

Prevention of Psychological Stress Injuries and Employee Turnover: A Cross-sectional Study of Denver metro EMS Organizations

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Introduction

- Psychological stress injuries (PSI) are physically taxing, financially expensive for the healthcare system, and a driver of employee turnover.^{1,2}
- Employee retention continues to be an issue in the field of EMS, despite efforts to improve the psychological well-being of providers.^{3,4}
- Survey data from 2023 reported overall turnover of EMS providers at 23-40%, with 38% turnover in the first year.⁵
- Identifying scalable strategies to prevent PSIs in EMS providers is necessary for improving workforce stability.
- Objective:** We investigated whether any of the selected methods for preventing PSIs are associated with lower turnover intention scores and are therefore more effective at preventing psychological stress injuries among prehospital providers.

Materials and methods

- An anonymous, non-experimental survey was distributed electronically to EMS providers in the Denver metro.
- Turnover intention was quantified via the 6-item Turnover Intention Scale.⁶
- Psychological stress was quantified via 2, single-item measures from the Maslach Burnout Inventory.^{7,8}
- Two parallel sets of multivariate models were developed: TIS regressed on PSI prevention methods offered by organizations and TIS regressed on PSI methods used by respondents.

Results

- Sample Characteristics:** N=163, 69.94% fire department based, 66.26% paramedics, 75.62% male, 83.66% white, mean EMS experience 13.39 years, mean time at current organization 8.13 years
- A one-unit increase in the burnout indicator was associated with a 3.37 point increase in TIS score (95% CI: 2.50, 4.25; $p < 0.001$).
- For each 1-method increase in total methods offered, TIS-6 scores decreased by 1.14 points on average (95% CI: -1.66, -.63; $p < .001$).
- No significant relationship between TIS-6 scores and total number of methods used.
- Promotion of Reflective and Self-care Practices was associated with 2.64 point lower TIS-6 scores on average (95% CI: -3.76, -0.32; $p = 0.022$) (Figure 1).
- Using Peer Support Programs was associated with a 2.64 point increase in TIS-6 scores, on average (95% CI: 0.70, 4.58; $p = 0.009$) (Figure 2).

Table 1. PSI prevention methods offered by organizations and used by respondents in the past 12 months

Method	Offered, n(%)	Used, n(%)	Utilization
Mindfulness-based Stress Reduction	36(22.09)	16(9.82)	44.44%
Stress Exposure Therapy	18(11.04)	5(3.07)	27.78%
Promotion of Reflective and Self-care Practices	64(39.26)	27(16.56)	42.19%
Psychological Stress First Aid	21(12.88)	5(3.07)	23.81%
Peer Support Program	140(85.89)	34(20.86)	24.29%
Critical Incident Stress Debriefing	116(71.17)	49(30.06)	42.24%
Resiliency Training	73(44.79)	29(17.79)	39.73%
Other	5(3.07)	1(0.61)	20.00%

Figure 1: Adjusted associations between TIS-6 scores and PSI prevention methods offered by organizations

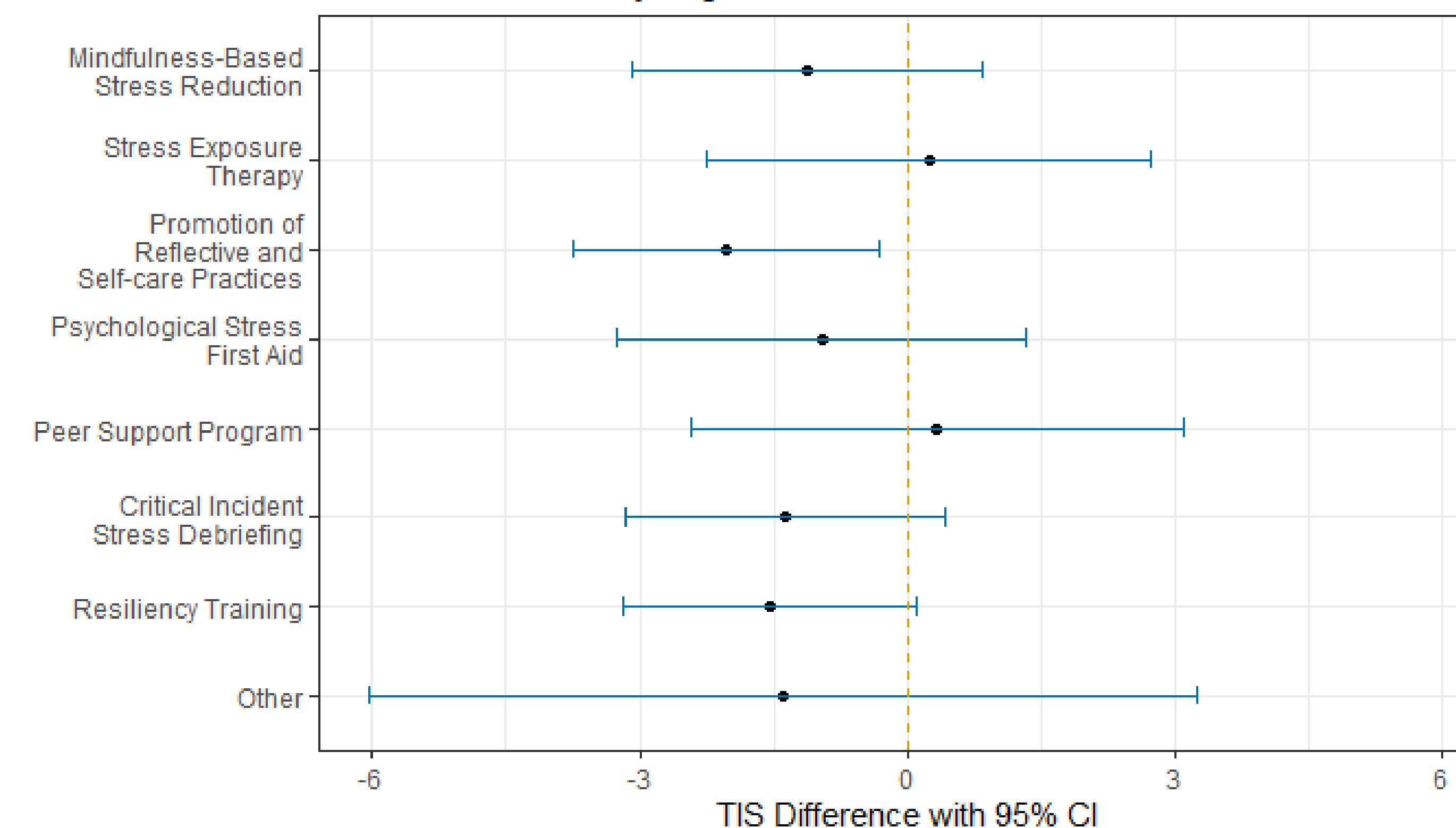
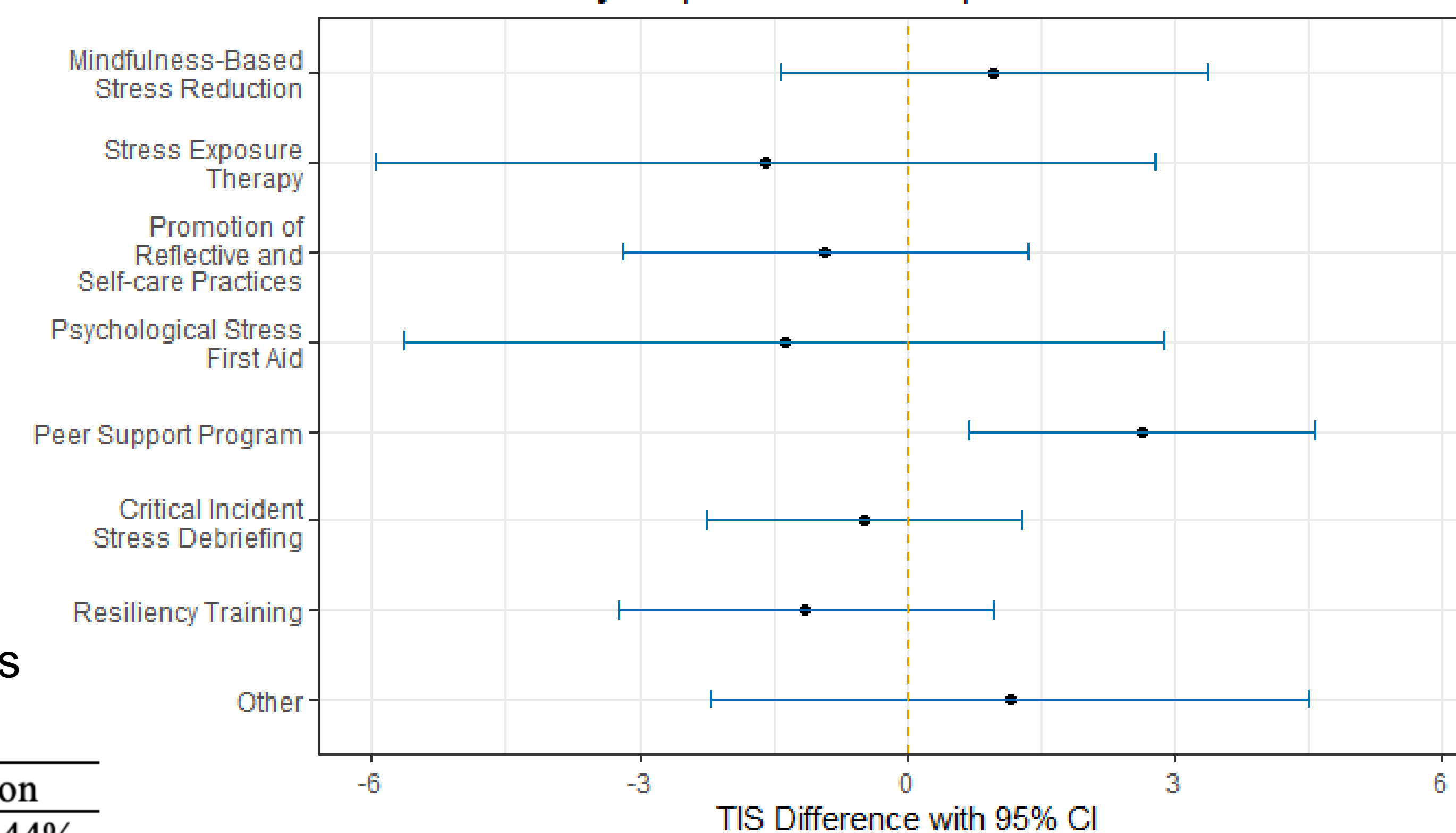


Figure 2: Adjusted associations between TIS-6 scores and PSI prevention methods used by respondents in the past 12 months



- Most commonly offered:** Peer Support Programs (85.89%), Critical Incident Stress Debriefing (71.17%)
- Most commonly used when offered:** Mindfulness-based stress reduction training (44.44%), Critical Incident Stress Debriefing (42.24%), Promotion of reflective and self-care practices (42.19%)

Conclusions

- EMS organizations may see improvement in retention by promoting reflective and self-care practices among their providers.
- Critical Incident Stress Debriefing was the most commonly offered method and frequently used by providers but did not have a significant relationship with TIS-6 scores.
- As the number of prevention methods offered by an organization increased, TIS-6 scores decreased, suggesting that preventing PSIs require a multi-modal approach to decrease turnover intention.
- Mindfulness-based stress reduction training and promotion of reflective and self-care practices were two methods providers are likely to use regularly and are relatively simple to implement.
- The use of peer support programs was associated with a 2.64 point increase in TIS-6 scores. Providers using this resource may be, at a baseline, more likely to leave their organization.
- A larger study with more subjects may find additional, significant associations between the PSI prevention methods and TIS-6 scores.

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