

Abstract

Treatment addressed brain activity readings, long history of childhood sexual abuse (CSA), and posttraumatic stress disorder symptoms. Researchers examine the potential benefits of adding a Neurofeedback and Biofeedback training to Cognitive Processing Therapy. Researchers found improvements on posttraumatic stress disorder and other related psychological symptoms in women who had experienced sexual abuse. Participant symptomatology was tracked using the Patient Health Questionnaire and Posttraumatic Checklist for DSM-5 over the course of 12 sessions. Symptoms were significantly reduced by the end of the 12-week therapy with the most improvement showed by the fifth session. Researchers developed a PTSD treatment protocol where Biofeedback, Neurofeedback, and Cognitive Behavioral Therapy are utilized to treat clients at InMindOut Emotional Wellness Center, LLC.

Introduction

One out of three women in the United States have been victims of sexual abuse before the age of eighteen. One of the most common effects of sexual assault is the development of Post-traumatic Stress Disorder (PTSD). PTSD was first included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) of the American Psychiatric Association. Cognitive Processing Therapy (CPT) is an evidence-based, cognitive-behavioral treatment shown to reduce trauma related symptoms in people who have experienced traumatic events, including sexual abuse (Resick et al., 2017). The CPT intervention is designed to last 12 sessions excluding the pre-treatment screening session.

Identifying physiological reactions is most beneficial to support individuals with PTSD recovery. Biofeedback is a subset of applied psychophysiology, where the physiological signals produced by the body are used as a psychophysiological mirror. Biofeedback monitors an array of physiological signals. People who are diagnosed with PTSD show elevated brain activity, especially the right parietal area (Cavtat, Croatia & Roy, 2006). Physiological states and brain wave activity associated with clients with PTSD can be trained with biofeedback and neurofeedback. In Neurofeedback, clients learn to become aware of brain activity, in order to consciously alter such activity. This is done by recording brain waves with an electroencephalogram (EEG) and presenting the data visually or audibly to the clients. Rewarding higher levels of a particular frequency, (namely 6-9HZ) which is the upper level of theta and lower levels of alpha to achieve deep relaxation, promote a lower arousal psychological state, thus reducing symptoms associated with PTSD (Peniston & Kulkosky, 1991).

The use of biofeedback and neurofeedback training in combination with evidence based treatment protocols, like CPT, has not been reported in the most recent literature. Liedl and colleagues (2011) conducted two treatment groups with refugees who reported experiencing traumatic events. One group was treated with CBT and only the treatment group and the other group was treated with CBT and Biofeedback (CBT-BF) treatment. Participants from the CBT-BF group reported greater improvements utilizing coping skills with their PTSD symptoms and experienced a significant reduction in pain (Liedl et al., 2011).

Methods

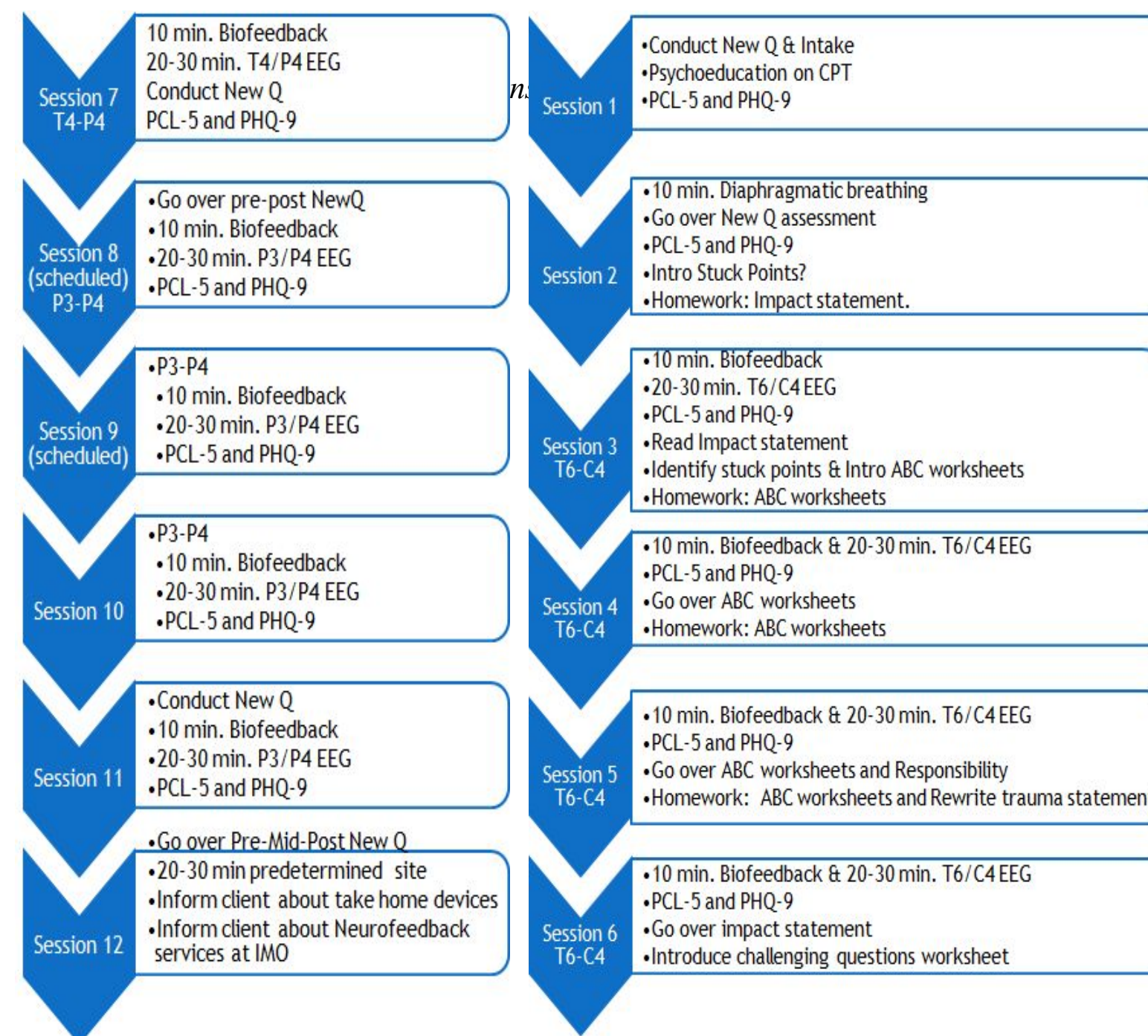
The purpose of this pilot study was to treat individuals diagnosed with PTSD with Biofeedback and Neurofeedback training along with Cognitive Processing Therapy (CPT), an evidence-based-treatment used to treat individuals with PTSD.

Participants

Three participants were recruited for this pilot study. They were all females, ages 21-43, who reported experiencing emotional, physical, or sexual abuse from a previous partners.

Materials

The researchers conducted the study at the Biofeedback and Neurofeedback practicum site InMindOut Emotional Wellness Center, LLC. where both of the researchers are doctoral practicum students under the supervision of a Neurofeedback and Biofeedback Board Certified Psychologist. Researchers used a NeXus-10 MKII digital amplifier with respective sensors to monitor the participant's temperature, breaths per minute, heart rate, alpha, theta, and beta brain activity.



Results

Pre-treatment and post-treatment metrics for all participants.

Measures	Participant A		Participant B		Participant C	
	Pre	Post	Pre	Post	Pre	Post
BPM	18	17.75	8	7	17.5	9.75
HR Min	69.19	60.47	78.37	77.58	67.37	66.78
HR Max	91.43	105.21	106.67	103.79	89.31	94.82
HR Mean	78.00	87.65	93.30	91.92	78.85	81.05
HRV Score	22.24	44.74	28.30	26.21	21.94	28.04
C4 Alpha Amplitude	-9.11	7.09	-1.01	2.18	-9.97	12.82
C4 Theta Amplitude	26.42	-1	-.52	-2.44	20.97	-7.56
PCL-5	58	18	39	2.5	60	29
PHQ-9	20	13	10	.5	21	12

Conclusion

The researchers in this study aimed to examine the effects of the combined treatment of Cognitive Processing Therapy (CPT), an evidence-based treatment, with Neurofeedback for Post-Traumatic Stress Disorder. The results indicate **positive outcomes experienced with combined treatment (CPT and Biofeedback and Neurofeedback) across the three participants.** These results suggest this treatment is associated with a decrease in PTSD symptomatology, increased heart rate variability, and increased development and use of coping skills. This study reveals the need for further exploration of these combined treatments.

Future pilot treatment studies include treating a group of participants with CPT only as the control group to compare the treatment effectiveness between treatment groups. It is our hope in the future to be able to claim that the use of biofeedback- neurofeedback training along with CPT in treating PTSD can be considered a Level 3: Probably Efficacious treatment.



References

