of the time</u>	<u>Always</u>
Did you change your panty-liners at least every 6 hours?	☐	☐	☐	☐
Did you use panty-liners to absorb vaginal discharge?	☐	☐	☐	☐
Did you use panty-liners to collect urine (pee) in case of an accident?	☐	☐	☐	☐
Did you use panty-liners to decrease the need for changing underwear?	☐	☐	☐	☐
Did you use panty-liners to feel clean and comfortable?	☐	☐	☐	☐
Did you wash your hands before changing your panty-liners?	☐	☐	☐	☐
Did you wash your hands after changing your panty-liners?	☐	☐	☐	☐

106. Did you use other products for periods/flow/cycle collection? ☐ Yes ☐ No
If "Yes," please specify:

- ☐ Natural sponges
 ☐ Depends (adult diapers)
 ☐ Reusable cotton pads
- ☐ Disposable briefs
 ☐ Other: _____

107. Did you use tampons/pads between periods/flow/cycle? ☐ Yes ☐ No

108. Did you use tampons and pads together during periods/flow/cycle? ☐ Yes ☐ No

109. Check the product below that you used most often for periods/flow/cycle collection

- ☐ Pads
 ☐ Tampons
 ☐ Panty-liners
 ☐ Other: _____

LAST DEPLOYMENT

Period/Flow/Cycle (con't)

110. Did you limit your showering/bathing during your periods/flow/cycle?
☐ Rarely ☐ Sometimes ☐ Most of the time ☐ Always
111. Did you wash your hands *before* doing any activity with/to your genitals (private parts)?
☐ Rarely ☐ Sometimes ☐ Most of the time ☐ Always
112. Did you wash your hands *after* doing any activity with/to your genitals (private parts)?
☐ Rarely ☐ Sometimes ☐ Most of the time ☐ Always
113. How did you dispose of your used tampons/pads? (check all that apply)
- | | |
|--|---|
| ☐ In the receptacle by the toilet | ☐ In the receptacle outside the immediate area |
| ☐ Wrap it up and carry it with me | ☐ Drop it in the toilet |
| ☐ Other: _____ | |
114. Did your periods/flow/cycle change? ☐ Yes ☐ No
 If "Yes", how?
☐ Skipped
☐ Heavier
☐ Lighter
☐ More painful
☐ Became irregular
☐ Other: _____
115. Did your periods/flow/cycles interfere with your job? ☐ Yes ☐ No
116. Did you do anything to change your periods/flow/cycle pattern before your last deployment?
☐ Yes ☐ No If "No," go to #119.
117. If "Yes," how? (check all that apply)
- | | |
|---|--|
| ☐ Hysterectomy | ☐ Norplant® (under your skin) |
| ☐ Depo-Provera® (shot) | ☐ Birth Control Pills |
| ☐ Drug store products (specify): _____ | |
| ☐ Herbs, which one(s): _____ | |
| ☐ Other: _____ | |
118. If Yes, why? (check all that apply)
- | |
|---|
| ☐ I did not want to be bothered |
| ☐ I could not manage periods/flow/cycle |
| ☐ Concerned about water supply for cleansing (showers) |
| ☐ Combat environment did not support periods/flow/cycle management |
| ☐ I was encouraged by others, (who?) _____ |

LAST DEPLOYMENT

Period/Flow/Cycle (con't)

119. Were you offered any of the following birth control methods BEFORE deployment? (check all that apply)

- | | |
|--|--|
| ☐ No | ☐ Birth Control Pills, How many packages of pills were you given? _____ |
| ☐ Depo-Provera® (shot) | ☐ Female condom |
| ☐ Diaphragm | ☐ Surgery (hysterectomy) |
| ☐ Cervical cap | |
| ☐ Intrauterine Device (IUD) | |
| ☐ Other: _____ | |

120. Were you offered any of the following birth control methods DURING deployment? (check all that apply)

- | | |
|--|--|
| ☐ No | ☐ Birth Control Pills, How many packages of pills were you given? _____ |
| ☐ Depo-Provera® (shot) | ☐ Female condom |
| ☐ Diaphragm | ☐ Surgery (hysterectomy) |
| ☐ Cervical cap | |
| ☐ Intrauterine Device (IUD) | |
| ☐ Other: _____ | |

121. Were you offered any of the following birth control methods AFTER deployment?

- | | |
|--|--|
| ☐ No | ☐ Birth Control Pills, How many packages of pills were you given? _____ |
| ☐ Depo-Provera® (shot) | ☐ Female condom |
| ☐ Diaphragm | ☐ Surgery (hysterectomy) |
| ☐ Cervical cap | |
| ☐ Intrauterine Device (IUD) | |
| ☐ Other: _____ | |

122. How did you get your supply of birth control?

- | | |
|--|--|
| ☐ Did not use any | ☐ By military clinic services before deployment |
| ☐ By a private doctor before deployment | ☐ By military clinic services during deployment |
| ☐ Mailed from my family/friends | |
| ☐ Other: _____ | |

123. If you did not use birth control methods, why not? (check all that apply)

- | | |
|---|--|
| ☐ I was not sexually active | ☐ I didn't think my periods would interfere with my job |
| ☐ I wanted to remain natural | ☐ Never gave it any thought |
| ☐ I don't have periods | ☐ Other: _____ |

124. While on deployment, did you seek birth control services? ☐ Yes ☐ No If "No," go to #126.

125. If Yes, why? (check all that apply)

- | | | |
|---|---|---|
| ☐ Fear of sexual attack | ☐ Pain control | ☐ Convenience management |
| ☐ Became sexually active | ☐ Control bleeding | ☐ Prevent pregnancy |
| ☐ Other: _____ | | |

LAST DEPLOYMENT

Period/Flow/Cycle (con't)

126. What did you do to prevent sexually transmitted diseases? (check all that apply)

- | | | |
|---|---|--|
| ☐ Not sexually active | ☐ Sponge | ☐ Female condom |
| ☐ Nothing | ☐ Diaphragm with spermicide | ☐ Male condom (dry) |
| ☐ Male condom (lubricated) | ☐ Male condom and spermicide | ☐ Other: _____ |
| ☐ Spermicide only | ☐ Abstinence | |

Vaginal Douching

127. Did you douche? ☐ Yes ☐ No If "No," go to #130.

128. If "Yes," what did you douche with? (check all that apply)

- ☐ Disposable ☐ Vinegar ☐ Betadine ☐ Water
☐ Other: _____

129. How often did you douche?

- | | | |
|------------------------------------|--|--|
| ☐ Daily | ☐ Weekly | ☐ Monthly |
| ☐ Bi-Weekly | ☐ After sexual activity | ☐ After period/flow/cycle |

Underwear

130. What was your underwear made of? (check all that apply)

- | | | | |
|--------------------------------------|------------------------------------|--|---------------------------------------|
| ☐ Cotton | ☐ Nylon | ☐ Silk | ☐ Other: _____ |
| ☐ Combination | ☐ Polyester | ☐ Disposable Briefs | |

131. Did you change your underwear? (check the one best answer)

- | | | |
|--|--|--|
| ☐ Daily | ☐ Twice a day | ☐ Every other day |
| ☐ Never changed | ☐ Didn't wear any | ☐ Other: _____ |

132. How did you launder your underwear? (check all that apply)

- | | | |
|--|--|---------------------------------------|
| ☐ Hand wash in the bathroom or shower | ☐ Machine wash | ☐ Other: _____ |
| ☐ In the local stream, river, or pond | ☐ In a well | |
| ☐ I wore disposable undergarments | ☐ Laundry service | |
| ☐ Helmet with drinking water | ☐ Disposable (put in the trash) | |

LAST DEPLOYMENT

Underwear (con't)

133. After you changed your underwear, did you feel clean? ☐ Yes ☐ No

Toilet

134. What type of toilets were generally available? (check all that apply)

- ☐ Indoor Flush ☐ Dug your own ☐ Port-A-Potty (chemical)
☐ Outdoor (wood/barrel) ☐ Outdoor (trailer) ☐ Other: _____

135. Were there other problems with the toilets? (check all that apply)

- ☐ No
☐ Stopped up
☐ Dirty
☐ Waste containers not emptied enough
☐ No sticks available to knock down flies/bugs
☐ Hard to undress and redress
☐ Pads and other waste products visible
☐ Not enough room to move around in
☐ Not cleaned often enough
☐ No door
☐ No place to hang gear or other items
☐ Smelled bad
☐ Other: _____

136. How long did problems with the toilet last? (check the one best answer)

- ☐ Entire deployment ☐ Half of the time ☐ Short time (less than 1 week)
☐ Only at the beginning ☐ Sporadically ☐ Other: _____

137. The privacy of the toilets was:

- ☐ Complete (out-of-sight & quiet) ☐ Partial ☐ Never (nonexistent)

138. How bothersome was privacy or the lack of privacy to you?

- ☐ Very ☐ Sometimes ☐ Not a problem

139. Toilet paper was:

- ☐ Always available ☐ Available most of the time
☐ Never available ☐ What I provided myself (my own)

140. The overall situation of the toilet was:

- ☐ Excellent ☐ Above average ☐ Average ☐ Below average ☐ Poor

LAST DEPLOYMENT

Showers

141. What type of showers were generally available? (check all that apply)

- ☐ Fixed structure ☐ Tent setup ☐ Wood/open top ☐ Mixed (male & female)
☐ Separate (female only) ☐ Separate by the hour ☐ Water recycled ☐ Other: _____

142. Did you ever urinate (pee) in the shower?

- ☐ All the time ☐ Most of the time ☐ Sometimes ☐ Rarely ☐ Never

143. Did you wear shoes or sandals in the shower?

- ☐ All the time ☐ Most of the time ☐ Sometimes ☐ Rarely ☐ Never

144. On the average, how many minutes did you spend a day doing the following?

	MINUTES			
	Less than 10	10-15	15-20	More than 20
Showering/washing self	☐	☐	☐	☐
Cleaning clothes/underwear	☐	☐	☐	☐
En route to the toilets/showers	☐	☐	☐	☐
Waiting for the facilities (showers/toilets)	☐	☐	☐	☐
Preparing for shower/washing/toilet (getting water, supplies, organizing gear)	☐	☐	☐	☐

145. The overall situation of the showers was:

- ☐ Excellent ☐ Above average ☐ Average ☐ Below average ☐ Poor

Quarters

146. Number of people in your tent/sleeping quarters: _____

147. Women only? ☐ Yes ☐ No

148. Men and Women? ☐ Yes ☐ No

149. Were there problems with any of the following at your deployment location? (check all that apply)

- ☐ Mites or lice ☐ Standing water ☐ Flies ☐ Mosquitoes
☐ Snakes ☐ Rodents ☐ Other wild animals ☐ Other: _____

150. Did you have problems with personal hygiene regarding bleed through or blood stains on your clothing during your periods/flow/cycle?

- ☐ Never ☐ Sometimes (2-3 times per week) ☐ Frequently (every day)

LAST DEPLOYMENT

Urine/Bowel/Period/Flow/Cycle Functions

151. Did you have problems with wetting yourself (urine/pee)?

- ☐ Never ☐ Sometimes (2-3 times per week) ☐ Frequently (every day)

152. Did you suffer from urinary tract bladder infections? ☐ Yes ☐ No If "No" go to 154.

153. If "Yes," how often? ☐ 1 time ☐ 2 times ☐ 3 times ☐ 4 times
☐ 5 times ☐ 6 times ☐ 7 times ☐ 8 times
☐ 9 times ☐ 10 times ☐ Other: _____

154. Did you routinely have to hold your urine (pee)? If "Never," go to #157.

- ☐ Never ☐ Sometimes (2-3 times per week) ☐ Frequently (every day)

155. If "Sometimes" or "Frequently," where? (check all that apply)

- ☐ At work/job ☐ At night ☐ Other: _____

156. If "Sometimes" or "Frequently," why? (check all that apply)

- ☐ Security ☐ Would interfere with work ☐ No time allowed
☐ Condition of toilets ☐ Location of toilets ☐ Smell of toilets
☐ Weather ☐ Other: _____

157. Did you use anything at night to urinate (pee) into instead of going to the toilets?

- ☐ Yes ☐ No If "No," go to #159.

158. If "Yes," what did you use?

- ☐ Urinal (hospital collection device) ☐ Bottle/cup/can/bowl/box ☐ Plastic bag
☐ Bed pan ☐ Other: _____

159. Did you have problems with leaking or soiling from bowel movements (poop)?

- ☐ Never ☐ Sometimes (2-3 times per week) ☐ Frequently (every day)
Comments: _____

160. Did you experience constipation?

- ☐ Never ☐ Sometimes (2-3 times per week) ☐ Frequently (every day)
Comments: _____

161. Did you experience diarrhea?

- ☐ Never ☐ Sometimes (2-3 times per week) ☐ Frequently (every day)
Comments: _____

LAST DEPLOYMENT

Diet and Hydration

162. Did you stop or decrease the amount of drinking fluids? ☐ Yes ☐ No If "No," go to #164.

163. If "Yes," why? (check all that apply)

- ☐ To decrease visits to the toilet ☐ Taste ☐ Not enough fluids available
☐ Temperature of fluids ☐ Other: _____

164. Did you drink enough water? ☐ Yes ☐ No

165. Did you have any problems with having enough water? (check all that apply)

- ☐ Taste of water ☐ Temperature of water
☐ Access to water ☐ Time to obtain & consume water
☐ Having enough water ☐ Other: _____

166. Did you add a "flavor mix" (example, Crystal Light®, Gatoraid®, Kool-Aid®, etc.) to your drinking water?
☐ Yes ☐ No

167. How was your drinking water provided? (check all that apply)

- ☐ Bottled water always available ☐ Bottled water frequently available
☐ Bottled water never available ☐ Canteens (filled from water source)
☐ Drinking areas (trucks, stations) ☐ Other: _____

168. Did you

- ☐ Gain weight during deployment? Number of pounds: _____
☐ Lose weight during deployment? Number of pounds: _____
☐ Remain the same weight? If weight remained the same, go to #170.

169. My weight change was due to: (check all that apply)

- ☐ Shifts worked ☐ Meals ☐ Stress ☐ Environment temperature
☐ Other: _____

170. Before deployment

- Did you receive regular preventative health training? ☐ Yes ☐ No
Were you screened for serious health problems? ☐ Yes ☐ No
Did you receive regular treatments? ☐ Yes ☐ No
Did you receive regular check-ups? ☐ Yes ☐ No

171. While you were deployed did you use any of the following?

- ☐ Alcohol ☐ Cigarettes ☐ Sleeping Pills ☐ Tranquilizers ☐ Other: _____

LAST DEPLOYMENT

Health Issues

172. While deployed, did you have any of the following problems? (check all that apply)

PROBLEMS	TREATMENT			
	Went away by itself	Self-Treated	Healthcare Provider	Other
Breast				
☐ pain	☐	☐	☐	☐
☐ lump	☐	☐	☐	☐
☐ nipple discharge	☐	☐	☐	☐
Stomach, intestines				
☐ nausea, vomiting	☐	☐	☐	☐
☐ pain	☐	☐	☐	☐
☐ diarrhea	☐	☐	☐	☐
☐ parasites (worms, etc.)	☐	☐	☐	☐
☐ constipation	☐	☐	☐	☐
☐ hemorrhoids	☐	☐	☐	☐
Urinary problems				
☐ burning, pain, urgency, frequency	☐	☐	☐	☐
☐ leaking	☐	☐	☐	☐
Female problems				
☐ painful cramps periods/flow/cycle	☐	☐	☐	☐
☐ skipped or late periods/flow/cycle	☐	☐	☐	☐
☐ spotting (bleeding) between periods/flow/cycle	☐	☐	☐	☐
☐ heavy bleeding or clots	☐	☐	☐	☐
☐ vaginal odors	☐	☐	☐	☐
☐ yeast infections	☐	☐	☐	☐
☐ discharge	☐	☐	☐	☐
☐ other	☐	☐	☐	☐
Bone/Muscle problems				
☐ neck	☐	☐	☐	☐
☐ shoulder	☐	☐	☐	☐
☐ back	☐	☐	☐	☐
☐ hip	☐	☐	☐	☐
☐ knee	☐	☐	☐	☐
☐ ankle	☐	☐	☐	☐
Feet				
☐ athlete's foot (fungal)	☐	☐	☐	☐
☐ infections	☐	☐	☐	☐
Relationship Problems				
☐ parents	☐	☐	☐	☐
☐ children	☐	☐	☐	☐
☐ partner	☐	☐	☐	☐
☐ other	☐	☐	☐	☐
Other Problems				
☐ skin	☐	☐	☐	☐
☐	☐	☐	☐	☐

LAST DEPLOYMENT

Health Issues (con't)

173. Did you have any of the following infections during deployment and how often? (check all that apply)

	<u>One time</u>	<u>Two times</u>	<u>Three or more times</u>
☐ Yeast/Candida	☐	☐	☐
☐ Bacterial Vaginitis, BV	☐	☐	☐
☐ Trichomonas, Trich	☐	☐	☐
☐ Chlamydia	☐	☐	☐
☐ Venereal warts, HPV	☐	☐	☐
☐ Gonorrhea, Clap, GC	☐	☐	☐
☐ Syphilis	☐	☐	☐
☐ Herpes, HSV	☐	☐	☐
☐ Other:	☐	☐	☐

If your period had stopped for one year or more before deployment go to #181.

174. Was pregnancy a concern before deployment? ☐ Yes ☐ No

175. Did you do a home pregnancy test before deployment? ☐ Yes ☐ No

176. Was a pregnancy test given to you?

☐ No

☐ Before deployment ☐ During deployment ☐ After deployment

177. Were you pregnant when deployed? ☐ Yes ☐ No

178. Was this pregnancy a problem? ☐ Yes ☐ No

If "Yes," why?

☐ No facilities for care ☐ Fear of safety for fetus

☐ You were treated differently by co-workers

☐ You were treated differently by your supervisor

☐ Co-workers were over-protective

☐ Desired to end pregnancy

☐ Fear of UCMJ/Military discipline

☐ Co-workers were angry

☐ Other:

179. Did you try to get pregnant to avoid being deployed? ☐ Yes ☐ No

180. Did you try to get pregnant during deployment in order to return home? ☐ Yes ☐ No

181. Were you adequately prepared for deployment? ☐ Yes ☐ No

182. Did you receive any health information booklets before deployment? ☐ Yes ☐ No

183. Were you adequately de-briefed after deployment? ☐ Yes ☐ No

LAST DEPLOYMENT

Health Issues (con't)

184. Did you experience any health problems afterwards because of deployment? ☐ Yes ☐ No
If "No," go to #186.
185. If "Yes," what were they? (please specify) _____
186. What benefit(s) did you experience from being deployed?(check all that apply)
- | | |
|---|---|
| ☐ Used resources (water, personal hygiene products, other equipment & supplies) wisely | ☐ Increased self-awareness about my body |
| ☐ Better organization of supplies and time | ☐ Became more organized in other areas |
| | ☐ Other: _____ |
187. My immediate Commanding Officer (CO) was: ☐ Male ☐ Female
188. My CO was sensitive and caring towards hygiene needs of women? ☐ Yes ☐ No
189. Did you ever approach your CO about these needs? ☐ Yes ☐ No
If "No," go to #191.
190. If "Yes", did this create a change towards the positive? ☐ Yes ☐ No

RECOMMENDATIONS

191. Of the following recommendations, what do you think would be "most" useful.
Identify for each recommendation how useful it would be, "4" being very useful and "1" not at all useful

	<u>Not at all useful</u>		<u>Very useful</u>	
Provide information about women's specific health needs	1	2	3	4
Provide information on how to manage periods/flow/cycle during deployment	1	2	3	4
Would you like the military to supply the following:				
tampons	1	2	3	4
handiwipes	1	2	3	4
pads	1	2	3	4
panty-liners	1	2	3	4
tooth brushes	1	2	3	4
combs/brushes/picks	1	2	3	4
hairpins/nets/other hair products	1	2	3	4
razors/shavers	1	2	3	4
underpants	1	2	3	4
boxers for women	1	2	3	4
bras	1	2	3	4
t-shirts	1	2	3	4
uniforms				
PT (Physical Training)	1	2	3	4
BDU (Battle Dress Uniform)	1	2	3	4
Other:	1	2	3	4
Change the uniform to allow ease of dressing and undressing	1	2	3	4
Provide more Showers	1	2	3	4
Provide more Toilets	1	2	3	4
Provide tents by gender	1	2	3	4
Provide clear directions for sexual behaviors within the command	1	2	3	4
Increase sensitivity of men to women's specific needs	1	2	3	4

COMMENTS

Please feel free to write any additional comments, thoughts, observations or suggestions regarding the topics already covered or any topic not covered.

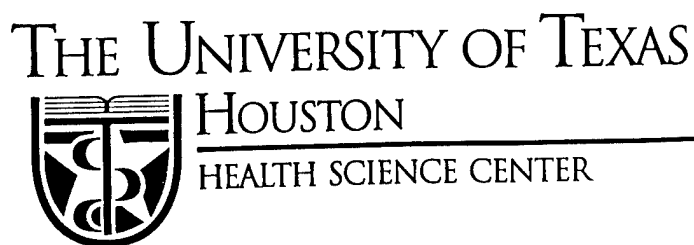
This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or printed text on the page.

Thank you!

For all the women that follow you, we thank you for your participation.

Appendix B

Consent Letter



School of Nursing
Systems and Technology

July 1998

Dear Participant:

You are invited to participate in the study *Combat Readiness: Hygiene issues related to military women*. This is a study about women's health practices during deployment. Participation is voluntary and you may choose to not participate at anytime. The purpose of this study is to find out what military women need to manage health care needs when deployed. Your input will be used to make suggestions for change.

If you choose to **participate** in this study, the enclosed questionnaire will take about one hour to complete.

Active duty participant:

- Your completing and returning the questionnaire will indicate your consent
- Return questionnaire in stamped-addressed large white envelope
- Due to your active duty status, USAMRMC policy stipulates we cannot pay you for your participation but your response is highly regarded

Non-active duty participant:

- Your completing and returning the questionnaire will indicate your consent
- Return questionnaire in stamped-addressed large white envelope
- Place your name and address on the enclosed 3x5 label
- Return label in the stamped-addressed envelope to receive \$10 for your valued response

Please complete and return the questionnaire by 31 July 1998. The possible risks that you may have are anxiety and privacy issues concerning the information you give us about your personal health care practices. You may feel uneasy or uncertain answering some of the questions.

All your answers will be kept **confidential**. To make sure your privacy is always met, we ask that you do not put your name or other personal information on the questionnaire. All returned questionnaires will be kept locked up and shredded after the study is completed.

Page 2

This study has been approved by the University of Texas-Houston Health Science Center Committee for Protection of Human Subjects (713) 500-5827 as HSC-SN-95-039.

If you choose **not to participate**, please return the entire packet to us in the provided envelope. We ask that you return either the completed or uncompleted questionnaire so that we can account for all the packets sent out.

If you have any questions about this study, please contact us at the address or phone numbers given below.

Thank you for your participation and we look forward to including your deployment experiences into the recommendations that are presented for consideration in the final report. You **can** make the difference!

Sincerely,



Barbara Shelden Czerwinski, PhD, RN
Principal Investigator
(713) 500-2114



Diane Wind Wardell, PhD, RNC
Co-Principal Investigator
(713) 500-2056

BSC:DWW/pbb

Enclosures

Appendix C

Publications

Publications

1. Wardell DW, Czerwinski BS,; (submitted 1999). A Challenge to managing feminine and personal hygiene.

Appendix D
Abstracts/Proceedings

Abstracts/Proceedings

1. Connelly LM, Czerwinski BS, Wardell DW,; (2000, April, submitted). Deployed military women's health management practices. Southern Nursing Research Society.
2. *Czerwinski BS, Wardell DW, Pitts K,; (1999 June 11). Feminine hygiene practices in military women. Society for Menstrual Cycle Research Conference, University of Arizona, Tucson, Arizona.
3. *Czerwinski BS, Wardell DW, Kouzekanani K, Pitts K, Connelly LM, Yoder L, Goldstein D, Terus MP,; (1998, October 2). *Combat readiness: Hygiene issues related to military women*. Poster session presented at The University of Texas-Houston Health Science Center, Research Day.
4. Pitts K, Wardell DW, Czerwinski BS,; (1998, February). *Mission ready: The subculture of women in the military as a population source*. Poster session presented at the annual meeting of the Southern Nursing and Research Society, Fort Worth, Texas.
5. *Wardell DW,; Czerwinski BS, Pitts K,; (1998, February). *Combat readiness: Hygiene issues related to military women*. Poster session presented at the annual meeting of the Southern Nursing Research Society, Fort Worth, Texas.
6. Czerwinski BS,; Wardell DW,; (1997, October 3). *Combat readiness: Hygiene issues related to military women* (poster). The University of Texas-Houston, Health Science Center, Research Day.
7. *Czerwinski BS, Wardell DW,; (1997, June 5). *Combat readiness: Hygiene issues related to military women*. Poster session presented at the Society for Menstrual Cycle Research Conference, The University of Illinois at Chicago.

8. *Czerwinski BS,; Wardell DW,; (1996, October 4). *Combat readiness: Hygiene issues related to military women* (poster). The University of Texas-Houston, Health Science Center, Research Day.

Appendix E

Personnel

Personnel

Personnel receiving pay from this effort are the following:

Barbara Shelden Czerwinski, PhD

Diane Wind Wardell, PhD

Kathleen Pitts, BSN

Portia Bartonico, BA