Fleet and Marine Corps Health Risk Assessment, 02 January – December 31, 2015

Executive Summary

The Fleet and Marine Corps Health Risk Appraisal is a 22-question anonymous self-assessment of the most common health risk behaviors. It supports preventive health screening and counseling by healthcare providers during the annual Periodic Health Assessment (PHA), provides individual members with credible sources of health information on the Web, provides data to health educators to plan and implement community interventions, and provides commanding officers at all levels with snapshots of their unit profiles.

The tool is web-based, but there is also a stand-alone Excel version that can be used on ships that have poor Internet connectivity. Completion of the assessment takes about three minutes and provides personalized reports to each individual. A total of 238,431 completed assessments were analyzed during the 02 January to 31 December 2015 and included both active and reserve component (Rc) members from the Navy (USN), Marine Corps (USMC), and Coast Guard (USCG).

This report utilizes both descriptive and analytic methods to report the results on the total responses as well as by service component and specific characteristics. Demographic variables that were examined included age, gender, race, rank, and service component. Analyses utilized one of two measures: 1) 'healthy' or 'unhealthy' risk ratings or 2) a risk score based on the total number of risk behaviors reported by an individual. Data were also analyzed for differences during various "days away from home station" periods.

The prevalence of specific risk factors remained fairly constant from the previous year, with the leading health risks being low fruit and vegetable consumption, consumption of high fat foods, not flossing, and not getting enough restful sleep. The mean number of risk factors showed that more USMC members qualified as "high risk" (32.3%), followed by the USMCR (27.6%), USN (26.1%), USNR (14.3%), USCG (10.8%), and USCGR (8.0%). Higher risk scores indicate a greater likelihood that members will utilize more healthcare services in the future than lower risk members. The data also indicated that, in general, Navy and Coast Guard personnel were more likely than Marines to be classified as obese.

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Background

Health Risk Assessments (HRAs) became widely used both in military and civilian settings beginning in the mid-1980s. HRAs are tools that can be used to educate patients, to assist healthcare professionals in counseling patients, and to inform decision makers of the overall health status of their populations. Different versions of HRAs are available to assess a range of conditions and risk behaviors. They are also often used to assess health concerns of specific age groups. The 2015 Fleet and Marine Corps HRA is a 22-question, anonymous, self-reported, web-based assessment tool specifically designed to assess risk behaviors common to military members.

The questions were based on other validated tools, such as the Alcohol Use Disorders Identification Test (AUDIT), the DoD Survey of Health Related Behaviors Among Military Personnel, and the National Health and Nutrition Examination Survey (NHANES), or input from subject matter experts. The questions address 10 risk categories that provide a snapshot of leading health indicators. The categories include: tobacco use, alcohol use, safety, stress management, sexual health, physical activity, nutrition, supplement use, dental health, and sleep problems.

More information on the HRA can be found at: http://www.med.navy.mil/sites/nmcphc/health-promotion/Pages/hra.aspx.

Methods

Data Collection and Analyses

After excluding 3,485 records, a total of 238,431 assessments were completed between 02 January and 31 December 2015. The data were analyzed by the EpiData Center (EDC) at the Navy and Marine Corps Public Health Center (NMCPHC). Surveys were excluded from the analysis for the following reasons:

1. Records that utilized the 2014 HRA Survey. The 2015 HRA Survey was implemented on 02 January 2015 at 0800. There was a total of 66 records removed.
2. Any record reported by United States Ship New Orleans, Unit Identification Code (UIC) 23168 in the month of January 2015. This UIC implemented the 2014 HRA Survey throughout the month of January 2015; 32 records were removed.
3. Records with blank fields were considered incomplete. There was a total of 2,018 incomplete records that were removed.
4. Surveys completed by service members who had a rank of civilian and identified themselves as Navy, Marine Corps, or Coast Guard members were excluded. A total of 1,369 records were removed.

All analyses utilized one of two measures: 1) 'healthy' or 'unhealthy' risk ratings or 2) a risk score. The 22 risk assessment questions were categorized as healthy or unhealthy according to the standards listed in Appendix B.

A risk score was tabulated based on the total number of risk behaviors in which one or more of the answers were reported as unhealthy. Risk behavior scores ranged from 0-10 and were categorized into risk levels low, medium, and high.

> 0-2 risk behaviors = low risk
> 3-4 risk behaviors = medium risk
> 5 or more risk behaviors = high risk

Risk scores do not predict early morbidity or mortality; rather, higher risk scores indicate a greater likelihood that service members will utilize more healthcare services in the future than lower risk service members.

Descriptive analyses, frequencies, and percentages were used to describe survey respondents. Logistic regression examining the relationship between days away from home station and risk number was conducted.

The following demographic variables were collected: age, gender, race, rank and service. Service member age was categorized into the following categories: 17-19, 20-29, 30-39, 40-49, and 50 years and older. Race was categorized as Caucasian, African Americans, Asian and Pacific Islanders, Hispanics or Other. Rank was categorized into five categories: enlisted service members (E1-E5 or E6-E9), officers (O1-O5 or O6-O9), and warrant officers (W1-W5).

Body mass index (BMI) was calculated from self-reported height and weight data, according to current Centers for Disease Control and Prevention (CDC) guidelines ([weight ÷ (height in inches)^2] x 703)[1]. According to the CDC, BMI values that exceed healthy levels have been shown in published studies to be an independent risk factor for certain diseases and all-cause mortality.
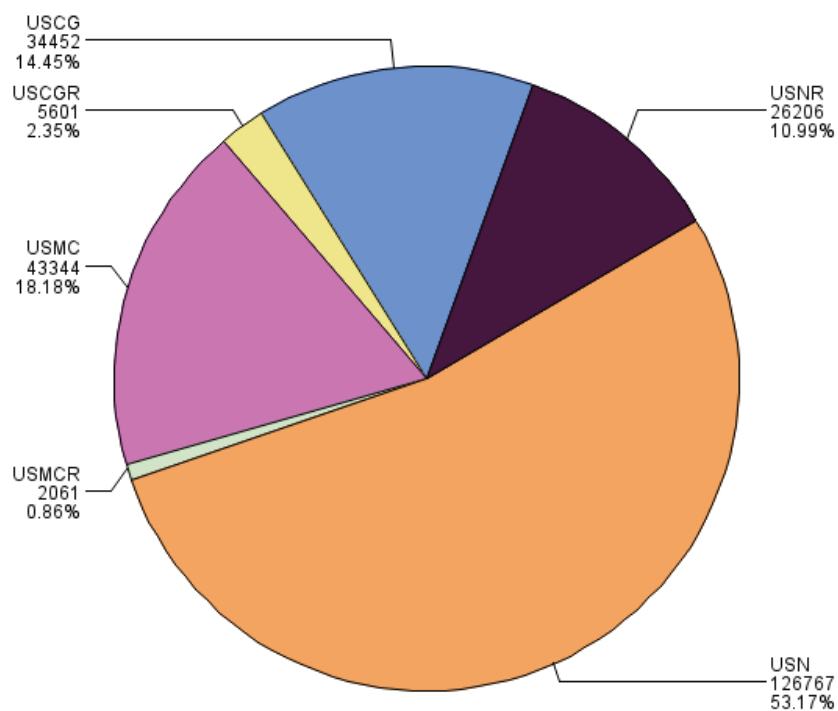
Results

Demographic Analysis

The majority of survey respondents (53%) were active duty Navy service members, while 11% were Navy Reserves, 19% were active duty and reserve Marines, and 17% were active duty and reserve Coast Guard members (Figure 1).

Figure 1:
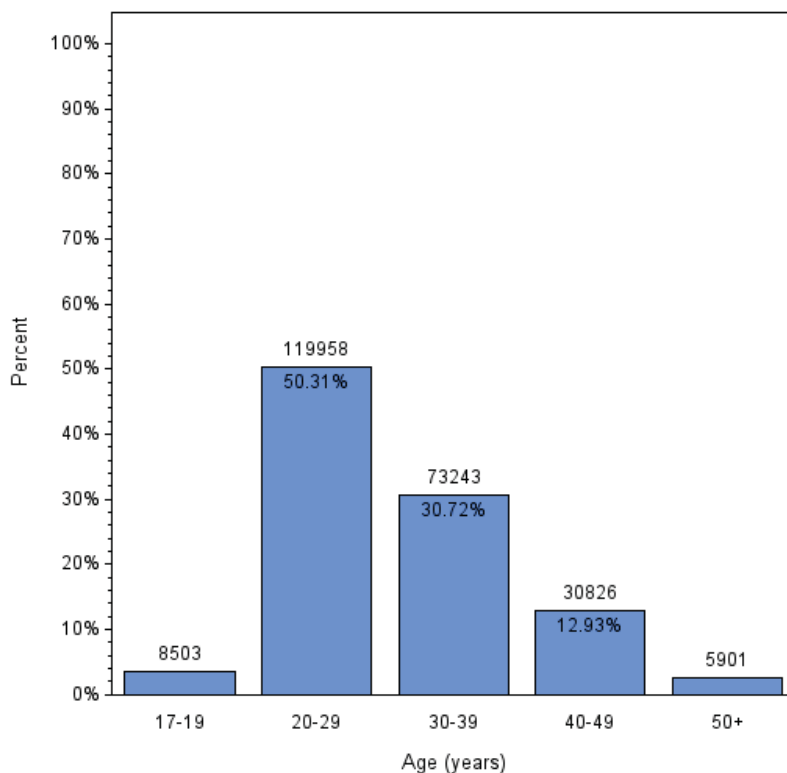**Distribution of Completed HRAs by Service Component**
238,431 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

The age distribution of survey respondents indicated that 50% of the respondents were in the 20-29 year old age group (Figure 2).

Figure 2:
Age Distribution of Completed HRA Survey
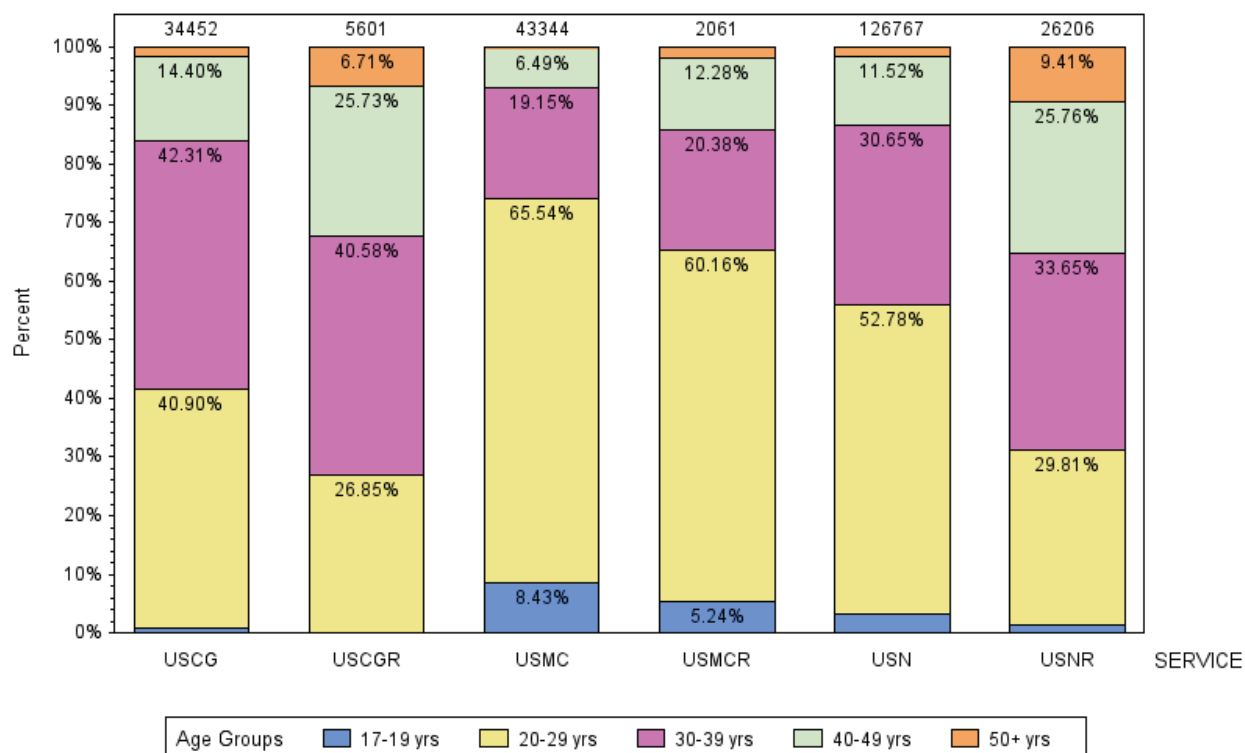238,431 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Overall, Navy and Coast Guard service member respondents were older than the Marine survey respondents (Figure 3). The mean age of service member respondents was USCG=32.0 years of age, USCGR=35.7 years of age, USN=29.8 years of age, USNR=35.7 years of age, USMC=26.3 years of age, and USMCR=28.8 years of age.

Figure 3:
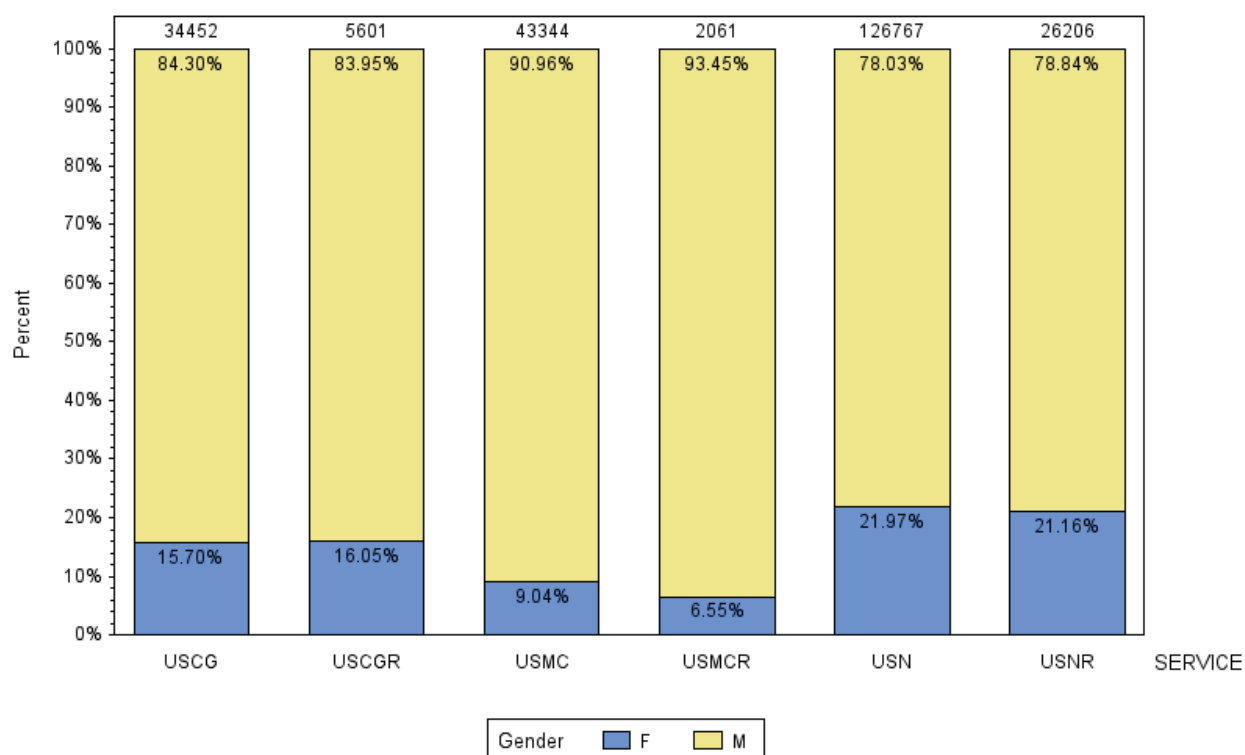Age Distribution of Completed HRAs by Service Component
238,431 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

With respect to gender, more males completed the HRA (82%), which reflects the general male-to-female ratio of military service members. The gender difference was evident in the Marine Corps, with less than 10% of the HRAs completed by females compared to 22% in the Navy and 16% in the Coast Guard.

Figure 4:
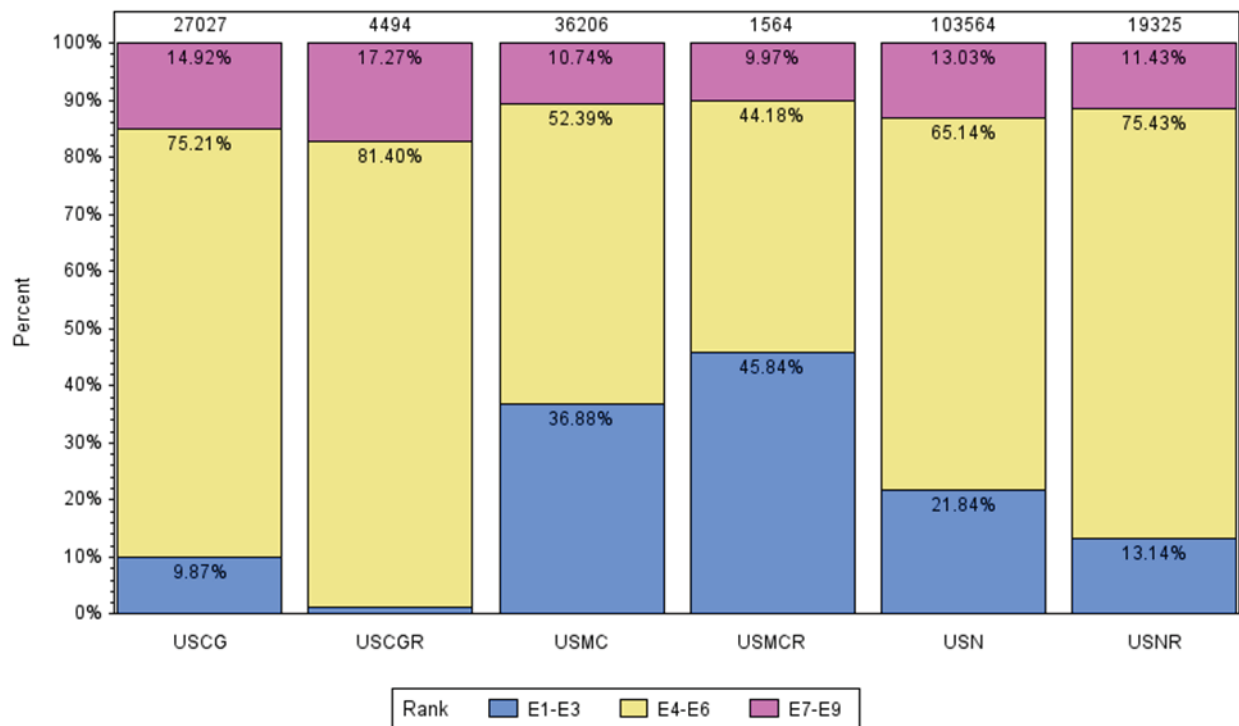Gender Distribution of Completed HRAs by Service Component
238,431 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Distribution by rank of survey respondents indicated that 81% were completed by enlisted members, 18% by officers, and 1% by warrant officers. Figures 5-7 display the distribution of respondents' rank by service.

The USMC and USMCR had the largest percentage of lower-ranking enlisted members (E1-E3) who completed the survey (37.0% and 46.0%, respectively). The USCG (75.2% E4-E6 and 14.9% E7-E9) and USCGR (81.4% E4-E6 and 17.3% E7-E9) had the largest percentage of senior-ranking enlisted members completing the survey (Figure 5).

Figure 5:
Rank (Enlisted Personnel) Distribution of Completed HRAs by Service Component*
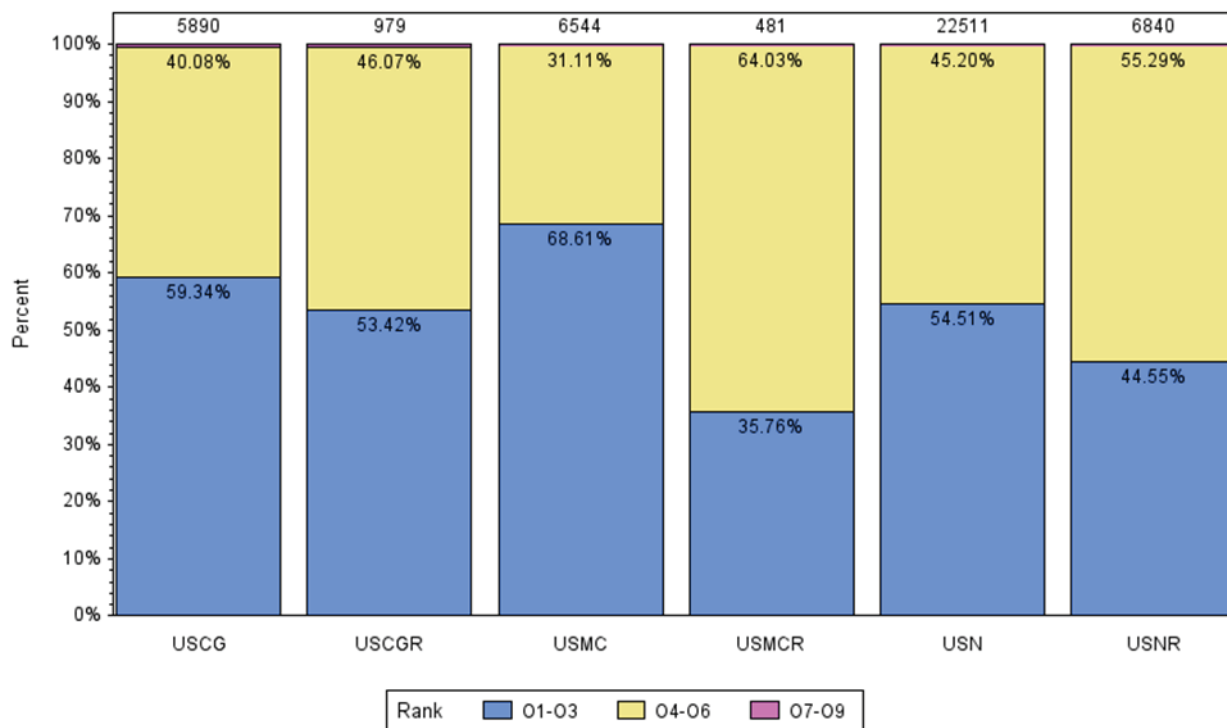192,180 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016
*Does not include enlisted personnel who indicated a rank of E10

Among service members who completed the HRA, the USMCR had the highest percentage of officers in the O4-O6 range (64%) out of all reserve components while the USN had the highest percentage among all active duty components (45.2%). The USMC had the highest percentage of officers in the O1-O3 range (68.6%) who completed the HRA among active duty components, whereas the USCGR had the highest percentage among reserve components (53.4%) (Figure 6).

Figure 6:
Rank (Officer Personnel) Distribution of Completed HRAs by Service Component*
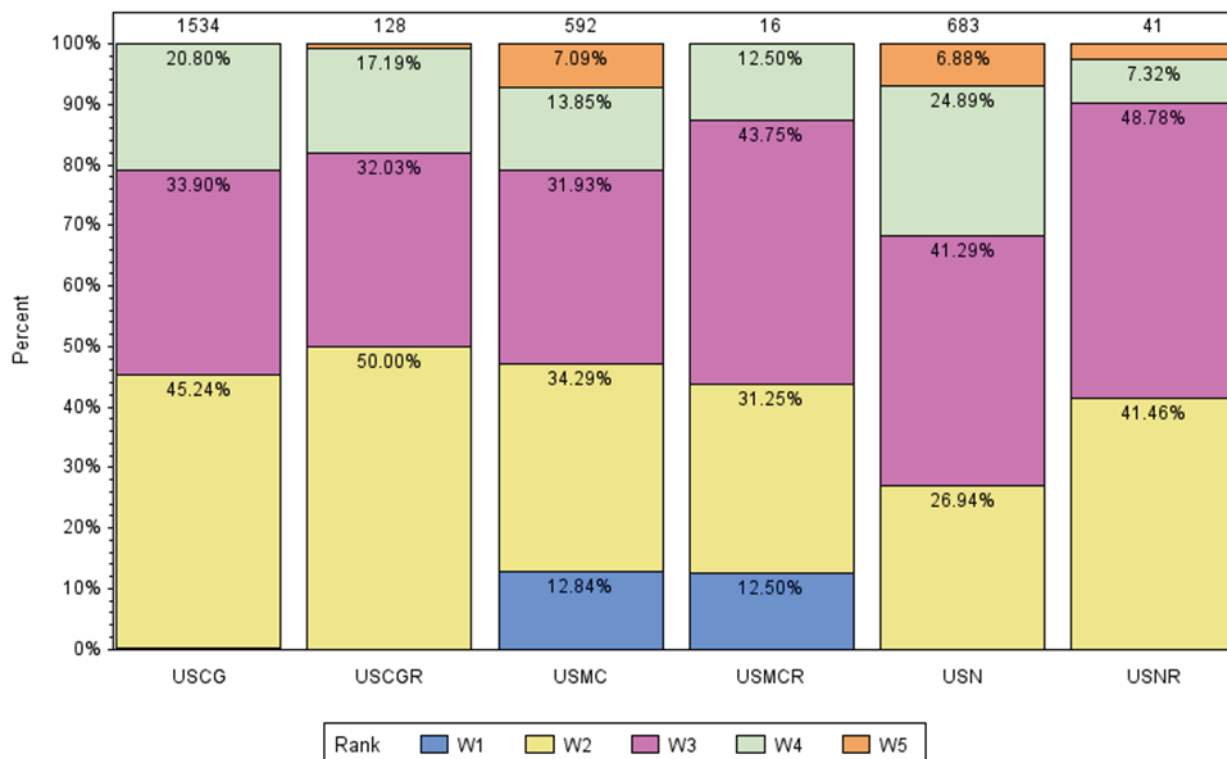43,245 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016
*Does not include officers who indicated a rank of O10

The USMC had the highest percentage of warrant officers in the W5 category (7%) and the USN had the highest percentage in the W4 category (25%) who completed the 2015 HRA. The USNR and the USMCR had the two highest percentages of warrant officers in the W3 category who completed the HRA questionnaire (49% and 44% respectively) (Figure 7).

Figure 7:
Rank (Warrant Officer) Distribution of Completed HRAs by Service Component
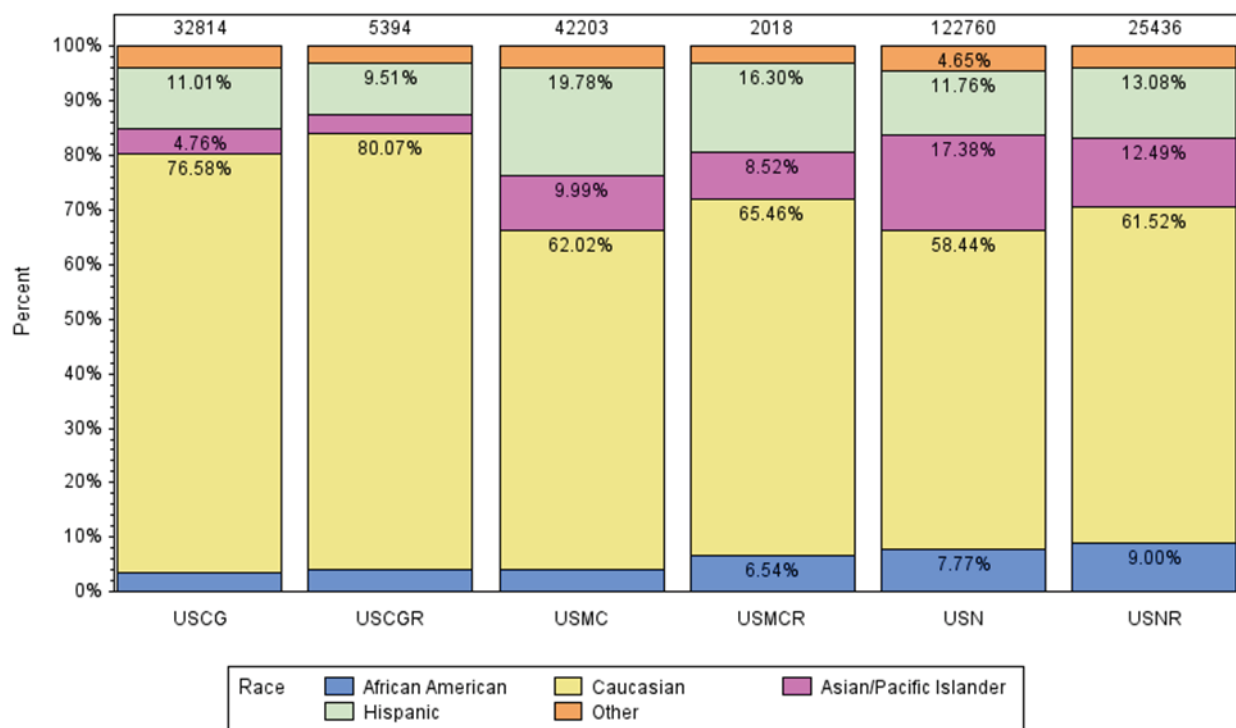2,994 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Across services, survey respondents were predominantly Caucasian, being most prominent among Coast Guard Active Duty and Reserves (77% and 80% respectively). Asian/Pacific Islanders were most prominent among Navy Active Duty members (17%). The largest percentage of Hispanics completing the survey were among Active Duty Marines Corps members (20%), whereas the largest percentage of African Americans were among Navy Reserve members (9%) (Figure 8).

Figure 8:
Race Distribution of Completed HRAs by Service Component*
230,625 records

	USCG	USCGR	USMC	USMCR	USN	USNR
	32814	5394	42203	2018	122760	25436
Other					4.65%	
Hispanic	11.01%	9.51%	19.78%	16.30%	11.76%	13.08%
Asian/Pacific Islander	4.76%		9.99%	8.52%	17.38%	12.49%
Caucasian	76.58%	80.07%	62.02%	65.46%	58.44%	61.52%
African American				6.54%	7.77%	9.00%

Race: African American, Caucasian, Asian/Pacific Islander, Hispanic, Other

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016
*7,806 service member respondents did not answer race question

HRA Risk Factor Analysis

BMI Status

Overall, 65% of service members were classified as overweight or obese according to the Centers for Disease Control and Prevention BMI standards for healthy adults. The analysis indicated that, in general, Navy and Coast Guard personnel were more likely than Marines to be classified as overweight or obese. Among all service components, Active Duty and Reserves had similar BMI levels (Figure 9).

Figure 9:
Distribution of BMI Category for Completed HRAs by Service Component
238,431 records
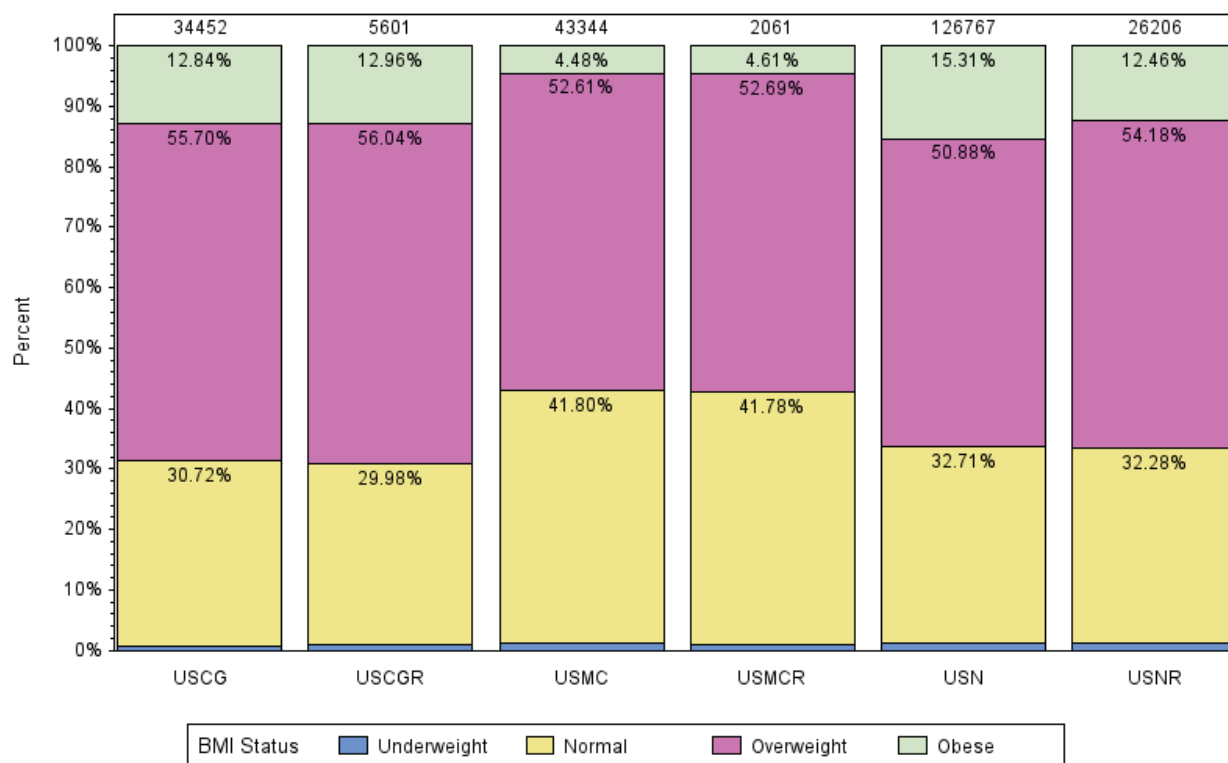
Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016
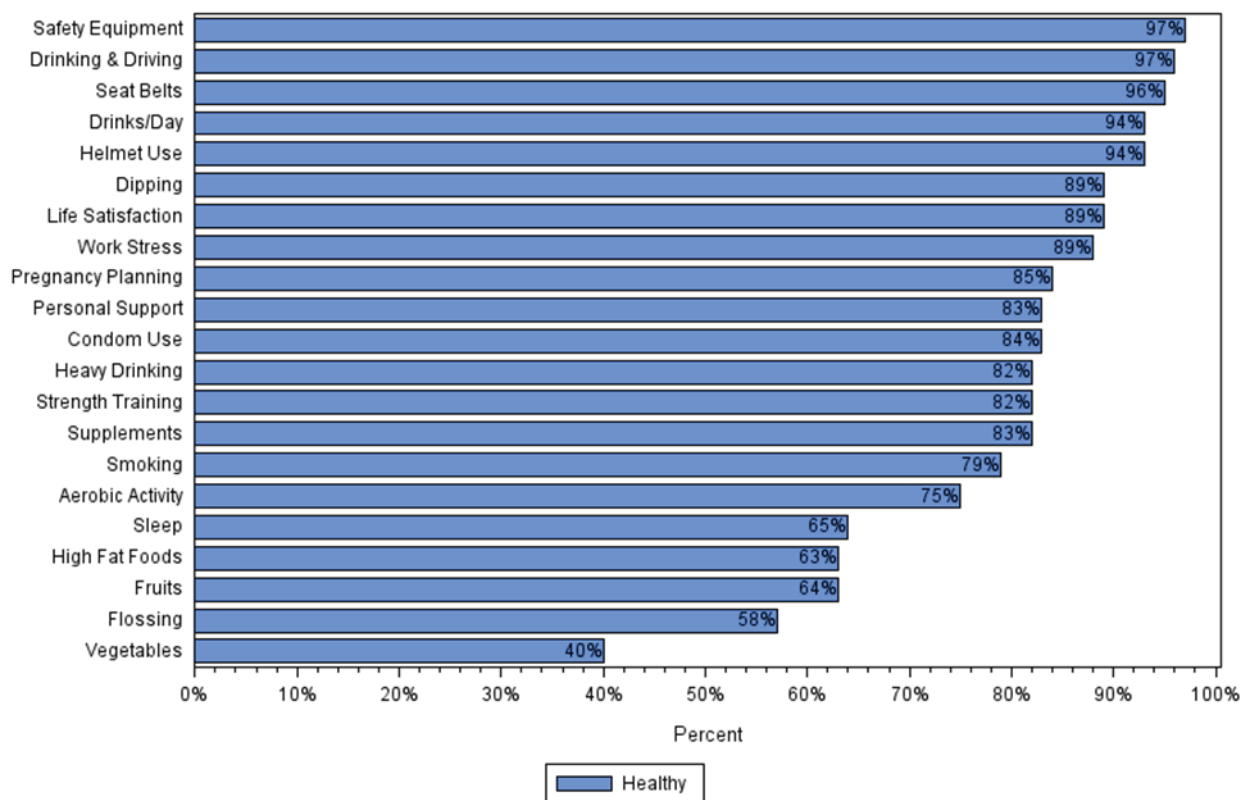
Distribution of "Healthy" Responses

As shown in Appendix B, each HRA question was classified as 'healthy' or 'unhealthy' based on responses to the question.

Figures 10-16 show the percentages of healthy responses by service component.

The behaviors with the lowest percentages of healthy responses were daily intake of vegetables (40%), lack of flossing (58%), low daily intake of fruits (64%), and high daily intake of high fat foods (63%). Among all respondents, other significant areas of concern included lack of sleep (65%), lack of aerobic activity (75%), and smoking (79%). Overall, the most common healthy behaviors reported by members included use of safety equipment (97%), avoiding drinking and driving (97%), and use of seat belts (96%) (Figure 10).
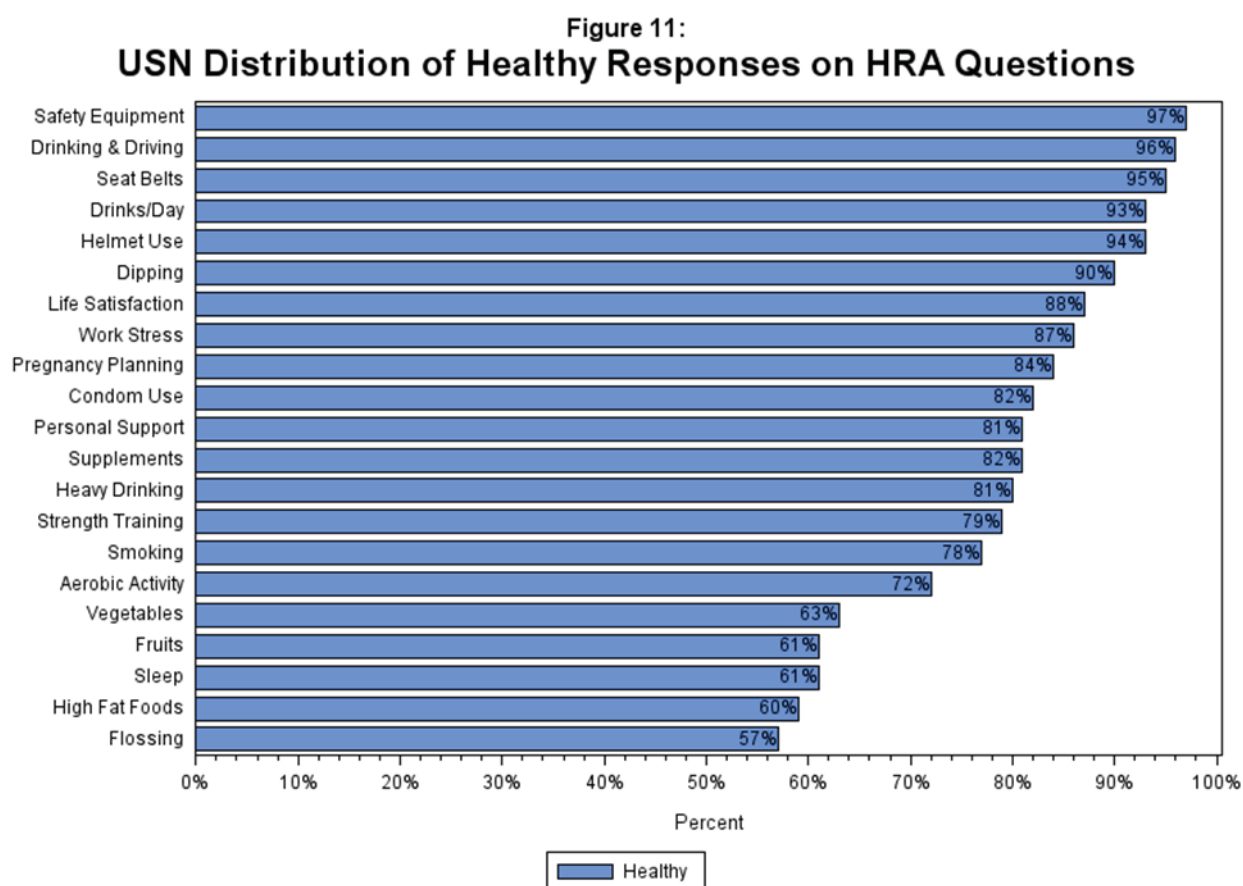
Figure 10:
Distribution of Healthy Responses on HRA Questions for All Service Components

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

USN and USNR response distributions closely resembled one another (Figures 11 and 12). In addition, 57% of USN and 65% of USNR members reported healthy flossing behaviors; 63% of USN and 47% of USNR members reported daily consumption of vegetables. The majority of USNR service members (90%) reported never drinking heavily or on one or two occasions per year compared to 81% USN service members. A larger proportion of USNR service members were more likely to report staying in the daily and weekly alcoholic drink limits than USN service members (96% and 93%, respectively). USNR members reported a higher percentage of healthier smoking behaviors (88%) than did USN members (78%). More USNR members reported getting enough restful sleep (74%) compared with USN members (61%).

Figure 11:
USN Distribution of Healthy Responses on HRA Questions

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016
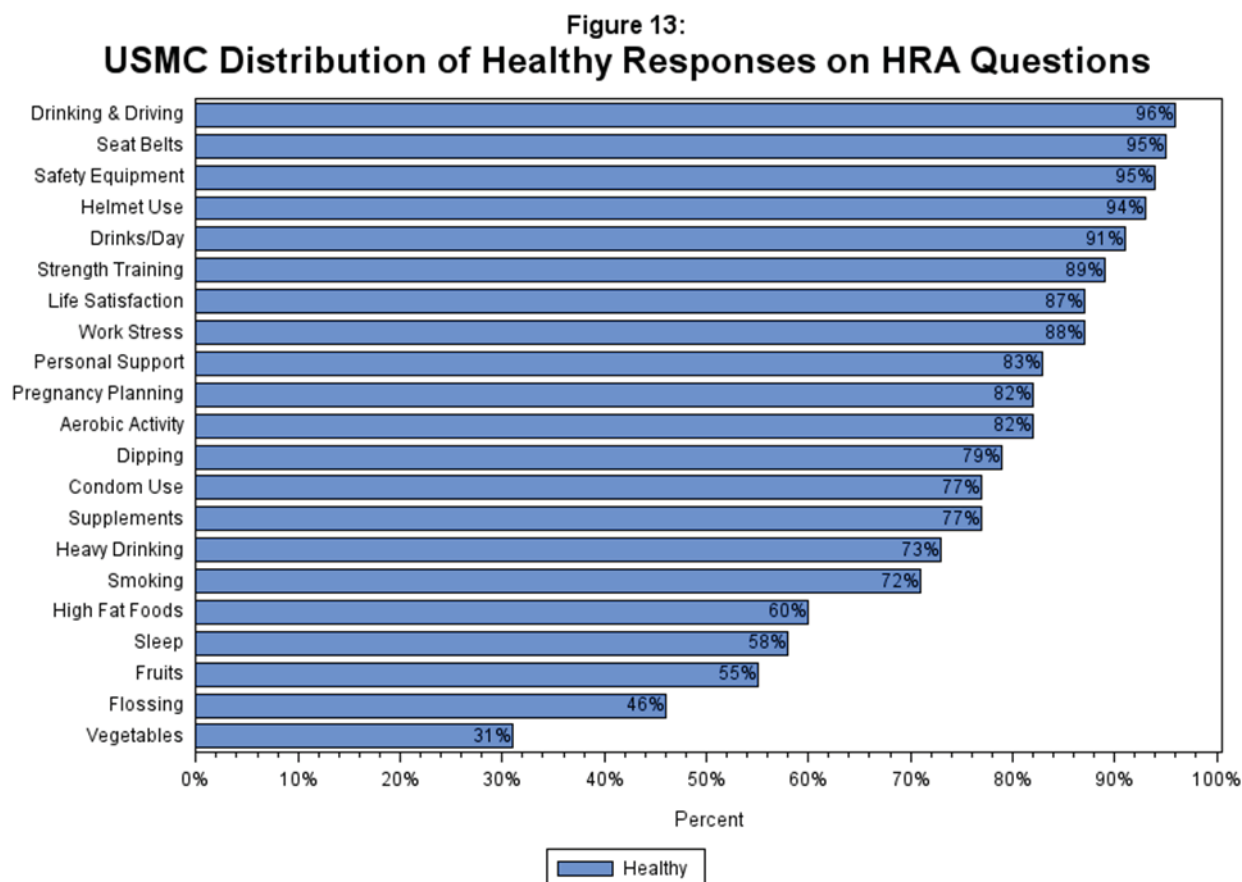
Figure 12:
USNR Distribution of Healthy Responses on HRA Questions
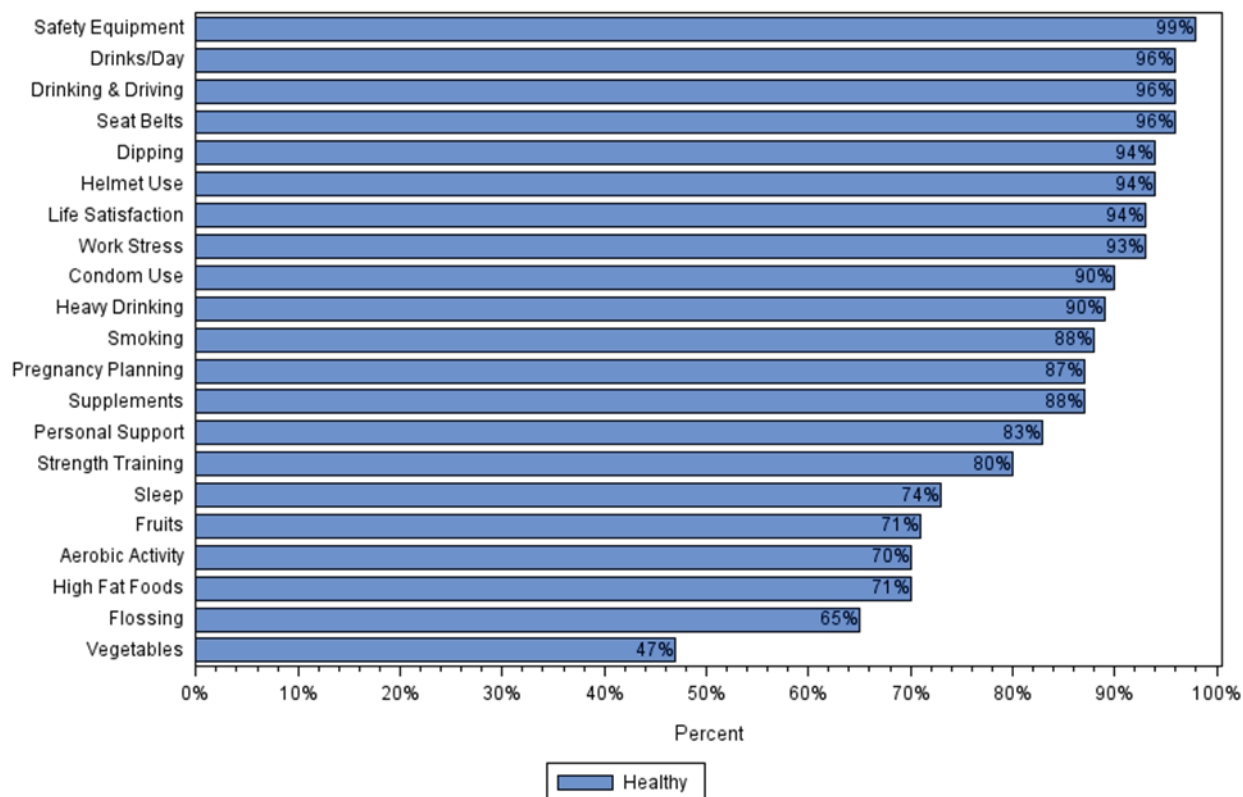
Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

The USMC and USMCR followed similar trends based on reported risks (Figures 13 & 14). USMC and USMCR healthy responses were lowest for intake of vegetables (31% and 36%, respectively), flossing (46% and 50%, respectively), and intake of fruits (55% and 61%, respectively). USMC members reported lower levels of healthy behaviors related to work stress (88%) than USMCR members (92%). USMC and USMCR members reported similar percentages of heavy drinking (73% and 75%, respectively), and drinks per day (91% and 92%, respectively). Both groups of Marines reported high percentages of healthy drinking and driving behaviors (96% and 97%, respectively). USMCR members reported higher proportions of healthier smoking habits (78%) compared to USMC service members (72%). USMC and USMCR service members reported similar percentages of dipping behaviors (79% and 82%, respectively). USMCR members reported higher percentages of getting enough restful sleep (69%) compared to USMC members (58%). USMC and USMCR service members reported similar proportions of healthy condom usage (77% and 79%, respectively).

Figure 13:
USMC Distribution of Healthy Responses on HRA Questions

Question	Percent
Drinking & Driving	96%
Seat Belts	95%
Safety Equipment	95%
Helmet Use	94%
Drinks/Day	91%
Strength Training	89%
Life Satisfaction	87%
Work Stress	88%
Personal Support	83%
Pregnancy Planning	82%
Aerobic Activity	82%
Dipping	79%
Condom Use	77%
Supplements	77%
Heavy Drinking	73%
Smoking	72%
High Fat Foods	60%
Sleep	58%
Fruits	55%
Flossing	46%
Vegetables	31%

Healthy

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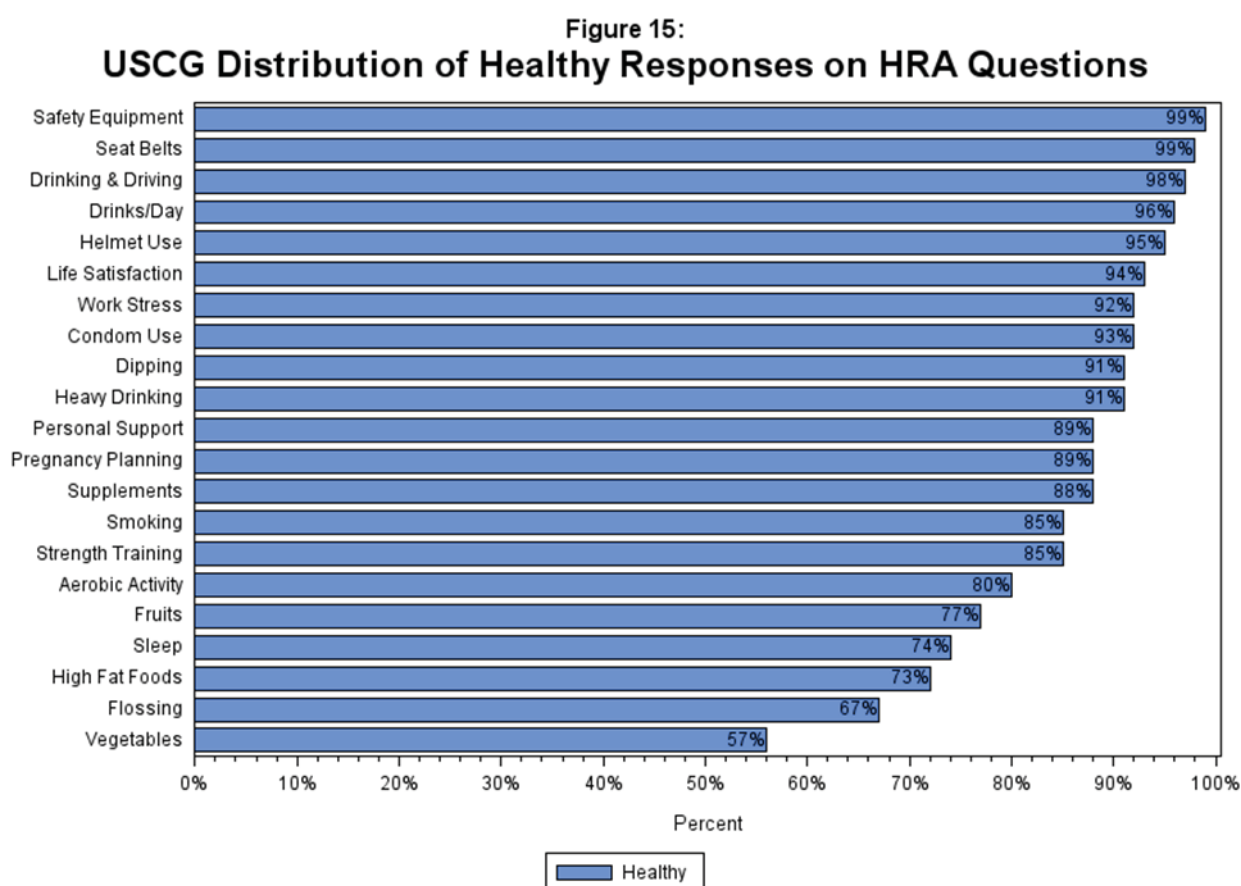
Figure 14:
USMCR Distribution of Healthy Responses on HRA Questions
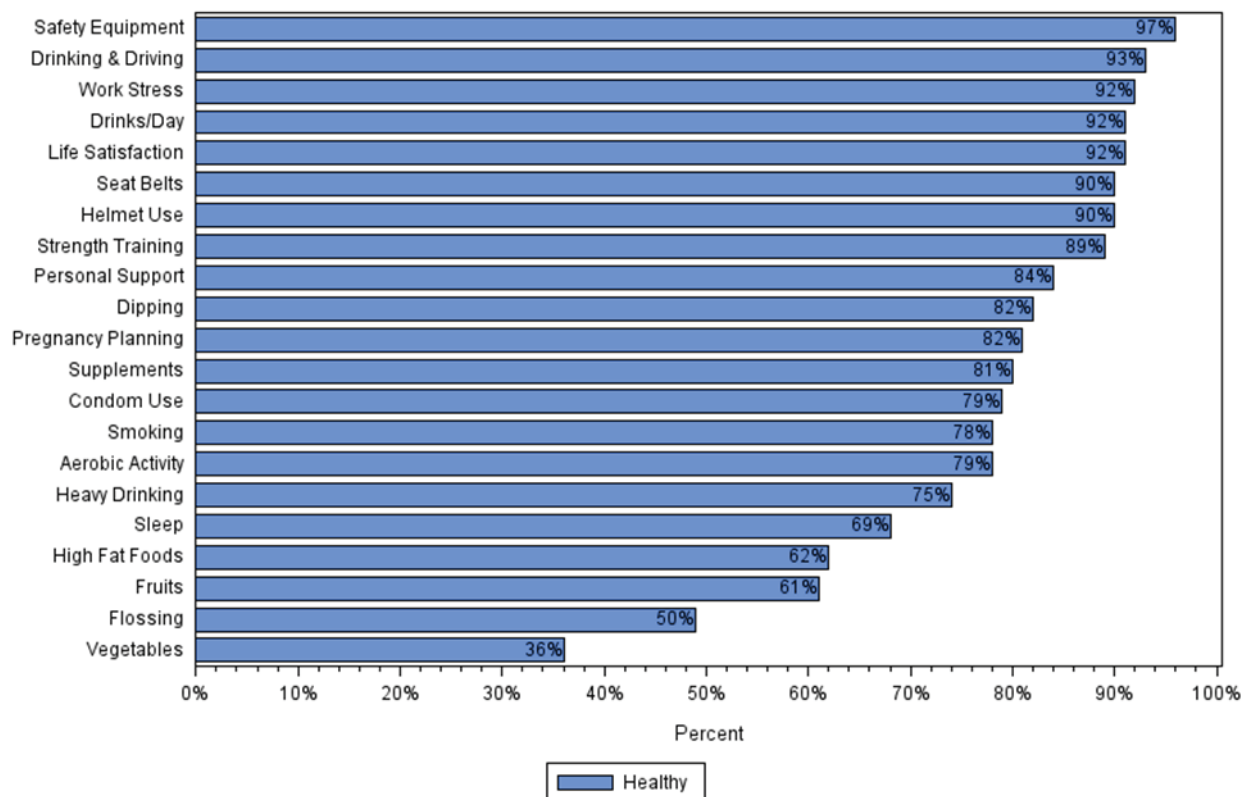
Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

The USCG and USCGR showed similar results of healthy behaviors (Figures 15 & 16). The lowest healthy responses for both groups were reported intake of vegetables (57% for USCG and 56% for USCGR), levels of flossing (67% for USCG and 74% for USCGR), and intake of high fat foods (73% among USCG and 75% among USCGR). USCG and USCGR members reported slightly higher percentages of healthy smoking behaviors (85% and 92%, respectively) than USMC and USMCR. The USCG and USCGR reported higher healthier heavy drinking responses (91% and 93%, respectively) and drinks per day (96% and 97%) than the other branches. The USCG and USCGR reported higher percentages of getting enough restful sleep (74% and 82%) compared to the other branches.

Figure 15:
USCG Distribution of Healthy Responses on HRA Questions

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Figure 16:
USCGR Distribution of Healthy Responses on HRA Questions
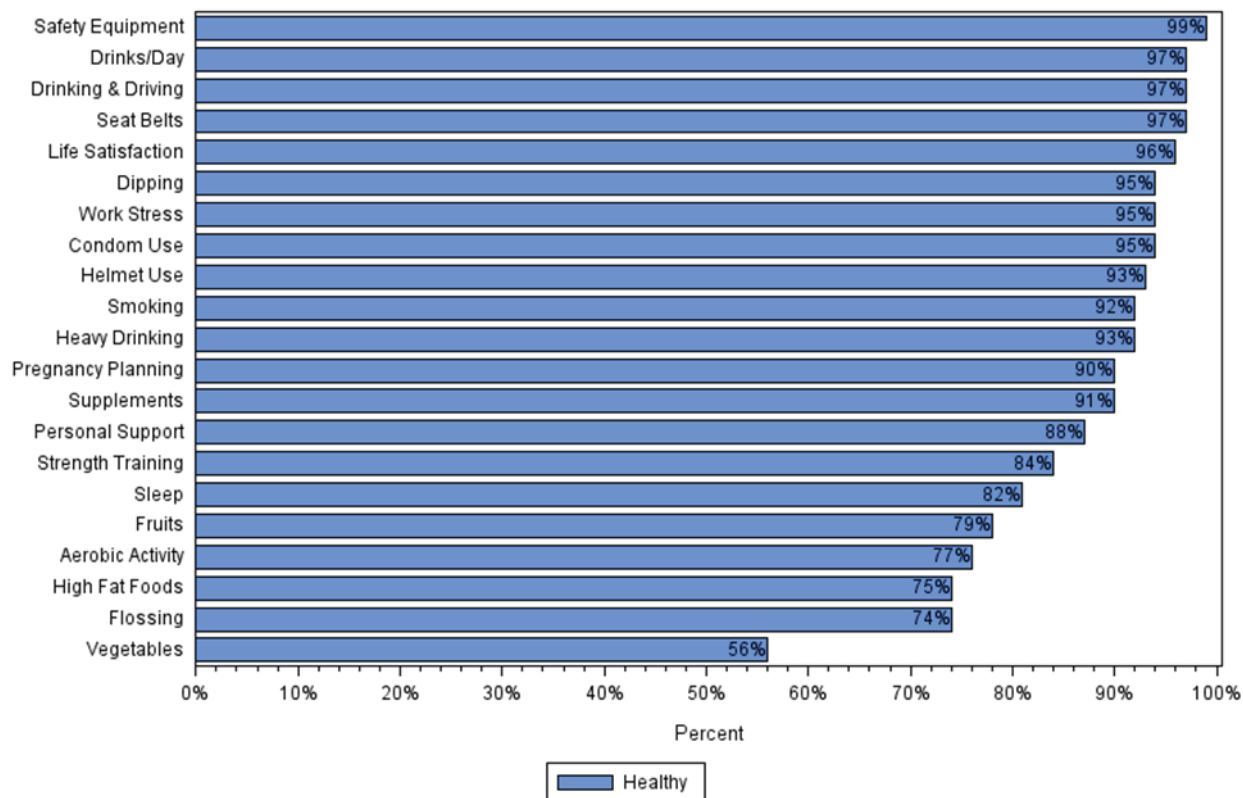
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Distribution of Risk Categories

Figure 17 shows risk categories for each service component, based on the number of members within each risk category. Each service member was categorized as low, medium, or high risk based on the number of reported unhealthy responses. Members in higher risk categories are considered more likely to utilize healthcare services in the future.

Based on the mean number of risk factors, USMC members were most often scored as "high risk" (32.3%), followed by the USMCR (27.6%), USN (26.2%), USNR (14.3%), USCG (10.8%), and USCGR (8.0%). Members of the USCGR most often scored in the low risk category (65.7%).

Figure 17:
Distribution of Risk Categories for Completed HRAs by Service Component
238,431 records
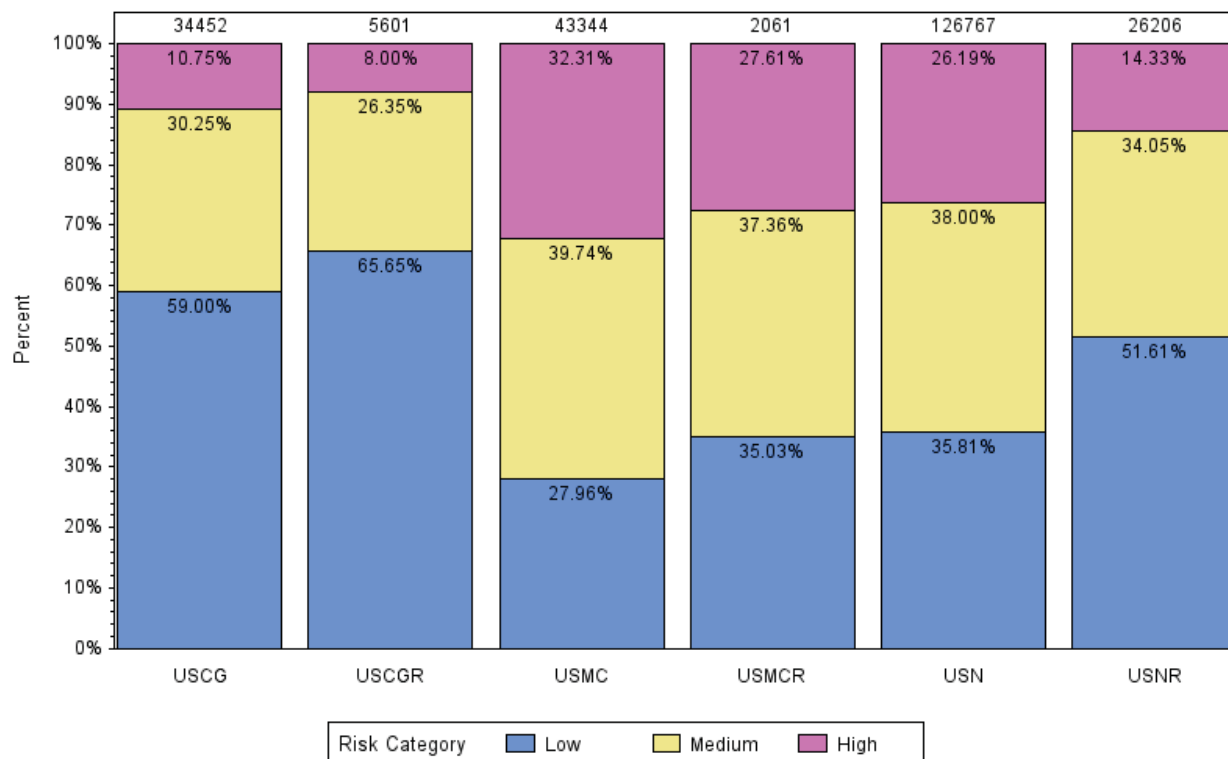
Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Changes in Health Responses

Table 1 displays the percent of respondents that were classified healthy for both this year and the previous year. Percent change in the 'healthy' response appears in the last column; increases in values indicate healthier behaviors. Overall, most 'healthy' responses were relatively unchanged. Consumption of vegetables improved in 2015, with an increase of 1.6%. Helmet use and sleep decreased in 2015 by 3.5% and 2.0% respectively. The answers for the question indicating on drinks per day were different for the 2014 and 2015 survey, so the results for drinks per day are not comparable.

Table 1. Percent Change in Healthy HRA Responses, Total, 2015 HRA[a]

	2014 (N=221,052)	2015 (N=238,431)	Percent Change
Aerobic Activity	75.9	75.1	0.8
Condom Use	84.3	84.0	0.3
Dipping	89.0	89.0	0.0
Drinking & Driving	96.7	96.6	0.1
Flossing	58.0	57.9	0.1
Fruits	63.9	63.9	0.0
Heavy Drinking	81.6	82.1	-0.5
Helmet Use[b]	97.3	94.0	3.3
High Fat Foods	64.5	63.3	1.2
Life Satisfaction	89.9	89.4	0.5
Personal Support	84.0	83.2	0.8
Pregnancy Planning	85.0	84.9	0.1
Safety Equipment[b]	97.3	97.2	0.1
Seat Belts	96.0	96.0	0.0
Sleep	65.8	64.5	1.3
Smoking	79.4	79.2	0.2
Strength Training	82.3	82.2	0.1
Supplements	82.4	82.7	-0.3
Vegetables	39.6	40.2	-0.6
Work Stress	89.0	88.6	0.4

[a]Percent Change calculation = [(2015 Value - 2014 Value)/2014 Value)]*100
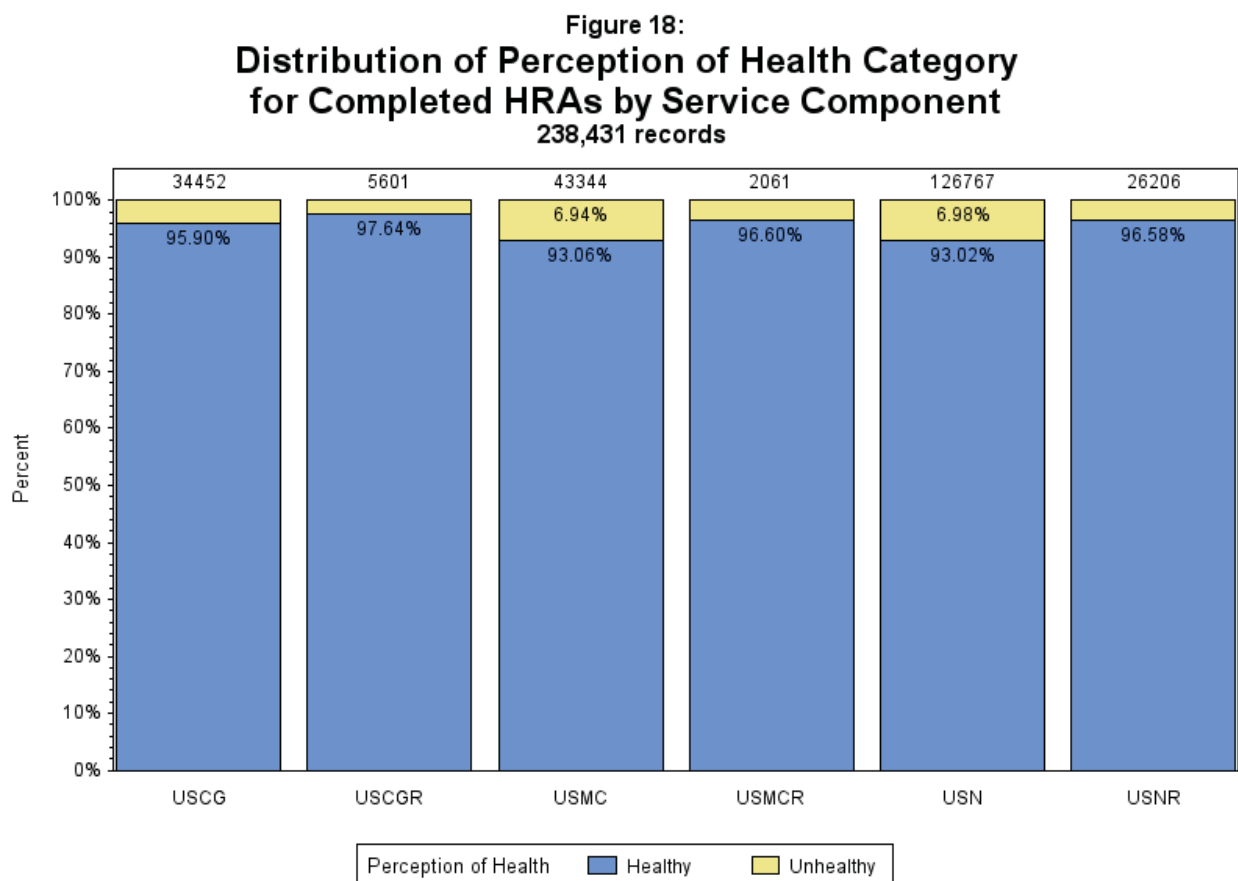
[a] May not exactly total 100 due to rounding error.

[b] Excludes non applicable answers.

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Perception of Health

Self-assessments of one's current state of health have been shown to be fairly accurate. However, perception of current good health may not accurately reflect future health for members who report significant risk factors that are major determinants of health outcomes. Among all service members, 94.0% rated their "health in general" as either good or excellent (Figure 18), even though the self-reported scoring of HRA data shows many members reported risk factors that placed them in medium and high risk categories (Figure 17).

Figure 18:
Distribution of Perception of Health Category for Completed HRAs by Service Component
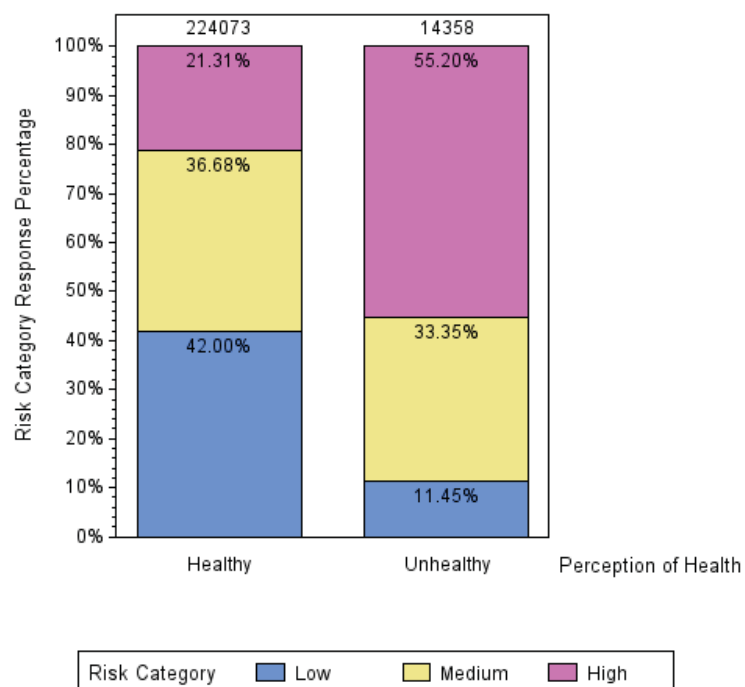238,431 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

The differences in perception of health and risk category showed that those who perceived themselves to be unhealthy (by rating that their health was either fair or poor), were more likely to be in the high risk category compared to those who perceived themselves to be "healthy". Of the small percentage of respondents who indicated they were unhealthy (6.0% of respondents), the majority had risk scores that fell into the medium to high risk categories (88.6%) (Figure 19).

Figure 19:
Distribution of Perception of Health Category Compared to Risk Category for Completed HRAs
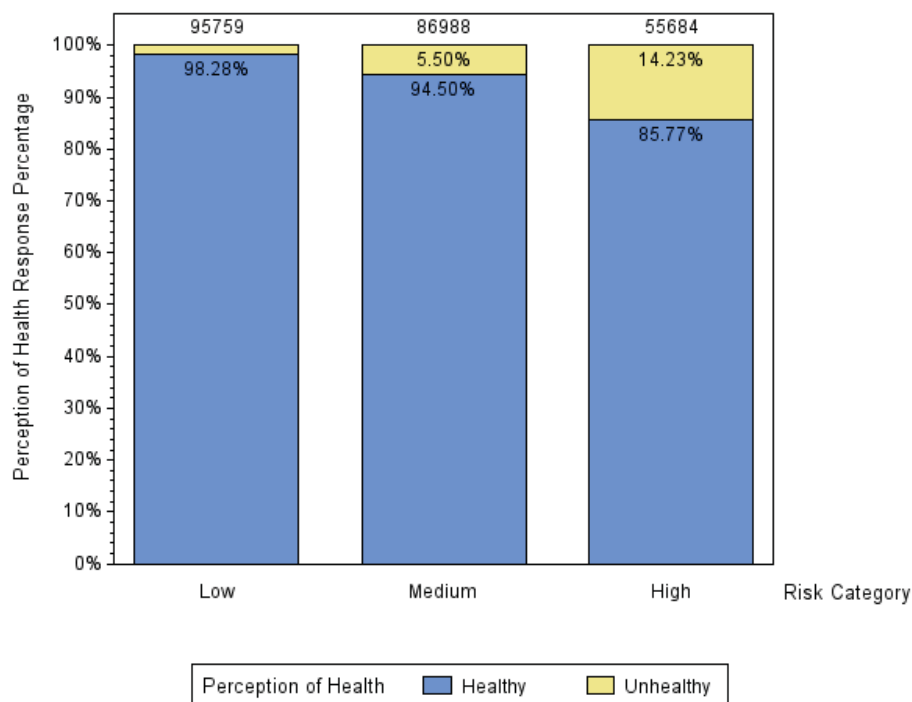238,431 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

The differences in perception of health and risk category were small but consistent, with lower risk groups having a higher perception of good health (98%) than the other two categories (Figure 20). However, 86% of high-risk individuals also perceived their health to be good.

Figure 20:
Distribution of Perception of Health Category
Compared to Risk Category for Completed HRAs
238,431 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Mean Risk by Demographic Variables

A risk score for each individual was tabulated based on the total number of unhealthy answers. There were a total of 10 risk categories. Risk scores were grouped into risk levels of low (0-2 risk categories), medium (3-4 risk categories), and high (5 or more risk categories).

More males were classified as high risk (25%) than females (18%) (Table 2).

Table 2. Risk Category by Gender, 2015 HRA[a]

Gender	Percent (%) Low Risk	Percent (%) Medium Risk	Percent (%) High Risk
Female (n=43,762)	46.9	35.2	17.9
Male (n=194,669)	38.6	36.8	24.6

[a] May not exactly total 100 due to rounding error.

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Older service members were less likely to report engaging in risky behaviors (Table 3). Approximately 57% of younger members (age 17-29) were in the high risk category.

Table 3. Risk Category by Age, 2015 HRA[a]

Age Group (Years)	Percent (%) Low Risk	Percent (%) Medium Risk	Percent (%) High Risk
17-19 (n=8,503)	30.9	40.8	28.3
20-29 (n=119,958)	34.8	36.8	28.4
30-39 (n=73,243)	44.2	36.4	19.4
40-49 (n=30,826)	50.0	35.6	14.5
50+ (n=5,901)	60.9	30.5	8.6

[a] May not exactly total 100 due to rounding error.

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By rank, the E1-E5 group, which is generally comprised of younger service members, had a greater percentage of members in the high risk category compared to E6-E9 and the officer ranks (Table 4). Senior officers (O6-O9) had a lower percentage of members in the high risk category compared to other officers. Warrant officers were generally most likely to be in the high risk category within the officer ranks.

Table 4. Risk Category by Rank, 2015 HRA[a]

Rank Group[b]	Percent (%) Low Risk	Percent (%) Medium Risk	Percent (%) High Risk
E1-E5 (n=131,176)	35.0	36.8	28.3
E6-E9 (n=61,004)	40.9	37.6	21.4
O1-O5 (n=40,271)	53.6	34.3	12.1
O6-O9 (n=2,974)	60.0	32.3	7.7
W1-W5 (n=2,994)	52.4	34.5	13.1

[a] May not exactly total 100 due to rounding error.

[b] Excludes individuals who indicated a rank of E10 or O10.

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No significant difference between race and risk category were noted (Table 5). This has been the case in previous years' reports.

Table 5. Risk Category by Race, 2015 HRA[a]

Race Group[b]	Percent (%) Low Risk	Percent (%) Medium Risk	Percent (%) High Risk
African American (n=15,092)	37.3	37.0	25.7
Caucasian (n=144,326)	42.5	35.9	21.6
Asian/Pacific Islander (n=30,653)	34.7	38.3	27.0
Hispanic (n=30,568)	37.8	37.0	25.3
Other (n=9,997)	36.4	36.9	26.7

[a] May not exactly total 100 due to rounding error.

[b] 7,806 service member respondents did not indicate race.

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016.

Days Away From Home Station

Using the "days away" variable, four time points were created to capture days away from home station: 0 days, 1-29 days, 30-179 days, and 180-365 days.

In the entire population, 49% of individuals did not spend any time away from the home station, 23% spent 1-29 days away, 21% spent 30-179 days away, and 8% spent 180-365 days away from the home station (Figure 21)

Figure 21:
Percentage of Days Spent Away from Home Station
238,431 records
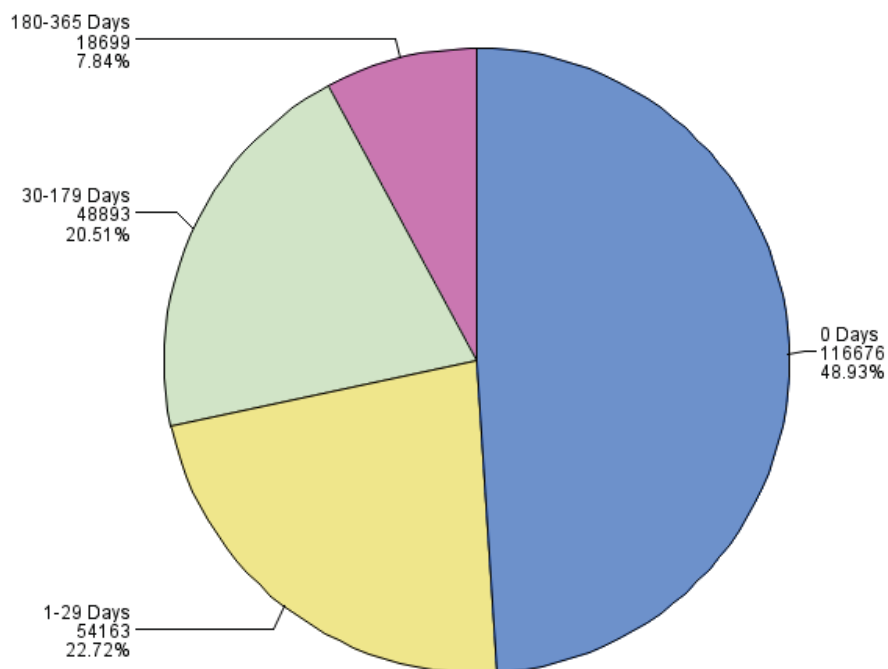
180-365 Days
18699
7.84%

30-179 Days
48893
20.51%

0 Days
116676
48.93%

1-29 Days
54163
22.72%

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Time away from home station was examined by service component (Figure 22). The USCG had the highest percentages of total days away with at least 61% of members reporting at least one day away from home station, followed by the USMC (53%). USMC members reported having the greatest percentage of members away from home station for 180-365 days (10%), while the USCG and USN members only had 8% of individuals away from home station for 180-365 days.
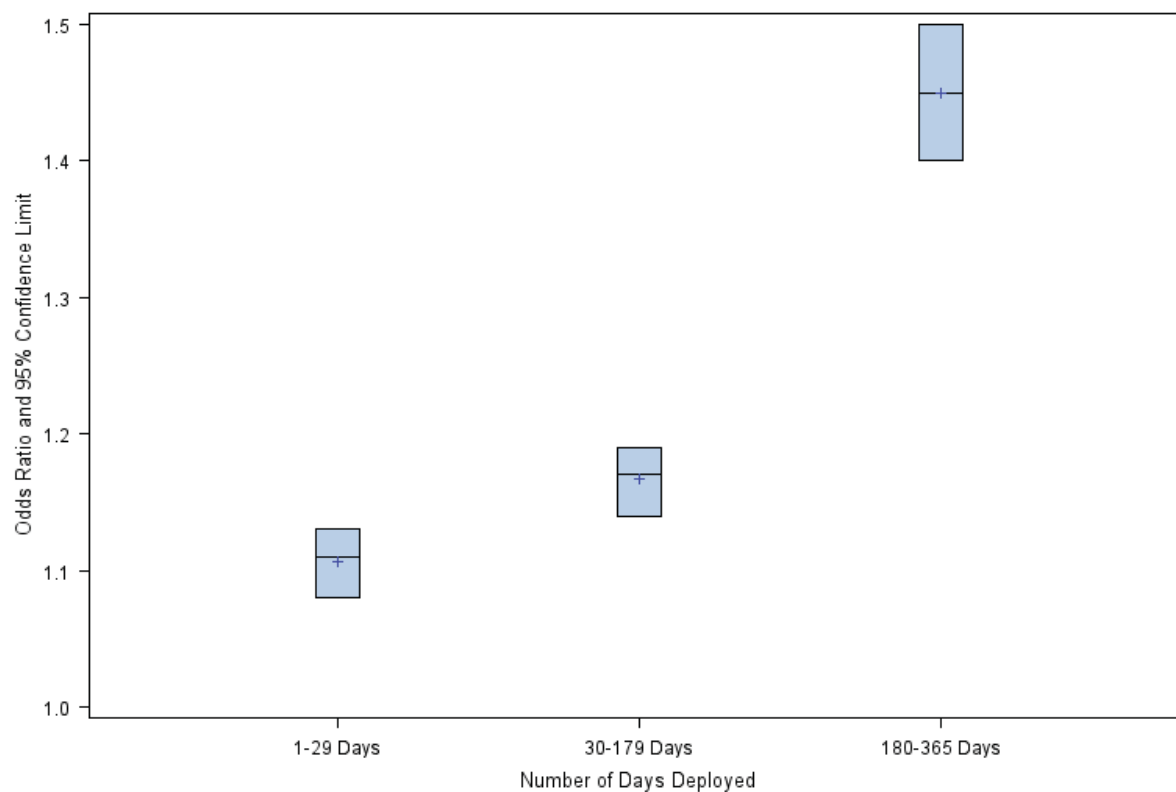

Figure 22:
Days Away From Home Station by Service
238,431 records
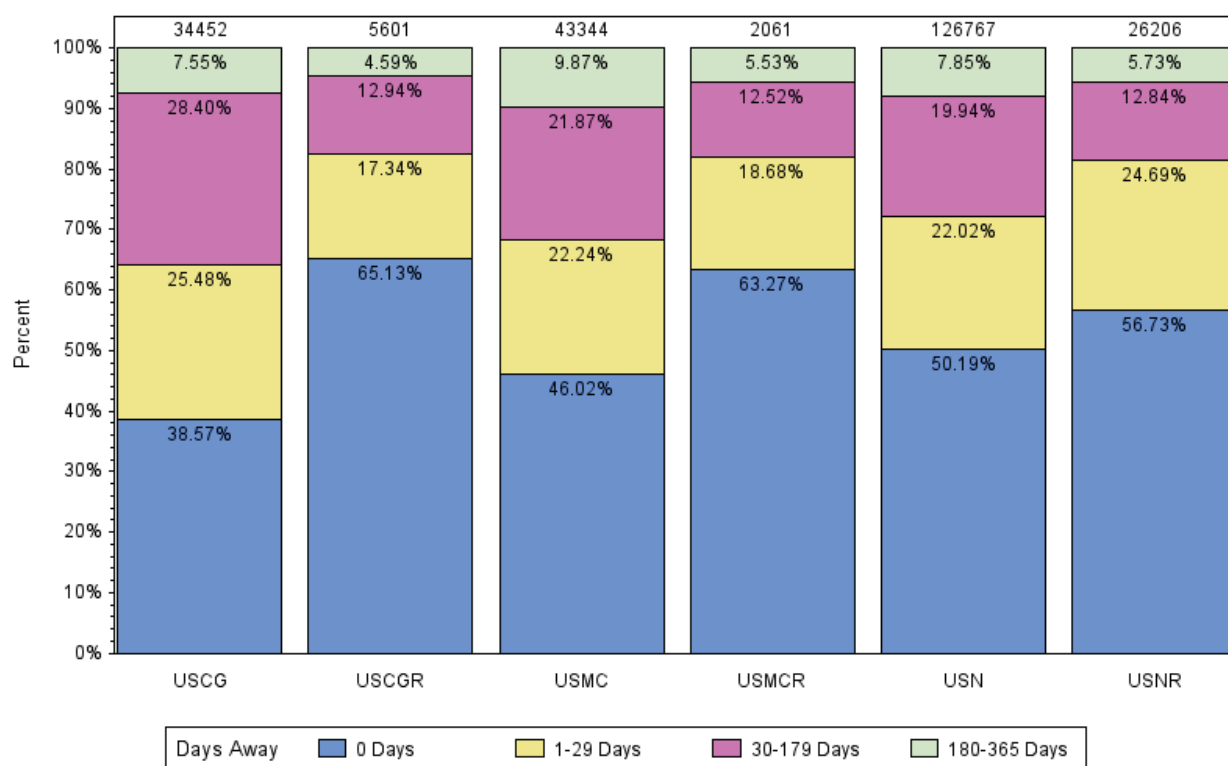
Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Total HRA risk score was examined in relation to the four "Days Away from Home Station" categories using frequency distribution and logistic regression. The percentage of members in the 'high' risk category increased from 21% at 0 days away to 30% at 180-365 days away (Figure 23). The percent of members in the 'low' risk category decreased from 42% at 0 days away to 34% at 180-365 days away. The percentage of SMs categorized as medium risk was constant across all categories of days away from home.

Figure 23:
Distribution of Risk Categories for Completed HRAs for Days Away from Home Station
238,431 records
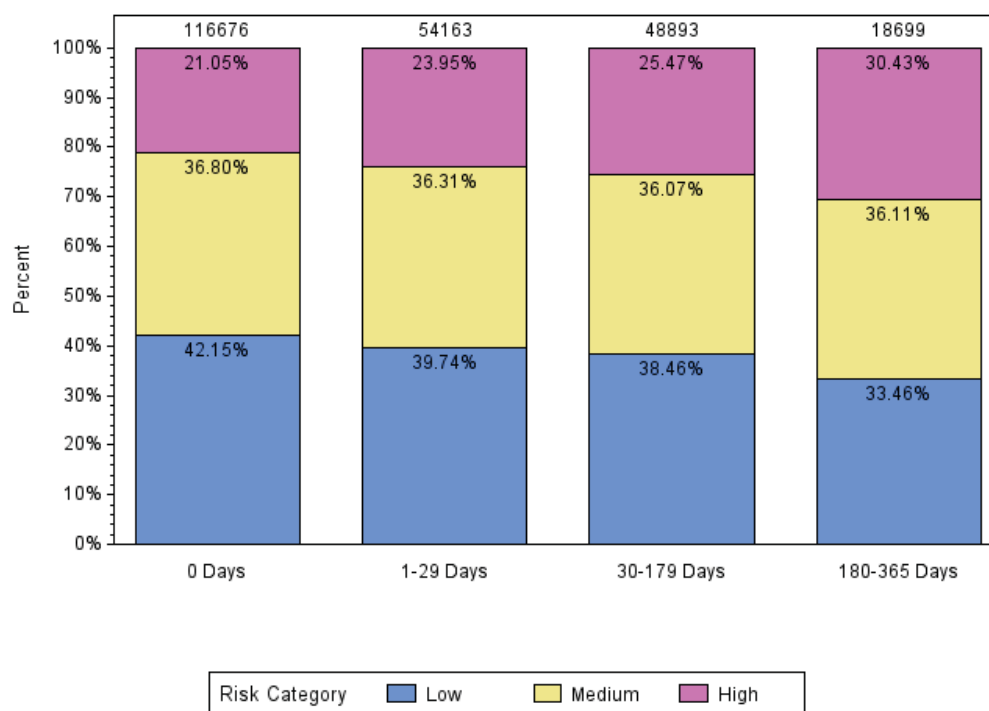
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Days Away From Home Station and Risk Score

To evaluate the relationship between length of days away from home station and risk score, a logistic regression model was used. A risk score of greater than two (medium and high categories) was set as the dependent variable, while days away from home station was used as a predictive variable. The model was found to be significant with the odds ratio increasing in each of the days away categories when compared to not leaving home station (Figure 24, Table 6).

Figure 24:
Relationship Between Risk Number and Different Days Away Categories
238,431 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Table 6. Relationship Between Days Away from Home Station and Risk Scores, 2015 HRA

Days Away from Home Station	n	Odds Ratio (95% CI)	p-value
0 Days	116,676	1 (Reference)	Reference
1-29 Days	54,163	1.11 (1.08-1.13)	<.0001
30-179 Days	48,893	1.17 (1.14-1.19)	<.0001
180-365 Days	18,699	1.45 (1.40-1.50)	<.0001

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016.

Days Away from Home Station and Unhealthy Behaviors

Responses to questions about smoking, dipping, drinks per day, heavy drinking, life satisfaction, work stress, personal support, and sleep were examined over the four time points to determine any time-related differences in reporting of unhealthy behaviors.

Figures 25-31 show the results of 'unhealthy' responses by self-reported time away from home station. Self-reported unhealthy behaviors, such as dipping, heavy drinking, drinks per day, and work stress all increased as time away from station increased, for all service components grouped together. However, unhealthy behaviors regarding the amount of restful sleep decreased as time away from home station increased.

Figure 25:
Distribution of 'Unhealthy' Behaviors by Time Away from Home Station, All Service Components
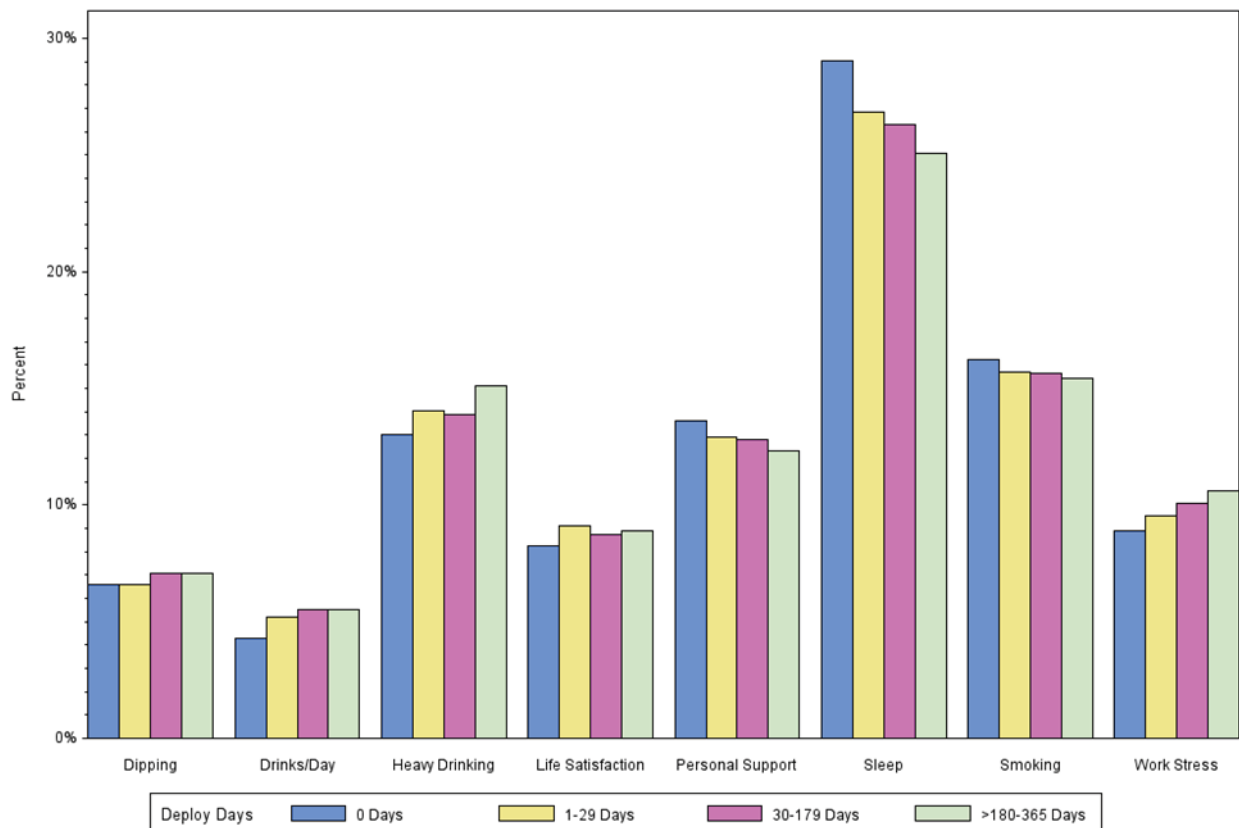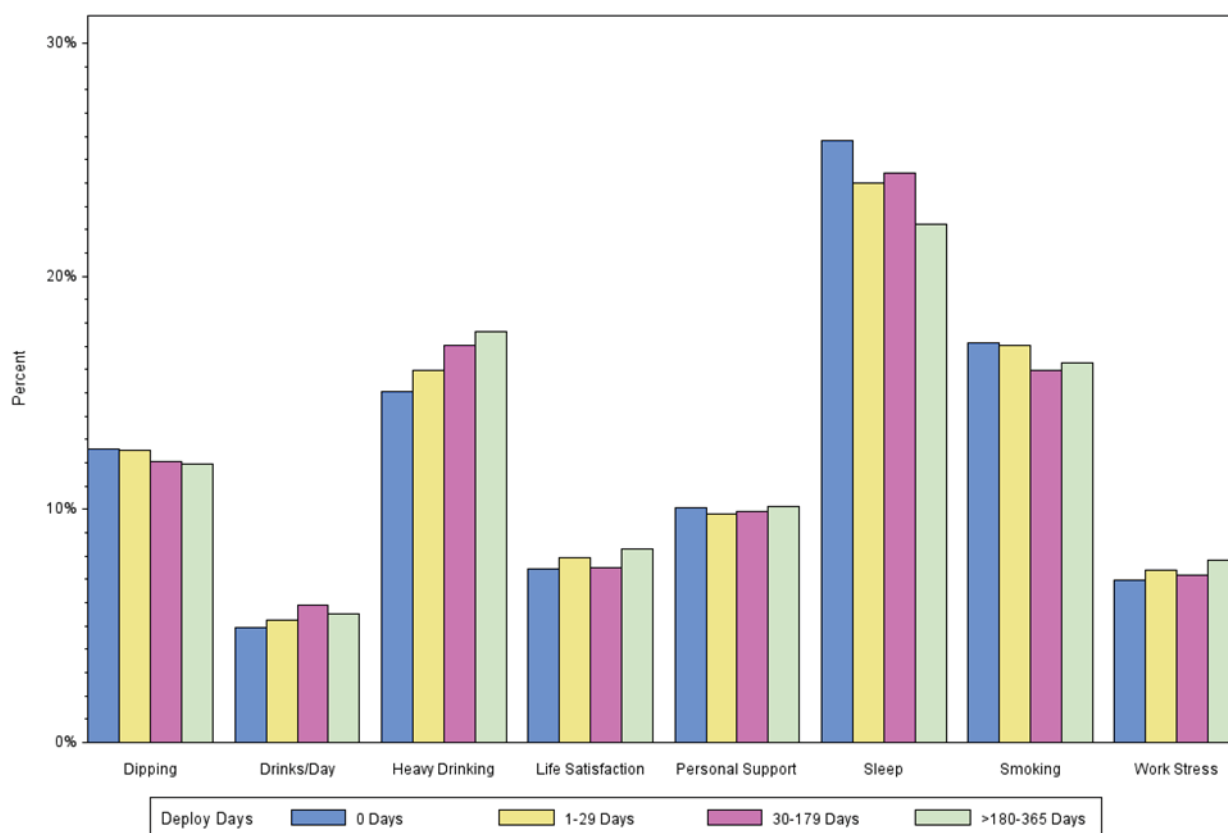238,431 records
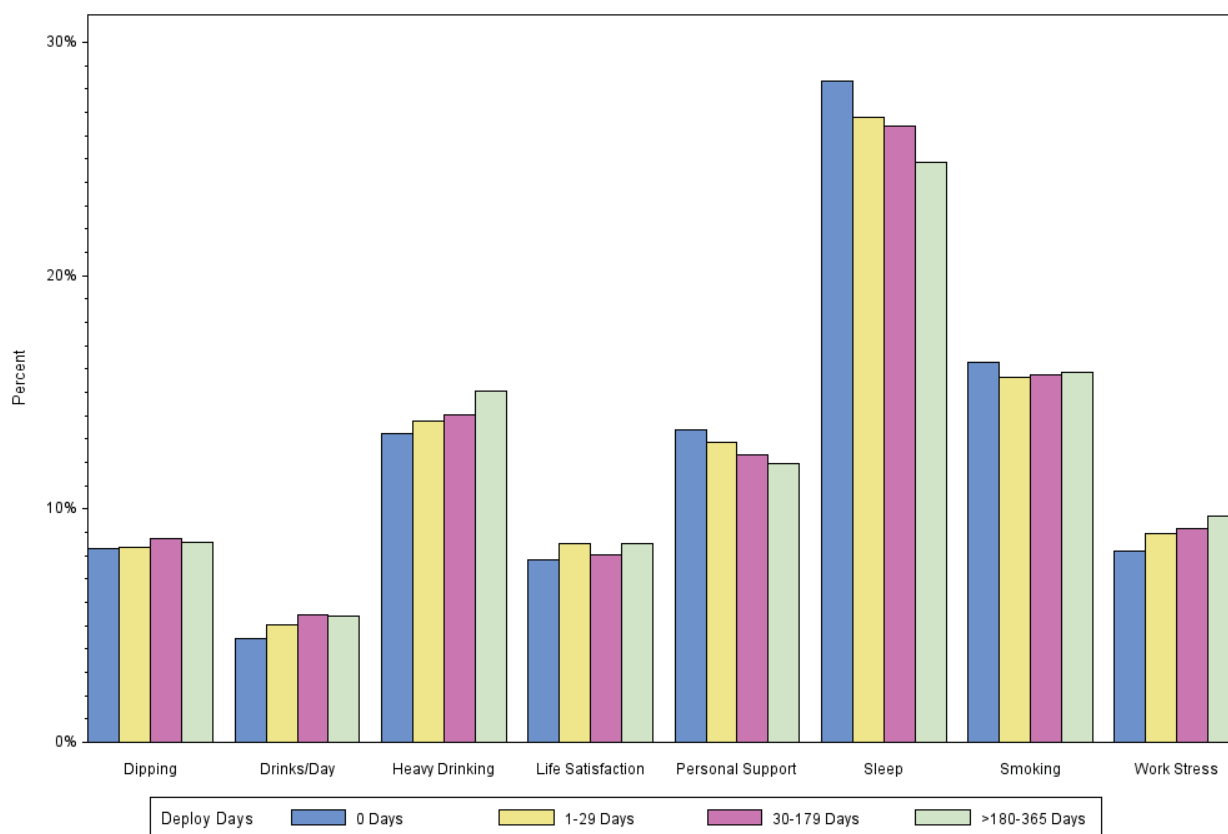
Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Frequency of 'unhealthy' responses increased or stayed relatively stable for all risk factors for USN members as days away from home station increased (Figures 26 and 27), with the exception of personal support and sleep. USN members reported a higher number of unhealthy behaviors related to heavy drinking as more time was spent away from their home station, starting at 13% for those who spent 0 days away and increasing to 15% for those who spent 180-365 days away. On the other hand, USNR members reported a higher frequency of unhealthy behaviors regarding personal support (17-19%). Other behavior changes were relatively similar between the two groups.

Figure 26:
USN Distribution of 'Unhealthy' Behaviors by Time Away from Home Station
126,767 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Figure 27:
USNR Distribution of 'Unhealthy' Behaviors by Time Away from Home Station
26,206 records
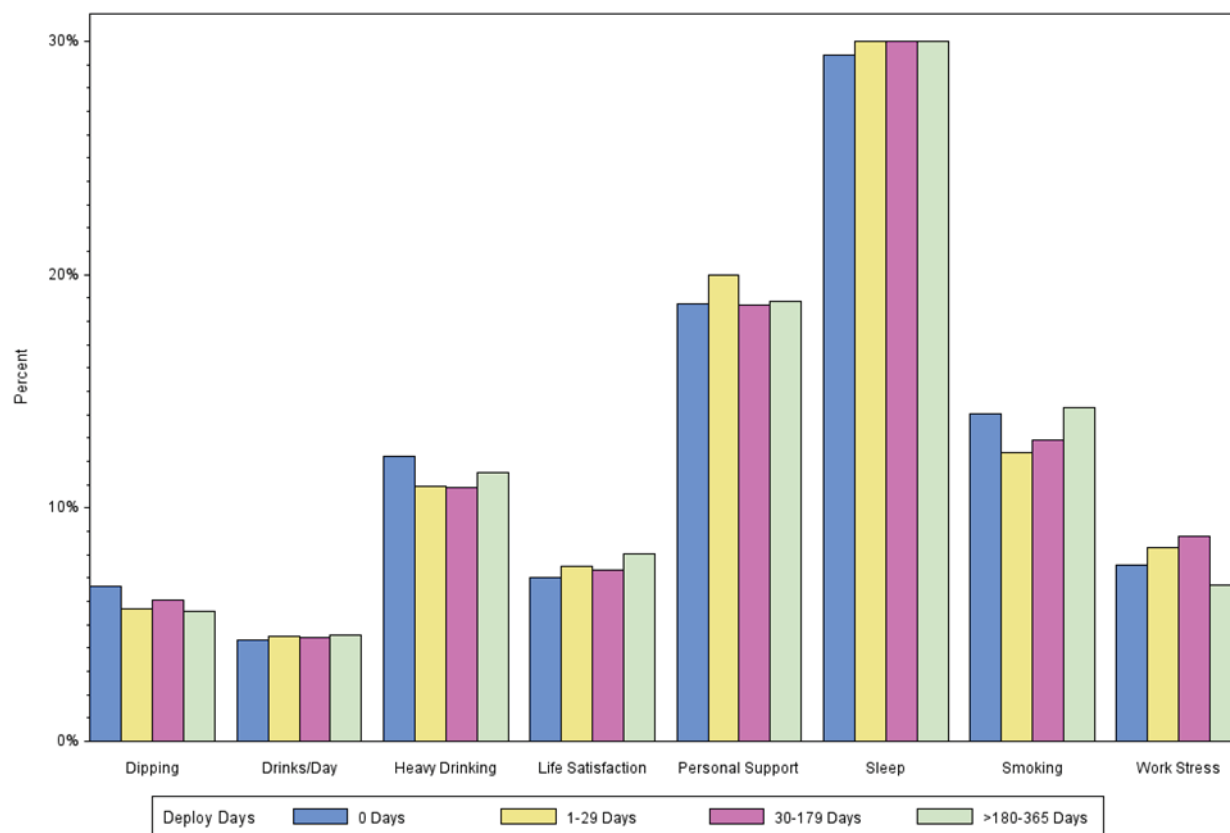
Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Frequency of 'unhealthy' responses increased or stayed relatively stable for all risk factors for USMC members as days away from home station increased, with the exception of sleep duration and heavy drinking behaviors. Unhealthy behaviors related to heavy drinking increased as time away from the home station increased, whereas unhealthy behaviors related to restful sleep decreased for the USMC (Figures 28). For USMCR, unhealthy behaviors related to restful also increased as time away from home station increased, whereas heavy drinking behaviors fluctuated (Figure 29).
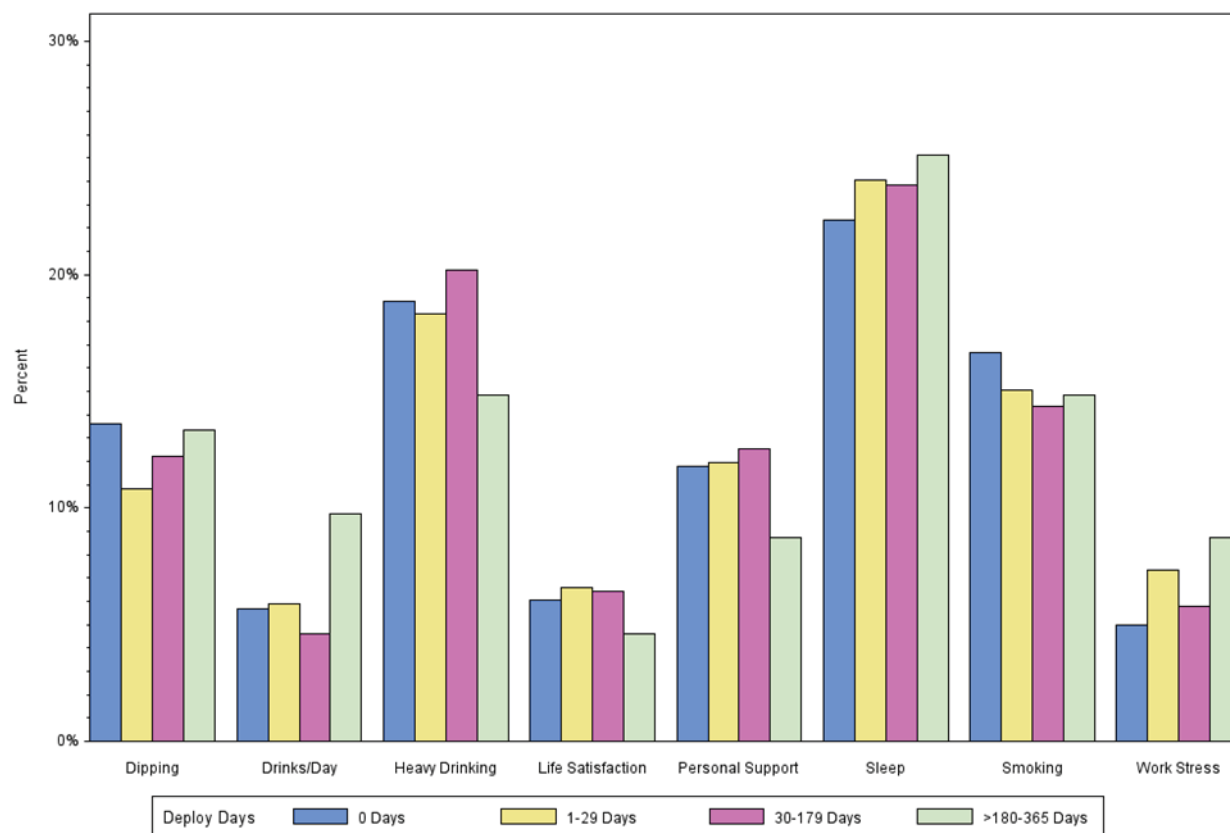

Figure 28:
USMC Distribution of 'Unhealthy' Behaviors by Time Away from Home Station
43,344 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Figure 29:
USMCR Distribution of 'Unhealthy' Behaviors by Time Away from Home Station
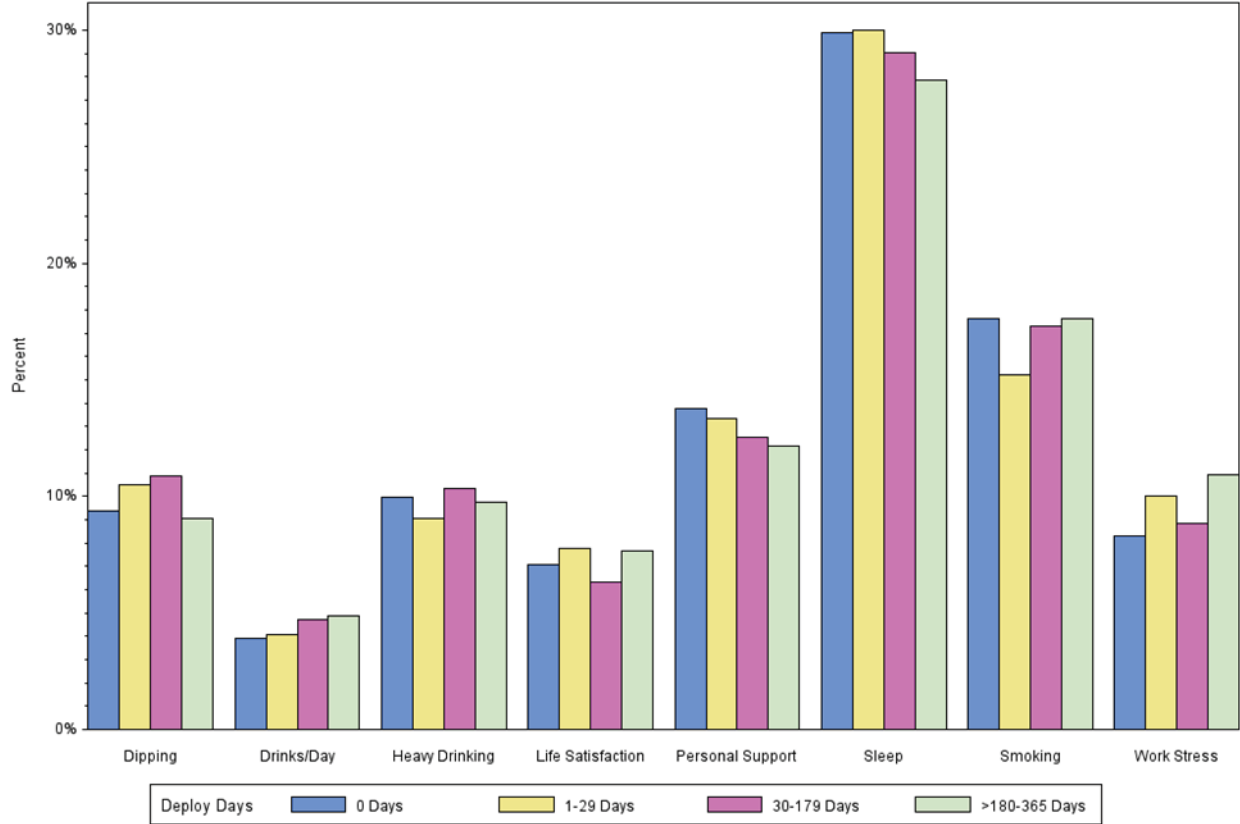2,061 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

USCG members reported higher levels of work stress when stationed away from home: 8% among those who spent 0 days away which increased to 10% of all behaviors among those who spent 180-365 days away. USCG members also reported higher levels of smoking than USCGR members overall. However, USCGR members reported higher percentages of lack of personal support, peaking at 22% for those away from their home station 1-29 days, as compared to USCG's peak at 13%. Other behavior changes were relatively similar between the two groups (Figures 30 and 31).
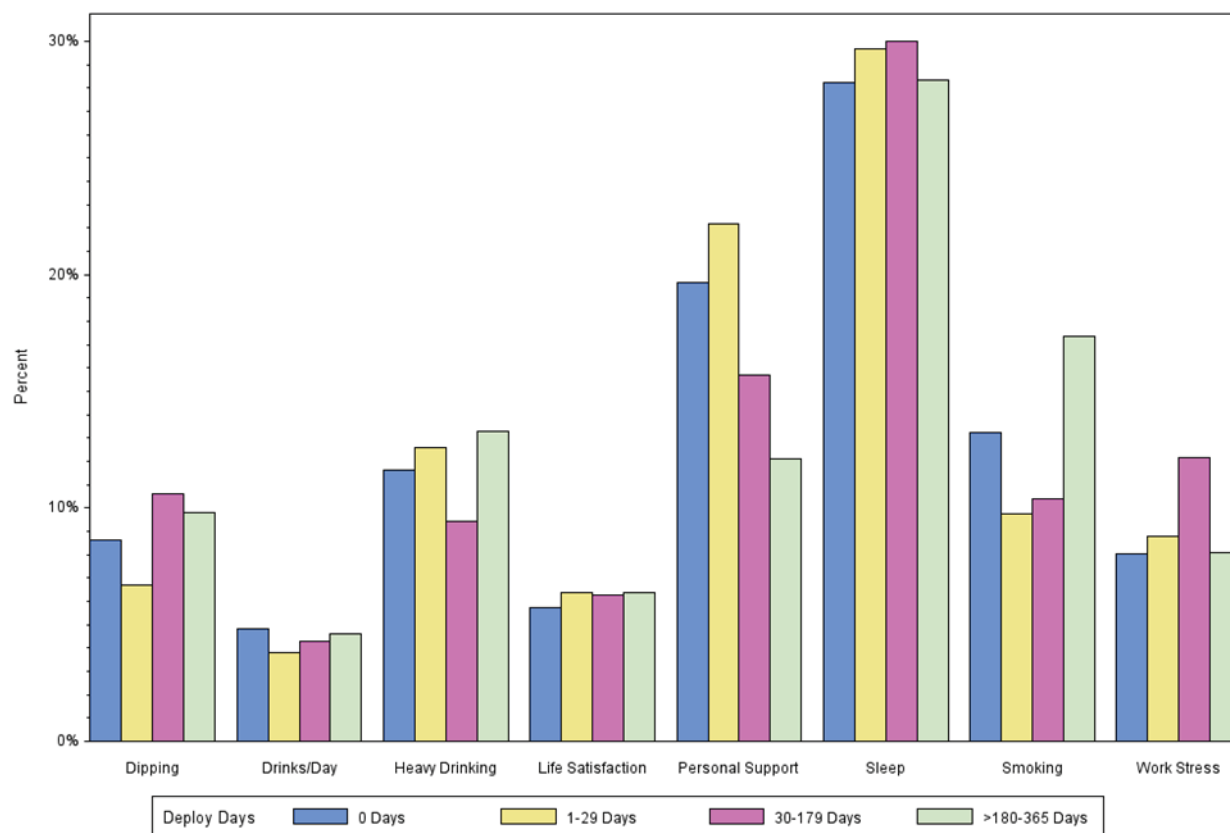

Figure 30:
USCG Distribution of 'Unhealthy' Behaviors by Time Away from Home Station
34,452 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Figure 31:
USCGR Distribution of 'Unhealthy' Behaviors by Time Away from Home Station
5,601 records

Prepared by the EpiData Center Department, Navy and Marine Corps Public Health Center on 08 April 2016

Discussion

Strengths and Limitations

Anonymity is a key strength of the survey, making it more likely that participants will answer honestly about risky behaviors in which they engage. In regards to sampling bias, taking the assessment is merely a matter of a commands' implementation of the PHA process, in addition to the survey being voluntary; thus, these responses would not represent a convenience sample.

Limitations of this report can be attributed to the limitations of the data collection tool. As a self-reported survey, the results can be biased due to participant recall or by the tendency to report socially desirable responses.   As such, some overestimation of positive behaviors and underestimation of negative behaviors may occur. Whereas it is possible for an individual to take the survey multiple times, there is no way to block or detect duplicate entries. It is also difficult to directly compare service components because the demographic characteristics that influence health behavior, as described earlier, vary significantly.   Records collected by commands using the stand-alone version may not have all been sent to NMCPHC and consequently, not included in the master data set.

Demographics

The use of the web-based survey tool declined for half of the components in 2015 as compared to 2014: USMCR (-475), USCG (-1,212), and USCGR (-396). The use of the tool increased for the other components in 2015 as compared to 2014: USMC (+3,421), USN (+14,638), and USNR (+1,403).

When interpreting the results, it is important to use caution when comparing groups that are dissimilar. For example, the Marine Corps is comprised of significantly younger members whose mission and environment may affect the results. It would be expected that younger members would report different types and levels of risk behaviors compared to older members. Similar differences in results could be attributed to gender differences. Although specific risk behaviors were not analyzed in this report by age or gender, the total number of risk behaviors, the risk number category, was examined for both of these variables. Not surprisingly, increasing age was inversely associated with the percentage of individuals who fell into the medium and high risk number category.

Risk Factors

The tool uses Body Mass Index (BMI), which is a fairly reliable indicator of body fatness for most people, is based on self-reported height and weight and is an inexpensive and easy-to-perform method of screening for weight categories that may lead to health problems.[1] Military height-weight tables use this approach but are more lenient for establishing official standards. BMI can also overestimate body fat in lean, muscular individuals. Therefore, these data should not necessarily lead to the conclusion that all individuals exceeding healthy levels are either overweight or obese. Rather, the data may support some general observations about weight across the services.

The decreasing percentage of members in the high risk category after the age of 29 may be due to survivor effect or healthy worker effect, indicating that those who remain in the military tend to be healthier than those who leave the service. It may also be that some individuals reduce their risky lifestyle behaviors as they mature.

Days Away From Home

The majority of individuals that completed the HRA (50%) did not deploy at all last year. Seventy-three percent of all active duty and reserve SMs were away from home for less than 30 days. USCG members were away from home for more days than members of other service components. As stated earlier, as time away from home station increased, both mean risk and percentage of members in the high risk category increased. Therefore, implementing health promotion activities may be even more important in populations that experience more separations.

Conclusion

When compared to previous surveys, the prevalence of specific risk factors has remained fairly constant, with the leading health risks being low fruit and vegetable consumption, high fat foods consumption, not flossing teeth, and lack of restful sleep. These results should be used to plan health promotion interventions that target priority areas. Although comparing individual service results to the total of all services may be tempting, it may be more appropriate to seek realistic and incremental percentages improvements when setting goals for the future.

The Fleet and Marine Corps HRA can be a valuable tool for tailoring health messages to individuals. The tailored feedback to participants on their individual reports and referral to credible health websites on each of the topics for more detailed information provides participants with the knowledge and skills to better manage their personal health.

From a more global, population health approach, the aggregate data in this HRA report provides each of the service components with valuable information that can be incorporated into comprehensive community health assessments, which is a first step in planning effective health promotion programs. Local HRA Administrators have the ability to generate additional reports in even greater detail at the individual unit level.

Decision-makers can use the data in this report for strategic planning. The results of this report can have a bearing on recruitment, retention, readiness, and quality of military life.

Appendix A

Fleet and Marine Corps HEALTH RISK SURVEY			
Age: ▼	Sex: ▼	Rank/Rate: ▼	Service: ▼
Race/Ethnicity: ▼	Height:	FEET ▼	INCHES 0 ▼	Weight: women select non-pregnant weight	POUNDS ▼

Number of days spent away from home station in the past 12 months: ▼

1. Would you say that your health in general is ….
- ○ a. Excellent
- ○ b. Good
- ○ c. Fair
- ○ d. Poor

2. Do you currently smoke cigarettes, cigars, pipes, hookah, or electronic products (e.g. e-cigarettes, e-hookah, etc.)?
- ○ a. Every day
- ○ b. Most days
- ○ c. Some days
- ○ d. Never smoked
- ○ e. I quit

3. Do you currently use smokeless tobacco (e.g., chew, dip snuff, snus)?
- ○ a. Every day
- ○ b. Most days
- ○ c. Some days
- ○ d. Never used smokeless tobacco
- ○ e. I quit

4. Do you consume more than 4 drinks on any day or 14 drinks per week (for men), or more than 3 drinks on any day or 7 drinks per week (for women)?
- ○ a. Yes
- ○ b. No

5. How often do you typically drink 5 or more alcoholic drinks on one occasion?(*"One Occasion" refers to an event or period when drinking exceeds one drink per hour*)
- ○ a. Daily
- ○ b. Weekly
- ○ c. Monthly
- ○ d. Once or twice per year
- ○ e. Never

6. How often do you drive when perhaps you have had too much to drink?
- ○ a. Often
  (i.e., more than once during the past 6 months)
- ○ b. Sometimes
  (i.e., once during the past 6 months)
- ○ c. Rarely
  (i.e., not in the past past 6 months, but at least once during the past year)
- ○ d. Never
  (i.e., not during the past year)

7. Do you use a seat belt when you drive or ride as a passenger?
- ○ a. Always
- ○ b. Most of the time
- ○ c. Sometimes
- ○ d. Rarely
- ○ e. Never

8. How often do you wear a helmet when you ride a motorcycle, all-terrain vehicle, or bicycle?
- ○ a. Always
- ○ b. Most of the time
- ○ c. Sometimes
- ○ d. Rarely
- ○ e. Never
- ○ f. Does not apply to me / I do not ride these vehicles

9. How often do you use the safety equipment recommended for your job? (*e.g., hearing and vision protection, respirators, barriers, and other safety devices*)
- ○ a. Always
- ○ b. Most of the time
- ○ c. Sometimes
- ○ d. Rarely
- ○ e. Never
- ○ f. Does not apply to me / None recommended

10. In general, how satisfied are you with your life? (*e.g., work situation, social activity, accomplishing what you set out to do*)
- ○ a. Very satisfied
- ○ b. Mostly satisfied
- ○ c. Somewhat satisfied
- ○ d. Not satisfied

11. How often do you feel that your work situation is putting you under too much stress?
- ○ a. Always
- ○ b. Most of the time
- ○ c. Sometimes
- ○ d. Rarely
- ○ e. Never

12. If you are feeling lonely, depressed, angry, stressed, or in need of help, do you have someone to talk to?
- ○ a. Not applicable. I do not experience these feelings and have no need to talk about them.
- ○ b. Always
- ○ c. Most of the time
- ○ d. Sometimes
- ○ e. Rarely
- ○ f. Never

13. In the past 12 months, how often did you or your partner(s) use a condom when you had sex?(*read all choices below carefully before responding*)
- ○ a. Does not apply to me because I am in a long-term relationship where we only have sex with each other
- ○ b. Currently I am not sexually active
- ○ c. Always
- ○ d. Most of the Time
- ○ e. Sometimes
- ○ f. Rarely or Never

14. On average, how many weeks per month do you engage in a total of at least 150 minutes of moderate-intensity aerobic activity (moderate-intensity physical activity means working hard enough to raise your heart rate and break a sweat, yet still being able to carry on a conversation. *i.e., brisk walking, swimming leisurely, or leisurely biking*) OR at least 75 minutes of vigorous-intensity aerobic activity (vigorous-intensity means you will not be able to say more than a few words without pausing for a breath , *i.e., jogging/running, swimming laps, or jumping rope*)?
- ○ a. 4 weeks per month
- ○ b. 3 weeks per month
- ○ c. 2 weeks per month
- ○ d. 1 week per month
- ○ e. I do not participate in aerobic training

15. On average, how many days per week do you engage in muscle-strengthening activities that work all muscle groups (legs, hips, back, abdomen, chest, shoulders and arms).
- ○ a. 4 or more days a week
- ○ b. 3 days a week
- ○ c. 2 days a week
- ○ d. 1 day a week
- ○ e. I do not participate in strength training

16. How often do you usually eat high-fat foods? *(e.g., fried foods; high-fat dairy products such as butter, cheese, or whole milk; regular salad dressing or mayonnaise; or packaged foods high in fats)*

- a. At most or every meal
- b. At least once a day
- c. 3-5 times per week
- d. 1-2 times per week
- e. Rarely or never

17. About how many cups of fruit do you eat each day? *(One cup of fruit = one small piece of fruit, one cup of cut-up fruit, one cup of 100% fruit juice, or 1/2 cup of dried fruit)*

- a. Four or more
- b. Three
- c. Two
- d. One
- e. Less than one

18. How often do you use over the counter (OTC) drugs, dietary supplements, or herbal products to help you manage your weight, enhance athletic performance, or treat depression?

- a. Daily
- b. Weekly
- c. Monthly
- d. Seldom
- e. Never

19. How frequently do you floss your teeth?

- a. Daily
- b. Most days
- c. Sometimes
- d. Rarely
- e. Never

20. About how many cups of vegetables do you eat each day? *(One cup of vegetables = one cup of raw or cooked vegetables, 1 cup of 100% vegetable juice, or 2 cups of raw leafy greens)*

- a. Four or more
- b. Three
- c. Two
- d. One
- e. Less than one

21. How often do you get enough restful sleep to function well in your job and personal life?

- a. Always
- b. Most of the time
- c. Sometimes
- d. Rarely
- e. Never

22. For both men and women, pregnancy is a life-changing event for mother and father. Regarding your actions related to possible pregnancy:

- a. I am not having sexual intercourse at this time in my life
- b. Either my partner or I cannot become pregnant
- c. My partner and I are pregnant, we are trying to have a baby now, or we would welcome a pregnancy if it occurred now
- d. My partner or I are correctly and consistently using birth control ALL the time
- e. My partner or I are correctly using birth control MOST of the time
- f. My partner or I are correctly using birth control SOME of the time
- g. My partner and I are not using birth control

Appendix B

CO Report Scoring Grid

Health Indicator	Health Behavior	Unhealthy Rating	Healthy Rating
Perception	1. Perception of health	c-d	a-b
Tobacco Use	2. Smoking	a-c	d-e
	3. Smokeless Tobacco	a-c	d-e
Alcohol Use	4. Drinks Per Day	a	b
	5. Heavy Drinking	a-c	d-e
	6. Drinking and Driving	a-c	d
Injury Prevention	7. Seat Belt	b-e	a
	8. Vehicle Helmets	b-e	a, f
	9. Safety Equipment	c-e	a-b, f
Stress Mngt	10. Life Satisfaction	c-d	a-b
	11. Work Stress	a-b	c-e
	12. Personal Support	d-f	a-c
Sexual Health	13. Condom Use	d-f	a-c
	22. Pregnancy Prevention	e-g	a-d
Physical Activity	14. Aerobic Activity	c-e	a-b
	15. Strength Training	d-e	a-c
Nutrition	16. High Fat Foods	a-c	d-e
	17. Fruits	d-e	a-c
Supplements	18. Supplements	a-c	d-e
Dental	19. Flossing	c-e	a-b
Nutrition	20. Vegetables	c-e	a-b
Sleep	21. Sleep	c-e	a-b
BMI		BMI$\geq$25	BMI <25

Reference:

1. Centers for Disease Control and Prevention BMI Web Site. Available at:
   http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/#Interpreted.
   Accessed 02 May 2016.

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