TREATMENT IN 2017

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Neuroscience gained unprecedented advancement in the 20th Century. It is considered one of the most interdisciplinary fields today as it encompasses studies related to general science, medicine, psychology, psychiatry, technology, neurology, biology, and even psychotherapy. Neuroscience is providing increased understanding of the body mind connection, human behavior, emotions and cognitions, how we learn, store or discard memory, and how the brain and body communicate. Over the last few decades' research has demonstrated "psychological disturbances do have a neurological basis." (Kandel, 1998).

Relevant to behavioral health/mental health perhaps the greatest scientific discovery of the twentieth century was neuroplasticity. Research confirmed that the human brain had the ability to change and develop new brain cells. Simply defined, neuroplasticity is the brain's ability to change in response to experience. We now know that the human brain can form new neural connections reorganizing itself across the lifespan. Research provides increased evidence that our brains are continually changing in response to our environment, experiences, lifestyle, and relationships. The brain can build new cells, new neuronal pathways, and repair itself when damaged. Brain changes occur through repeated learning, consistent practice or exposure to an area of focus. Simultaneously, the brain undergoes "synaptic pruning" by removing neural pathways no longer needed. Scientists once believed that as we aged we lost brain cells and that these cells were never able to regenerate. With evidence of the malleability of the brain, what this means for treatment is nothing short of miraculous. We now have evidence that psychotherapy elicits neurological activity that allows new and healthy neural pathways to emerge, supporting the desired behavioral change. Repetition changes the brain.

Patients entering treatment present with brains that have been hard wired for unhealthy behaviors, decisions, thinking distortions, mood states and more, through the repetition process. Using this same process but directed towards healthy outcomes makes sense. Thus, I propose that at the core of treatment modalities today, the concept of Neuroplasticity drive the clinical program. The treatment plan can be guided by objectives and interventions designed to build new neuronal pathways through an integrated approach that supports positive brain change and improved opportunity for long-term recovery. Neuroplasticity is affected by lifestyle choices, nutrition, exercise, sleep patterns, and levels of stress. Thus, in a residential setting, the program should be designed to provide focus on these areas as well as exposure to activities that provide the best opportunity for plasticity to occur.

An emerging paradigm known as Neuropsychotherapy, which merges psychotherapy and neuroscience is providing opportunity for enhanced treatment. As an example, individuals who present for therapy may be struggling with an over active amygdala and right frontal lobe. We see this in individuals with anxiety who tend to withdraw to manage their symptoms. The right frontal lobe is associated with negative emotions and is further activated by the act of withdrawal. Thus, the patient's way to manage the anxiety is actually exacerbating it. To overcome anxiety, the left frontal lobe needs to be activated. We know the left frontal lobe is connected to positive emotions and action. This brain area is also connected to language and logic. A neuropsychotherapist can use this knowledge to design an effective intervention such as engaging the patient's left frontal lobe by having her identify and verbalize emotions and rational statements that challenge her anxious thoughts. Addiction is a symptom of unresolved and/or unidentified traumatic experience(s) rooted in dysregulation and stress. Neurochemical pathways are disrupted as one searches for relief through use of chemicals or behaviors that wreak havoc on dopamine levels and the reward center of the brain. Neuropsychotherapy can help the addict by first providing the empathy and kindness to assist in overcoming shame, and be the consistent calming presence demonstrating acceptance despite the addict's ability or erratic behaviors. The role modeling and

safe relationship the therapist provides is one way neuroplasticity occurs as the addict begins to learn self-regulation and tolerance of emotions. When psychotherapy is successful, this translates to the brain having been changed. Neuroplasticity can be effectuated in the therapist office or a treatment facility over a period of time when exposed to consistent optimal experiences for positive change.

When an individual is seeped in guilt and shame there is a payoff for these emotions as they activate the brain's reward center. This knowledge helps explain why some are seemingly addicted to perceived negative states. Over time however, feeling excessive guilt and shame does not achieve positive outcomes. To intervene on self-sabotaging behavior, focusing on gratitude increases dopamine and serotonin. The mere thought of seeking gratitude improves mood. Helping a patient make decisions, setting daily intentions and short and long-term goals result in calming the amygdala, and assists in stopping tendency towards impulsivity.

The dysregulation of the nervous system and emotions resulting from traumatic experience are attended to most effectively by providing safety to process the traumas. Safety is a basic human need required for the brain to develop in the most optimal way for mental, emotional, and behavioral health. Clinicians know that both early childhood trauma and/or adult trauma may present as over-reactivity and under reactivity. The result of unprocessed trauma can be seen in emotional, behavioral, and psychological extremes. Addiction is a prime example of an extreme or excessive behavior. Neuroplasticity provides evidence that change is possible.

I introduced a clinical model of neuroscience based addiction and trauma treatment at a residential behavioral health facility which I had co-founded. I witnessed many patients experience rapid shame reduction, reduction in cravings, and increased hope after receiving education on neuroplasticity and learning that the program was providing them with very intentional and specific activities, experiences, and content designed to change the unhealthy brain to one that provided the positivity, coping abilities, focus, and lifestyle changes they longed for.

Effective treatment requires emphasis on encouraging discovery and understanding of one's life through safely guided self-exploration. Clinicians, who demonstrate genuine compassion, nurturing, kindness, and empathy, assist the patient in positive re-structuring of the brain. A program must be consistent and thorough in the treatment delivery to effectuate this change. A wealth of research exists on how colors impact mood, how sound heals, the effect of sunlight on mood and sleep/wake cycles, how body posture impacts confidence, and much more. Putting into practice neuroscientific discoveries can only effectuate long-term recovery.

Nancy Jarrell O'Donnell specializes in addiction and trauma treatment. She has spent most of her 25-year career working in residential and in-patient facilities. Her experience ranges from Psychotherapist to Clinical Director to President of Clinical Services/Operations. She is a licensed therapist in Arizona currently in private practice. She developed The Sabino Model: Neuroscience Based Addiction and Trauma Treatment™