Introduction

- Health Risk Assessments (HRAs) became widely used both in military and civilian settings beginning in the mid-1980s
- HRAs are survey tools that can be used to educate, to assist healthcare professionals in counseling patients, and to inform decision makers of the overall health status of their populations
- The Fleet and Marine Corps HRA is a 21-question, self-reported, anonymous, web-based assessment tool specifically designed to assess risk behaviors common to military members
- However, there have been no studies looking into the health effects or more specifically the health behavior of deployed Navy service members

Specific Aims

- To determine the prevalence of self-reported health risks in Navy active duty service members
- Examine the relationship between health risk scores and military deployment

Methods

- **Study Design**
  - Self administered survey
  - Navy and Marine Corps Public Health Center Data Sharing Agreement (DSA) for De-Identified Data, Navy Medicine (NM)-20120308 via secure DOD internet portal
- **Participants**
  - Inclusion Criteria: Active duty members of the United States Navy who completed HRA surveys during the 2011 calendar year
  - Exclusion Criteria:
    - Incomplete surveys
    - Height > 6’10 or < 4’10
    - BMI < 18 or >38
    - Warrant Officers
    - Other than active duty Navy personnel (Marines, Army, Reservists, and Civilian DOD employees)

Main Outcome: Health Risk Score and Category

- Health Risk Score [0-6]—Unhealthy Criteria
  - Smoking Tobacco: yes
  - Smokeless Tobacco: yes
  - Alcohol Frequency: > 2 drinks daily
  - Frequency of Excessive Alcohol: > once or twice/yr*
  - Excessive Work Stress: ≥ sometimes
  - Restful Sleep sufficient for work safety ≤ sometimes
  - *(Excessive Alcohol defined as ≥5 drinks on one occasion)*

- Health Risk Categories
  - 0-2 risk score = Low Risk Category
  - 3-4 risk score = Medium Risk Category
  - 5-6 risk score = High Risk Category

Predictor Variables

- Demographics
  - Age, Gender
  - Rank (Officer or Enlisted)
  - BMI (normal, overweight, obese)
- Deployment
  - 0 days
  - 1-29 days
  - 30-179 days
  - 180-365 days

Statistical/Data Analysis

- Descriptive statistics with 95% CI’s
- χ2 test for trend
- Bivariate analyses using χ2 or Fisher’s exact test
- Logistic regression analysis – Risk categories grouped no low risk (0-2) versus medium/high risk (3-6)

Results

- 216,729 filled out survey
- 116,589 other than active duty Navy and warrant officers
- 4,475 height or weight meeting exclusion criteria
- 92 incomplete surveys
- 93,573 final sample

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**Table 1. Distribution of Health Risk Scores**

<table>
<thead>
<tr>
<th>Health Risk Score</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No/Low Risk</td>
<td>14</td>
<td>1.09</td>
</tr>
<tr>
<td>Medium/High Risk</td>
<td>28</td>
<td>2.45</td>
</tr>
</tbody>
</table>

**Table 2. Effect of Deployment Duration on Individual Risk Behaviors**

**Table 3. Predictor Variables and Health Risk Category**

<table>
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<tr>
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<th>Results</th>
</tr>
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</tbody>
</table>

**Results (Continued)**

- 73% of participants had no or low risk
- 26% had medium to high risk
- When individual behaviors examined separately, all 6 increased with increasing numbers of days of deployment (β² test for trend, p<0.001)

**Figure 1. Distribution of Health Risk Scores**

**Figure 2. Effect of Deployment Duration on Individual Risk Behaviors**

**Figure 3. Predictor Variables and Health Risk Category**

Conclusions

- As deployment length increased, health scores and percentage of members in the high risk category increased.
- Military deployment presents unique health challenges for our service members beyond the immediate dangers of the combat zone.
- With the current trend in defense cuts and sequestrations, special consideration needs to be placed on the deployment cycles and its effect on the health of service member and their families.
- This study underscores the need to monitor the health status of our service members using tools such as the HRA.