

The Effect of Hyper-Realistic Trauma Training on Emotional Intelligence in Second Year Military Medical Students



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BACKGROUN

What is Hyper-realistic training?

- High fidelity mass causality scenarios played out on a movie set designed to resemble a Middle Eastern village, ED, and OR in a deployment setting.
- Students performed a variety of procedures on the cut suit including wound packing, cricothyroidotomy, chest tube thoracostomy, laparotomy, and suturing¹.

What is Emotional Intelligence (EI)?

- Evaluates the ability to “monitor one’s own and others’ emotions, to discriminate among them, and to use this information to guide one’s thinking and actions”².



Figure 1: The Emotional Quotient Inventory (EQ-I 2.0) model evaluates EI as a combination of traits, abilities, and skills organized under 5 domains as displayed above.³

- EI is correlated with increased competencies in many areas prioritized by the Accreditation Council for Graduate Medical Education (ACGME): Improved doctor-patient relationship, increased empathy, teamwork, communication skills, stress management, organizational commitment, and leadership⁴
- EI is also correlated improved ability to handle stress and reduced burnout, increased perception of occupational stress, and reduced incidence of depression and suicide⁵⁻⁶

METHODS

- Second year medical students went to Strategic Operations (STOPS) in San Diego, CA for the skills week.
- Prior to arriving, students took the EQ-i 2.0, a 133 item survey of statements with response options on a 5-point Likert scale. Students re-took the survey at the end of the week.
- Students participated in 50 increasingly intense trauma scenarios and rolls throughout the week.
- Raw scores were converted to a standardized score based on normative population data using a mean of 100 and a standard deviation of 15 ⁷.

	2016	2017	2018	Total
Male	20	22	27	69
Female	12	7	8	27
Total	32	29	35	96

Table 1: Demographics of participants by gender and year

DATA

Measure	Paired t Test for Pre – Post	Year	Gender
Total Eq Score	0.000		
Self-Perception	0.000		
Self-Regard	0.000		
Self-Actualization	0.001		
Emotional Self-Awareness	0.000		
Self-Expression	0.007		
Emotional Expression			0.013
Assertiveness	0.000		
Independence	0.044		0.005
Interpersonal	0.001	0.031	
Interpersonal Relationships	0.001		
Empathy			
Social Responsibility	0.000	0.031	
Decision Making	0.002		
Problem Solving			
Reality Testing	0.004		
Impulse Control	0.018		
Stress Management	0.000	0.014	
Flexibility	0.000	0.028	
Stress Tolerance	0.000		
Optimism	0.000	0.001	
Happiness	0.000	0.011	

Table 2: P values from 3 way ANOVA comparing EQ scores from pre to post testing and across year and gender.

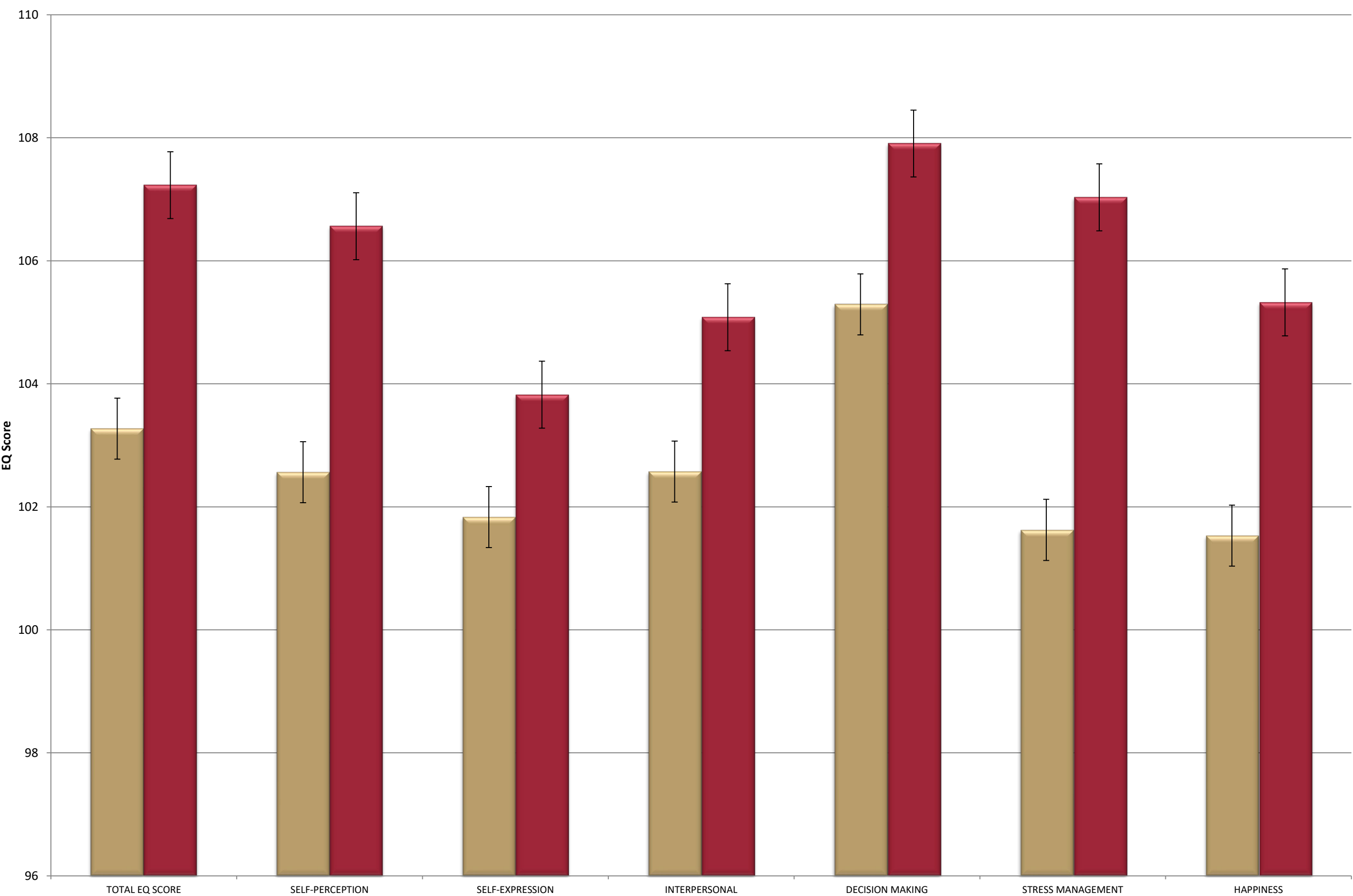


Figure 2: Comparison of pre and post test scores in the total EQ score and the 5 domains. Error bars are included to highlight the significance of the change.

RESULTS

- Average improvement of total EQ score was 3.95 points.
- R² for the ANOVA comparing pre to post scores was 90%

DISCUSSION

- The domain scores that showed the most improvement were stress management (5.4 EQ points), and self perception (4 EQ points)
- We theorize that improvement in stress management will correlate with enhanced performance and decreased long term sequela of acute stress such as depression and PTSD⁸
- The 2018 class showed more improvement in several categories when compared to prior years, indicating increased effectiveness of the training
- Differences seen based on gender were minimal
- Some limitations include the fact that the EQ-I tool relies on self evaluation. Increased familiarity with the survey during the post test may have swayed responses.
- Further research is needed to determine the practical significance and durability of the change in EQ score for medical students and physicians over time.
- Previous studies have shown an association between improved EQ score and certain performance measures, emotional wellbeing, and stress management⁹⁻¹². But more longitudinal research is needed to demonstrate this with our training.

CONCLUSION

- In deployed environments, as well as in trauma care, physicians are required to make decisions at a moment’s notice and cope with stressful situations.
- Hyper-realistic simulation training has been proven to develop these skills measured as EI.
- Further research is needed to determine the long-term impacts of the increased EI scores. Some specific areas to investigate include physician performance and emotional wellbeing.

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