

HOME / REMOTE TRAINING BEST PRACTICES

Key words: neurofeedback, NFB, home NFB training, remote NFB training.

Introduction

Neurofeedback (NFB) home training has been used for many years. However, it has become more popular and an essential method for continuing clients/patients who began NFB prior to the COVID 19 pandemic and still need continuing NFB as well as new clients/patients (trainees) who wish to begin NFB training.

NFB remote training has also gained popularity in recent years. It is anticipated that home/remote training (HRT) will continue to become more widely used as the predictions currently indicate another outbreak during the fall of 2020. Further, these approaches, can facilitate those living in rural or remote areas who otherwise could not access such services.

In these best practices, we will address some of the methodological, clinical, technical, and legal aspects of HRT NFB. This method of training is used in homes, schools, health care related offices/practices, satellite offices of clinical practices, and residential centers where the NFB clinician or NFB technician may not be physically present during sessions but still has the ability to have professional oversight to maintain proper use of these tools.

Additionally, these best practices will address the NFB protocols and considerations clinicians will find helpful in providing and overseeing HRT.

Definitions

1. What is the difference between home training versus remote training?

Home training and remote training are not the same. Remote training involves NFB being remotely supervised by qualified practitioners, via webcam for example, where it can be possible to remotely supervise the client/patient (trainee), the set-up, the protocols, the sessions, etc., ideally, even remotely control the software. In some cases, remote training may be executed via a specific business model. With remote training, a clinician or technician logs in from a remote location and runs a system in the home/office/school where the trainee and technician see each other by webcam and the session is actually run by the tech but the training is done in the remote location.

Home training typically involves a family member being trained how to use equipment that is most often leased to the trainee to use at home; or a headset with preset protocols and/or clinician guided training protocols and montages designed for home training in which the practitioner can review the sessions and the compliance offline. With some software the home training sessions can be remotely assisted and/or monitored in real time. Preferably the trainee performed sessions at the clinician's office and should regularly be followed-up in person. The trainee then runs sessions at home which may or may not be directly supervised. The clinician or technician reviews and makes sure sessions are being done and the reward and effectiveness of the protocol is monitored post training when NFB training is conducted.

2. What should the customer look for in seeking a professional service?

The potential HRT trainee should look for a qualified and experienced clinician who is familiar with and has successfully used HRT.

3. What kind of client is most viable for HRT?

HRT is not for everyone. HRT is for clients/patients who have been previously evaluated in person or remotely in order to determine viability for training. Persons with serious disorders (i.e., seizure disorders, stroke, etc., may require highly specialized professionals in order to determine potential benefit and safety for HRT; and may not be good candidates for HRT). Each client/patient must be evaluated for his/her ability to use HRT and the benefits that are measurable. Predictability of side effects and clinical history are especially important in the case of unsupervised training.

Clinical Oversight

1. How are the sessions monitored?

There are numerous manufacturers of NFB equipment who have adapted amps for use with HRT or have separate amps designed especially for home training. Some use standard software while others have software from which the clinician can immediately review HRT sessions. Some manufactures have developed methods by which the clinician can monitor HRT sessions in real time.

2. How are decisions made regarding changes in protocols?

The clinician or a specially trained technician reviews HRT sessions and monitors trainee progress. Some systems have built in progress trackers that are tailored to the individual trainee and are filled out as directed by the clinician. The clinician or technician arranges routine methods to check in with the trainee (through online monitoring, E-mail, telemedicine and similar formats, or other agreed upon communication methods). For quick guidance telephone conversations and texts can also be helpful. Protocols can be changed remotely, depending upon the software, or the clinician or technician establishes

a method by which protocols can be modified, updated or changed based upon the trainee's progress.

3. What are credentials/experience of the decision maker regarding training protocols?

There are various levels of training practitioners can pursue. Initial training on how to use equipment is commonly acquired through the manufacturer of the equipment. Most common is to become certified through the Biofeedback Certification International Alliance (BCIA) which requires that the clinician complete 36 hours of didactic training, complete a course in neuroanatomy, 25 hours of mentoring by a BCIA certified practitioner, and pass an exam.

4. What are the criteria that defines achieving successful outcomes?

In general, successful outcomes are achieved when the trainee reports significant reduction or elimination of presenting symptoms, i.e., insomnia, anxiety, depression, attentional deficits, cognitive deficits. Some providers prefer to substantiate claims of improvement by using well standardized measures of attention, mood issues, etc., that psychologists and others often use to "assess" such conditions. Another factor in successful outcomes is the collaborative relationship between client and clinician, as coaching by the clinician is an integral part of NFB training for all clients. The HRT criteria of successful outcomes are the same criteria used for in office training: reduction or elimination of presenting symptoms combined with a clinical evaluation and NFB data.

5. How is progress, success attainment, and termination managed and reported to client?

NFB practitioners use various methods to determine the trainee's progress. Typically, the targeted measures in key brain regions are demonstrated to move toward and fall into the range expected for the age of the patient. External measures that have been normed to monitor mood, or attention, or aspects of cognition of mood to demonstrate that behavior functioning has actually improved as a result of the NFB protocol are used as well. In addition, factors such as progress tracking, client self-report, symptom reduction, and session trend screens are all collaborative efforts of the clinician and client in determining success attainment and termination of training and treatment.

The same criteria are used with HRT as with in office training. Progress tracking, client self-report, symptom reduction, NFB session trend screens, remapping (if possible) are all measures used to determine trainee progress.

Getting Started

Business model for home/remote training:

1. Fees to rent/lease/own equipment and time frames associated.

Many NFB Amps require the purchaser be a licensed professional. Thus, renting or leasing equipment to trainees is the most ethical method. For some clients it may be feasible to purchase equipment.

2. What is the pricing with increased numbers of hardware units versus any software tracking systems associated.

Companies producing HRT equipment and related software may have products that may be similar in versatility and type of training in some instances while different in other aspects of the type and detail of NFB they perform. Some devices have limitations to the type and number of protocols that may be available to trainees, while others provide a variety of standard and optional NFB protocol offerings. Pricing should be adjusted accordingly.

3. Does the company offer materials and support to help market the services?

Most HRT trainees will have little or no experience in participating in NFB and thus will not be familiar with preparation, electrode placement and running sessions. Companies selling HRT equipment and software should provide the necessary support to clinicians or directly to the end user trainee. In this same context, user “friendliness” for trainees should be considered when selecting equipment.

4. How does the clinicians offer “shared” use of a unit for multiple members of the family?

It is important for clinicians to have a contractual arrangement as to who may use the equipment and established protocols. It is also important for trainees to aware that other persons using a protocol designed for a specific trainee should not be shared with other persons or trainees. First, they will be reflected in the assigned trainee’s clinical record which can become confusing to determine a specific trainee’s overall progress. Second, depending on the protocol another user may experience unpleasant side effects.

It should be explained to the trainee that the equipment and protocol are assigned to a specific user, and other who use it may not get the same benefit and/or could experience unpleasant side effects. The analogy of sharing one’s prescription with another person might be helpful in trainee understanding of the importance of not sharing equipment and protocols.

Multiple users within the same family may use the same equipment (if equipment allows), provided the clinician has set up specific protocols for each trainee. Some companies and providers may set up “discounts” to share a device with individualized protocols to other family members a way to make such services more affordable and to promote the integrity of using patient specific protocols.

5. Are the sessions being charged by per use, per time period (unlimited use), or by a package plan?

Manufacturers of HRT hardware and software have differing methods by which the equipment can be used. Some include software that requires purchase per session by the clinician. Others have controls that can be set by the clinician. Frequency and number of sessions should be established and monitored by the clinician.

Hardware

Hardware should be approved as NFB equipment that specifically is measuring brain activity and providing measures that can be referenced to meaningful changes toward functional improvement (for example, in the United States, equipment may be FDA registered).

The equipment should be easy to ship to the trainee and then be returned to the clinician. While the client holds responsibility in returning NFB equipment, it is the clinician’s administrative responsibility to keep track of his/her leased and returned equipment to avoid the loss of expensive equipment. In addition, HRT equipment should be easy to use with minimum training. Basic instructions of setting up the system for remote access training should be available to the trainee.

How is the equipment managed for maintenance?

Most HRT equipment is durable and long lasting; and does not require routine maintenance. Technical problems should be referred to the clinician or manufacturer for assessment.

Software

Software should be easy to install if loading onto a laptop or tablet for remote use. Most HRT systems should be capable of running traditional training (i.e., 1 Channel, 2 Channel, 4 Channel).

In most cases, training sessions should be able to be monitored by the clinician or technician. Depending upon the equipment and software, sessions can be reviewed via internet or real time monitoring (for example, screen-sharing provides the option to

monitor the sessions in real time). In some cases, sessions may need to be uploaded to a cloud-based program or sent by E-mail in order to be monitored.

Training Points

Trainee has written best practices and videos if possible.

Ideally, trainees should have a manual, or written instructions on how to set-up sessions, require trainee preparation, and run a complete session. It is strongly recommended that the trainee come to the clinician's office where the software is set up on the trainee's laptop and the equipment and software tested. The trainee should be able to demonstrate how to setup a session, prep for the session, and then run a session with the clinician's supervision and guidance. Manufacturer's often create instructional videos for trainees to view when setting up and preparing for NFB training.

Online supervision

Clinicians should provide effective training with their clients/patients by completing at least one session from beginning to end in the clinician's office to assess and ensure the trainee's ability to run a session, operate equipment with integrity, and demonstrate user proficiency for running the device at home. However, in some instances the trainee coming to the office for training and practice may not be feasible. Therefore, the use of online supervision via the use of virtual meetings (i.e., Skype, Go-To-Meting, Zoom) can be beneficial in providing the trainee with information and guidance regarding technical support, proper care of equipment, proper use of cleaning supplies, appropriate care of electrodes, and post-session trainee cleanup.

Session Management

The clinician is responsible for proper protocol management, which includes type of session, length of session, frequency of sessions, and targeting symptoms discussed with the trainee. Time of day is also important. In general terms sessions should be run between 6:00 am and 6:00 pm and preferably at the same time on the same day. Home and remote training sessions should have comfortable seating, no distractions, no other devices or phone, and the trainee should remain still to reduce artifacts, etc.

Monitoring

The clinician/technician should have:

- 1) access to all training sessions for review.** This is often done through a) Internet based software, b) sessions saved to disk and mailed, c) sessions are E-mailed, or d) real time connectivity. Session data should be exchanged through secure data transfer connections.
- 2) A method to observe the trainee.**

Legal and Ethical Issues

Licensed clinicians need to check with their State or national licensing agency to make sure that HRT options are considered within their scope of practice and meet the Standards of Practice and Ethics. When working with out of state trainees, clinicians should be sure not to violate any ethical mandates.

Challenges

The clinician offering HRT can face several challenges when using this modality.

The first and most common is trainee compliance. When reviewing sessions, it is not uncommon to find an irregular pattern of training sessions. Several may be done one day after the other and in other circumstances, and/or display periods of 10 or more days where no session has been completed.

Misuse of equipment can also be of concern; for example, the trainee might allow others unknown to the clinician to use the equipment.

Misuse of protocols can also be a problem if the equipment is not safeguarded to prevent a trainee from altering or changing a protocol.

Progress tracking should be done at a minimum of once per week. This may be done via telephone, written summaries via Email or an online tracking system. Trainees who do not report weekly progress may not gain benefits from HRT.

Routine training is important and should be explained to the trainee before HRT begins. If the standard is to have 1-2 sessions per week in the office, the same standard should be required with HRT.

The number of sessions for HRT should be determined in the same way as if the trainee was coming into the clinician's office for training. If the same protocols are being used with HRT that would be used in the clinician's office, then the same outcomes should be expected if the trainee is executing HRT sessions properly.

Change of NFB protocols with HRT is the same as in office training.

Routine assessment (QEEG) should be done whenever possible. Some software may allow for remote assessment (in absence of ability to conduct an in office QEEG).