

The Feasibility of a Positive Psychology Group Intervention for Patients with Multiple Sclerosis

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Background

Living with multiple sclerosis (MS) presents a significant challenge for many patients. Depression and anxiety are common, occurring in up to 50% and 15% of patients, respectively [1]. One factor that may play an important role in adaptation to chronic disease is optimism [2]. Positive psychology (PP) uses targeted activities to increase the frequency and intensity of positive emotional experiences such as optimism [3]. PP interventions have successfully improved several patient reported outcomes (PROs) in healthy subjects as well as subjects with cardiovascular and other diseases, but have not been used in MS. There is a strong need for novel psychosocial interventions to facilitate adjustment and improve health-related quality of life (HRQOL) in individuals facing the many challenges of living with MS.

Objectives

- Evaluate the feasibility and tolerability of a five-week group PP training intervention for MS patients.
- Examine the efficacy of group PP training to increase optimism and positive affect.

Methods

- Participants (n=11) were recruited from the Comprehensive Longitudinal Investigation of Multiple Sclerosis at the Brigham and Women's Hospital, Partners MS Center (CLIMB).
- All participants were female and their ages ranged from 36-62 (mean=53.5)
- Subjects completed five consecutive weeks of group PP training in groups of 3-5. The groups met once per week, with sessions lasting from 45-60 minutes.
- Participants were assigned a weekly exercise to complete in between sessions, which would be discussed at the following group meeting.
- In addition, participants completed a battery of PROs and cognitive measures pre and post intervention. The change in scores for each PRO was assessed using a paired t-test.
- The battery consisted of:
 - Life Orientation Test (LOT-R)**: a 10-item measure of optimism and pessimism.
 - Positive and Negative Affect Scale (PANAS)**: a 20-item questionnaire comprised of two mood scales, one measuring positive affect and the other measuring negative affect.
 - Short Form 36 Healthy Survey (SF-36)**: a generic measure of HRQOL. It yields an 8-scale profile of functional health as well as physical and mental health summary scores.
 - Center for Epidemiologic Studies Depression Scale (CES-D)**: a 20-item self-report measure of depression focused on the cognitive and affective rather than the somatic components of depression.
 - State Trait Anxiety Inventory (STAI)**: two 20-item questionnaires designed to measure the current temporary condition of "state" anxiety and the general and long-standing quality of "trait" anxiety.
 - Symbol Digit Modalities Test (SDMT)**: measures working memory and speed of information processing.

Table 1. Demographics

| | Participated | Declined | p-value |
|-------------------------------------|--------------|-------------|---------|
| N | 11 | 47 | <NA> |
| % female | 100 | 70.2 | 0.0502 |
| % white | 81.8 | 91.5 | 0.3178 |
| % hispanic | 9.1 | 4.3 | 0.4745 |
| Age (years, Mean (SD)) | 53.5 (7.4) | 48.9 (11.7) | 0.0552 |
| Disease duration (years, Mean (SD)) | 20.7 (6.9) | 15.8 (7.6) | 0.0552 |
| EDSS (Median (Range)) | 2 (1, 6.5) | 1.5 (0, 7) | 0.105 |
| % RRMS/CIS | 81.8 | 87.2 | 0.6391 |
| % not fully employed | 81.8 | 31.9 | 0.0048 |

Intervention

Week 1 – Gratitude for Positive Events

- Participants were asked to recall three positive events that occurred in the past week and to write about the events and how the events made them feel.
- It is important to search for good things that have happened despite living with the stress of a chronic illness.

Week 2 – Personal Strengths

- Participants completed a brief survey of personal strengths and selected a strength (i.e., perseverance, humility) to use deliberately within the next 24 hours. They then wrote about how they used the strength and how they felt while using it.
- Using strengths boosts self-esteem, increases energy, reduces stress, and increases feelings of productivity.

Week 3 – Gratitude Letter

- Participants were asked to recall another individual's kind act that resulted in joy, relief, serenity, or other positive feelings. They then wrote a letter describing feelings of gratitude associated with this event.
- Life satisfaction depends far less on actual events, and more on what we decide to pay attention to.

Week 4 – Enjoyable and Meaningful Activities

- Participants were asked to intentionally complete three acts in a single day- a pleasurable act done alone, a pleasurable act done with others, and a meaningful or important act.
- Variety and novelty are important to having and maintaining a satisfying lifestyle.

Week 5 – Remembering Past Successes

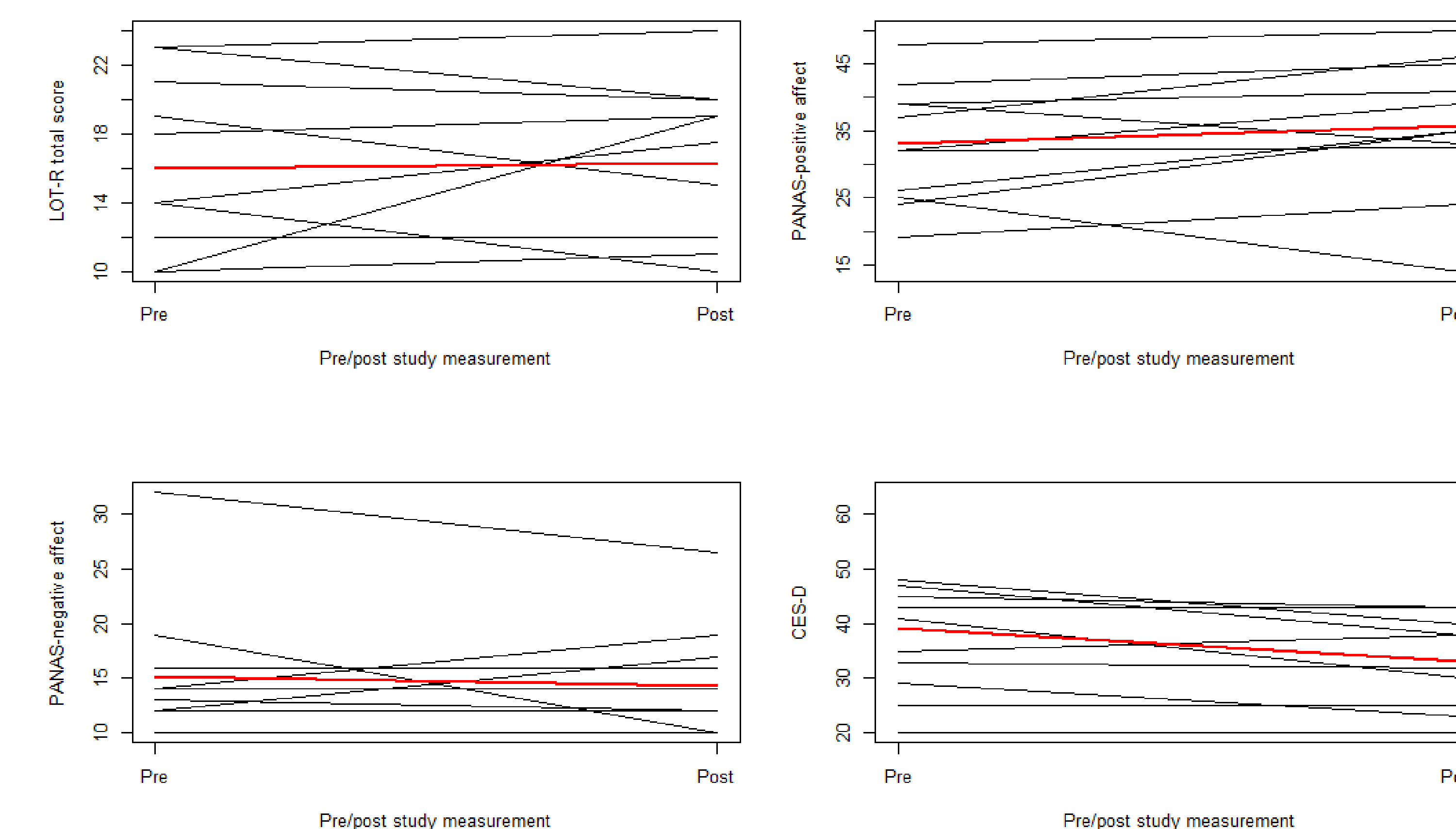
- Participants were asked to focus on a time when they experienced success and write about the event and the positive feelings they had during the event.
- Our strengths and accomplishments can teach us about how we can have success in the future, in all things including our health.

Results

Table 2. Patient Reported Outcomes

| | Baseline | Follow-up | Change | p-value | 95% CI |
|----------------------------|-------------|-------------|-------------|---------|-------------|
| LOT-R | 16 (5) | 16.3 (4.6) | 0.3 (3.7) | 0.781 | -2.17,2.81 |
| PANAS_pos | 33 (8.9) | 35.9 (10.3) | 2.9 (6.6) | 0.183 | -1.6,7.33 |
| PANAS_neg | 15.2 (6.5) | 14.3 (5.1) | -0.6 (4.2) | 0.689 | -3.56,2.46 |
| CES-D | 39.1 (12.4) | 33.2 (8.4) | -3.4 (4.7) | 0.049 | -6.78,-0.02 |
| STAI_state | 38.4 (12.4) | 34.5 (14.4) | -3.9 (15.1) | 0.411 | -14.06,6.24 |
| STAI_trait | 43.5 (17.4) | 35.6 (10.1) | -6.5 (13.9) | 0.173 | -16.44,3.44 |
| SF-36_Physical functioning | 42.5 (12.7) | 46.7 (9.8) | 2 (5.5) | 0.287 | -1.96,5.89 |
| SF-36_Role physical | 35.4 (10) | 37.4 (12.5) | 2 (6.7) | 0.341 | -2.48,6.51 |
| SF-36_Bodily pain | 42.4 (10.6) | 45.3 (13.7) | 2.2 (12) | 0.574 | -6.36,10.78 |
| SF-36_General health | 38.4 (8.5) | 43.2 (9.9) | 3.4 (7.8) | 0.294 | -3.84,10.64 |
| SF-36_Vitality | 39.3 (13.6) | 44.9 (10.5) | 4.6 (4.9) | 0.016 | 1.08,8.02 |
| SF-36_Social functioning | 39 (14.4) | 40.6 (13.2) | 1.5 (6.7) | 0.465 | -2.95,5.99 |
| SF-36_Role emotional | 41.9 (14.5) | 42.8 (13.6) | 0.9 (11.5) | 0.796 | -6.79,8.62 |
| SF-36_Mental health | 41 (12.5) | 45.8 (13.4) | 4.8 (8.8) | 0.098 | -1.08,10.77 |
| SF-36_Physical composite | 38 (9.8) | 47.1 (10.3) | 1.3 (9.2) | 0.736 | -8.29,10.96 |
| SF-36_Mental composite | 41 (13.3) | 42.1 (14.8) | 4.2 (12.7) | 0.455 | -9.16,17.58 |
| SDMT | 47 (14) | 49.7 (19.1) | 1.1 (7.3) | 0.646 | -4.14,6.34 |

Figure 1. PROs Pre and Post Study Intervention



- The primary outcome of the study was the proportion of subjects who completed the five weeks in order to measure feasibility and tolerability of the intervention.
- All participants completed the intervention (proportion completed=1; 95% CI: 0.72, 1), demonstrating the feasibility and tolerability of the intervention.
- For each PRO, the mean change showed a positive effect of the intervention.
- In particular, optimism, positive affect, and quality of life were all observed to increase, while negative affect, depression, and anxiety were all observed to decrease.
- Despite the constancy of the direction, only changes on the vitality subscale of the SF-36 (p=0.016) and the CES-D (p=0.049) were statistically significant.

Conclusion

Our study demonstrates that group PP is a feasible intervention that should be studied further in larger numbers of MS subjects. Though this intervention is feasible and tolerable, barriers are not uncommon when it comes to participation. Participating in such an intensive intervention can be hard for those who work full-time, have a high EDSS, live far, or rely on others for transportation. Of the 58 patients we approached, 53 expressed interest in the intervention regardless of whether or not they were able to commit to the 5 consecutive weeks. For future PP interventions, considering an online group may be helpful in increasing enrollment.

References

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