

Neuroscience and psychiatric nursing – it is worth thinking about

Neuroscience is a discipline in which there is a complimentary relationship between the biological and psychological sciences. Our contemporary understanding of the structure and neural circuits of the brain has been greatly enhanced by researchers who work in the field of neuroscience. They in turn have developed the work of brain exploring pioneers which can be dated back to 2nd Century AD. According to Kandel & Squire (2000) the scope of neuroscience ranges from “genes to cognition, from molecules to the mind” (p113). This then provides a broad arena from which psychiatric nurses can develop and extend clinical practice, research and education. For example neuroscience informs treatment of trauma and dissociation Bradshaw, Cook & McDonald, (2011), enhances understanding of the positive and negative symptoms in schizophrenia, Rolls & Deco, (2010) and offers a broader appreciation of the influence of neural pathway changes in depression, De Raedt & Koster, (2010). As I learn more about neuroscience and apply aspects of the discipline to my practice I am aware of increased hope, delight, creativity, spontaneity and purpose for and in my role as a psychiatric nurse.

From neuroscience we learn about the physiological response and association in the brain's circuits between a stressful event such as rape, assault, war, escaping a house fire and fear. Neural circuits are created at that time. When a memory is triggered through sensory stimulation the neural circuit operates as it did during that initial stressful event. In day to day living this translates to those neural circuits being stimulated through smell, touch, sight, taste or sounds and thus the body repeatedly experiencing psychological, behavioural, physical and emotional responses of the event. Further, the use of functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) enables researches to observe and map the brains responses to single stimuli and events including interactions with others, recalling past experiences and anticipating the future (Kandel & Squire, 2000).

How does this information assist the role of the psychiatric nurse? Through understanding the importance of neural circuits and the changes that occur in the brain during stress the psychiatric nurse can assist clients to develop strategies to manage distressing symptomatology. Further, the nurse can work with clients to alter neural circuitry in the present and for the future. Strategies such awareness of body responses to specific sensory stimuli and stress, breathing techniques and challenging old thinking associated with the event can be easily integrated into practice.

When a nurse observes physiological changes in the client, he / she can highlight same and encourage the client to notice what is happening in their body, their subjective experience. The client is encouraged to challenge their body to update the physiological readout about the past and present in order to create new experiences in the future. It is possible that a positive comment from a nurse to a client can significantly alter an old negative neural pathway. Validation of a client's experience of for example, sexual abuse may do much to unwind years of not being believed and thus stimulate the creation of new neural pathways. This in turn may assist clients develop new strategies to self regulate their emotions and behaviours, especially important for clients diagnosed with borderline personality disorder (Hughes, et al., 2012).

With over 30 years experience as a psychiatric nurse which has included 10 years working specifically with adult survivors of childhood trauma I embrace and enjoy the research emerging from neuroscience. Psychodynamic approaches so prominent in my training are regaining ground as neuroscience demonstrates the effectiveness of such interventions in creating neural pathway changes. Evidence is emerging of complimentary relationships between neuroscience and psychodynamic models including, psychoanalysis Northoff, Bermphohl, Schoeneich and Boekar, (2007), psychodrama Yaniv (2010), and attachment theory Cozolino (2006). Modalities such as mindfulness, acceptance and commitment therapy, music and art therapy can also greatly assist the brain make new connections and create new meanings for individuals.

I like the following statement from McAdams cited in (Casey & Long 2002:603):

If you want to know me then you must know my story, for my story defines who I am, and if I want to know myself, to gain insight into the meaning of my own life, then I, too, must come to know my story.

The statement evokes for me the importance of psychiatric nurses assisting clients to know their story in the context of understanding the story of their brain and mind. In my work with clients I show them a diagram of the brain especially the limbic system and its response to stress. I show them neural pathway changes that can occur in childhood trauma and how new neural pathways can be created by challenging and changing old scripts and behaviours. I observe their body relax, they take a sigh and comment “so I am not mad”. As they sigh their brain has already started to create a different story and thus meaning of their experiences.

Neuroscience has much to offer psychiatric nursing and even as I think about what I am writing I am extending my own story as a clinician, researcher and educator.

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