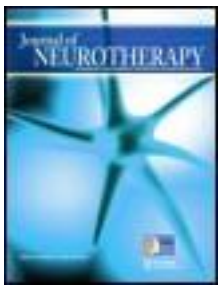

Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience

A Primer on Clinical Study Research in Neurotherapy

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Published online: 18 Oct 2008.

To cite this article: Marianne Barabasz EdD , Arreed Barabasz PhD , & Neville Blampied MSc (1996) A Primer on Clinical Stufy Research in Neurotherapy, Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience, 1:4, 12-14

To link to this article: http://dx.doi.org/10.1300/J184v01n04_02

A PRIMER ON CLINICAL CASE STUDY RESEARCH IN NEUROTHERAPY

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This article describes the need for increased clinical case study research and provides the key elements in preparing manuscripts reporting findings of such research to meet publication acceptability standards.

Experimental clinical case study research can be an important and crucial first step in furthering our knowledge in the area of neurotherapy and neurometric assessment. The key to making case study research valuable is careful observation and description (Barabasz & Barabasz, 1992). We have seen hundreds of case interventions by psychologists and psychiatrists which have had the potential of contributing new theoretical or applied knowledge to the field. Unfortunately, failure to address certain minimal requirements (Kazdin, 1981) meant that these proto-studies were never articulated in writing or were unsuitable for publication.

Because practitioners can solve major problems, creatively develop new techniques, and stringently test existing procedures, their lack of research productivity is a "social and professional tragedy" (Barlow, Hayes, & Nelson, 1984, p. 18). In addition to being directly relevant to patient needs, such work would push back the frontiers of psychological science. The essential elements of clinical research are quite straight forward. However, the lack of one or more of these essentials precludes publishability of many potentially valuable contributions.

"The purpose of a clinical manuscript must be to communicate new hypotheses, observations, and findings which expand the professional horizon; or to present in detail new or modified techniques. It is important to state in clear cut, concrete form what was actually done so that others can replicate, test, or apply the procedure to their own patients" (Fromm, 1981, p. 6). To be useful to others in practice and to contribute to science, neurotherapy case studies must include: 1) a literature survey; 2) a clinical diagnosis; 3) suitable neurometric testing data; 4) the patient's history, including previous treatment and the referral source; 5) details of the neurotherapy procedures used, including specific instructions given to patients; and 6) follow-up data on treatment outcomes, including unsuccessful as well as successfully treated cases.

It is useful to distinguish between process and outcome data. Process data is that obtained on-line during neurotherapy procedures, e.g. within-session changes in QEEG measures, or derivatives thereof, such as beta/theta ratios. Outcome data are typically measured before, immediately following therapy, and at follow-up. Such data would include psychometric tests, tests of cognitive function, parent/teacher ratings, measures of school and/or occupational performance, etc. Rather than percent or summarized data, tables of raw data, supporting the observations of EEG and behavioral changes, should be included. It is essential that the types of analyses used are clear. For example, power analysis of quantitative EEG (QEEG) is generally considered to be the most sensitive and appropriate analysis for differentiating ADD/ADHD children from those without the disorder (Chabot, Merkin, Wood, Davenport, & Serfontein,

1996). Magnitude analysis, which may be required for statistical reasons when one group of participants is compared to another, may be misleading and/or not be sufficiently sensitive to aid diagnosis (Crawford & Barabasz, 1996). This argues in favor of single case rather than group designs for neurotherapy research. In contrast to relative data (percent scores), data summaries (difference scores), or to outcomes of correlational analyses, access to actual raw data makes it possible for other practitioners to compare their cases with published ones or for researchers to combine studies in reviews, summaries, re-analyses, or meta-analytic procedures. In reporting raw (and other data) it is essential to make clear exactly how the data presented were derived. For example, if within-session averages are reported, the exact way in which these averages were computed needs to be clearly described. However, there is no need to provide details of all cases treated. A single case can suffice, but three to five representative cases, including a representation of case failures, may be an ideal goal for the present neurotherapy literature.

A recent pair of case studies of Attention Deficit Disorder treated within the context of behavior therapy using neurotherapy and hypnosis demonstrated how these criteria can be met (A. Barabasz & M. Barabasz, 1996; M. Barabasz & A. Barabasz, 1996).

1) A literature review of the prevalence of the disorder was presented.

2) Etiologies of ADD/ADHD were discussed citing the most recent literature.

3) The neurological origin of ADD/ADHD was briefly reviewed. Because the study emphasized frontal lobe neurotherapy, the most recent neuro-imaging morphological studies were reviewed to provide a basis for this procedure.

4) Alternative treatments of ADHD were reviewed including the use of stimulant drugs, behavior modification, cognitive behavior therapy, and neurotherapy.

5) The case study participants' diagnoses were given using DSM-IV criteria and the relevant neurometric assessment data was highlighted including an emphasis on simultaneous evaluation of nineteen active scalp electrode sites.

Cases were discussed, with demographic data and specific histories disguised to protect the identity of the clients. Previous treatment information was provided, including success/failure (quantitative) data and clients'/parents' perceptions (qualitative data). Intervention procedures were elucidated with adequate detail for replication. The frequency and massing of treatment sessions was noted and treatment outcome data were shown for post treatment and follow up for one month, six months, and twelve months for each of the client cases. Finally, the discussion section of the paper emphasized the comparisons of the cases and the strong effects for neurotherapy in rehabilitating Attention Deficit Disorder symptomatology. The need for further research in controlled settings was explained and questions still to be answered were formulated. Limitations of the study were discussed and recommendations for improvements in further clinical trials were made.

The importance of obtaining a full simultaneous nineteen electrode neurometric assessment using standardized procedures prior to conducting neurotherapy was emphasized as was the need to view neurotherapy with or without hypnosis as an adjunctive procedure conceptualized within the broader context of behavior therapy. Indeed, little can be said about the specificity of neurotherapy in a treatment unless its relationship to the neurometric assessments conducted before and after treatment can be clearly demonstrated. Our accompanying article in the Journal of Neurotherapy (Blampied, Barabasz & Barabasz, 1996) discusses single case research designs and provides a guide as to how these studies can be conducted to provide the strongest possible inference.

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