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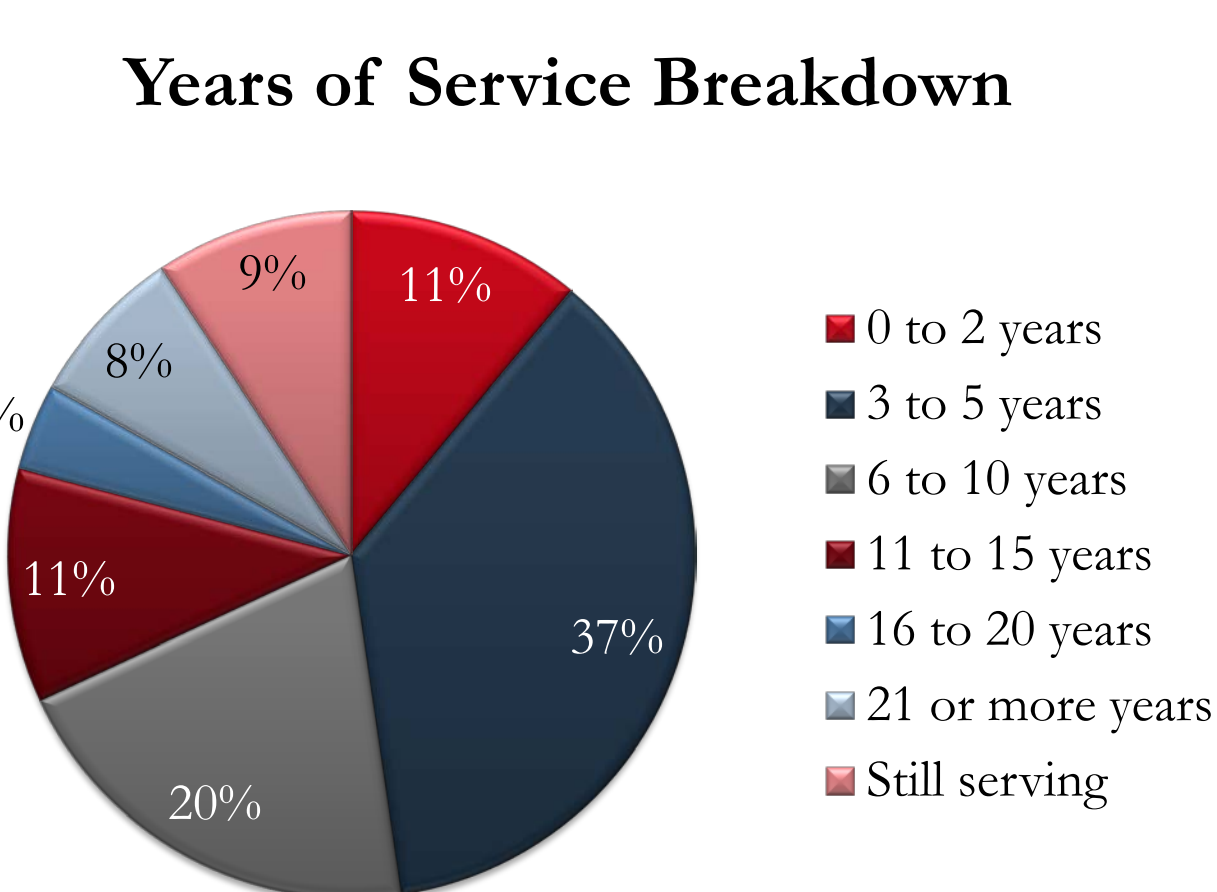
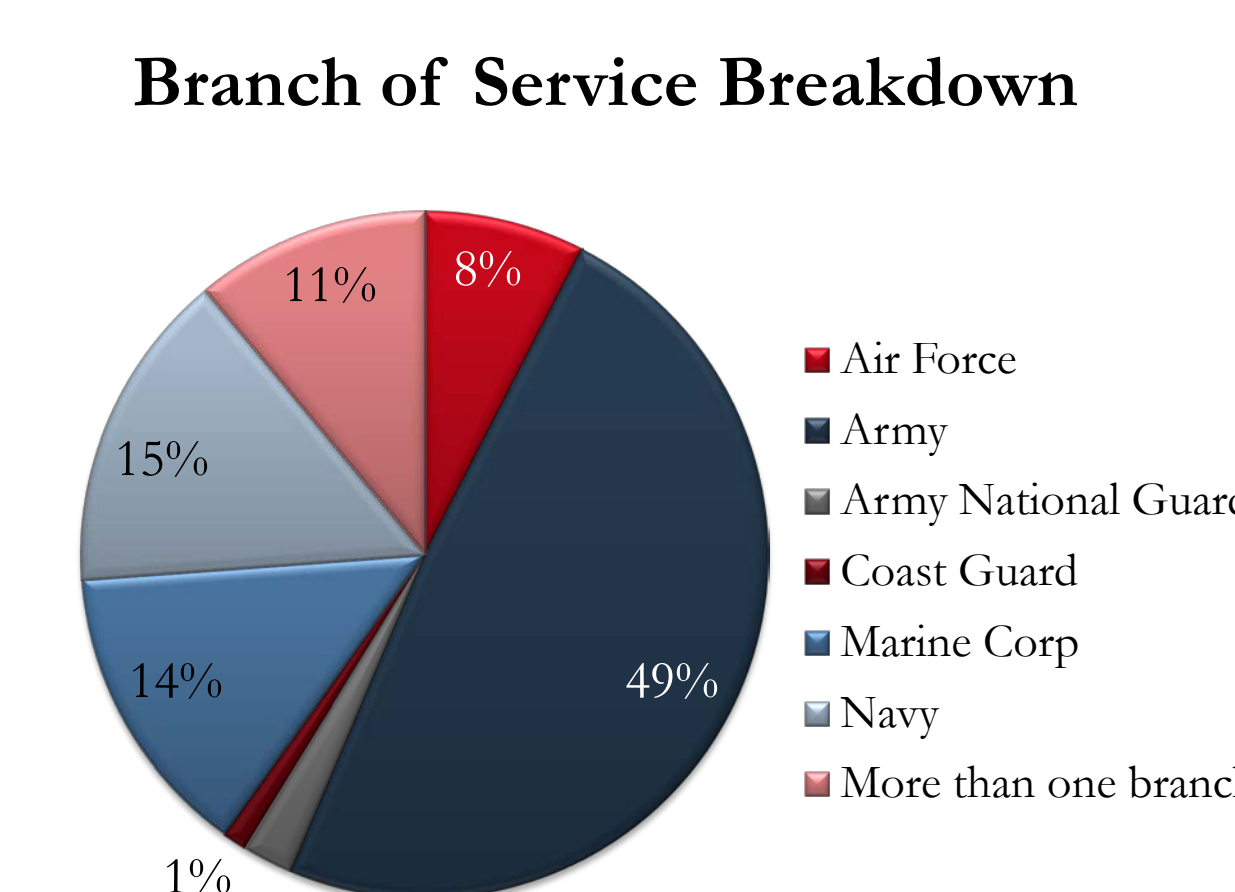
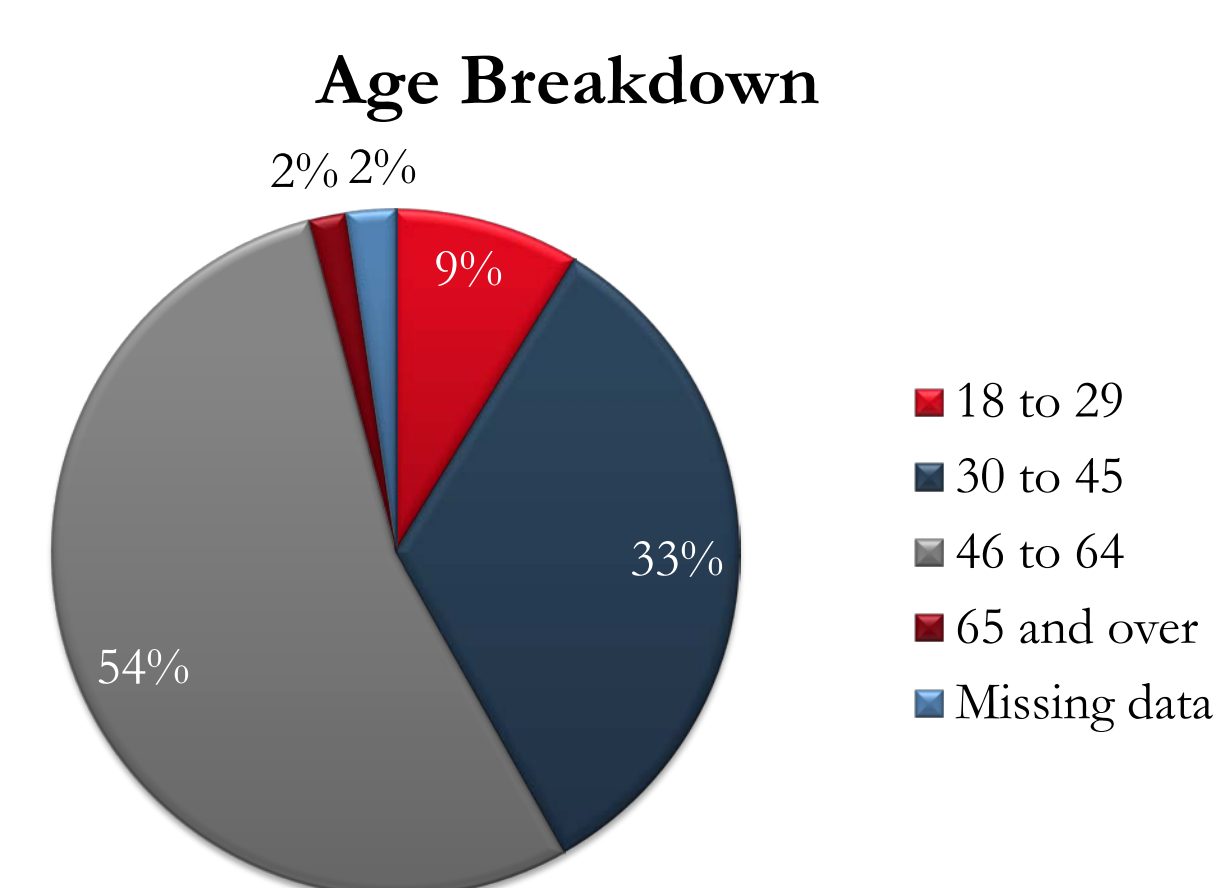
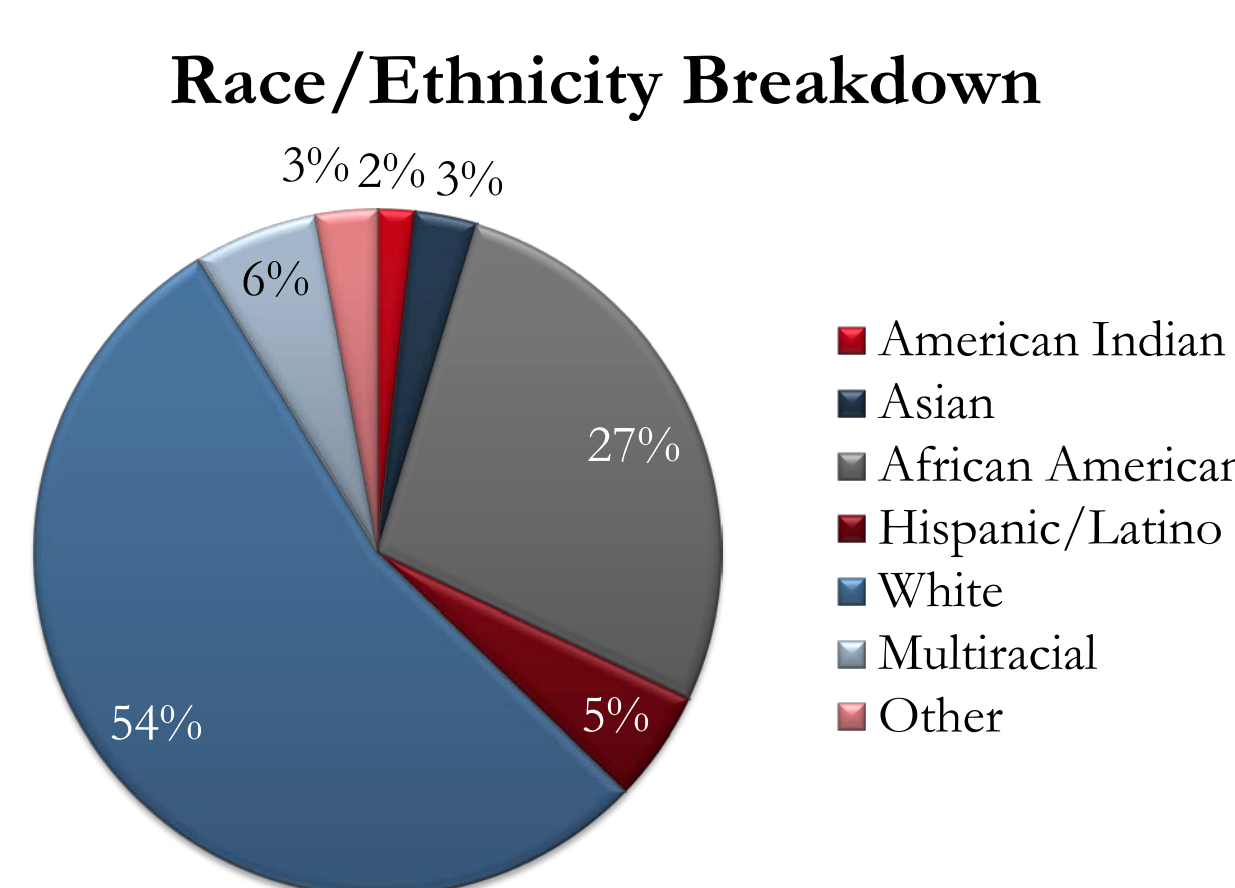
Introduction

Veteran suicide, addiction and substance abuse related deaths are skyrocketing at alarming proportions due to post-traumatic stress disorder (PTSD).^{4,5} Cognitive Processing Therapy (CPT) is an evidence-based practice that has been utilized to help people recovering from PTSD^{2,3}; however, veterans continue to demonstrate the need for self-coping skills to enhance resilience throughout the CPT program. Effective, complementary means are needed to combat the effects of PTSD and promote trauma recovery so veterans can deal with everyday stressors and challenges. Mindful Yoga Therapy (MYT) is a trauma-informed, empirically-supported program offered in conjunction with traditional clinical therapy that utilizes mindfulness and self-regulation techniques to enhance well-being for veterans.

Methods

Procedure: MYT was offered at the VA Medical Center-Fort Thomas Residential Program as part of their 7-week or 8-week clinical therapy protocol. The MYT program was offered once a week, with each session lasting 75 minutes. The program was comprised of five practices: Pranayama, Asana, iRest/Yoga Nidra, Meditation, and Gratitude. To evaluate the effectiveness of the MYT program, pre-test and post-test data were collected using four validated instruments: Perceived Stress Scale (PSS), Brief COPE, Short Grit Scale (Grit-S), and the Mindful Attention Awareness Scale (MAAS). In addition, participants' perceived physical and emotional well-being was recorded at the beginning and end of each session. Participants were also required to complete the PTSD Checklist (PCL) and the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) on a weekly basis. To assess changes in outcomes, paired samples *t*-tests were conducted for participants who completed both a pre-test and post-test survey (*n*=125).

Participants: Seventeen cohorts of veterans participated in the MYT program (*n*=172) including six women's PTSD (*n*=58), six men's PTSD (*n*=67), and five men's traumatic brain injury (TBI) (*n*=47) cohorts. Of the MYT participants, a majority were male (66%) and between the ages of 46 and 64 (54%). Participants were of diverse race. In addition, participants were most likely to have served in the Army (49%), to have served for less than 10 years (67%), and to be discharged from the military when they arrived at the VA for treatment (89%).



Results

Perceived Stress Scale (PSS)

On the PSS (10 questions), participants could receive a total score ranging from a 0 (low perceived stress) to a 40 (high perceived stress). The national average score on the PSS is a 13.0.¹

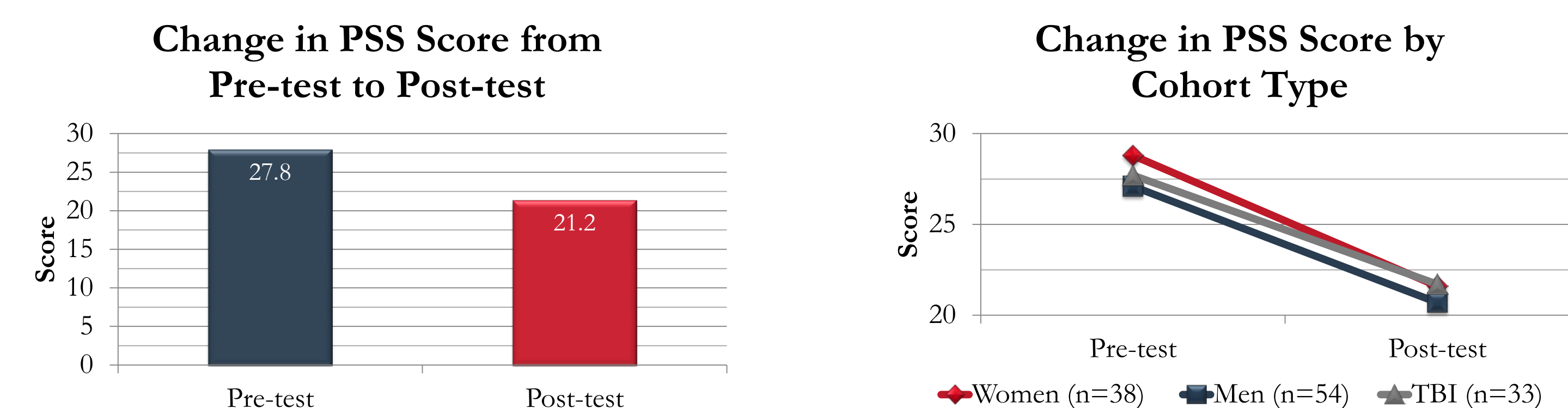


Figure 1: Paired samples *t*-tests revealed a statistically significant reduction in PSS score from pre-test to post-test ($p < .01$). There were no significant differences in PSS outcomes by cohort type ($p = .720$), supporting that MYT was equally effective at reducing perceived stress for all three groups.

Brief COPE

The Brief COPE includes 28 questions, with 14 subscales. Scores on each of the subscales could range from a 2 (not at all) to an 8 (doing it a lot).

Brief COPE Subscale	Pre-test Mean	Post-test Mean	<i>t</i> value	<i>p</i> value
Self-Blame	6.66	5.10	9.03	<.001
Self-Distraction	5.70	5.46	1.17	.246, ns
Active Coping	5.55	6.54	-5.50	<.001
Planning	5.54	6.30	-4.61	<.001
Acceptance	5.17	6.20	-5.68	<.001
Instrumental Support	5.14	6.34	-6.78	<.001
Venting	5.08	5.12	-0.23	.816, ns
Behavioral Disengagement	4.93	3.70	6.99	<.001
Religion	4.86	5.66	-4.91	<.001
Emotional Support	4.71	5.79	-5.76	<.001
Substance Use	4.63	2.86	6.97	<.001
Positive Reframing	4.55	5.85	-6.44	<.001
Denial	4.42	3.73	3.84	<.001
Humor	3.90	3.86	0.27	.787, ns

Figure 2: Paired samples *t*-tests revealed significant changes in coping strategies from pre-test to post-test for all subscales except self-distraction, venting, and humor ($p < .01$).

Short Grit Scale (Grit-S)

On the Grit-S (8 questions), participants could receive a score ranging from 1 (not at all gritty) to 5 (extremely gritty).

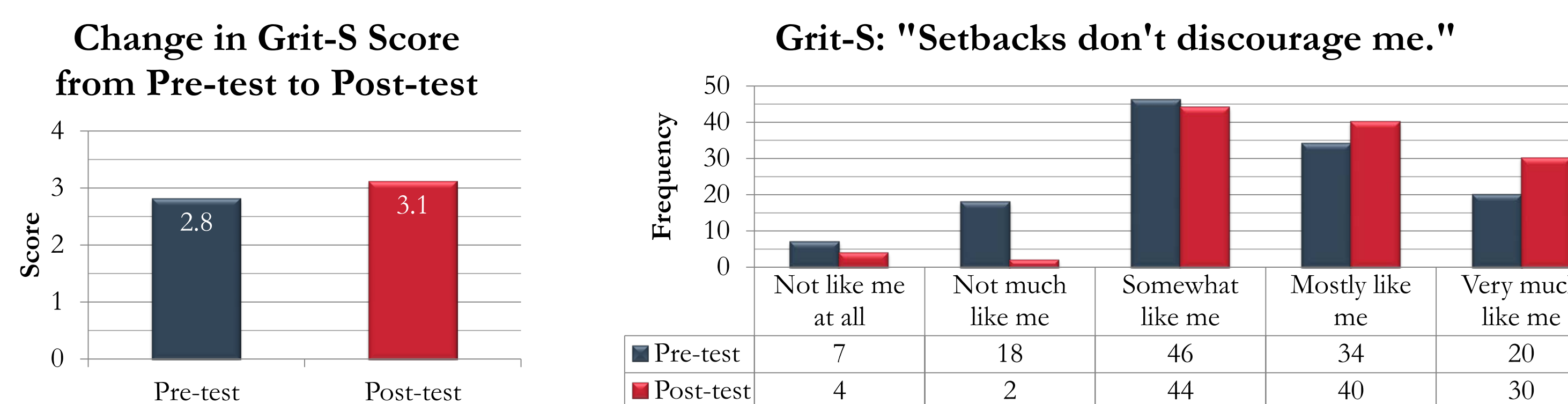


Figure 3: A paired samples-test revealed a significant increase in Grit-S score from pre-test to post-test ($p < .01$). A sample of the change to one of the Grit-S questions is depicted on the right.

Mindful Attention Awareness Scale (MAAS)

On the MAAS (15 questions), participants could receive a score ranging from 1 to 6; higher scores reflect higher levels of dispositional mindfulness.

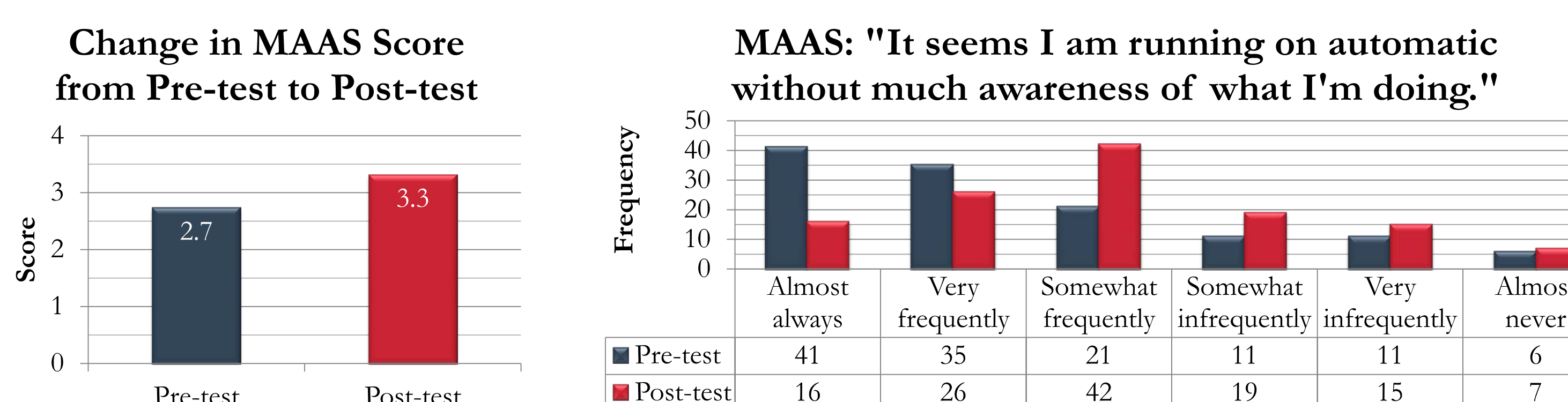


Figure 4: A paired samples-test revealed a significant increase in MAAS score from pre-test to post-test ($p < .01$). A sample of the change to one of the MAAS questions is depicted on the right.

PTSD Symptoms

The PTSD Checklist (PCL) and the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) are the gold standard in clinical PTSD assessment. The outcome measures indicate a clear, significant reduction in PTSD symptoms.

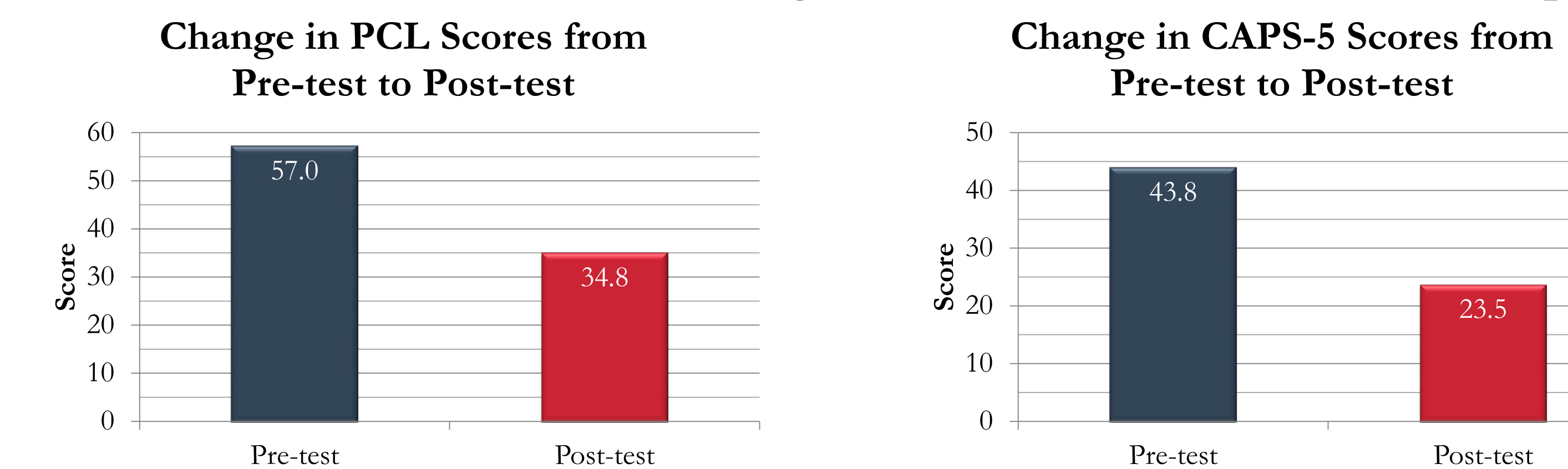


Figure 5: Paired samples-tests revealed significant reductions in PCL and CAPS-5 scores from pre-test to post-test ($p < .01$).

Perceived Physical and Emotional Well-being

Before and after each MYT session, participants were asked to rate their perceived physical and emotional health from 1 (poor) to 5 (excellent).

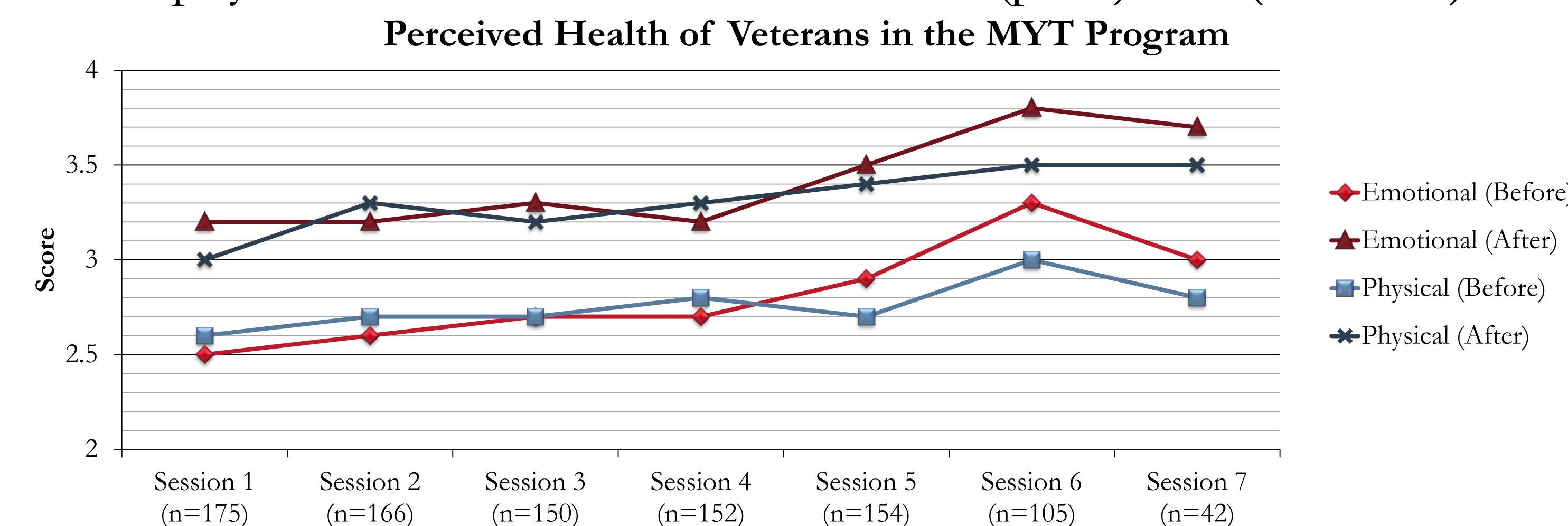


Figure 6: For all sessions, participants perceived their physical and emotional health to be greater at the end of the session compared to the beginning. Furthermore, self-reported health gradually improved as participants attended more sessions.

Conclusions

The MYT program had a positive impact on the psychological, emotional, and physical well-being of veterans with PTSD/TBI. In addition to significant changes from pre-test to post-test, participants engaged in focus groups to discuss how they had used the skills learned in MYT outside of the classroom to relieve pain, identifying skill utility/queuing during CPT sessions, manage anger, facilitate sleep, and make better choices. Future studies will evaluate the long-term impact of the program as well as compare outcomes for veterans completing the 7-week or 8-week MYT program with veterans not receiving MYT as part of their clinical therapy protocol.

Acknowledgments

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