A Case Study: Treating Anxiety with Neurofeedback

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Introduction

Client Information:

- Male
- Age 21
- Hispanic
- Lives at home with family

Presenting Symptoms:

- Avoids public places
- Obsessive tendencies
- Problems making friends
- Paranoid behaviors
- Judgmental
- Self-conscious
- Unstable sleep patterns
- Lack of motivation
- Attention Issues
- Jaw pain
- Racing thoughts
- Eye contact avoidance

The client in this case study experienced debilitating anxiety to the point he was limited to leaving his house. He expressed an inability to pay attention during his college classes due to racing thoughts and anxiety related affects, such as sweaty palms, jaw pain and nervousness. The client suffered multiple childhood traumas, which contributed to his anxiety. In June of 2015 he became a participant in our neurofeedback anxiety study at the Sarabia Centers Neurofeedback Clinic. We collected a quantitative electroencephalogram using eyes open and eyes closed data. In addition, a Clinical Q was performed as an adjunct for data collection. Dr. Mark Jones reviewed all collected QEEG data and created a protocol for the client's treatment.

What is Neurofeedback?

The process of normalizing brainwaves in specific regions of the brain which control cognitive processes and emotional states. (Demos, 2005)

EEG driven neurofeedback is based on two basic tenets: that brain electrical activity reflects mental states and that the activity can be trained. (Michael Thompson, 2015)

Materials & Methods

Neurofeedback - Utilizing Bioexplorer Software & Brainmaster Amplifer

Total Neurofeedback Sessions 14

Length of Sessions –

30 minutes NFB

1 Channel Placement at FZ

Training Protocol –

Decrease Theta/Alpha 5-9

Increase SMR 12-15

Decrease High Beta 25-30

Feedback Type:

Sessions 1 & 2 – Balloon Invaders - Client uses state of mind to provoke the animated fox to throw darts popping balloons – When the participant reaches the goal popping all of the balloons the game begins again

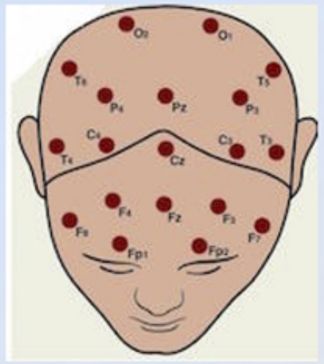
Sessions 3 to 14 – Cartoons including Bugs Bunny, Tom and Jerry, and Frozen

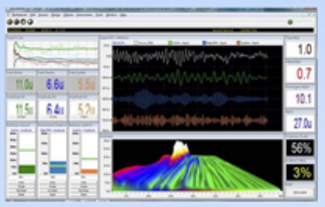
Session Goals – The training involved changing brainwave patterns in the frontal area of the brain. Client was encouraged to sit comfortably and acheive a calm alert state of mind as guided by the feedback.

Other Treatment Protocols:

In addition to neurofeedback talk therapy, and biofeedback were used as modalities to treat client's anxiety. Biofeedback was conducted using Mind Media's Biotrace+ software, and Nexus amplifier for skin conductance training. For this training visualization and intention were used as modalities for anxiety reduction. The client processed emotions regarding his progress via talk therapy and explored additional ways to overcome his anxiety related symptoms.

Charts and Figures





Results

Decreases in the Zung Anxiety Scale demonstrate improvement in anxiety related symptom.

EEG data collected from each session shows the following: The client maintained his goals of steadily lowering his Theta/Alpha band throughout the duration of his sessions. The client showed success in consistenly reducing his High Beta activity. However, the client did not meet consistent goals increasing his SMR wave band rather it slightly decreased. These changes correspond in symptom improvement.

The client's perception of neurofeedback has been positive. The client reports that he is no longer homebound and is eager to go out and about in public places, including concerts, restaurants and shopping malls. His motivation to excel and participate in life is much improved and his family reports positive changes. The clients depression is reduced and nearly absent. Although his eye contact has improved he continues to experience anxiety when attempting conversation face to face, which leads to racing, obsessive thoughts and the inability to focus. His harsh judgment of himself and others has decreased and his sleep patterns have become regulated. The client reports experiencing less paranoid behaviors. The client's jaw pain remains a side effect of his anxiety. He has self-awareness of his jaw pain and uses mindfulness and breathing exercises to release tension. As the client has progressed he longs for establishing a social circle but has found it difficult as he has been isolating himself for such a long period of time. Overall, the client reports satisfaction in neurofeedback therapy and the role the clinician played in the process.

Conclusions

Neurofeedback shows to have played a significant role in the reduction of anxiety symptoms in this client. The client's overall life view and self-motivation has shown positive improvement. The assigned protocol was effective in its implementation and the client has responded well. The positive client/clinician relationship is also a factor in the success of anxiety reduction. Blending neurofeedback with talk therapy appears to have lasting and significant effects in the clients overall well-being. The client will return to neurofeedback training in January 2016.

References

Demos, J. N. (2005). Getting Started with Neurofeedback. New York, New York: W. W. Norton & Company, Inc. .

Michael Thompson, L. T. (2015). The Neurofeedback Book (Second ed.). Toronto: Association for Applied Psychophysiology and Biofeedback.