

NEUROCOUNSELING

Neurocounseling: A New Section of the *Journal of Mental Health Counseling*

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Despite the growing momentum to infuse neuroscience into counseling, neuroscience-related publications are relatively scant in flagship counseling journals. In response, this January 2017 edition of the Journal of Mental Health Counseling introduces a new section entitled “Neurocounseling” that will remedy this gap in the literature. This article provides a rationale for the creation of the Neurocounseling section that includes a discussion of current trends in research initiatives, the evolution of the term neurocounseling, and the existing neuroscience-related publications in flagship counseling journals. Additionally, this article outlines the vision for the Neurocounseling section that will aid readers as they conceptualize and conduct neurocounseling research as well as prepare manuscripts for publication.

A new era of brain-based health and wellness is upon us. Government funding for neuroscience research is at an all-time high (The White House Office of Science and Technology Policy, 2015), and the National Institutes of Health (NIH) has outlined an ambitious research agenda to develop strategies to enhance research into the neural correlates of the human experience in both health and disease (NIH, 2014). Similarly, in 2008 the National Institute of Mental Health (NIMH) created the Research Domain Criteria (RDoC) as an organizing system for neuroscience research that strives to identify new targets for treatment, detect subgroups within functional systems, inform treatment selection, and facilitate a more direct link between research and practice (Insel et al., 2010). These research trends related to mental health and wellness have led some to call neuroscience the newest force in counseling (D’Andrea, 2012), and it is likely that neuroscience findings over the next decade will significantly alter the way we conceptualize and practice clinical mental health counseling (CMHC).

The past 25 years of neuroscience research have already yielded results that significantly alter our understanding of human emotion, cognition, and

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behavior. Neuroscience findings are already becoming the “practice standards of the future” (Myers & Young, 2012, p. 21). The American Mental Health Counselors Association (AMHCA) *Standards for the Practice of Clinical Mental Health Counseling* (2016, Section V.A.) outlines a wide range of knowledge (e.g., neurobiology of thinking, emotion, and memory) and skills (e.g., ability to describe the basic organization of the brain as it may relate to mental health) in the biological bases of behavior necessary for the training and practice of CMHCs. An understanding of the underlying biological, neurological, and physiological processes are core to a professional counselor identity and “foundational knowledge required of all entry-level counselor education graduates” (Council for the Accreditation of Counseling and Related Educational Programs (CACREP), 2015, p. 9). This trend in training standards highlights our field’s acknowledgement of the importance of neuroscience to counseling; unfortunately, counselors have been relatively absent from academic discourse, and neuroscience manuscripts in the flagship counseling journals are scant in comparison to journals in allied professions.

Despite a few empirical studies of neuroscience principles in the counseling field (e.g., Crockett, Cashwell, Tangen, Hall, & Young, 2016; Field, Beeson, & Jones, 2016), the neuroscience literature in the counseling field is primarily conceptual in nature and attempts to generalize findings from other disciplines to the practice of CMHC (e.g., Makinson & Young, 2012). Additionally, only two manuscripts were identified in the flagship counseling journals that even mentioned the RDoC (Hall, Jones, Tyson, Woods, & Keltz, 2016; Miller, 2016). This is especially concerning given that a large portion of NIMH funding will only support research integrating the RDoC framework (Hershengberg & Goldfriend, 2015).

If neuroscience is to be the newest force in counseling and counseling is to remain a major mental health profession in an increasingly brain-based era of mental health, then it is imperative for the counseling profession to create a neuroscience-informed research agenda to address the gaps in our body of literature. We must not only understand, but contribute to this rapidly growing body of knowledge if we are to remain a viable mental health profession. As Associate Editors of the Neurocounseling section of the *Journal of Mental Health Counseling* (JMHC), we believe this new section is the next step towards establishing and propelling the integration of neuroscience into the counseling profession. Therefore, the purpose of this manuscript is to discuss the evolution of neurocounseling, briefly review the existing neurocounseling literature, and outline the goals and objectives for the Neurocounseling section of the *Journal of Mental Health Counseling*.

THE EVOLUTION OF NEUROCOUNSELING

Neurocounseling has developed rapidly over the past few years. The term *neuroscience* is broadly defined as the scientific study of the nervous system. It is a discipline with many branches, ranging from rigorous scientific disciplines such as affective, cognitive, and social neuroscience, to applied disciplines



such as interpersonal neurobiology. The term neurocounseling first emerged in a 2000 article published in the *Journal of Counseling & Development* (Erk, 2000). Erk (2000) described neurocounseling as the orientation-of-choice when working with clients whose “diagnosis or the majority of the problematic behaviors emanates from or can be attributed to the neurobiology or neurochemistry of the client” (p. 395). Even though this article was limited to clients diagnosed with attention-deficit/hyperactivity disorder (ADHD), Erk (2000) highlighted the importance of neurocounseling. Specifically, Erk indicated that helping clients and significant others develop a neurobiological understanding of ADHD promoted a sense of acceptance and compassion that propelled cognitive strategies to control symptoms. Notwithstanding Erk’s contribution, this early conceptualization of neurocounseling was limited to an understanding of pathology as opposed to the full spectrum of human functioning that is advocated for by the current neuroscience research vision of NIH and NIMH.

The neurocounseling term remained somewhat dormant until 2013, when a column entitled “Neurocounseling: Bridging Brain and Behavior” was first published in *Counseling Today*, the flagship magazine of the American Counseling Association (ACA). The very first column introduced the term *neurocounselor* in an article entitled “The Birth of the Neuro-Counselor?” (Montes, 2013). Drawing on interviews with many neurocounseling experts (e.g., Lori Russell-Chapin, Bill McHenry, Raissa Miller), Montes discussed the tension between the humanistic principles of the counseling profession and the growth of neuroscience in the counseling field. Although the term neurocounseling was never used, this piece clearly foreshadowed the tremendous increase in the application of neuroscience into the counseling profession.

At around the same time as the “Neurocounseling: Bridging Brain and Behavior” column began, its editors, Laura Jones and Lori Russell-Chapin, founded neuroscience interest networks in two major counseling associations, the Association for Counselor Education and Supervision (ACES) and ACA respectively. Likewise, an AMHCA neuroscience interest network was established in 2015, which quickly gained the most members of any AMHCA interest network, with over 800 members at the time of this writing. The three interest networks have worked collaboratively to promote neurocounseling, which has resulted in the creation of several webinars, dissemination of neuroscience tracks at major counseling conferences, and formation of writing circles for scholars with an interest in neurocounseling.

Many textbooks (e.g., Luke, 2015; McHenry, Sikorski, & McHenry, 2014) have also been published to provide counselors with an introduction to neuroscience and to further delineate the specialty of neurocounseling. Neurocounseling was highlighted in the 2014 book, *A Counselor’s Introduction to Neuroscience* (McHenry et al., 2014), which provided an overview of core competencies needed for neurocounseling. McHenry et al. (2014) described how neurocounseling can be used for pre- and post-intervention outcome evaluations, to assess real-time changes in the brain, and to target specific parts of the brain with intentional skill delivery. Their excitement and advocacy was



tempered by a healthy appreciation for the humanistic tradition of counseling. McHenry et al. (2014) proposed that neurocounseling techniques were another way to help us know our clients, a necessary feature of our humanistic tradition, while also acknowledging the importance of variables that can not be quantified and scientifically measured. Despite the contributions of this text, the authors continued the trend of generalizing neuroscience findings from other disciplines to the counseling field.

One of the most notable publications in recent history was the April 2016 issue of *JMHC*. In this special edition devoted to neurocounseling, Russell-Chapin (2016) defined neurocounseling as “the integration of neuroscience into the practice of counseling by teaching and illustrating the physiological underpinnings of many of our mental health concerns” (p. 94). Russell-Chapin asserted that psychoeducation was essential to the neurocounseling process and, like Erk (2000), affirmed the normalizing power of a brain-based understanding of the human experience during the counseling process. From this foundational definition of neurocounseling provided by Russell-Chapin (2016), we infer that neurocounseling can take several forms. Neurocounseling includes using existing neuroscience findings from outside the counseling field to better understand counseling processes and client presenting concerns, known as *translational neuroscience*. Neurocounseling also includes conducting brain-based studies evaluating the counseling process and outcomes, such as examining the neurological impact of specific microskills or the impact of mindfulness on brain regions associated with dissociation. Neurocounseling can also include the use of specialized brain-based techniques with clients, such as neurofeedback and neurotherapy (Chapin & Russell-Chapin, 2014). Thus, neurocounseling provides a framework for counselors to inform their current practices with neuroscience (i.e., translational neuroscience), to conduct brain-based research within the counseling field, and develop specializations in brain-based techniques (e.g., neurofeedback).

For the purpose of the Neurocounseling section, we extend Russell-Chapin’s (2016) foundational definition of neurocounseling. We contend that neurocounseling is a specialty within the counseling field, defined as the art and science of integrating neuroscience principles related to the nervous system and physiological processes underlying all human functioning into the practice of counseling for the purpose of enhancing clinical effectiveness in the screening and diagnosis of physiological functioning and mental disorders, treatment planning and delivery, evaluation of outcomes, and wellness promotion.

NEUROSCIENCE OF PSYCHOTHERAPY LITERATURE

Neurocounseling has benefited tremendously from neuroscience research in the field of psychology. Several comprehensive reviews of outcome literature have provided overwhelming evidence that psychotherapy leads to significant changes in the brain following treatment (e.g., Barsaglini, Sartori, Benetti, Pettersson-Yeo, & Mechelli, 2014; Linden, 2006; Peres & Nasello, 2008;

Weingarten & Strauman, 2015). From these findings, we can conclude that various forms of psychotherapy (e.g., cognitive behavioral therapy) change the functioning of the central nervous system (e.g., increased prefrontal cortex activation) in clients diagnosed with a variety of mental disorders (e.g., obsessive compulsive disorder), as measured using several methods of neuroimaging (e.g., functional magnetic resonance imaging) across several meta-analyses.

Despite the robust pre- and post-treatment outcome literature related to psychotherapy, there have been relatively fewer outcome studies related to the process of psychotherapy (Weingarten & Strauman, 2015). It has been recommended that brain imaging technology be used to identify in-vivo responses to specific topics, techniques, and relationship dynamics during psychotherapy (Goncalves & Perrone-McGovern, 2014; Weingarten & Strauman, 2015). Previous research has shown that different therapeutic models (e.g., emotion-focused, task-focused) activate different regions of the brain that could work against each other if employed sporadically during a psychotherapy session (Weingarten & Strauman, 2015). Additionally, certain interventions (e.g., cognitive reappraisal) may be more harmful depending upon how emotions are generated (McRae, Misra, Prasad, Pereira, & Gross, 2012). Therefore, there is a need to evaluate not only the outcomes of specific interventions, but how and when they are applied.

Much of the neuroimaging research has focused on brain response to cognitive behavioral therapy (CBT), and there is a need to extend this line of inquiry to other models of counseling and psychotherapy (Weingarten & Strauman, 2015). While the evaluation of existing treatment models and techniques is important, many have called for a shift towards using brain-based information to inform the creation of new theories and models of psychotherapy (Weingarten & Strauman, 2015). In response, a new theoretical orientation of *neuropsychotherapy* (Dahlitz, 2015; Grawe, 2007; Rossouw, 2014) has emerged. Neuropsychotherapy is defined as:

A neurobiologically informed framework for psychotherapy that conceptualizes thought and behavior as emerging from the influence of motivational schemata developed to preserve or enhance basic psychological needs. Therapeutic processes start from the development of a safe and enriched environment to activate positive approach motivational schemata utilizing a bottom-up neurological approach, and proceed from a top-down approach to facilitate long-term change in neural architecture. (Dahlitz, 2015, p. 64)

Neuropsychotherapy challenges the traditional top-down approach of many psychotherapies (e.g., CBT) and provides a framework to integrate genetic and epigenetic data related to physiology, emotion, cognition, behavior, social experiences, and spiritual concepts into the practice of psychotherapy with an emphasis on the therapeutic relationship and wellness promotion (Rossouw, 2014). This conceptualization of neuropsychotherapy aligns well with the NIMH's RDoC initiative to structure neuroscience research using several units of analysis including genes, molecules, cells, circuits, physiology,



behavior, self-report, and paradigms as well as developmental and environmental processes (NIMH, n.d.).

The growth of the neuropsychotherapy movement is evidenced by the creation of a new credential (Certified Clinical Neuropsychotherapy Provider), professional organization (The International Association of Clinical Neuropsychotherapy), and peer-reviewed journal (*International Journal of Neuropsychotherapy*). Despite the growth of neuropsychotherapy, much of the training and scholarship in neuropsychotherapy originates outside of the United States and has little exposure to the counseling field. Neuropsychotherapy is an example of how neuroscience has been used to inform the creation of new theory that can now be empirically validated. While this represents growth in the field of psychotherapy, it is unclear what this model will mean for the counseling profession and the establishment of neurocounseling as a specialty. Will we continue the trend of generalizing neuroscience findings to the counseling process or establish a truly independent body of neurocounseling literature?

THE CALL FOR AN INDEPENDENT BODY OF LITERATURE

The creation of an independent body of literature in the counseling field is one of the major principles outlined to strengthen and unify the profession (Kaplan & Gladding, 2011); yet counseling research has been criticized for its largely descriptive nature and lack of process and outcome based designs (Erford, Miller, Schein, McDonald, Ludwig, & Leishear, 2011; Ray et al., 2011; Wester, Borders, Boul, & Horton, 2013). Notwithstanding the value of the neuroscience literature related to psychotherapy, these findings have yet to be replicated within a professional counseling framework. Although the use of brain-based measures (e.g., EEG) is accessible, we have “largely failed to use brain-based measure to substantiate [our] work” (Myers & Young, 2012, p. 26). Many of the neuroscience findings from allied fields have been generalized to the counseling field without empirical investigation. This reflects a larger trend, that many of the “best-practices” in the mental health care field have been “dictated to counselors by other mental health professions” (Kaplan & Gladding, 2011, p. 371). Therefore, the need to create a neurocounseling research agenda exists within a larger discussion regarding the need to create an independent body of literature, enhance the quality of counseling research, and empirically evaluate therapeutic outcomes.

While these concerns are notable, the increase in conceptual articles and emergence of a few empirical studies related to neuroscience in counseling is encouraging. As the counseling profession continues to establish itself as a major mental health profession, it is imperative that we create an independent body of knowledge that capitalizes upon our unique professional values and philosophy. We believe that the burgeoning field of neuroscience and the exploratory nature of the RDoC provides a tremendous opportunity for professional counselors to accomplish this goal.



THE CURRENT NEUROCOUNSELING LITERATURE

Although a complete content analysis of neuroscience-related publications in counseling journals is outside of the scope of this article, a brief review of the existing literature is reviewed to provide a foundation for future scholarship. In order to identify potential articles, several search terms were used: *mind*, *brain*, *neurocounseling*, and *neuroscience*. Next, we used Academic Search Complete, a database within EBSCO Host, to search for these terms within flagship counseling journals including *JMHC* and the *Journal of Counseling & Development (JCD)*. Each term was searched for independently using three field options: *no field selected*, *as subject term*, and *in title*. As can be seen in Table 1, of the 690 total publications in *JMHC* from 1994-2016, only a small percentage included these search terms.

Table 1 Neuroscience Publications in *JMHC* (1994-2016)

Search term	No field	As subject term*	In title*
Mind	7 (1.0%)	3 (0.4%)	2 (0.3%)
Brain	11 (1.6%)	3 (0.4%)	2 (0.3%)
Neurocounseling	1 (0.1%)	0 (0.0%)	1 (0.1%)
Neuroscience	8 (1.2%)	6 (0.9%)	2 (0.3%)

Note. Search completed using Academic Search Complete Database through EBSCO Host and resulted in 690 total publications. *Duplicates not removed from search findings.

A large portion of these *JMHC* articles focused on ADHD (e.g., Hall & Gushee, 2002), while others included topics such as: exercise as a counseling intervention (Okonski, 2003); holistic counseling techniques for clients with traumatic brain injury (e.g., Patterson & Staton, 2009); neuroscience-informed cognitive behavioral therapy (Field, Beeson, & Jones, 2015; Field et al., 2016); mind-body techniques in integrated primary care settings (Glueck, 2015); beliefs about the use of mind-body practices (Nichols, 2015); neuroscience principles aligning with reality therapy (Wubbelding, 2015); neurofeedback specialty practice (Chapin, 2016; Pacheco, 2016); the inflammatory hypothesis of depressive disorders (Hall et al., 2016); experiences learning interpersonal neurobiology (Miller & Barrio-Minton, 2016); and brain-based psychoeducation (Miller, 2016). Notwithstanding the quality of these manuscripts, the majority of these articles were conceptual in nature with only a few (e.g., Field et al., 2016) including an empirical evaluation of neuroscience principles in counseling. It should also be noted that many of these publications were included in the aforementioned April 2016 special issue of *JMHC*, which significantly increased the citation count of neuroscience articles in *JMHC*.

We followed the same search protocol to identify neuroscience-related publications in *JCD*. As can be seen in Table 2, of the 1,406 total publications



Table 2 Neuroscience Publications in JCD (1994-2016)

Search term	No field	As subject term*	In title*
Mind	311 (0.8%)	15 (0.4%)	2 (0.1%)
Brain	212 (0.9%)	1 (0.07%)	32 (0.1%)
Neurocounseling	1 (0.07%)	0 (0%)	0 (0%)
Neuroscience	1 (0.07%)	1 (0.07%)	1 (0.07%)

Note. Search completed using Academic Search Complete Database using EBSCO Host and resulted in 1,406 total publications. *Duplicates not removed from search findings.

in *JCD* from 1994-2016, an even smaller percentage of manuscripts on the neuro-search terms were identified. Some of the notable articles identified in this search focused on topics such as: limitations of left-right brain lateralization interventions in counseling (Robbins, 1985); neuropsychological assessment (Lewis & Sinnott, 1987); mind-body self-care (Schure, Christopher, & Christopher, 2008); CBT, neuroscience, and post-traumatic stress disorder (Makinson & Young, 2012); neurofeedback in counseling research and practice (Fraggedakis & Toriello, 2014; Myers & Young, 2012); and neurodevelopmental components of the stress response system (Kindsvatter & Geroski, 2014). Continuing the trend identified in the *JMHC* articles, most of these articles were conceptual in nature.

In addition to publications in *JMHC* and *JCD*, additional neuroscience-related literature was found in several other counseling journals including the *Journal of Creativity in Counseling*, *Journal of Humanistic Counseling*, *Journal for Social Action in Counseling and Psychology*, *Counseling and Values*, *The Professional Counselor*, and *VISTAS*. Although not exhaustive, additional articles focused on topics such as: neurofeedback in the treatment of ADHD (Russell-Chapin & Chapin, 2011); the relationship between magic, neuroscience, and counseling (Echterling, Presbury, & Cowan, 2012); implications of neuroscience for counseling and social justice (Ivey & Zalaquett, 2011); left-right brain processes in counseling (Field, 2014); breathing characteristics and symptoms of psychological distress (Crockett et al., 2016); and neuroscience implications for Adlerian theory (Miller & Taylor, 2016).

There are at least three additional publications by professional counselors outside of the counseling journals that are worth noting. Each of the studies evaluated both process and outcome variables using electroencephalogram (EEG) biofeedback, also called neurofeedback, in the treatment of ADHD (Russell-Chapin et al., 2013), anxiety (Dreis et al., 2015), and emotional decision making (Collura, Zalaquett, & Bonnstetter, 2014). These three publications, in addition to a few others (e.g., Crocket et al., 2016; Field et al., 2016; Miller & Barrio-Minton, 2016) represent the only empirical evaluation of neurocounseling identified for the purposes of the current article.



Significant challenges exist to increasing the breadth and depth of neurocounseling scholarship within the counseling field. Anecdotal evidence from neuroscience interest network meetings and our own experience suggests that publishing neuroscience literature in the counseling journals is difficult due to perceptions of neurocounseling as too closely aligning with the medical model and a lack of subject expertise among editorial board members. Additionally, the articles that are published are not centrally located and many are published outside of the counseling journals, making it very difficult for counselors to gain access to this literature in an efficient manner. Given the largely conceptual nature of our existing neurocounseling literature, counselors are placed in a position of continuing to generalize research findings from allied fields such as psychology to the counseling process rather than conducting empirical studies to validate and replicate these findings within a counseling framework.

It is common for neuroscience to be used to justify existing theories and explain why things happen, and neuroscience is only recently being used to inform the generation of innovative theories and techniques. It is time for the counseling field to make a shift toward an empirical evaluation of the neuroscience implications for counseling, and produce a body of literature that empirically supports the practice of neurocounseling. It is with this spirit that we embark into the next generation of the neurocounseling movement and continue AMHCA's leadership in the advanced practice of CMHC through this new section of *JMHC*.

OVERVIEW AND OBJECTIVES OF THE NEUROCOUNSELING SECTION

An understanding of the brain and the entire nervous system is imperative for the continued evolution of our field. Despite many calls to action by notable leaders in the counseling field (e.g., Myers & Young, 2012), we are just beginning to establish a brain-based era in counseling, an era of neurocounseling. As we strive for an independent body of knowledge, it is important for the counseling profession to have a dedicated space for neurocounseling research. Although many counselors and counselor educators are doing innovative neurocounseling work, anecdotal evidence suggests that there are barriers to publishing neurocounseling literature in the flagship counseling journals. Therefore, many counselors (e.g., Dreis et al., 2015) continue to publish outside of the counseling field. Without a central location, it is difficult for counselors to access neurocounseling literature.

The goal of the Neurocounseling section is to increase scholarship related to neurocounseling by providing a dedicated space for academic discourse. This section provides CMHCs with an opportunity to enhance clinical training and practice in a brain-based era of mental health and wellness. In order to accomplish this goal, we have outlined several objectives for the Neurocounseling section:



- Provide a dedicated space for neuroscience manuscripts in the counseling field.
- Identify clinical outcomes in an era of neuroscience.
- Generate and evaluate new theories and techniques of clinical mental health counseling grounded in neuroscience principles.
- Replicate and validate existing psychotherapy research within a counseling framework.
- Increase exposure to the RDoC in the counseling field.
- Create an independent body of neurocounseling literature.

In order to meet these objectives, we encourage manuscripts that emphasize innovative strategies and techniques demonstrating the theory, research, and practice of neurocounseling. Although articles that critically review the existing neuroscience literature as it pertains to counseling are welcomed, preference will be given to original research that evaluates existing theories and techniques using neuroscience principles as well as using these principles to generate new theories, techniques, and strategies of neurocounseling. Researchers are encouraged to submit manuscripts that incorporate the RDoC of the NIMH.

We acknowledge that our optimism about recent advances in neurocounseling should be tempered with empirical and practical realities, and we do not believe neurocounseling to be the panacea for all clients. We also recognize the potential for this neurocounseling movement to lead some to believe that other counseling does not include neuroscience principles or is not valuable; this could not be further from the truth. Rather, we hope and anticipate that neuroscience will become so integrated into our training, research, and practice that we will no longer need to call it *neurocounseling* or need a special section in a journal, because all counseling will be neurocounseling (or as Lori Russell-Chapin would say, “neuro-wise”). We hope that this new Neurocounseling section of *JMHC* represents the next step in this growing movement towards integrating neuroscience principles related to the nervous system and physiological processes underlying all human functioning into the practice of counseling for the purpose of enhancing clinical effectiveness in the screening and diagnosis of physiological functioning and mental disorders, treatment planning and delivery, evaluation of outcomes, and wellness promotion, the next step to solidify CMHC as a leading mental health profession.

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