

Emerging Clinical Practice Brief

*From the Advancement for Clinical Practice Committee of the
American Mental Health Counselors Association*

Thriving in a New Era of Neuroscience: Understanding How Brain Science Can Inform Clinical Practice



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In recent years the concept of neuroscience - the study of the brain and nervous system - has quickly made its way into Clinical Mental Health Counseling vernacular. In the *Journal of Mental Health Counseling*, references to neuroscience have increased nearly threefold since 2009 as compared to the five years prior. Assisting clinical mental health counselors in developing a deeper understanding of neuroscience can enhance both clinical effectiveness and long-term outcomes. This clinical practice brief provides an introduction and initial discussion regarding the significance and application of neuroscience to clinical mental health counseling.

Benefits of Incorporating Neuroscience into the Clinical Mental Health Counseling Profession

Given considerable advances in brain imaging and recording technologies, such as magnetic resonance imaging (*MRI*), which examines brain anatomy, functional MRI (*fMRI*), which investigates the activity of various brain regions, to diffusion tensor imaging (*DTI*), a MRI approach that determines white matter architecture (i.e., connections between neuron cell bodies), and even functional DTI (*fDTI*), which measures the activity between neurons, the potential for understanding the brain and translating that understanding into counseling application has never been stronger. Stemming from such developments, the National Institute of Health (NIH) has developed a *Brain Research through Advancing Innovative Neurotechnologies* (BRAIN) initiative, which focuses on understanding “the circuits and patterns of neural activity that give rise to mental experience and behavior” (NIH, 2014, p.12). Understanding how the brain functions can assist clinicians to make more informed conceptualizations of client behavior. In this way, the NIH is suggesting that an understanding of the brain represents the future with regard to comprehending and promoting mental health and wellness.

By embracing neuroscience, the counseling profession also will be in a position to adapt to this contemporary and rapidly advancing understanding of mental health. Research in translational neuroscience may soon become a cornerstone of informing advances in client care, including the development of new interventions and enrichment and reconsideration of evidence-based practices within counseling. Understanding neuroscience will also provide counselors with the language to facilitate communication and collaboration with other health professions, an important consideration in a growing world of integrative health care (Egan et al., 2011; Johnson, 2001; Twardosz, 2007).

Recognizing the benefit of neuroscience does not insinuate a movement away from our current professional identities as clinical mental health counselors, but rather an opportunity to consider what neuroscience means through a counselor lens. One of the core strategic objectives within NIH’s BRAIN initiative called for the need to cultivate an integrative understanding of the brain-behavior processes. Counseling represents a unique perspective among the various helping professions and has an opportunity to play a key role in contributing to this integrative understanding.

Benefits of Incorporating Neuroscience into Clinical Mental Health Counseling Practice

Principles of neuroscience provide notable benefits to clinical practice when working with an individual client or at the systems level (i.e., couples, families, and communities). The concept of intentionality, or the rationale underlying a counselor’s conscious decision to engage in a particular response or intervention with a client (Gersten, Mears, Baldwin, Roberts, Gaertner, & Bartley, 2013), serves as a foundation for effective clinical practice. Every

behavior, cognition, feeling, and bodily sensation a client experiences, whether maladaptive or adaptive, has roots in neuroscience. The way we aid clients in becoming more aware of language, thoughts, emotions, and the body, facilitates positive change and inevitably serves to alter those connections. As such, the functioning of a client's brain and associated nervous system has vast implications on the efficacy of therapeutic interventions and the establishment of the therapeutic relationship. An understanding of neuroscience empowers counselors to deepen their understanding of clients and client diversity as well as the change process (Benjamin, 2013; Egan, Combs-Orme, & Neely-Barnes, 2011; Johnson, 2001), and in this way become more intentional in their practice. For example, traditionally trained in "talk therapy," counselors often engage adult clients in verbal modalities that require rational thought to some degree. However, if working with a survivor of trauma for instance, understanding the manner in which the brain processes traumatic events and continually responds to traumatic memories is essential. Having a client verbally process the traumatic event before the client has developed nonlinguistic practices such as deep breathing and grounding skills to help balance autonomic nervous system arousal may be ineffective and even potentially detrimental to the client.

Less dramatic examples exist moment-to-moment during every counseling session regardless of presenting concern or client demographics. Counselors begin influencing a client's brain the moment a client walks into the office; through eye gaze and voice tone both safety and the therapeutic relationship are facilitated. . Beyond these early encounters, principles of neurophysiology can in part be seen as a metatheory of clinical work and thus are inherently applicable to every theoretical orientation or therapeutic approach and supplement the knowledge base from which counselors can draw. Technological advances in brain imaging and recording have provided clinicians with clear evidence that psychotherapy induces discernible changes in brain structure and function, often with equal or greater efficacy to psychopharmacology (Barsaglini, Sartori, Benetti, Pettersson-Yeo, & Mechelli, 2014). This begins to take place the moment the client walks in our door and continues well after they leave. Counseling and neuroscience are inextricably linked, and counselors now have an opportunity to utilize the workings of the brain to enhance clinical practice.

Approaches to Neurocounseling

Neurocounseling, or clinical practice which recognizes and integrates knowledge and functioning of the brain and related physiology, encompasses a wide range of considerations and practices. Below are some approaches to neuroscience-informed counseling:

1. Brain-based interventions such as neurofeedback (NFB) and, more broadly, biofeedback (BFB), which incorporate equipment to allow both the counselor and client to examine the real time activation of the brain and autonomic nervous system, stand as clear examples of Neurocounseling. Such approaches have proven powerfully efficacious in allowing clients to self-regulate their brain and physiological processes (e.g., heart rate, breathing, skin temperature, brain waves). Although BFB and NFB both require additional training, a growing number of counselors are beginning to incorporate these evidence-based adjuncts to traditional counseling approaches.
2. Even without the inclusion of feedback equipment, counselors can engage in neurocounseling. Every counseling session has at its core a therapeutic relationship. This relationship develops as a result of "feeling" connected, accepted, and understood. If walking into our office a client feels safe and comfortable, their brain and body will be responding much differently than a client walking in feeling nervous and apprehensive. When an individual is not feeling safe, their autonomic nervous system is not functioning in a manner most conducive to interpersonal interactions, an idea drawn from Stephen Porges' (2011) Polyvagal Theory. Furthermore, a strong therapeutic relationship can help to maintain optimal autonomic arousal. Similarly, a client with an early trauma history or unsupportive early home environment may experience a more reactive autonomic nervous system to interpersonal situations (in addition to other stressors), which means the counselor may need to devote more time to cultivating trust and establishing safety (Russell-Chapin & Jones 2015). Understanding such concepts of the nervous system and interpersonal neurobiology can not only enhance clinical assessment and relationship building, it can also benefit counselors working with fostering relationships in groups, couples and families.

3. Even outside of the therapeutic relationship, when noticing a client is stressed or hyperaroused (e.g., breathing quickly, increased heart rate, speaking quickly, jumpy, etc.), it is important to incorporate grounding, breathing or mindfulness-based activities to calm the client's autonomic nervous system. This will in turn assist the client in fully accessing both the cortical (i.e., outermost cognitive and sensory area) as well as the limbic (i.e., deeper emotional areas) regions of the brain, making traditional counseling potentially more effective. Another example of a brain-based technique of calming the system is through having clients label the sensations they are feeling. As such, they are turning emotions (i.e., physiological body-based experiences) into feelings (i.e., linguistic and mental understanding of the sensation). Emotions are processed in a different part of the brain than are feelings and by having the client label the emotion (i.e., create a feeling label) you can help to recruit their frontal and prefrontal cortex (i.e., rational part of the brain), thereby employing brain structures that help to regulate limbic regions of the brain.
4. Another important factor in neurocounseling includes appreciating the biological diversity of clients and understanding potential differences in the function of the brain and physiology, for instance, differences between biological sex or clients of different ages. For example, adolescents have an increased response of the hypothalamic-pituitary adrenal (HPA) axis (i.e., one of the stress pathways in the body) to stress with advancing puberty (McCormick & Mathews, 2007). Furthermore, children under 18 months do not have a fully developed capacity for declarative memory, a system which is not fully integrated until five years (Newcombe, Lloyd, & Ratliff, 2007). As such, younger children may not be as efficient at consciously recalling memories when compared to adults but very much remember events on an implicit or unconscious basis.
5. Neuroscience can also enhance the psychoeducation that we provide to clients. Knowledge about how and why clients may be experiencing their struggles can serve to empower clients as well as destigmatize mental illness. Knowledge of neuroscience can also enable counselors to best address questions clients may have, given exposure to neuroscience in the media and pop psychology (Benjamin, 2013; Chung & Insel, 2014; Clement & Lovat, 2012; Egan et al., 2011; Johnson, 2001). Furthermore, a fundamental knowledge of neuroscience can instill hope, foster encouragement, and help to establish realistic expectancies for client outcomes.
6. Knowledge of neuroscience also enrich wellness-based practices. New research elucidating the fundamental and reciprocal connections between our gut and our brain and benefits of body movement to mental wellbeing underscore how such healthy eating and activity practices can augment not only brain and physiological functioning but also counseling. This perhaps suggests the importance of integrating such interventions into a holistic plan for client wellness (and counselor wellness for that matter).
7. Further still, more and more evidence is unfolding detailing how oppression, chronic stress and ostracization can affect physiology, brain development, and plasticity (i.e., changes in brain structure). Such changes include changes to autonomic nervous system functioning and functioning of the HPA and sympathetic-adrenal-medullary axis (i.e., additional stress pathway) in the brain and body. As such, counselors can enhance the brain development of clients through our advocacy and social justice work, thereby potentially enhancing the work done in the counseling relationship as well. Conversely, failing to work from a multicultural perspective can serve to further reinforce maladaptive brain and physiological functioning in our clients (Douthit, 2015).

Ways to Learn More

It is essential to engage in ethical practice with regard to scope of practice and competency and to seek additional education and training in these areas prior to modifying one's counseling interventions. Some neurocounselors contend that knowledge of the structure and physiological functioning of the brain is not necessary. However, this author strongly believes in the benefit of having a base level of understanding in these areas. Not having this fundamental knowledge can be seen as similar to utilizing techniques from a particular counseling theory without having any understanding of the basis of that theory or why or how the components therein are hypothesized to lead to change. Ethical matters related to adequate training, scope of competence and standards of care are important considerations when integrating new knowledge or approaches. Resources for gaining this core knowledge are growing in the field. Below are some ideas and resources to expand one's knowledge and skills in this area:

Association Connections and Journals

1. Join the AMHCA Neuroscience Interest Network or one within another counseling organization. Connecting with others over this shared interest, exchanging ideas and resources detailing ways they and others are incorporating knowledge of neuroscience can be essential to enhanced learning in this area.
2. Attend conference sessions and trainings. Growing in number, such trainings and conference presentations meet practitioners where they are in their training and understanding of neuroscience to help them gain basic and advanced skills. For more information on AMHCA webinars in particular, visit the website at <http://www.ambca.org/webinar.aspx>.
3. Recognizing the growing interest and demand for more information regarding the Neurocounseling, Counseling Today now has a monthly column devoted to the subject, entitled Neurocounseling: Bridging Brain and Behavior. Each month authors cover a new topic relevant to ways of using neuroscience in clinical practice to enhance client self-regulation.

Jones, L.K. (2015). **Thriving in a New Era of Neuroscience: Understanding How Brain Science Can Inform Clinical Practice**, Alexandria, VA: American Mental Health Counselors Association.

The Advancement for Clinical Practice Committee of the American Mental Health Counselors Association (AMHCA) is responsible for developing, coordinating, and producing the white papers, which give a brief orientation to clinical mental health counselors about topics relevant to current practice. Existing AMHCA white papers include technology in counseling, trauma-informed practices, and responding to suicide risk. The Committee has a protocol for interested authors and contributors; please contact the chair of the Committee.

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Select Additional Resources

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