

# Reducing Anxiety in a Population of First Responders with Post-Traumatic Stress Disorder

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## PURPOSE / OBJECTIVES

### Background:

- First responders face trauma at work, which may lead to anxiety and post-traumatic stress disorder (PTSD)
- An occupational medicine program using a transdisciplinary biopsychosocial treatment approach aims to reduce anxiety in first responders with both anxiety and PTSD
- This analysis examines how the intensity of patient participation in the program relates to the likelihood of anxiety resolving, as measured by the clinician-administered Hamilton Anxiety Rating Scale (HAM-A)

### Objective:

To assess the relationship between the intensity of exposure to a transdisciplinary biopsychosocial treatment program and the clinical resolution of anxiety in first responders with both anxiety and PTSD

## MATERIALS & METHODS

**Data Source:** Occupational medicine clinic data about first responders employed by the City of San Diego

**Inclusion Criteria:** Patient initiated care between May 1, 2022, and July 30, 2024

**Exclusion Criteria:** Patient did not have clinically-significant anxiety (HAM-A>13), patient did not have clinically-significant PTSD (PCL-5≥33), or patient did not complete an hour with the program

**Primary Outcome:** Patient had (vs. lacked) clinically-significant anxiety (HAM-A>13) at treatment completion

**Independent Variable:** Hours of program exposure (log base 2 transformed)

**Control Variables:** HAM-A score at treatment initiation, gender, age, and occupation (firefighter vs. police)

**Analysis:** t-test to assess pre/post change in HAM-A scores; logistic regression for the primary adjusted analysis

## RESULTS

### Findings:

- The analysis included 55 patients
- A t-test found HAM-A scores significantly ( $p<.001$ ) decreased following treatment, from a mean of 25.6 (standard deviation: 4.5) to a mean of 10.2 (standard deviation: 6.6)
- A multivariable logistic regression found that program hours were significantly ( $p=0.003$ ) and negatively associated with the likelihood that a patient had clinically-significant anxiety at completion
- Doubling hours of program participation significantly decreased the likelihood that patients would have clinically-significant anxiety at program completion (odds ratio: 0.46; 95% confidence interval: 0.28-0.77)
- None of the other variables in the analysis had a statistically-significant association with anxiety outcomes

Doubling hours of participation in a transdisciplinary biopsychosocial treatment program was associated with significantly reduced odds of having clinically-significant anxiety at program completion in a population of first responders with anxiety and PTSD.

**Odds Ratio: 0.46**

**95% Confidence Interval: 0.28-0.77**



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Table 1: Descriptive Statistics

	Statistics (N=55)
Program hours, mean ± SD	259.3±165.8
Patient age, mean ± SD	43.3±8.8
Male patient, n (%)	41 (74.5)
Patient is a firefighter, n (%)	9 (16.4)
HAM-A at initiation, mean ± SD	25.6±4.5
HAM-A at completion, mean ± SD	10.2±6.6
Patient had anxiety at completion, n (%)	18 (32.7)

There were 55 patients included in the analysis. The patients went from having a mean HAM-A of 25.6 at initiation to a mean HAM-A of 10.2 at completion, with scores greater than 13 indicating clinically-significant anxiety. While all patients had clinically-significant anxiety at program initiation, only 18 patients (32.7%) had it at program completion.

Table 2: Adjusted Logistic Model Examining Factors Associated with Anxiety at Treatment Completion

	Odds Ratio	95% Confidence Interval
Logged program hours (base 2)	0.46	0.28-0.77
Patient age	0.99	0.91-1.07
Male patient	0.40	0.08-2.07
Patient is a firefighter (vs. police)	3.78	0.61-23.28
HAM-A at initiation	1.14	0.97-1.34

A logistic regression found there was a significant association between hours of program participation and whether patients had clinically-significant anxiety at program completion (odds ratio: 0.46; 95% confidence interval: 0.28-0.77). None of the other factors examined were significantly associated with whether patients had anxiety at treatment completion.

## Conclusion

Increased exposure to transdisciplinary biopsychosocial treatment was significantly associated with a reduced likelihood of clinically-significant anxiety in a population of first responders with a history of anxiety and PTSD.

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