Empirical Summary
New Haven Retreat Results
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Overall Summary
This retreat works, and gains are maintained up through 1 year later. Every outcome measure that we examined was significant in the expected directions. Participants of the retreat experienced an increase in wellbeing/life satisfaction, coping self-efficacy, social support, and trauma education, and experienced a decrease in PTSD. The control group did not experience these same effects. Therefore, this retreat not only decreases mental distress symptoms, but increases positive mental health symptoms.

What Analyses Were Run?
We ran multilevel growth curve models to examine the change in wellbeing, social support, PTSD, coping self-efficacy, and education over time. For the analyses of the treatment group, we compared whether linear, quadratic, cubic, or logarithmic growth curves best fit the analyses.

How Were Groups Compared?
We compared a treatment group, who was measured on six time points (baseline; pre-retreat; post-retreat; 3-months; 6-months; 12-months) with a control group, who was measured at two time points (baseline; baseline).

What Did We Find?
The following were measured as outcome variables.

Analysis of Wellbeing (WHO-5)
The treatment group’s model was best fit as a quadratic model. This means that scores initially increased but are projected to slightly decrease (or slow) over time. The slope of this model was significant ($b = 0.16, p < .001$).

The control group did not exhibit a significant increase in wellbeing across time points ($b = 0.01, p = .912$). See Figures 1 and 2 below.

Analysis of Social Support (SSQ-6)
The treatment group’s model was best fit as a quadratic model. This means that scores initially increased but are projected to slightly decrease (or slow) over time. The slope of this model was significant ($b = 0.06, p < .001$).
The control group did not exhibit a significant increase in social support across time points \((b = -0.46, p = .33)\). See Figures 3 and 4 below.

**Analysis of PTSD (PCL-20)**

The treatment group’s model was best fit as a cubic model. This means that scores decreased fairly consistently over time. The slope of this model was significant \((b = -0.20, p < .001)\).

The control group did not exhibit a significant decrease in PTSD scores across time points \((b = 0.08, p = .08)\). See Figures 5 and 6 below.

**Analysis of Coping Self-Efficacy (CSE-7)**

The treatment group’s model was best fit as a cubic model. This means that scores increased fairly consistently over time. The slope of this model was significant \((b = 0.31, p < .001)\).

The control group did not exhibit a significant increase in coping self-efficacy scores across time points. In fact, the control group exhibited a significant decrease in coping self-efficacy over time – suggesting that those who did not receive treatment worsened over time \((b = -0.19, p < .05)\). See Figures 7 and 8 below.

**Analysis of Belief that Group Therapy Can Help Me Heal**

The treatment group’s model was best fit as a quadratic model. This means that scores initially increased but are projected to slightly decrease (or slow) over time. The slope of this model was significant \((b = 0.09, p < .001)\).

The control group did not exhibit a significant increase in this belief across time points \((b = 0.05, p = .511)\). See Figures 9 and 10 below.

**Analysis of Belief That I Can Heal**

The treatment group’s model was best fit as a quadratic model. This means that scores initially increased but are projected to slightly decrease (or slow) over time. The slope of this model was significant \((b = 0.11, p < .001)\).

The control group did not exhibit a significant increase in this belief across time points \((b = 0.11, p = .189)\). See Figures 11 and 12 below.

**Analysis of Education**

The treatment group’s model was best fit as a cubic model. This means that scores increased fairly consistently over time. The slope of this model was significant \((b = 0.39, p < .001)\).

The control group did not exhibit a significant increase in education scores across time points \((b = 0.04, p = .56)\). See Figures 13 and 14 below.
Analysis of Yoga Education:

The model of the group who took yoga was best fit as a cubic model. This means that scores increased fairly consistently over time. The slope of the model was significant ($b = .16, p < .001$).

The control group did not exhibit as significant increase in yoga education scores across time points ($b = -0.17, p = .241$). See Figures 15 and 16 below.

Analysis of Muay Thai Education:

The model of the group who took Muay Thai was best fit as a cubic model. This means that scores increased fairly consistently over time. The slope of the model was significant ($b = .30, p < .001$).

The control group did not exhibit a significant increase in Muay Thai education scores across time points ($b = -0.11, p = .430$). See Figures 17 and 18 below.

The Influence of Yoga and Muay Thai

Moderation Analysis: Neither yoga nor Muay Thai was a significant moderator of the relationship between mental health scores and time. This means that the overall trajectories over time did not look significantly different for those who took or did not take yoga and/or Muay Thai.

However, Muay Thai was trending toward significance in the moderation of the linear relationship between PTSD symptoms and time ($p = .083$). It is possible that with less missing data and/or a larger sample, this result would be significant.

Yoga was trending toward significance in the moderation of the linear relationship between social support and time ($p = .056$). It is possible that with less missing data and/or a larger sample, this result would be significant.

Yoga was trending toward significance in the moderation of the linear relationship between wellbeing and time ($b = .11, p = .067$). It is possible that with less missing data and/or a larger sample, this result would be significant.

Some main effects were present. Only the significant main effects are listed below:

WHO 5, Yoga: People who took the yoga class experienced a .39 increase in wellbeing compared to those who did not take yoga ($p < .001$).

WHO 5, Muay Thai: People who took the Muay Thai class experienced a .44 increase in wellbeing compared to those who did not take the Muay Thai class ($p = .001$).
PTSD, Muay Thai: People who took the Muay Thai class experienced a .11 decrease in PTSD symptoms compared to those who did not take the Muay Thai class ($p < .05$). **Note:** Yoga was trending toward significance ($b = -0.09$, $p = .09$).

Coping Self-Efficacy, Yoga: People who took the yoga class experienced a .43 increase in coping self-efficacy compared to those who did not take the yoga class ($p < .001$).

Coping Self-Efficacy, Muay Thai: People who took the Muay Thai class experienced a .37 increase in coping self-efficacy compared to those who did not take the yoga class ($p < .001$).

**Which Educational Components were Most Important?**

Different educational components were more important than others, depending on which outcome measure we looked at. Interestingly, only the educational component on how trauma affects the body was the only educational component that was not significantly related to any of our outcomes.

- **WHO 5:**
  - An increase in knowing how to focus on empowering thoughts and feelings was associated with an increase in wellbeing ($b = .14$, $p < .01$).
  - An increase in being able to describe how trauma affects the brain was associated with an increase in wellbeing ($b = .11$, $p < .05$).

- **Social Support:**
  - Understanding how to acknowledge the reality of the traumatic experience was associated with an increase in social support ($b = .09$, $p < .05$).

- **PTSD:**
  - An increase in knowing how to focus on empowering thoughts and feelings was associated with a decrease in PTSD ($b = -.09$, $p < .01$).
  - Understanding how to acknowledge the reality of the traumatic experience was associated with a decrease in PTSD ($b = -0.08$, $p < .01$).
  - Understanding how to stay in the present moment when faced with a trigger was associated with a decrease in PTSD ($b = -.06$, $p < .05$).

- **Coping Self-Efficacy**
  - Understanding how to stay in the present moment when faced with a trigger was associated with an increase in coping self-efficacy ($b = .19$, $p < .001$).
  - Understanding how to acknowledge the reality of the traumatic experience was associated with an increase in coping self-efficacy ($b = .16$, $p < .01$).
  - Understanding how to objectively observe negative thoughts, feelings, and memories was associated with an increase in coping self-efficacy ($b = .11$, $p < .05$).
  - An increase in knowing how to focus on empowering thoughts and feelings was associated with an increase in coping self-efficacy ($b = .21$, $p < .001$).
What are the Effects of Outpatient Therapy, Outpatient Activity, and the Online Course?
Unfortunately, we had too many missing variables on these measures to come to conclusive findings (approximately 90% of the data were missing on these variables).

The Influence of Beliefs about Self and Group Therapy

**Moderation Analysis:** These beliefs moderated some relationships in our analyses. The statistically significant relationships are described below:

- **WHO-5:**
  - An increase in the belief that they can heal was associated with an increase in the overall relationship between wellbeing and time ($b = .09, p < .01$).
  - An increase in the belief that group therapy can help was associated with an increase in the overall relationship between wellbeing and time ($b = .05, p < .05$)

- **SSQ-6:**
  - An increase in the belief that they can heal was associated with an increase in the overall relationship between social support and time ($b = .05, p < .01$).

- **PTSD:**
  - An increase in the belief that they can heal was associated with a decrease in the linear relationship between PTSD and time ($b = -0.07, p < .001$).
  - **Note:** the belief that group therapy can help them heal was approaching significance ($b = -0.02, p = 0.053$).

- **Coping Self-Efficacy:**
  - An increase in the belief that they can heal was associated with an increase in the overall relationship between coping self-efficacy and time ($b = 0.15, p < .001$).

- **Education:**
  - An increase in the belief that they can heal was associated with an increase in the relationship between education and time ($b = .05, p < .05$)
Figure 1. Treatment Group, Wellbeing (WHO-5)
Multilevel Quadratic Growth Curve Model of Wellbeing Scores Across Time Points
Figure 2. Control Group, Wellbeing (WHO-5)
Multilevel Linear Model of Wellbeing Scores Across Time Points
Figure 3. Treatment Group, Social Support (SSQ-6)
Multilevel Quadratic Growth Curve Model of Social Support Scores Across Time Points
Figure 4. Control Group, Social Support (SSQ-6)
Multilevel Linear Model of Social Support Scores Across Time Points
Figure 5. Treatment Group, PTSD (PCL-20)
Multilevel Cubic Growth Curve Model of PTSD Scores Across Time Points
Figure 6. Control Group, PTSD (PCL-20)
Multilevel Linear Model of PTSD Scores Across Time Points
Figure 7. Treatment Group, Coping Self-Efficacy (CSE-7)
Multilevel Cubic Growth Curve Model of Coping Self-Efficacy Scores Across Time Points
Figure 8. Control Group, CSE-7
Multilevel Linear Model of Coping Self-Efficacy Scores Across Time Points
Figure 9. Treatment Group, Group Therapy Can Help Me Heal
Multilevel Quadratic Growth Curve Model of Group Therapy Belief Scores Across Time Points
Figure 10. Control Group, Group Therapy Can Help Me Heal
Multilevel Linear Model of Group Therapy Belief Scores Across Time Points
Figure 11. Treatment Group, Believe That I Can Heal
Multilevel Quadratic Growth Curve Model of Education Scores Across Time Points
Figure 12. Treatment Group, Believe That I Can Heal
Multilevel Linear Model of Beliefs about Healing Scores Across Time Points
Figure 13. Treatment Group, Education
Multilevel Cubic Growth Curve Model of Education Scores Across Time Points
Figure 14. Control Group, Education
Multilevel Linear Model of Education Scores Across Time Points

[Graph showing the multilevel linear model of education scores across time points, with a horizontal line indicating no change over time.]
Figure 15. Treatment Group (restricted to those who took Yoga), Yoga Education Multilevel Cubic Growth Curve Model of Yoga Education Scores Across Time Points
Figure 16. Control Group, Yoga Education
Multilevel Linear Model of Education Scores Across Time Points
Figure 17. Treatment Group (restricted to those who took Muay Thai), Muay Thai Education Multilevel Cubic Growth Curve Model of Muay Thai Education Scores Across Time Points
Figure 18. Control Group, Muay Thai Education
Multilevel Linear Model of Muay Thai Education Scores Across Time Points