



U.S. Naval Unit Behavioral Health Needs Assessment Survey

A PUBLICATION OF THE  
NAVAL HEALTH  
RESEARCH CENTER  
SAN DIEGO



GCEITF  
SUMMER 2015

The U.S. Naval Unit Behavioral Health Needs Assessment Survey is an anonymous assessment of behavioral health factors that affect readiness and wellness in the fleet. These factors include Post traumatic Stress Disorder (PTSD), suicidality, sexual assault, and other behavioral and mental health symptoms. The intent of NUBHNAS is to provide feedback to both individuals and unit leadership regarding behavioral health readiness, with the ultimate goal of increasing awareness of symptoms and allowing for targeted, early intervention.

*Published by:*  
The Naval Health  
Research Center  
San Diego, CA  
92106-3521

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*Photo by Cpl. Anthony Quintanilla*

In October 2014, the Ground Combat Element Integrated Task Force (GCEITF) began its research effort to assess what impact, if any, gender integration has on the mission effectiveness and readiness of Marine Corps ground combat units. At this time it was acknowledged that a fundamental aspect of readiness was behavioral health. Morale and unit cohesion, as well as sensitive items such as sexual assault and mental health problems, needed to be evaluated. We are honored that the Naval Unit Behavioral Health Needs Assessment Survey (NUBHNAS) was selected as the measurement tool for these behavioral health outcomes.

Survey data from the ITF has allowed us to draw the following conclusions:

- **Women in the ITF are thriving.** Morale, unit cohesion, commitment to the military are exceptionally high. Rates of mental health problems are lower than those in comparison Marine groups.
- **Training with the ITF was taxing for both men and women.** Morale and cohesion decreased

across time, and rates of depression increased; however all rates remained more favorable than those seen in comparison integrated Marine groups. For women, perceptions of work-related stress increased notably across the ITF training cycle.

- **Sexual assault is a serious concern.** Six individuals (both men and women) reported forced sexual assault during their time with the ITF. Marines in the ITF report histories of sexual assault at levels similar to those in other military populations.
- **Men and women in mechanized roles showed better mental health,** higher morale and better sleep when compared with those in non-mechanized roles.
- **Attrition is better predicted by mental health at baseline than by physical capability.** The primary predictors of attrition were mental health problems, poor sleep, high stress, baseline pain, and aggressive behavior. Items such as baseline speed and strength did not predict attrition. Men in the ITF were slightly more apt to attrite than women in the ITF.

# INTRODUCTION

In order to collect data that would inform ITF leadership regarding the morale, mental health and readiness of their Marines, the Naval Health Research Center surveyed the volunteers of the ITF twice in-person using the tablet-based NUBHNAS and once using an online version of NUBHNAS. In addition, we conducted saliva sampling to measure biomarkers of stress and inflammation.

The NUBHNAS is an anonymous survey that includes a range of standardized, validated scales assessing behavioral health (McAnany et al., 2014). This project evolved out of the Behavioral Health Needs Assessment Survey (BHNAS) that was administered to Navy expeditionary Sailors in Iraq and Afghanistan from 2006-2013. Participants complete an informed consent process in which they are told how to create a unique identifier code that allows us to match their individual responses over time without ever being

able to identify them as an individual. We believe this is critical in order to adequately and sensitively collect the data requested by the Marine Corps in the evaluation of this unique unit.

The specific aims of behavioral health measurement for the ITF included understanding the prevalence of sexual assault in the integrated unit, as well as gender differences at baseline and over time with respect to perception of unit cohesion and personal morale. In addition to these requested data, NUBHNAS was also able to provide gender and outcome data for measures of mental health symptoms including suicidal ideation, sleep disturbance, aggression, pain, and alcohol use. Finally, these data allowed for modeling a proxy for attrition for both genders, which we hope will provide useful information regarding the outcomes of the volunteers in the unit.

## METHOD

NUBHNAS researchers conducted tablet-based surveys and saliva sampling for 358 Marines of the ITF in November 2014 at Camp Lejeune. Of these original participants, 26% were female and 74% male. The majority of those who consented to take the survey were under twenty-four years of age, had 1-2 years on active duty, and reported first class scores in both the Physical and Combat Fitness Tests. Forty percent of the men and thirty-five percent of the women reported a history of deployment. Debrief of the Commanding Officer and his leadership team (including medical and chaplain support) took place on 9 December 2014.

In February, participants from the baseline were emailed a link to an online version of the survey and offered a gift card to complete it. Ninety individuals participated in the mid point survey and fifty participants (56% male and 44% female) were matched to their baseline responses, representing a 20% response rate.

In March 2015, the team traveled to Twentynine Palms, where it met the Marines of the ITF as they entered one of their final training phases. There, 238 Marines took the survey (228 were matched to baseline). At this phase,

29% of the participants were female and 71% male. The debrief of the CO and his leadership team took place on 21 April 2015.

At both time points, the leadership and Marines of ITF were helpful and inviting, and we found a very high participation rate among the Marines.

In an attempt to provide context for the GCEITF findings, we administered the NUBHNAS to a comparison group of Marines in a gender-integrated unit. The group was surveyed in February 2015. The leadership of this command identified a sample of male and female Marines in their unit that matched the gender composition of the ITF. This was not meant to be a representative sample of their entire unit, as women were intentionally oversampled. The participants included 205 Marines (34% female, 66% male) who consented to the survey and saliva sampling. Of these Marines, the majority was under twenty-four years of age, had served between 3-5 years on active duty, and reported first class scores on both the Physical and Combat Fitness Tests. Debrief of the Commanding Officer was conducted on 10 March 2015.

<b>Baseline: November 2014</b>	<b>Mid-point: February 2015</b>	<b>Follow-up: March 2015</b>
<i>In-Person Survey and Saliva Sample, Camp Lejeune</i>	<i>On-line survey</i>	<i>In-Person Survey and Saliva Sample, Twentynine Palms</i>
<i>n=358 (26% women, 74% men)</i>	<i>n=90 (44% women, 56% men)</i>	<i>n=238 (29% women, 71% men)</i>

# SEXUAL ASSAULT

One issue that stands out as particularly alarming for military women is the high prevalence of military sexual trauma, with between 15-28% of female veterans reporting rape while serving in the military (Kimerling, Street, Pavao, et al., 2010; Sadler, Booth, Cook, Doebbeling, 2003; Skinner, Kressin, Frayne, et al., 2000). Some research indicates that sexual assault during military service is even more problematic for one's overall quality of life than sexual assault in the civilian sphere (Sadler et al., 2003; Suris, Lind, Kashner, & Borman, 2007).

Prevalence of sexual assault was also one of the primary outcome measures under investigation by Marine Corps leadership for the ITF. As NUBHNAS is completely anonymous, we believe that we elicited a high level of honesty on this very sensitive topic. NUBHNAS asks Marines about their history of forced sexual assault. Participants are asked about this history pre-service, in-service, and in the past six months.

For the Marines of the ITF at baseline assessment, 35% of the unit's women entered the ITF with a history of sexual assault. 21% reported the assault occurred pre-service and 15% reported the assault occurred in service. The NUBHNAS found similar rates of assault history in the comparison Marine unit, whose women reported a lifetime history of 42%, and in three Navy units, with lifetime sexual assault rates reported at 35% for female Sailors.

NUBHNAS surveys were again administered to the men and women of the ITF in March 2015, while the unit was at Twentynine

Palms. This time participants were asked about their experiences with forced sexual assault in the past six months, during their time with the ITF. As of March 2015, six ITF Marines reported forced sexual assault during their time with the ITF. These six included two women, two men, and two "unknown." These two people did not provide their unique identifier code on the follow up survey, thus not allowing us to match them to their baseline responses which included their genders. We believe these people may have intentionally concealed their identities.

When these data were briefed to ITF leadership, both after the assessments at Camp Lejeune and Twentynine Palms, they expressed serious concern about the recent sexual assault. Medical and chaplain personnel told the group that they would keep their doors open and be ready in case any of these individuals decided to seek help. After the briefing at Twentynine Palms, the CO and his leadership team expressed grave concern regarding the numbers of Marines reporting sexual assault during their time with the ITF, especially since only one sexual assault had been formally reported. Those present at the debrief sincerely believed the Marines of the ITF knew two things with no question: 1) that their leaders did not tolerate this behavior; and 2) that victims should feel empowered to get help without fear of further harm. Discussions ensued regarding actions for follow up by leadership, medical and chaplain personnel to continue to educate and stress the open door policies of everyone in ITF leadership.

- *35% of the ITF's women reported a history of forced sexual assault. 21% reported that the sexual assault occurred pre-service, 15% reported that the sexual assault occurred in service.*

- *Six ITF Marines reported forced sexual assault during their time with the ITF. These six included two women, two men, and two individuals who did not provide their gender.*

- *These lifetime history numbers are slightly lower than those reported by women in other gender-integrated Marine groups, but the numbers of recent assaults experienced by Marines in the ITF (both men and women) were slightly higher than those experienced in other groups.*

# UNIT COHESION

Another primary factor of interest for the Marine Corps was unit cohesion in the ITF, which is particularly important as high self-reported unit support and cohesion have been associated with military retention (Vasterling et al., 2015). NUBHNAS assesses this construct through the use of statements such as “members of this unit can depend on one another;” “members of this unit stand up for each other;” “Members of this unit would risk their lives for each other;” and “I have confidence in this unit’s ability to perform our mission.”

## **% Agree/Strongly Agree with Unit Cohesion Item**

<b>Item</b>	<b>Group</b>	<b>Time</b>	<b>Men</b>	<b>Women</b>
<i>The members of my unit know that they can depend on each other.</i>	ITF	Baseline	49%	77%
		Midpoint	46%	64%
		Final	44%	59%
	Comparison Marines		40%	34%
<i>I have real confidence in my unit’s ability to perform its mission.</i>	ITF	Baseline	47%	74%
		Midpoint	50%	77%
		Final	42%	48%
	Comparison Marines		57%	51%
<i>I think the level of training in this unit is high.</i>	ITF	Baseline	48%	78%
		Midpoint	54%	73%
		Final	44%	60%
	Comparison Marines		38%	33%

- **Female Marines of the ITF reported extraordinarily high levels of unit cohesion, notably higher than those reported by female Marines in the comparison group.**

At baseline, 77% of ITF women believed that the members of their unit could depend on each other. At follow-up, 59% of women in the ITF endorsed this statement. At both time points, perceptions of cohesion were notably higher than those reported by female Marines in the comparison group.

- **Men in the ITF reported levels of cohesion slightly higher than those reported by male Marines in the comparison group.**

At baseline, 49% of ITF men believed that the members of their unit could depend on each other. At follow-up this number decreased to 44%. At both time points perceptions of cohesion were somewhat higher than those reported by male Marines in the comparison group (40%).

- **A similar pattern was found for other items related to unit cohesion.**

When the data were briefed to the

ITF Commanding Officer and his leadership team in December 2014, the team appreciated seeing data confirming what they already believed to be true: the women who had volunteered for the ITF were motivated and happy to be part of the unit. These women seemed to be embracing many parts of the experience, leading to a very positive feeling of unit cohesion, belonging, trust, confidence in the unit, and belief that the unit functioned very well. Although men in the ITF reported levels of positive feelings similar to those of male Marines in the comparison group, there was some concern that the men of the ITF did not seem to share the women’s extreme positive perspective regarding the unit and its cohesion. The leadership group discussed their thoughts that the women of the ITF represented a self-selected group of women with high levels of motivation and positive expectations for the experience.

The follow up data were briefed to the ITF leadership team in March 2015, while the unit was at Twentynine Palms and engaged in its final training

evolution. Approximately 25% of women and 36% of men had attrited at that point. The Commanding Officer and his leadership team believed that those who were retained in the ITF at that point were still extremely motivated, but over the course of a long and intense training schedule, the Marines were physically and emotionally exhausted. It was hypothesized that overtime, those who were retained had gained more realistic expectations—for themselves and their fellow Marines.

The CO was pleased to know that the perceived unit cohesion among his ITF Marines continued to be higher than fleet Marine comparisons, despite nearly a year of challenging training in a unique, high pressure environment. They continued to believe the women who volunteered for the ITF were a unique group — and those women still with the unit at follow-up were a specific, self-selected subgroup of Marines - extraordinarily motivated, physically and emotionally strong, and outstanding team members.

# PERSONAL MORALE

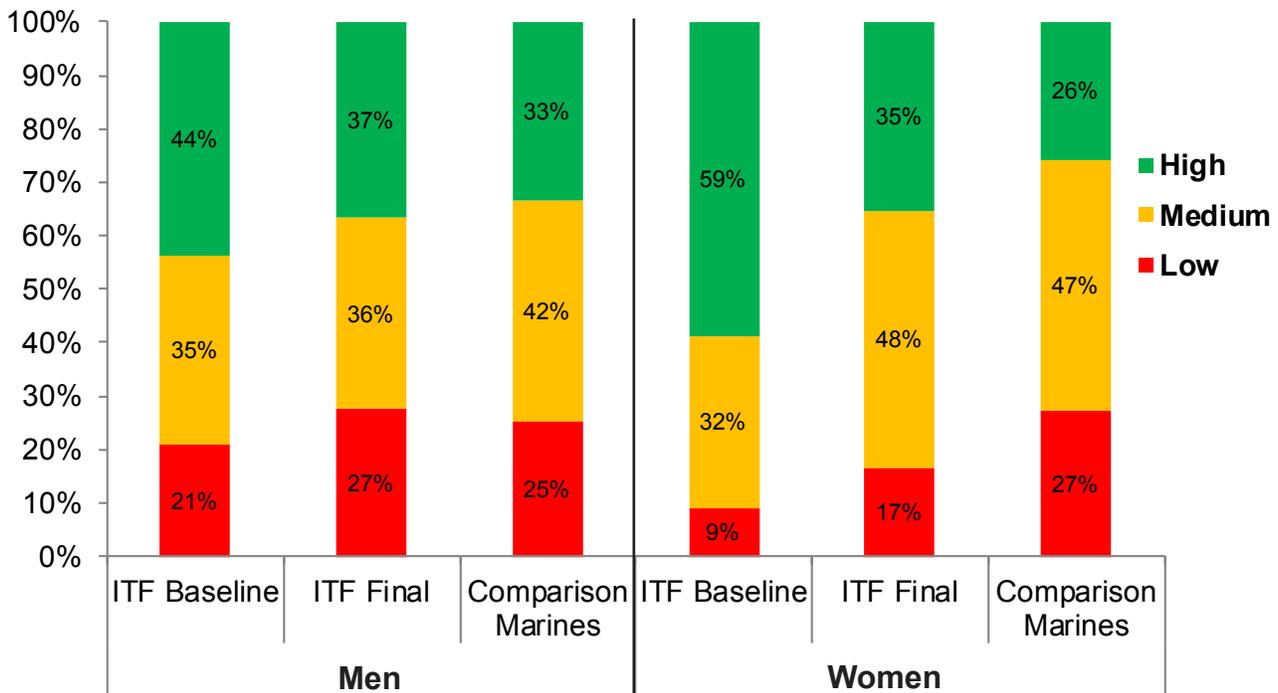
The Marine Corps also expressed interest in the personal morale of both men and women who volunteered for the ITF, how this morale changed over the course of the task force, and how it differed from that of Marines in the fleet. NUBHNAS surveyed personal morale and organizational commitment at baseline and follow ups for the Marines of the ITF. Overall, personal morale for women in the ITF was very high compared to women in a comparison group — and compared to men in the ITF.

• **Personal morale is high among both men and women in the ITF.**

• **At baseline, 59% women in the ITF reported high personal morale.** By follow-up this number had decreased to 35%. These numbers are more favorable than the frequency of high morale reported by female Marines in the comparison group (27%)

• **At baseline, 44% of men in the ITF reported high personal morale.** By follow-up, this number had decreased to 37%. These numbers are more favorable than the frequency of high morale reported by male Marines in the comparison group (33%)

**Personal Morale Across Time in Men & Women**



NUBHNAS also surveyed levels of organizational commitment as an additional indicator of morale. Overall, ITF women reported extraordinarily high levels

of organizational commitment at baseline assessment, compared to both men in the ITF and women in a comparison group.

**% Agree/Strongly Agree with Item**

Item	Group	Time	Men	Women
<i>Military has a great deal of personal meaning.</i>	ITF	Baseline	65%	79%
		Midpoint	64%	73%
		Final	61%	65%
	Comparison Marines		61%	51%
<i>Feel a strong sense of belonging to the military.</i>	ITF	Baseline	57%	71%
		Midpoint	43%	64%
		Final	61%	59%
	Comparison Marines		45%	33%

- **79% of ITF women reported that the military has personal meaning to them at baseline, compared to 65% of ITF men and 51% of female Marines in the comparison group.**
- **72% of ITF women reported a sense of belonging, compared to 57% of ITF men and 33% of female Marines in the comparison group**

At the online follow up and in-person follow up assessments conducted in Twentynine Palms, the women of the ITF reported decreases in these indicators of commitment to the military and feeling that they were part of a “family.” At the final follow-up, 66% of ITF women reported the military has personal meaning to them and 60% reported a sense of belonging. These data indicated a change from the

extreme levels of organizational commitment reported by women at baseline; by the final follow-up, the ITF women showed commitment levels similar to those of the ITF men.

When these data were briefed to the Commanding Officer of the ITF and his leadership team, those assembled reported feeling glad, but not surprised, to learn the morale of the ITF women was so high. As they expressed with regard to several other factors we assessed, the team had observed unique levels of motivation among the women who volunteered. They reported at both baseline and follow-up debriefs that they believe the women who were retained in the ITF over the training schedule had self-selected for success. They believed this success was largely due to the attitudes, dedication, motivation, and flexibility of these women, making them a very special cohort.

## MENTAL HEALTH

NUBHNAS is unique in its ability to assess symptoms of several mental health diagnoses through the use of well-validated clinical scales that are embedded within the survey (McAnany et al., 2014). Participants who endorse certain patterns of symptoms and/or functional impairment due to PTSD, depression, and anxiety are likely to be given that diagnosis when evaluated by a mental health professional. Overall, the women of the ITF looked healthier at baseline — with regard to mental health symptoms — than their female counterparts in a comparison Marine unit.

- **12% of ITF women and 11% of ITF men fit criteria for PTSD at baseline assessment**, compared to 21% of women and 14% of men in a comparison group. The lack of gender difference in PTSD rates within the ITF is unusual as women typically have higher rates of PTSD both in the general population and in military populations (Tolin & Foa, 2006; Riddle, Smith, Smith et al., 2007).
- **9% of ITF women and 8% of ITF men fit criteria for PTSD at follow up.** This decrease from baseline indicates that those with baseline PTSD symptoms either attrited from

the program or received help.

- **Rates of anxiety were low in the ITF**, with 5% of women and 2% of men in the ITF endorsing anxiety at baseline. At follow up, this number had decreased to 2% for both men and women. In contrast, 14% of women and 8% of men in the comparison Marine group endorsed anxiety.

- **Depression in the ITF increased over time.** At baseline, 5% of women in the ITF and 3% of men endorsed depression. At follow up this number had increased, with 7% of women in the ITF and 8% of men reporting depression. These rates were lower than those in the comparison group, where 11% of women and 9% of men reported depression. The slight increase in depression over time mirrors what NUBHNAS data has found in groups of Sailors at training commands and during deployment.

These data were briefed to the Commanding Officer and his leadership team, including the medical officer and chaplain, after the baseline and follow up surveys. The medical officer and chaplain indicated some surprise at the high rates of PTSD, depression and anxiety reported at baseline, as many of these women had not presented to them for

assistance. They were familiar with a few Marines with whom they had interacted and provided resources and/or referrals. They were interested in the general decline of these problematic symptoms over time and seemed certain that they knew of several Marines who may have been among those suffering from these symptoms at baseline, who attrited from the program. They believe this is the primary reason for the decreased rates of mental health problems at follow up, rather than Marines seeking help for PTSD, depression or anxiety.

The Commanding Officer of ITF was also briefed on the perception of stigma among those Marines in his unit regarding the seeking of mental health services. At baseline, 30% of the Marines in the ITF reported that they believed that if they sought services for mental health concerns, their leaders would see them as weak. Additionally, 27% reported that they believed they would be treated differently should they seek help. The CO asked all members of his officer and enlisted leadership team to ensure that the Marines of the ITF knew they had his permission to seek help should they need it. Perceptions of stigma were similar at follow-up.

# SUICIDE

NUBHNAS asks difficult questions regarding suicide. Participants are asked if they are currently planning to end their lives. **The men and women of the ITF had no members who endorsed current suicidal plan or intent, at either baseline or follow-up time frames.**

Suicidal ideation in the past two weeks is also assessed, as is history of suicide attempts. At baseline, 6% of Marines in the ITF endorsed thoughts of being better off dead in the past two weeks, and 3% reported they had made plans to

end their lives at some point in the past. At baseline, **5 individuals were at particularly high risk, reporting current suicidal thoughts and a history of attempting/preparing for suicide.** At follow-up in Twentynine Palms, the Marines of the ITF showed an increase in those with suicidal ideation, with 9% reporting thoughts they would be better off dead. **2 individuals were at particularly high risk at the end of the training, with current suicidal ideation and a history of attempting/preparing for suicide.**

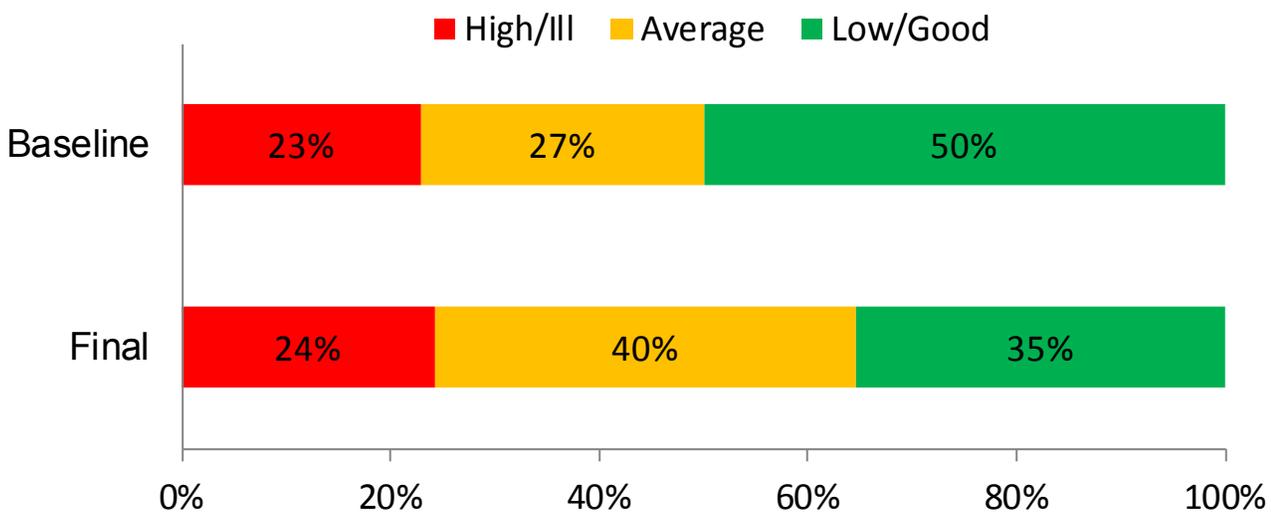
The CO was briefed on these data, and like many other CO's facing similar findings, expressed concern at not knowing the identity of these high risk Marines. We explained that the confidentiality of NUBHNAS, and our inability to identify any individual, is vital to allowing Marines to feel they can tell the truth. His leadership team understood this reasoning; however, they were thankful for the correlates we were able to provide which might be gatekeepers to finding the Marines at the highest risk in order to help them (see "Gatekeepers").

# C-REACTIVE PROTEIN

C-Reactive Protein is a measure of inflammation. CRP binds to damaged cells, so high levels of CRP indicate high levels of damaged cells in the body. Elevated levels of C-Reactive Protein have been linked to increased risk of heart attack, stroke, cancer, neurodegenerative

conditions, and mental health disorders. Within the ITF, levels of CRP were measured through a saliva sample at baseline, and then again at follow-up. Over the course of a challenging training year, fewer Marines in the ITF showed protective levels of C-Reactive Protein.

**C-Reactive Protein Levels Over Time**



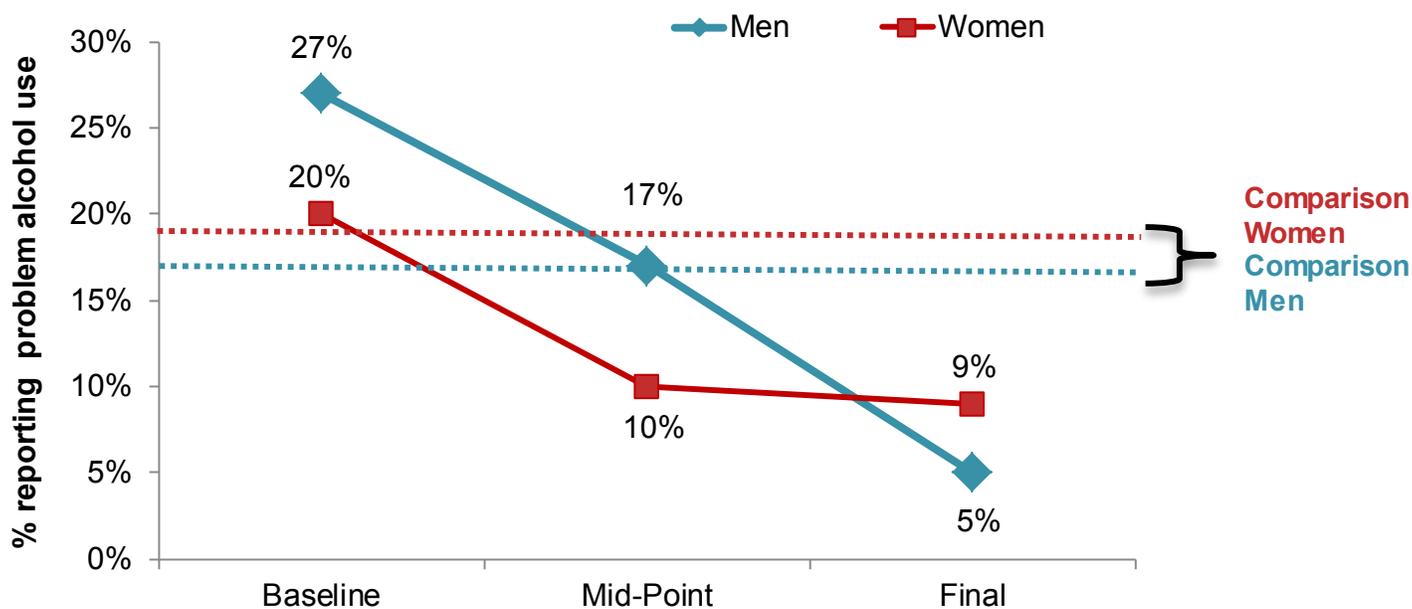
# ALCOHOL

While it has been established that enlistees and veterans in the United States are more likely to use alcohol than civilians, recent research suggests that women in the military are significantly less likely than men to be heavy or binge drinkers and to experience alcohol-related problems, and significantly less apt to use alcohol than their civilian counterparts (Institute of Medicine, 2012; Teachman, Anderson & Tedrow, 2014). However, despite men’s heavier drinking, women in the military may be at risk for alcohol problems at lower levels of consumption (Brown, Bray

& Hartzell, 2010). While alcohol has not been linked to volitional military attrition, alcohol abuse and alcohol related incidents are grounds for dismissal.

- **Members of the ITF were identified as problem alcohol users if they that reported drinking more alcohol than they meant to in the past year, and reported needing/wanting to cut down on their drinking.**

- **As shown in the graph, at baseline, problem drinking in the ITF was relatively high, but decreased over time. In the comparison group of Marines, 17% of**



# RESOURCEFULNESS

One consistent message echoed from leadership within the ITF was that while physical preparedness is important for success in the ITF, even more important is resourcefulness and creative problem solving. Women who were successful in the ITF used creative workarounds to compensate for their reduce height and/or strength, as documented in a Marine Corps Times article (Seck, 2015). While NUBHNAS data found that physical indicators such as maximum pull-ups or best 5K time did not discriminate between those who were retained in the ITF and

those who were not, self-perceptions of resourcefulness did.

As part of a General Self-Efficacy scale, members of the ITF were asked to rate how true the following statement was for them: “Thanks to my resourcefulness, I know how to handle unforeseen situations.” All responses were on a scale from “Not at All True” to “Exactly True”.

- 39% of men and women who were retained throughout the experiment reported that the statement “Thanks to my resourcefulness, I know how to handle unforeseen situations”

was exactly true. Only 26% of those that were not retained reported that the statement was exactly true for them. There was no difference in self-perceptions of resourcefulness between men and women.

- Perceptions of resourcefulness were slightly higher among retained men and women in the ITF (39%), compared to other Marines in gender-integrated units (32%).

- Baseline physical indicators (max number of pull-ups and 3-mile run time) did not predict attrition, in men or women.

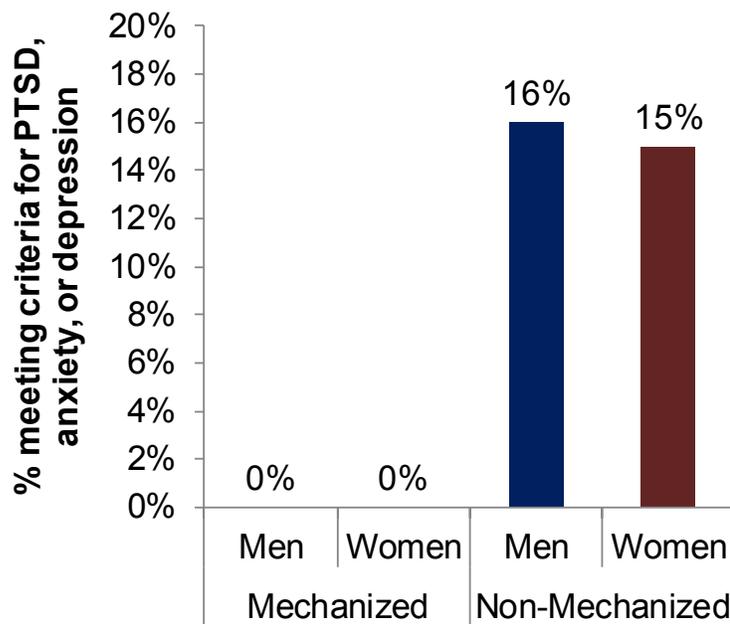
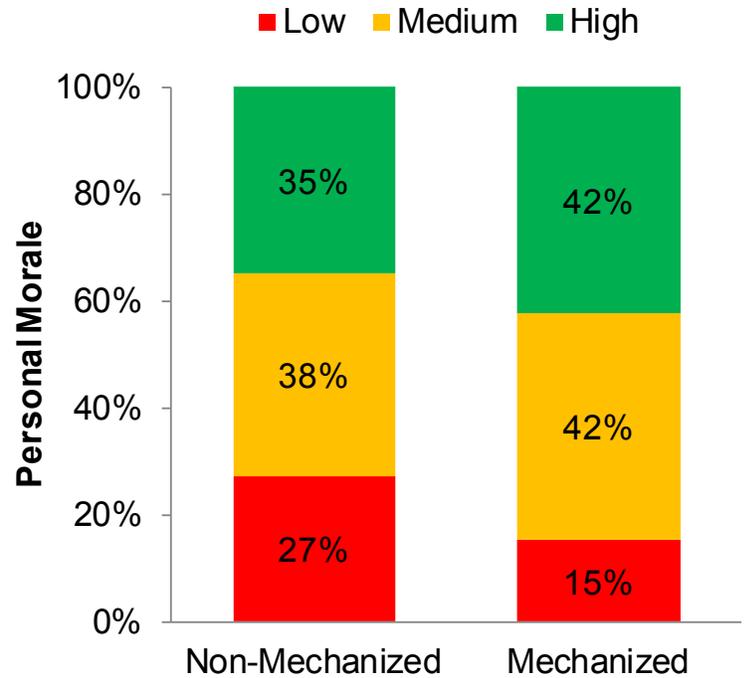
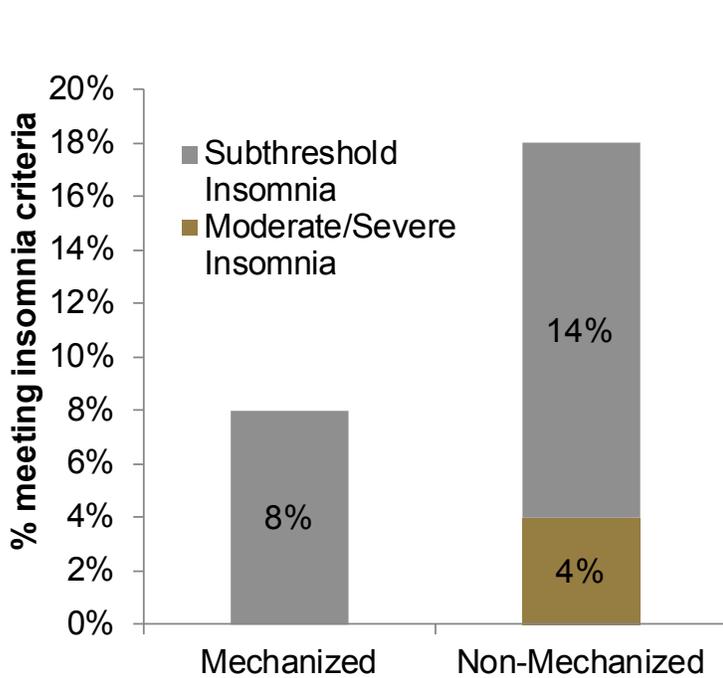
# MECHANIZED VERSUS NON-MECHANIZED ROLES

Individuals in non-mechanized roles showed lower morale, worse sleep, and higher PTSD, depression, and anxiety compared with individuals in mechanized roles.

- 16% of individuals in non-mechanized roles met criteria for PTSD, anxiety, or depression, versus 0% in mechanized roles.

- 27% of individuals in non-mechanized roles reported low personal morale, versus 15% in mechanized roles.

- 18% of individuals in non-mechanized roles exhibited subthreshold or moderate-severe insomnia, versus 8% of individuals in mechanized roles.



At the assessment in Twentynine Palms, the CO expressed interest in whether being in a non-mechanized MOS placed women at a particular disadvantage. We did not find evidence that women struggle more overall than men in non-mechanized MOS. Although the specific levels of some individual outcomes did differ by gender (for example, non-mechanized men showed lower morale and non-mechanized women showed more subthreshold insomnia), being in a non-mechanized role appears to be psychologically difficult for both men and women. Most strikingly, there were no differences in mental health outcomes (PTSD, anxiety, or depression) between men and women in non-mechanized roles.

# ATTRITION

Given the cost and burden associated with training and recruitment of military members, identifying predictors of military retention remains an important goal. Since NUBHNAS data is anonymous, we used failure to complete the final survey at 29 Palms as a proxy for attrition. ITF leadership confirmed that the number of men and women completing the NUBHNAS survey at 29 Palms matched the number of men and women retained in the ITF in March. As such, we are

confident that survey completion is an accurate proxy for retention. NUBHNAS data was able to confirm that women in the ITF were no more likely to attrite than men. During our final debrief, ITF leadership was able to confirm that the proportion of men and women that NUBHNAS data identified as attriting was accurate. We were also able to identify pain, aggression, poor mental health, stress, and insomnia as key, independent predictors of attrition in the ITF.

## Key Independent Predictors of Attrition in the ITF

- Pain
- Aggression
- Poor mental health
- Stress
- Insomnia

## PAIN AND ATTRITION

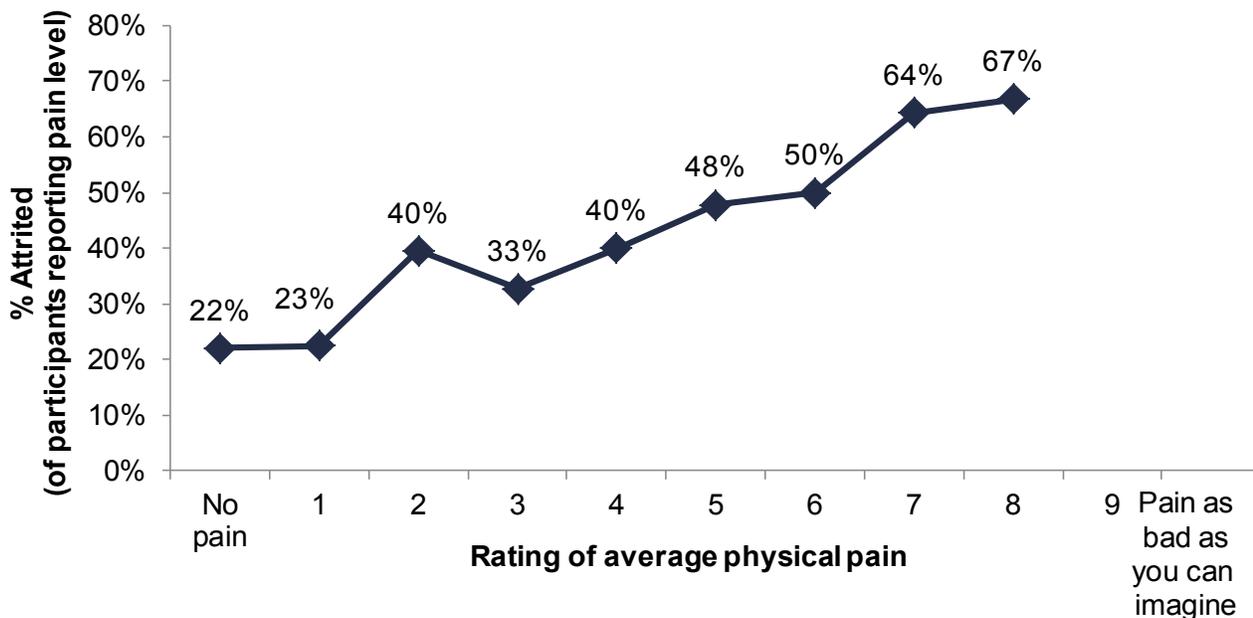
**"If you don't rehab (an ankle sprain) you are going to be more apt to sprain it again... Catching it early would prevent the chronic pain."**

*– Lt. Cmdr. Stephanie Elenbaum,  
Task Force Medical Officer*

Pain is a prominent problem among service men and women. 40% of veterans returning from OEF/OIF are diagnosed with pain, with over a quarter reporting moderate to severe pain intensity (Cifu et al., 2013; Girona, Clark, Massengale & Walker, 2006). Many military members feel that pain is a normal part of their occupation, which may lead individuals to ignore or minimize this condition (Carragee & Cohen, 2009).

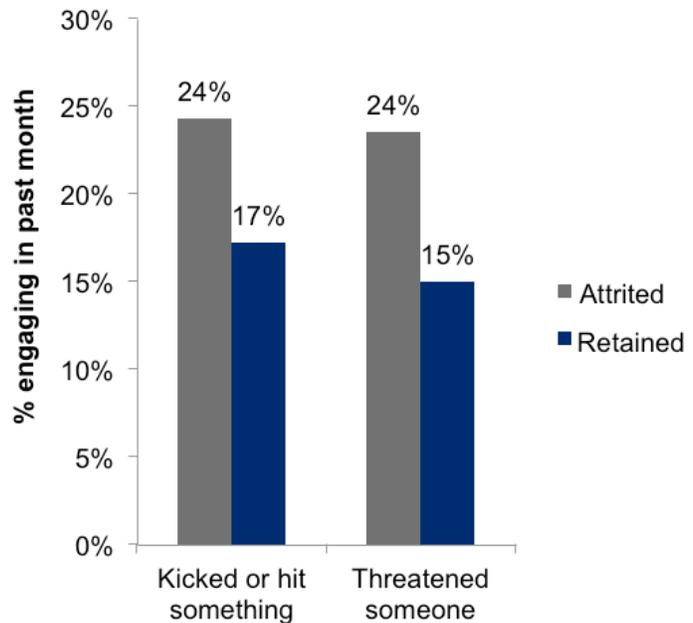
NUBHNAS data revealed that baseline pain was the strongest predictor of attrition from the ITF. This mirrors what has been widely reported, that the majority of women that have been pulled from the ITF training were unable to continue due to medical reasons such as hip, leg and foot injuries like stress fractures – most of which involve chronic pain (Kovach, 2015)

- **At baseline, 37% of women reported no chronic pain and 29% of men reported no chronic pain.**
- **Pain was reported on a ten point scale from "No Pain" to "Pain as bad as you can imagine." The level of pain reported was generally low, with women reporting an average of 3.13, and men reporting an average of 3.47.**
- **Pain at baseline was the strongest predictor of attrition.**



# AGGRESSIVE BEHAVIOR AND ATTRITION

- Outward displays of aggression, including frequency of yelling at others and frequency of threatening others, were more frequent among those in the ITF than in the comparison Marine group.
- Aggressive behavior increased for both men and women in the ITF from baseline to follow up, with men reporting higher frequency of aggressive behavior than women at every time point.
- Those who were retained in the ITF were less likely to report engaging in outward aggression at baseline than those who attrited.



# SLEEP AND ATTRITION

Sleep is better in the ITF than in the comparison Marine unit. In the comparison Marine unit, insomnia was reported by approximately half of Marines.

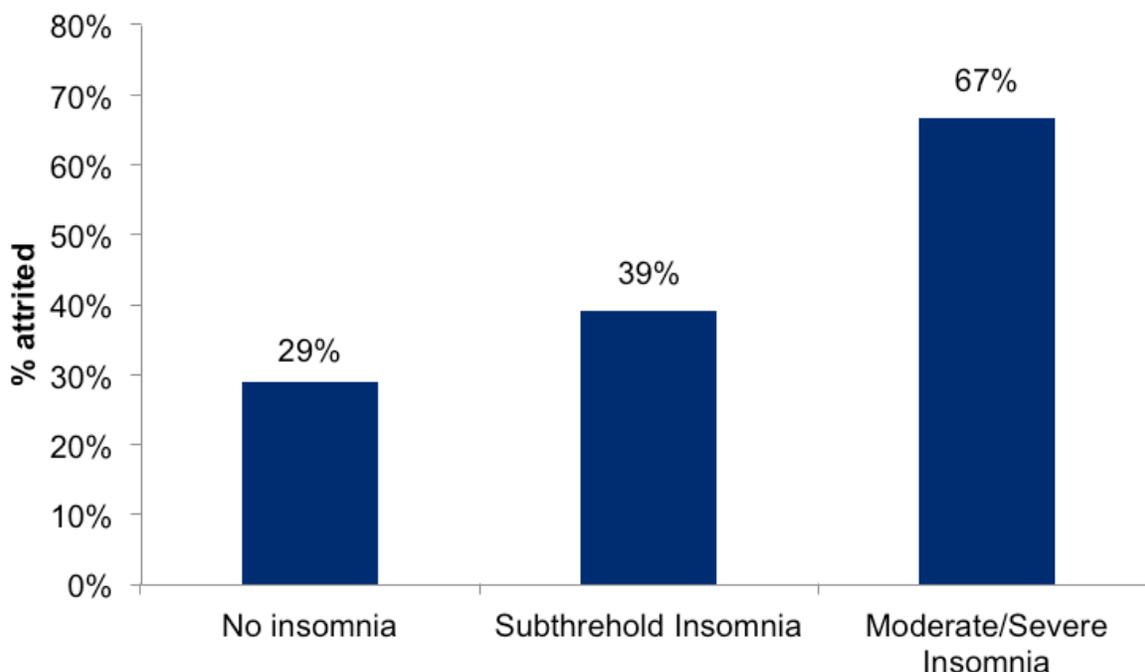
- 33% of men and women in the ITF reported subthreshold/

moderate/severe insomnia at baseline.

- There was no difference in insomnia rates by gender.
- By the final follow-up, 15% of men and women in the ITF reported insomnia.

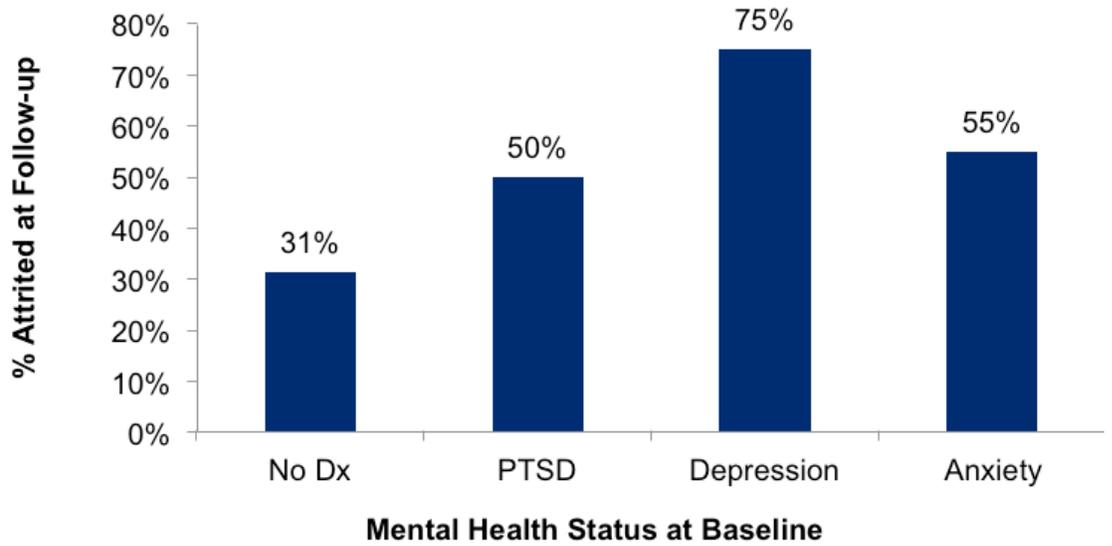
- Reduction of insomnia was due to attrition of those with sleep problems.

- Sleep problems in the ITF are highly correlated with mental health problems.



# MENTAL HEALTH AND ATTRITION

• Both men and women in the ITF with baseline mental health concerns were significantly less likely to be retained. This mirrors the pattern we have found in high-stress Navy training schools.



# STRESS AND ATTRITION

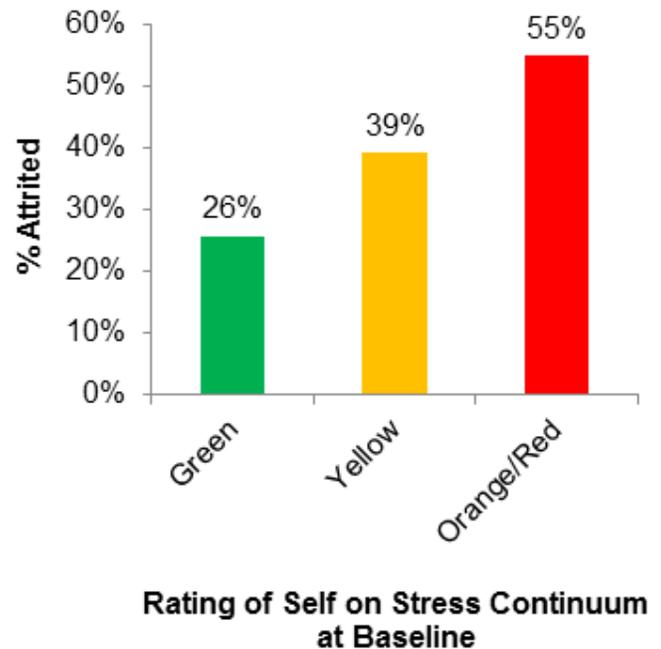
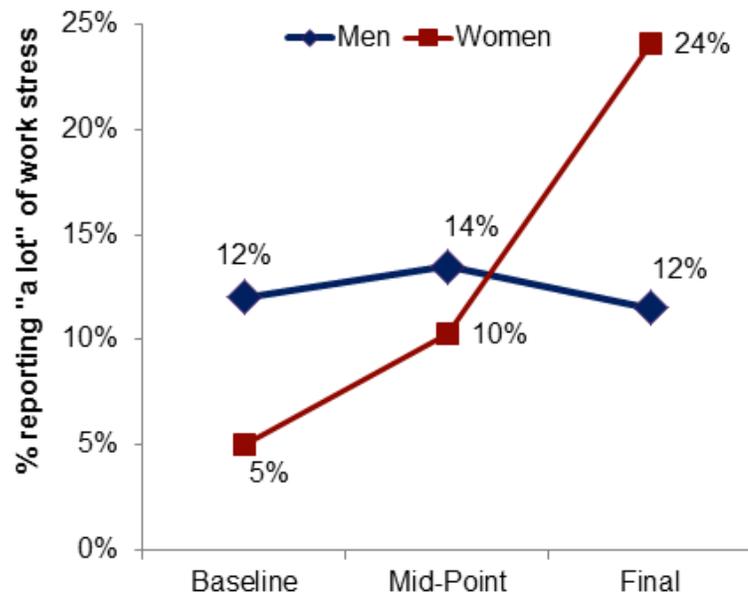
• Family/Relationship stress was the primary source of stress for ITF men and women at baseline, with approximately 15% of men and women reporting a lot of stress over their relationships. This decreased by the final follow up (13% men, 7% women).

• Work-related stress increased across the assignment for women, and by the final follow up, was their primary stressor. For women, managing perceptions of stress

may be particularly important as these have been shown to predict desire to re-enlist (Lancaster et al., 2013).

• While family/relationship stress did not predict attrition, there was a trend for baseline perceptions of work stress to predict attrition.

• Overall self-ratings on the stress continuum were highly predictive of attrition.

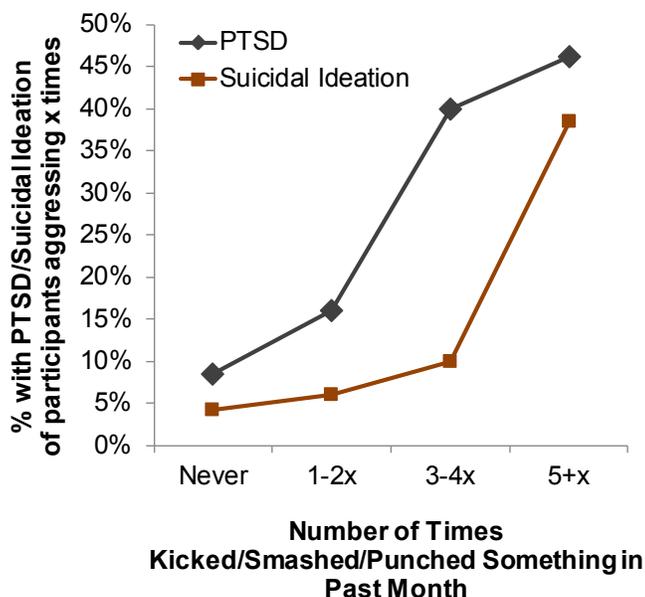


# GATEKEEPERS

Over the course of the current wars, increasing attention has been focused on the high prevalence rates of both suicide and post-traumatic stress disorder among military members. Military leaders are faced with the need to identify high risk individuals in a way that does not add stigma for people who often already feel unwilling or unable to seek help. NUBHNAS has identified two “gatekeepers” in the ITF - factors which have been shown thus far in the data to be strongly correlated with those who suffer from both suicidal ideation and PTSD. The importance of these factors is twofold: 1) they are so strongly statistically associated with the outcomes of interest that they necessarily provide leaders a way to provide targeted intervention for the people at the highest risk, and 2) because they are not necessarily linked with mental health in most peoples’ minds, they can be used as a conversation starter with suffering people who might normally avoid talking about their symptoms, and hopefully can lead to helpful (and even life-saving) intervention and treatment.

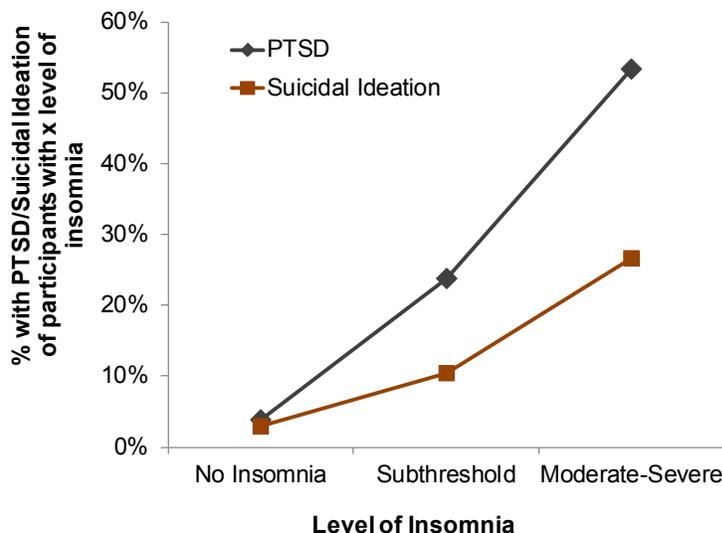
## Aggression

The first of the “gatekeepers” identified by NUBHNAS in the ITF population was outward displays of aggression. We have consistently found aggression to be associated with mental health outcomes in other groups of Marines and Sailors. Among other items, the Marines of the ITF answered a question that asked how many times in the past month they punched, kicked, or smashed something (ranging from never to more than 5 times). We found a strong correlation between outward displays of aggression and PTSD or suicidal ideation in ITF Marines. 39% of those who reported punching, kicking, or smashing something more than 5 times in the past month were also experiencing significant and regular suicidal thoughts, and 46% of those reporting this behavior met criteria for PTSD. Officer and enlisted leaders in the ITF believed that they could use these data to identify those who might be suffering from serious mental health concerns because these outward displays of aggressive behavior would likely come to their attention. They stated that they felt confident they could intervene with these people and have them assessed for further medical and/or mental health treatment as they dealt with their behavioral issues.



## Sleep

Sleep is one of the primary reasons people seek help from their primary care providers, and is often associated with mental health disorders. NUBHNAS data have supported the importance of asking people about their sleep as a way to predict those who are also struggling with suicidal ideation and PTSD. The Marines of the ITF were categorized as experiencing no insomnia, subthreshold, or moderate-severe insomnia. There is a strong correlation between insomnia, suicidal ideation, and PTSD in ITF Marines, with over 50% of those reporting moderate-severe insomnia also fitting criteria for PTSD, and 25% expressing serious and regular suicidal thoughts. The medical officer and chaplain of the ITF agreed to immediately provide psycho-education regarding sleep for the unit, with the hope that Marines suffering from insomnia might seek their help. When the Marines present for care or support from medical or religious personnel, they can be assessed for other mental health concerns. The ITF leadership felt confident this intervention was a low stigma method by which they might be able to intervene with, and potentially even save, a few Marines most in need of their help.



# CONCLUSIONS ABOUT THE CHARGE OF NUBHNAS

- 1** **There are no concerns with the morale of women in the ITF, nor with their perceptions of unit cohesion or organizational commitment.** In fact, in all of these categories, the women of the ITF scored significantly higher than both their male counterparts and the female Marines of a comparison group. Furthermore, the morale of men in the ITF did not suffer from being in a gender-integrated ground combat unit.
- 2** **Sexual assault must be addressed among both men and women.** We understand it has been continually acknowledged and confronted in the ITF throughout the training cycle, but assaults still occurred in the unit. Six Marines, both men and women, reported forced sexual assault during their time with the ITF, indicating this is not only a concern for women.

## RECOMMENDATIONS

- 1** **Identify those with chronic physical pain.** In our data, pain was the primary predictor of attrition. As we know that the majority of women in the ITF attrited due to physical injury, the relationship between chronic pain and susceptibility to injury should be further evaluated. In addition, the Marines of the ITF who reported experiencing moderate to severe chronic pain (most of whom also reported not treating it) were more likely to have symptoms of mental health disorders and significant sleep disturbance. Because pain is not stigmatized like other types of mental health complaints, educate Marines about the effect pain can have in other parts of their lives and encourage them to seek medical attention for their pain.
- 2** **Watch for physical and verbal outbursts of aggression.** Outward signs of aggression are a serious risk factor for suicidal thoughts and behavior -- as well as PTSD and attrition -- in ITF Marines. When individuals come to the attention of the command due to these behaviors, it is important for ITF leaders to work with these Marines to help them manage their reactions to stressors in their lives. Targeted intervention that focuses on cognitive restructuring to decrease hostility and behavioral anger management might end up being life-saving for those at risk.
- 3** **Identify those with sleep problems and ensure they enter the health care system.** Sleep disturbance is a symptom of multiple mental health diagnoses, but also stands alone as a risk factor for suicide, PTSD, and attrition in ITF Marines. ITF Marines who admit to suicidal ideation and PTSD symptoms are far more likely to endorse insomnia. People tend to think about sleep issues as relating to physical health, rather than mental health; therefore, there is a unique opportunity for leadership to identify and intervene with those who might be at highest risk without stigma. NUBHNAS debriefs to the ITF CO included the recommendation that by educating and asking people about their sleep, they may be able to reach those who are suffering the most. Sleep disruption is a unique and vital gatekeeper to find those who are experiencing the symptoms of PTSD and/or feeling suicidal, and subsequent interventions could very possibly lead to lives saved.

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