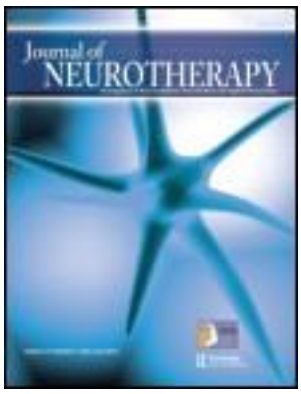

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The Relationship Between Burnout, Interpersonal Commitment, Client Adherence, and Quality of Work Life Among Neurofeedback Practitioners

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SCIENTIFIC FEATURES

THE RELATIONSHIP BETWEEN BURNOUT, INTERPERSONAL COMMITMENT, CLIENT ADHERENCE, AND QUALITY OF WORK LIFE AMONG NEUROFEEDBACK PRACTITIONERS

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This study identified neurofeedback (NFB) practitioner self-perceptions related to quality of work life. We also identified practitioner self-perceptions of common clinician factors related to NFB. To guide this current study, we utilized our previous conceptual framework research on practitioner perspectives of NFB (Larson, Ryan, & Baerentzen, 2010). One hundred forty-eight NFB practitioners completed online surveys gathering demographic information and ratings of practice behaviors and characteristics. For data set analyses, we utilized descriptive statistics, frequencies, means, standard deviations, ranges, Cronbach's alpha analysis, Pearson product–moment correlation analysis, and a regular simultaneous regression analysis. Our results indicated that 74% of the variance in quality of work life can be determined by variance in a significant multiple correlation of burnout, interpersonal skills commitment, and client adherence. We found monthly sessions correlated with financial gain or loss (FGL). We also found client adherence separately correlated with monthly sessions, NFB knowledge, NFB learning commitment, and NFB mentorship. For NFB practitioner self-perceptions of common clinician factors, the most frequently endorsed practitioner traits in rank order were (a) ethical, (b) attentive, (c) empathic, (d) calm, (d) observant, (e) sense of humor, (f) analytical and confident (tied), (g) friendly and realistic expectations (tied), (h) optimistic, and (i) careful. NFB practitioner quality of work life appeared to be related to three straightforward components: reducing burnout, increasing commitment to enhancing interpersonal skills, and increasing client adherence. Practitioners providing mentoring, practitioners improving NFB knowledge and skills, and more monthly sessions are separately related to client adherence. Of interest, we found only the number of monthly sessions positively correlated with monthly FGL. We found a variety of perceived NFB common clinician factors adding to the complexity of understanding factors influencing NFB outcomes. Of interest, two (attentive and calm) of the top four practitioner self-perceptions of common clinician factors are also important NFB client outcomes.

INTRODUCTION

Neurofeedback (NFB) or electroencephalographic (EEG) biofeedback combines operant conditioning and advanced technology to teach individuals to influence and regulate their EEG patterns leading to improvements in physiological and psychological functioning. Berger (1930) detected EEG activity in 76 individuals and demonstrated feasibility of capturing and utilizing EEG in his follow-up studies. Kamiya (2011) and Sterman, LoPresti, and Fairchild (2010) reviewed and summarized their crucial applied EEG research during the 1960s and 1970s; their research demonstrated

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the feasibility and utility of combining EEG wave patterns with operant conditioning to improve physiological regulation. Since this initial exploratory and applied research, a plethora of research ranging from single-subject design studies to meta-analyses reported the efficacy and the effectiveness of NFB for psychological and physiological disorders. Yucha and Montgomery (2008) presented a framework and findings for evidence-based NFB, whereas Hammond (2011) provided a NFB description and a review of NFB research findings. Despite these research advancements, exploration of NFB practitioner variables influencing outcomes is still in a nascent phase. A comprehensive literature review found a limited number of investigations related to NFB practitioner process and outcome variables. Rubi (2006) investigated international practitioner demographic variables and a practitioner training program highlighted age as a potential variable for specific client types (Thompson & Thompson, 2008). Additional findings emphasized the importance of establishing NFB practice guidelines and standards (Hammond et al., 2011; Hammond & Kirk, 2008). Research reported the importance of exploring client and practitioner relationships (Aguilar-Prinsloo & Lyle, 2010). A descriptive study funded by the National Institute of Mental Health reported that out of 2,136 mental health practitioners, 19 reported utilizing NFB (Cook, Biyanova, Elhai, Schnurr, & Coyne, 2010); authors postulated low NFB endorsement may be related to limited exposure in graduate training and the need for advanced NFB training and specialization after graduate training. Larson et al. (2010) utilized a systematic and qualitative method to capture practitioner perspectives on client adherence, knowledge, skills, and traits related to NFB, which were utilized to design the following study.

We focused on exploring connections among burnout, quality of work life, interpersonal skills, client adherence, financial gain or loss (FGL), monthly sessions, NFB knowledge, NFB learning commitment, and NFB mentorship because these items were identified as important variables in our previous study (Larson et al., 2010). These items consistently appear as important factors within mental health practitioner literature. We also identified common practitioner self-perceptions involved with NFB practice. We briefly review each of our primary variables and then offer our study hypotheses. Our primary variables are in bold type to provide easy reference for the reader.

We utilized Sirgy, Reilly, Wu, and Efraty's (2008) definition of **quality of work life** including the interaction between work resources and work identities leading to various levels of workplace stressors. In this study we simplified our **quality of work life** item by asking overall satisfaction with work life. Maslach and Leiter (1997) defined **burnout** as a condition of individuals experiencing toxic individual and organizational factors leading to negative emotions and unproductive workplace behaviors. Maslach, Schaufeli, and Leiter (2001) reported that **burnout** reduced job performance, impaired physical health, and negatively impacted emotional and cognitive well-being. We utilized Wogan and Norcross's (1985) therapeutic framework for defining **interpersonal skills commitment**, which included abilities and commitment to connect and maintain therapeutic rapport with clients. The World Health Organization (2003) defined client adherence as following a recommended course of treatment; they also reported that only 50% of people with chronic diseases adhere to recommended treatments. For this study, we defined **client adherence** by subtracting monthly dropouts from successful monthly closures. **FGL** consisted of subtracting monthly costs from monthly revenues. A portion of practitioners reported either zero financial gain or financial loss; we decided these findings in the remaining analyses. We decided practitioners reporting zero financial gain or loss did not reduce the importance of their perceptions about NFB. If we discarded their surveys, we would lose important perspectives and could only generalize our findings to NFB practitioners with financial gain. **Monthly sessions** included the total amount of sessions practitioners provided each month.

Practitioner ratings of **NFB knowledge, NFB learning commitment**, and **NFB mentorship** were collected. We utilized Imel and Wampold's (2008) psychotherapy **common factors** framework to organize our NFB practitioner characteristics findings. They defined **common factors** as practitioner characteristics, role, client bond, context, and relationship qualities, which are separate from the specific therapy method being applied. A meta-analysis reported that up to 70% of client outcomes could be explained by **common factors** rather than method of therapy (Wampold et al., 1997). Because this framework includes a broad range of factors and we were focused on clinician variables, we modified **common factors** into **common clinician factors** and utilized this term for the remainder of this article. We also note that our study only collected practitioner self-perceptions of common clinician factors rather than collecting perspectives from clients as well.

RESEARCH HYPOTHESES

Below are the research hypotheses:

1. A significant and multiple correlation of burnout, interpersonal skill commitment, and client adherence explains variance in quality of work life scores.
2. Monthly FGL correlates with quality of work life scores.
3. Monthly sessions, NFB knowledge, NFB learning commitment, NFB mentorship, certificates, education, licensure, experience, and FGL are separately correlated with client adherence scores.
4. Practitioner self-perceptions of NFB characteristics can be identified and rank ordered through the common clinician factors framework.

METHODS

Participants and Procedure

With Illinois Institute of Technology Institutional Review Board approval, we recruited NFB practitioners through discussion boards and e-mail distribution. The announcement directed participants to an online survey that included a consent process. We collected 148 usable practitioner surveys. For each completed survey, $10 was donated to the International Society for Neurofeedback and Research. We utilized SPSS Version 18.0 to complete our analyses. Two research assistants entered the 148 surveys into two separate SPSS files; we resolved discrepancies by comparing the two files and original surveys. To identify errors, missing data, and outliers and ensure data met assumptions for analyses, we utilized a five-step data set cleaning process (Mickey, Dunn, & Clark, 2004). For data set SPSS analyses, we utilized descriptive statistics, frequencies, means, standard deviations, ranges, Cronbach's alpha analyses, Pearson product–moment correlation analyses, and a regular simultaneous regression analysis.

Instrumentation

For this study we collected responses to the 32-item NFB Practitioner Survey, which can be found in the appendix. We developed this survey by utilizing findings from our initial NFB practitioner investigations (Larson et al., 2010). This survey included demographic, certificates, licensure, specialization, client adherence, burnout levels, interpersonal skills commitment, quality of work life, and additional variables identified in our previous research. In addition, we asked practitioners to choose 10 best traits that described them from the list of 34 traits identified in our previous study (Larson et al., 2010). For remaining analyses, we utilized the following variables from the 32-item survey. We provided the primary variables utilized in the analyses in bold type and identified which variables consisted of either single or multiple items. The following variables consisted of one item: **gender** (Item 1), **age** (Item 2), **education** (Item 3), **certificates** (Item 4), **license** (Item 5), **experience** (Item 8), **monthly sessions** (Item 15), **quality of work life** (Item 27), **burnout** (Item 28), and **interpersonal commitment** (Item 30). Quality of work life, burnout, and interpersonal

commitment items each contained an 11-point scale (0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%). The following variables consisted of multiple items. The **monthly FGL** variable was calculated by subtracting monthly costs (Item 6) from monthly revenues (Item 7) and adherence was calculated by subtracting clients not completing recommended sessions (Item 19) from clients completing recommended sessions (Item 18). Practitioners rated their own level of knowledge in three areas: technology, brain functioning, and overall NFB knowledge. These questions gathered practitioner perspectives of their own knowledge levels rather than testing their knowledge or someone else's rating of their knowledge. We calculated the **NFB knowledge** factor by adding together the knowledge items of technology (Item 20), brain functioning (Item 21), and overall NFB knowledge (Item 22). The NFB knowledge items utilized a 5-point scale: 1 (ex*cellent*), 2 (*above average*), 3 (*average*), 4 (*below average*), and 5 (*unsatisfactory*); for analyses, we completed a reverse scoring with higher scores indicating higher knowledge levels. We calculated the **NFB commitment** factor by adding together the commitment to learning items of technology (Item 23), brain functioning (Item 24), and overall NFB learning commitment (Item 25). The NFB commitment items utilized an 11-point scale (0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%). The **NFB mentorship** factor consisted of adding together the Items of monthly hours of providing training (Item 13) and providing supervision (Item 11). We utilized Item 31 for our **common factor** variables analysis.

RESULTS

Table 1 presents demographic information for research subjects utilized in this study. For 148 subjects, we provide percentages for gender, education, certification, and licensure. In addition, we provide means and standard deviations for age, years practicing NFT, and monthly sessions.

Table 2 provides means, standard deviations, Cronbach's alpha, and ranges for variables utilized in the remaining analyses. The variables included quality of work life, burnout, monthly FGL, adherence, interpersonal commitment, monthly sessions, NFB knowledge, NFB commitment, and NFB mentorship. We utilized these results for the Pearson product–moment correlation analyses. To test internal consistency, we performed Cronbach's alpha analyses for measures with two or more items; results supported consistency in performance of monthly FGL, adherence, NFB knowledge, NFB commitment, and NFB mentorship factors.

Table 3 provides Pearson product–moment correlations for quality of work life, burnout, monthly FGL, adherence, interpersonal commitment, monthly sessions, NFB knowledge, NFB commitment, and NFB mentorship. Results indicated significant correlations between variables of interest in this study, and we discuss implications within our Discussion section.

Table 4 provides a regular simultaneous regression analysis for neurofeedback practitioners with quality of work life scores being the dependent variable and burnout,

TABLE 1. Demographic Information for Neurofeedback Practitioners

Item	*M*	*SD*	%
Gender			
Female	—	—	45.60
Male	—	—	54.40
Total	—	—	100.00
Education			
High school	—	—	0.70
Associates	—	—	1.40
Bachelor's	—	—	10.10
Master's	—	—	41.90
Doctorate	—	—	45.90
Total	—	—	100.00
Certification			
BCIA	—	—	35.00
Non-BCIA	—	—	65.00
Total	—	—	100.00
Licensure			
Licensed	—	—	60.00
No license	—	—	40.00
Total	—	—	100.00
Age	54.33	11.62	—
Years practicing NFT	9.71	9.32	—
Monthly sessions	56.80	48.22	—

Note. $N = 148$. BCIA = Biofeedback Certification International Alliance; NFT = neurofeedback therapy.

TABLE 2. Means, Standard Deviations, Cronbach's Alpha Analyses, and Ranges of Selected Neurofeedback Practitioner Survey Items

Measure	No. of items	*M*	*SD*	α	Range
QWL	1	8.93	1.74	—	3.00–11.00
Burnout	1	2.58	1.87	—	1.00–9.00
FGL	2	2038.50	2583.62	.71	−2000.00–16.750.00
Adherence	2	1.72	2.60	.69	−3.00–20.00
Interpersonal commitment	1	9.03	2.70	—	1.00–11.00
Monthly sessions	1	56.80	48.22	—	0.00–500.00
NFB knowledge	3	17.87	9.33	.86	4.00–41.00
NFB commitment	3	28.36	18.80	.82	5.00–162.00
NFB mentorship	2	26.72	25.95	.81	0.00–267.00

Note. $N = 148$. QWL = quality of work life; FGL = financial gain or loss; NFB = neurofeedback.

TABLE 3. Findings from Correlations of NFB Practitioners' Quality of Work Life, Burnout, Financial Gain or Loss, Adherence, Interpersonal Commitment, Monthly Sessions, NFB Knowledge, NFB Commitment, and NFB Mentorship Scores

Scale	QWL	B	FGL	A	IC	MS	NFBK	NFBC	NFBM
QWL	—	–.38***	.15	.26**	.31***	.21**	.20*	.20*	.18
B	—	—	–.15	–.12	–.16	–.11	–.11	–.12	.08
MI	—	—	—	.14	.15	.55***	.08	.06	.19
A	—	—	—	—	.15	.62***	.24**	.25**	.38***
IC	—	—	—	—	—	.15	.02	.12	.09
MS	—	—	—	—	—	—	.14	.16	.65***
NFBK	—	—	—	—	—	—	—	.85***	.08
NFBC	—	—	—	—	—	—	—	—	.11
NFBM	—	—	—	—	—	—	—	—	—

Note. $N = 148$. QWL = quality of work life; B = burnout; FGL = financial gain or loss; A = adherence; IC = interpersonal commitment; MS = monthly sessions; NFBK = neurofeedback knowledge; NFBC = neurofeedback commitment; NFBM = neurofeedback mentorship.
*$p < .05$. **$p < .01$. ***$p < .001$.

interpersonal commitment, and client adherence combined being independent variables. Regular simultaneous regression results, with an alpha level of .05, indicated that as interpersonal commitment and client adherence scores increase together and burnout scores decrease, quality of work life scores increase. Results indicated a multiple correlation of .86 ($p < .001$) and 74% of the variance in quality of work life could be determined by the variance in burnout, interpersonal commitment, and client adherence combined.

Table 5 provides a frequency analysis for the top 10 traits endorsed by practitioners.

TABLE 4. Findings from Regular Simultaneous Regression Analysis Predicting Neurofeedback Practitioner's Quality of Work Life Scores and Burnout, Interpersonal Commitment, and Client Adherence Combined

Variable	β	*t* test	*p*	*R*	R^2
DV					.31***
Quality of work life IVs				.86***	74%
Burnout	–.81	–18.89	.000		
Interpersonal commitment	.13	3.05	.003		
Client adherence	.12	2.68	.008		

Note. $N = 148$. DV = dependent variable; IV = independent variable.
***$p < .001$.

TABLE 5. Findings from Frequency Analysis of Top 10 of 34 Practitioner Traits

Variable	% picked in top 10	Rank
Ethical	61.5	1
Attentive	60.8	2
Empathic	48.0	3
Calm	43.9	4
Observant	41.9	5
Sense of humor	39.2	6
Analytical/Confident (tied)	36.5	7
Friendly/Realistic expectations (tied)	35.8	8
Optimistic	33.8	9
Careful	32.4	10

Note: $N = 148$.

We present the findings in rank order with number one being the most frequently endorsed trait. The most frequently endorsed traits in rank order were (a) ethical, (b) attentive, (c) empathic, (d) calm, (e) observant, (f) sense of humor, (g) analytical and confident (tied), (h) friendly and realistic expectations (tied), (i) optimistic, and (j) careful. We review our NFB practitioner common factor findings in the Discussion section.

DISCUSSION

Our first hypothesis was supported by regular simultaneous regression analysis findings; a significant and multiple correlation of burnout, interpersonal skill commitment, and client adherence explains variance in quality of work life scores. NFB practitioners deciding to improve their quality of work life may explore methods focusing on reducing burnout, increasing commitment to interpersonal skills, and improving client adherence. Burnout interventions typically address personal, physical, and psychological well-being, individual values, workload versus reward, and workplace stressors. Future burnout research may include identifying and testing burnout interventions that match workplace demands and needs specific to NFB practitioners. Interpersonal skill commitment may include practitioners engaging in mentoring and training opportunities related to interpersonal skill enhancement. Future NFB interpersonal skills research may include investigating effective and user-friendly skill enhancement methods for NFB practitioners. To improve client adherence, practitioners may focus on tools that reduce client barriers related to clients attending and maintaining a NFB therapy schedule. Effective tools may address common barriers, including, but not limited to client costs, limited time for therapy, and reduced family support. Future client adherence research may include exploring client barriers to completing NFB therapy and then identifying user-friendly tools that address these barriers. NFB practitioner quality of work life appeared to be related to three straightforward components: reducing burnout, increasing commitment to enhancing interpersonal skills, and increasing client adherence. Overall, these findings may be partially explained by the idea that high work engagement leads to high work satisfaction.

Our second hypothesis was not supported by our correlation findings. We did not find a significant relationship between FGL and quality of work life. We postulated that increased FGL would be related to improved quality of work life. However, we found monthly FGL was related to monthly sessions, whereas FGL was not related to other primary variables of interest. We propose that our study design and analyses may be limited in identifying components related to FGL. Further research on components influencing FGL may include exploring costs, such as equipment, supplies, office space, staffing, marketing, training, mentoring, and additional cost centers.

Our third hypothesis was partially supported by our analyses. We found client adherence separately correlated with monthly sessions, NFB knowledge, NFB learning commitment, and NFB mentorship. Client adherence did not correlate with certifications, licensure, experience, or FGL. To improve client adherence, practitioners may focus on methods that increase overall monthly number of sessions. Possibly, increasing the number of monthly sessions provides more opportunities to improve NFB application skills, which in turn produces successful outcomes leading to higher client adherence. Increasing NFB knowledge, learning commitment, and mentorship improves NFB skill sets, which increases client adherence and willingness to complete the NFB therapy. Future NFB client adherence research may include testing various methods focusing on improving NFB knowledge, skill sets, and mentorship.

Our fourth hypothesis was supported by our analysis. We were able to identify and to rank NFB practitioner self-perceptions of common clinician factors, which included (a) ethical, (b) attentive, (c) empathic, (d) calm, (e) observant, (f) sense of humor, (g) analytical and confident (tied), (h) friendly and realistic expectations (tied), (i) optimistic, and (j)

careful. Of interest, two (attentive and calm) of the top four practitioner self-perceptions of common clinician factors are important NFB client outcomes. Possibly, practitioners modeling attentiveness and calmness influences client outcomes, and these factors are related to developing a therapeutic relationship rather than specific technical characteristics related to NFB therapy. Our study design and analyses may be limited in identifying components related to specific technical skills needed in NFB therapy. To enhance client relationships, practitioners may focus on identifying and improving their self-perceptions of NFB common clinician factors through training and mentorship opportunities. Our common factor findings also add to the complexity of understanding which factors influence NFB outcomes. Future NFB research may include testing the influence of various common clinician factors on client outcomes.

We do not offer these findings as a comprehensive list of variables related to NFB practitioner quality of work life and burnout. We collected practitioner self-perceptions and did not collect client data; this leads to limitations in generalization and ability to connect practitioner self-perceptions with client outcomes. Practitioners provided their perceptions of their own knowledge level, which limits our ability to develop connections between knowledge and outcomes. However, we demonstrated that a practitioner's self-perception of his or her professional knowledge is related to client adherence. A potential next step may explore the impact of practitioner perceptions of knowledge versus NFB knowledge test scores on outcome variables. From our findings, we propose practitioner perceptions of professional self are crucial components connected to various outcomes. We may have missed additional factors due to our study design, sample size, and method of data collection. We offer our study findings as guidance in improving practitioner outcomes and potential starting points for investigating practitioner self-perceptions influencing NFB outcomes. A wealth of robust research indicates the impact of NFB therapy on client outcomes; however, we emphasize the importance of exploring the influence of individual practitioner self-perceptions of common clinician factors on NFB outcomes. For example, do practitioners with low burnout and high quality of work life produce quicker and more sustainable NFB client outcomes? Furthermore, do practitioners with self-perceptions of high levels of ethical, attentive, empathic, calm, and observant common clinician factors produce quicker and more sustainable NFB client outcomes? Future research directions may explore the impact of client ratings of NFB practitioner common clinician factors on outcome measures. Common clinician factors may include, but are not limited to, ethical, attentive, empathic, calm, and observant, whereas the potential outcome measure may include neurofeedback effectiveness, quality of life, drop out rates, FGL, burnout, and additional outcome measures. Overall, we attempted to provide findings to identify practitioner self-perceptions to guide components of future NFB research.

REFERENCES

Aguilar-Prinsloo, S., & Lyle, R. (2010). Client perception of the neurofeedback experience: The untold perspective. *Journal of Neurotherapy*, *14*, 55–60.

Berger, H. (1930). On the electroencephalogram of man. *Journal für Psychologie und Neurologie*, *40*, 160–179.

Cook, J. M., Biyanova, T., Elhai, J., Schnurr, P. P., & Coyne, J. C. (2010). What do psychotherapists really do in practice? An Internet study of over 2,000 practitioners. *Psychotherapy: Theory, Research & Practice*, *47*, 260–267.

Hammond, D. C. (2011). What is neurofeedback: An update. *Journal of Neurotherapy*, *15*, 305–336.

Hammond, D. C., Bodenhamer-Davis, G., Gluck, G., Stokes, D., Hunt Harper, S., Trudeau, D., . . . Kirk, L. (2011). Standards of practice for neurofeedback and neurotherapy: A position paper of the International Society for Neurofeedback and Research. *Journal of Neurotherapy*, *15*, 54–64.

Hammond, D. C., & Kirk, L. (2008). First, do no harm: Adverse effects and the need for practice standards in neurofeedback. *Journal of Neurotherapy*, *12*, 79–88.

Imel, Z., & Wampold, B. (2008). The importance of treatment and the science of common factors in psychotherapy. In S. D. Brown & R. W. Lent (Eds.), *Handbook of counseling psychology* (4th ed., pp. 249–262). Hoboken, NJ: Wiley.

Larson, J. E., Ryan, C. B., & Baerentzen, M. B. (2010). Practitioner perspectives of neurofeedback therapy for mental health and physiological disorders. *Journal of Neurotherapy*, *14*, 280–290.

Kamiya, J. (2011). The first communications about operant conditioning of the EEG. *Journal of Neurotherapy*, *15*, 65–73.

Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it*. San Francisco, CA: Jossey-Bass.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, *52*, 398–422.

Mickey, R. M., Dunn, O. J., & Clark, V. (2004). *Applied statistics: An analysis of variance and regression* (3rd ed.). New York, NY: Wiley.

Rubi, M. C. M. (2006). Neurofeedback around the world. *Journal of Neurotherapy*, *10*, 63–73.

Sirgy, M., Reilly, N. P., Wu, J., & Efraty, D. (2008). A work-life identity model of well-being: Towards a research agenda linking quality-of-work-life (QWL) programs with quality of life (QOL). *Applied Research In Quality of Life*, *3*, 181–202.

Sterman, M. B., LoPresti, R. W., & Fairchild, M. D. (2010). Electroencephalographic and behavioral studies of monomethylhydrazine toxicity on the cat. *Journal of Neurotherapy*, *14*, 293–300.

Thompson, M., & Thompson, L. (2008). Achieving excellence with your staff: A consultant staff training program [Abstract]. *Journal of Neurotherapy*, *12*, 75.

Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H. (1997). A meta-analysis of outcome studies comparing bona fide psychotherapies: Empirically, ''all must have prizes.'' *Psychological Bulletin*, *122*, 203–215.

Wogan, M., & Norcross, J. C. (1985). Dimensions of therapeutic skills and techniques: Empirical identification, therapist correlates, and predictive utility. *Psychotherapy: Theory, Research, Practice, Training*, *22*, 63–74.

World Health Organization. (2003). *Adherence to long-term therapies: Evidence for action*. Geneva: Author.

Yucha, C., & Montgomery, D. (2008). *Evidence-based practice in biofeedback and neurofeedback*. Wheat Ridge, CO: Association for Psychophysiology and Biofeedback.

APPENDIX

Neurofeedback Practitioner Survey

1. What is your gender?
2. What is your age?
3. What is your educational level?
4. What certificates do you have?
5. What licenses do you have?
6. For an average month, what are your total neurofeedback (NFB) financial costs?
7. For an average month, what are your total NFB financial revenues?
8. How many years of NFB experience do you have?
9. How many inquiries do you get from potential clients per month?
10. For an average month, how many hours of NFB supervision do you receive?
11. For an average month, how many hours of NFB supervision do you provide?
12. For an average month, how many hours of NFB training do you receive?
13. For an average month, how many hours of NFB training do you provide?
14. For an average month, what is your NFB caseload size?
15. For an average month, how many NFB sessions do you provide?
16. For an average month, how many new clients do you have starting NFB?
17. For an average month, how many clients do you have participating in NFB?

18. For an average month, how many clients do you have successfully completing their NFB treatment?
19. For an average month, how many clients quit NFB before completing their NFB treatment?
20. How would you grade your current knowledge about EEG technology? 1 = A (excellent), 2 = B (above average), 3 = C (average), 4 = D (below average), 5 = E (unsatisfactory)
21. How would grade you grade your current knowledge about brain functioning? 1 = A (excellent), 2 = B (above average), 3 = C (average), 4 = D (below average), 5 = E (unsatisfactory)
22. How would you grade your overall knowledge about NFB? 1 = A (excellent), 2 = B (above average), 3 = C (average), 4 = D (below average), 5 = E (unsatisfactory)
23. My commitment to learning about EEG technology is? 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
24. My commitment to learning about brain functioning is? 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
25. My commitment to learning about NFB is? 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
26. My commitment to telling other people about NFB is? 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
27. My satisfaction with my work life related to NFB is? 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
28. My burnout level related to my NFB practice is? 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
29. How would you grade your interpersonal skills with clients? 1 = A (excellent), 2 = B (above average), 3 = C (average), 4 = D (below average), 5 = E (unsatisfactory)
30. My commitment to improving my interpersonal skills with clients is? 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
31. Out of the 34 items below, pick 10 that best describe your traits when doing NFB. Attentive, Sense of Humor, Enthusiasm, Affable, Warm, Calm, Trustful, Patience, Tolerance of Ambiguity, Willing to Make Mistakes, Optimism, Hope, Empathic, Friendly, Accepting, Open Minded, Sensitive to Differences, Creative, Realistic Expectations, Observant, Flexible, Confidence, Curious, Analytical, Investigative, Inquisitive, Willing to Pioneer, Availability, Know Limits, Integrity, Mindful, Careful, Reliable, Ethical
32. Put your 10 items in order from 1 to 10, with 1 being your strongest trait, 2 being your second strongest trait, 3 being your third strongest trait, and so on, until you have used all 10 items.