



COMMON STRESS COPING STRATEGIES AMONG U.S. SUBMARINERS: PERSPECTIVES FROM THE FOUNDRY TO THE FLEET



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Introduction

Submariners endure unique stressors, including isolation/confinement and intense/extended workloads¹.

Effective coping is essential for maintaining resilience and reducing adverse health and career outcomes^{2, 3}.

It is **unclear how submariners manage stress**.

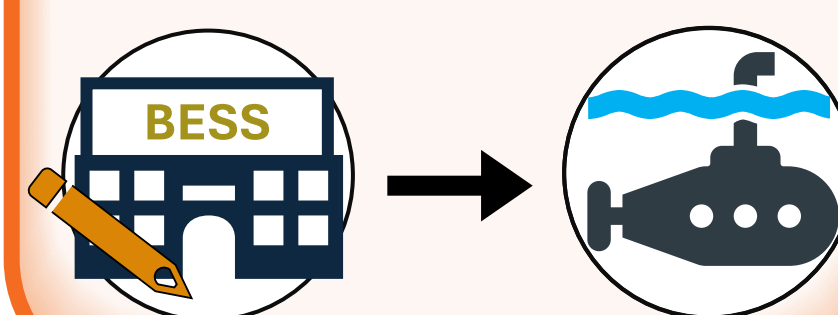
The **Brief COPE**⁴, administered as part of the Submarine Environment Fit (SUBFIT)⁵ assessment, evaluates coping behaviors during training (Basic Enlisted Submarine School; BESS) and again at the Fleet level, allowing for the observation of coping patterns at different career points/settings.

Goal: Evaluate changes in submariner coping habits with increased operational exposure to inform wellness resource and intervention development.



Objective

Leveraging secondary data, investigate **changes in coping behaviors** of Enlisted U.S. submariners in training vs. during Fleet service.



Methods

Data Set Characteristics:

- $N = 3,390$
 - Enlisted submariners
- Within-Subjects
 - ~2 years between administrations
 - BESS:** Average 21.31 years old
 - Fleet:** Average 23.17 years old

Brief COPE⁴:

- 28 items; 4-point Likert scale
- 3 scales** (coping styles),
14 subscales (coping behaviors)

Brief COPE Scale Definitions⁴

(increased scores = greater frequency of engaging in a coping behavior under a particular coping style)

Avoidance Coping	Disengaging from a stressor; associated with reduced psychological adaptation and increased maladjustment ^{2, 6}
Problem-Focused Coping	Actively addressing or trying to change the effects of a stressor; associated with enhanced resilience ^{7, 8, 9}
Emotion-Focused Coping	Regulating emotional responses to a stressor (as opposed to the stressor itself); associated with positive feelings ⁹ when accounting for avoidance ¹⁰

Results

Analysis:

- Wilcoxon Signed-Rank Test¹¹ (nonparametric)[†]
 - Bonferroni correction¹²
- Effect size: Rank-Biserial Correlation (r)¹³
- Category-level change^{4, 14}

[†]Standardized z scores are reported here for interpretability

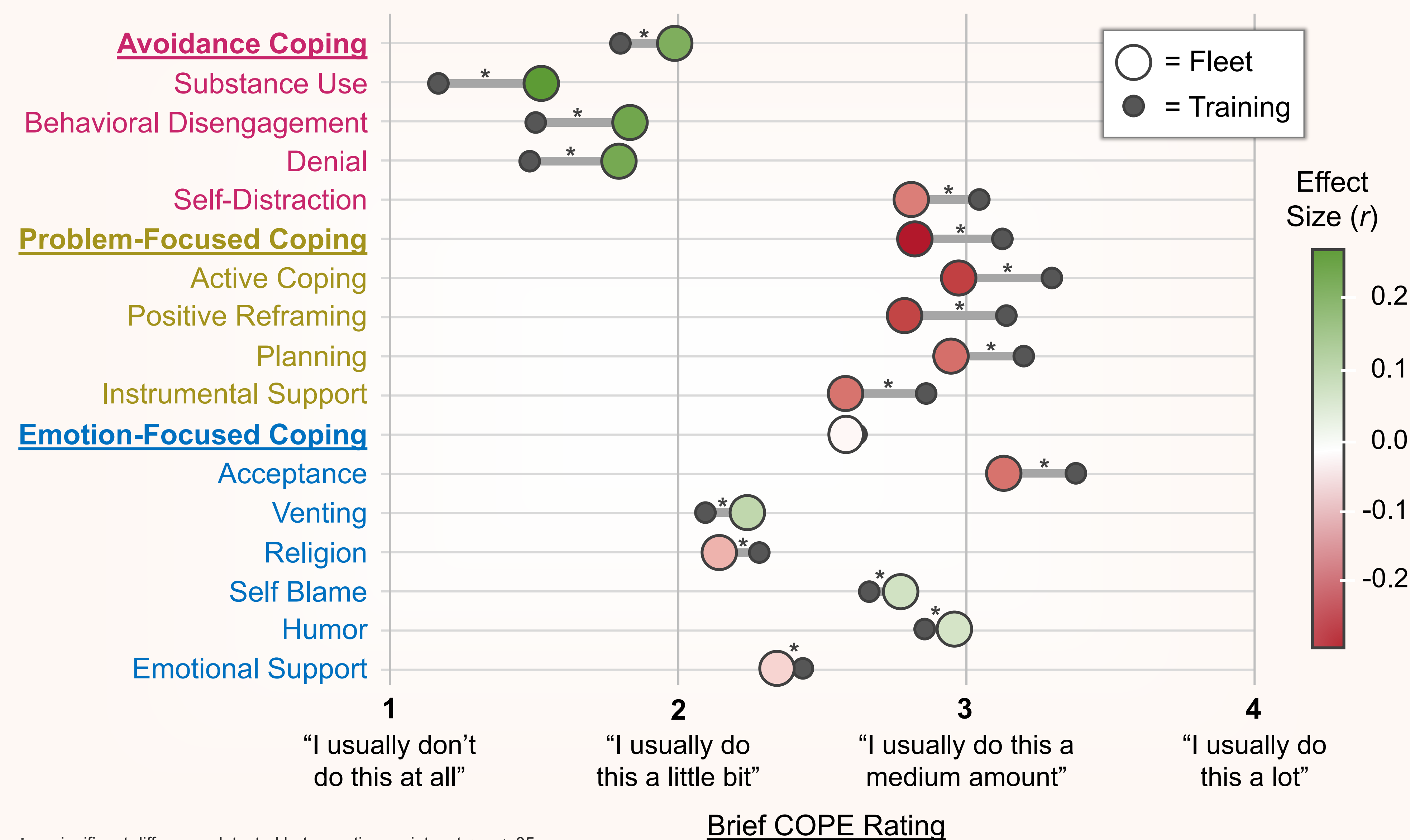
Degrees of Change per Scale:

Avoidance Coping:
 $z = 17.54$, $p_{adj} < .001$, $r = 0.22$
• 10% of respondents increased usage by ≥ 1 category level

Problem-Focused Coping:
 $z = -23.85$, $p_{adj} < .001$, $r = -0.29$
• 16% of respondents decreased usage by ≥ 1 category level

Emotion-Focused Coping:
 $z = 0.00$, $p_{adj} > .05$, $r = -0.01$

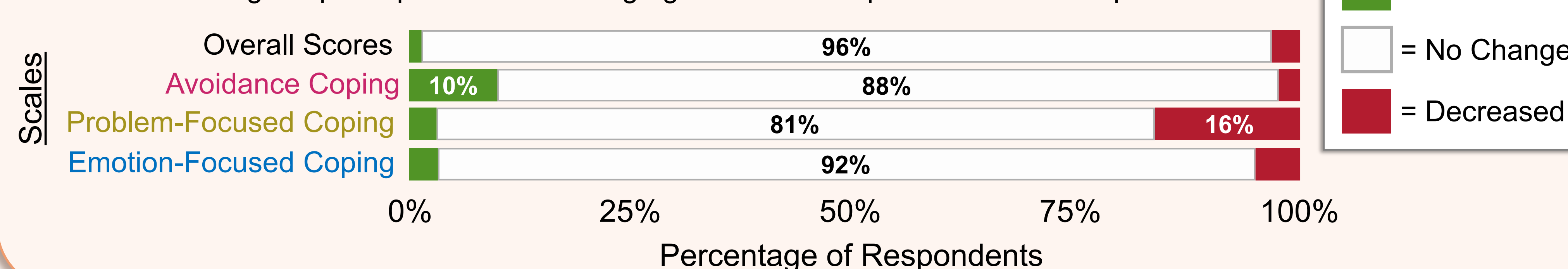
Average Brief COPE Subscale Scores: Training vs. Fleet



* = significant difference detected between time-points, at $p_{adj} < .05$

Frequency of Category-Level Changes in Coping Styles

Percentage of participants with a change greater than ± 1 point / ± 1 Likert response level



Conclusions

After ~2 years of service, submariner use of **active, adaptive coping declined** while usage of **passive, withdrawn behaviors increased**

- Avoidance Coping:** The least used style during training and in the Fleet; greatest increase in usage overall
 - Greatest changes in: **Substance Use** and **Behavioral Disengagement**
- Problem-Focused Coping:** The most used style during training and in the Fleet; greatest decrease in usage overall
 - Greatest changes in: **Active Coping** and **Positive Reframing**
- Emotion-Focused Coping:** Consisted of the most frequently used behavior (**Acceptance**) during training and in the Fleet; no significant change in usage overall

Implications:

- Although changes in coping behaviors were **small-to-moderate**, limited changes were initially expected due to:
 - Perceived limitations in available support resources^{1, 2}
 - The brief time (~2 years) to observe behavioral changes¹⁵
- If these shifts towards more avoidant behaviors *persist* with prolonged service, **risk of maladaptation**^{2, 6} or **separation**⁹ may increase

Future Work: These findings underscore the need for **stress management education** and the **reinforcement of adaptive coping strategies** across the career timeline

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