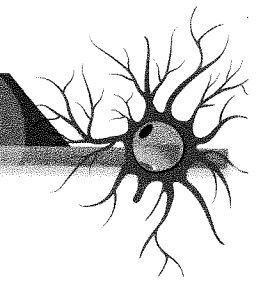

My journey into neurofeedback: Process and case study

I remember stepping into the classroom at the end of my first year of graduate school to begin learning about something called neurofeedback. At the time, all I knew was that it seemed like an interesting elective course and that it had something to do with the brain, which would help bridge the gap between my psychology undergraduate degree and the graduate counseling degree I was pursuing. Little did I know that the information from this course would continue to resonate with me throughout my budding career.

After earning my degree, I began working in a residential facility for adolescents and young adults with behavioral, mental health and developmental issues. Simply put, traditional therapies didn't work well with this population. I found myself wondering how best to help my clients and contacted the professor from my neurofeedback course, Lori Russell-Chapin. She identified how neurofeedback could help and what steps I could take to become more familiar with the process and training. Unfortunately, I didn't have my state license at the time, nor did I have the ability to pursue it further. Additionally, the company for which I worked didn't have the means to pay for this treatment.

Fast-forward five years. I was still with the same company but was now working with a population of clients who had sexual behavior problems. I continued to seek treatment interventions to best help these clients but was again falling somewhat short. Once again, I reached out to Russell-Chapin about how neurofeedback might help these clients and whether any research had been done related to sexually problematic behaviors. The sexually problematic behaviors of many of my clients could be traced back to the many different traumas they had experienced throughout their lives, including physical, sexual and emotional abuse; cognitive impairments; head injuries; traumatic emotional experiences; and negative genetic influences. This is where my career began to take a turn.

After I contacted her this time, Russell-Chapin offered to meet me for lunch to discuss different options that were available, which included getting trained in neurofeedback and joining a private practice in which I could use this intervention. Due to funding issues, it was unlikely that bringing neurofeedback to the agency in which I worked was going to be an option. So, although I enjoyed working with this particular client population and witnessing some of the benefits of that work, I knew that I wanted to explore other options and to be able to provide a new treatment for those in need. For those reasons, I felt ready to take the next step in my career. Soon thereafter, I completed a four-day, 36-hour professional training in neurofeedback and began seeing the benefits of this treatment in my own practice.

Why am I writing about this experience? First and foremost, I want to express how important it is to explore and take risks when you find something that you have an interest in and are passionate about. Had I not contacted my former professor to further discuss neurofeedback, I may not have undergone training or even been in private practice at this point in my career. Most likely, I also would have continued questioning whether I was providing my clients with the best opportunity to become mentally healthier.

Neurofeedback is not a miracle intervention, nor does every client benefit from it to the same degree. However, in the almost two years that I have been using neurofeedback in my practice, I have seen many great changes and improvements in my clients.

What is neurofeedback?

Neurofeedback, often called *biofeedback for the brain*, works by measuring brain wave activity and using rewards and inhibits to help the client's brain become more efficient through self-regulation. After a series of assessments are completed, we are able to identify specific areas in the brain that have become dysregulated due to many different factors in our lives (some of which are within our control, and others of which are outside of our control). From there, we pinpoint those areas and help the brain to self-regulate through operant and classical conditioning during a series of individual sessions.

Each client's treatment plan is tailored to his or her own individual problem areas. Therefore, this is not a one-size-fits-all intervention. Pairing conditioning with other self-regulation skills such as diaphragmatic breathing and heart rate variability training, as well as healthy lifestyle changes that include diet and exercise, our clients are able to get back to a more regulated state.

Again, I will emphasize that neurofeedback is not a miracle intervention for everyone. However, it has shown great efficacy rates for the treatment of attention-deficit/hyperactivity disorder, mood disorders, anxiety disorders, obsessive-compulsive disorder, epilepsy, substance use disorders, posttraumatic stress disorder (PTSD), autism, learning disorders, brain injury and insomnia. It is important to find a treatment provider who has been sufficiently trained and who can explain how and why this intervention works.

To better explain some of the intricacies and benefits of neurofeedback, I will share one of the cases with which I worked. To protect my client's information, I have changed her name and demographic details, but the symptoms and results have not been modified. This client is not an adolescent, nor does she exhibit sexually problematic behaviors, but because of the case's complexity, as well as the symptoms the client was experiencing, it will show how neurofeedback can be helpful for many different problems.

Case study

I met Claire after her neurologist referred her to our practice. Claire had been involved in an accident in which she had been rear-ended, causing her to have a concussion. She was struggling with post-concussion syndrome, as well as anxiety and depressive symptoms associated with the accident.

Before beginning the neurofeedback, Claire completed an extensive assessment involving several paper-and-pencil self-assessments, the test of variables of attention, a five-channel electroencephalogram (EEG) and a 19-channel EEG. These tests confirmed that there was dysregulation in the brain and that she would be a good candidate for neurofeedback. Claire also completed a problem checklist that included 62 possible symptoms. She indicated that she had 34 of these symptoms, with "foggy thinking," "lack of energy, motivation, interest" and "forgetfulness" as the top three. This checklist is important because we administer it again after 10 sessions and then again after 20 sessions to gauge the client's sense of progress.

After reviewing all of the results with Claire, we began by doing breathing exercises to help her breathe from the diaphragm. We also started heart rate variability training. These trainings are important because they help clients begin to feel an intrinsic sense of control, which can get their body into the parasympathetic response.

Claire did well with this, so we started the 20-session process of neurofeedback. We used a protocol called TAG-sync, which entrains two different spots of the brain to sync brain wave activity. The spots that we used were selected on the basis of the assessments that were done, as is the case with neurofeedback and individualization of the protocols.

Claire responded well to the sessions and indicated some changes as early as the third and fourth sessions. Of particular interest from her self-report during these sessions, Claire indicated such things as "looking around more as opposed to tunnel vision" (session three), "more present" (session four), "able to talk and cook at same time" (session six) and "able to make better plans and work through them" (session nine).

I administered the problem checklist again after the 10th session, and she noted that 15 of the 34 symptoms she originally had picked were improved, including all three of her most problematic symptoms. This was great news already, but with more work, I was confident the results could be even better.

From session 10 to session 20, new changes were being identified. Claire indicated "able to recall things well" (session 12), "remember dreams consistently" (session 13), "better planning ahead with things" (session 17) and "PTSD moment last week, but able to breathe through it" (session 20). On the symptom checklist after session 20, Claire indicated that eight more symptoms had gotten better, meaning that 23 of the original 34 symptoms had improved.

As we processed the progress Claire was experiencing and saw her brain wave activity, it was evident that the neurofeedback was achieving great results. We discussed Claire's options, which included doing more sessions, but because of concerns about money, she had not been able to complete any additional sessions at the time of this writing. Fortunately, her results likely will be sustained until any new or additional dysregulation occurs. Claire now possesses tools to use during times of extra stress or anxiety, in addition to a more regulated brain that will allow for better problem-solving and overall functioning.

Conclusion

Although neurofeedback can't be expected to produce the same results in all cases, this case study provides a look at what the intervention has to offer when other options have been exhausted. Often, I see clients who have been to several different counselors, each of whom offers his or her own benefits, but these clients still feel that something is missing.

Neurofeedback offers a way for clients to regulate their brains through a process that is unlike that of traditional counseling. Through classical and operant conditioning, we are able to regulate brain wave activity as a way to allow for more effective intake of information and reasoning. Although the upfront costs may be a bit of a shock, this treatment process has been found to be effective for many different disorders and may serve as that last missing piece to help clients achieve a sense of peace.

To explore more about neurofeedback, or to find a board-certified treatment provider in your area, visit the International Society for Neurofeedback and Research at *isnr.org* or our practice's website at *ChapinandRussell.com/neurotherapy*. ❖

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