Application of Neurology: PET Scans in Social Work

Evoanna K. Kelley and James Winship MSW, PhD and Jean Duve Berghammer MSSW, LCSW

University of Wisconsin – Whitewater, Department of Social Work

Introduction

My research assesses the application of neurology in the field of social work, especially for diagnosing and treating mental diseases and disorders.

Specifically, I will examine how social work and PET scans can be used to diagnose and treat mental disease and behavior problems among children and adolescents.

Key Words:

•Neurology (Neuroscience)

•PET Scans: Positron Emission Tomography

•Diagnosis/Treatment

•Mental Diseases, Disorders: ADHD

•Behavior Problems: Impulsivity, Inattentive, Hyperactive.

Research Question(s)

•How do social workers utilize neuroscience, specifically PET scans, in the diagnosis and treatment of children and adolescents with mental disorders and behavioral problems?

•For social workers who do utilize neuroscience in their practice, how closely does this practice reflect current research concerning best practices in this area?

Significance of my Research

•Social work lacks the hard medical science to diagnose and treat mental disorders and behavior problems. Although neuroscience is not required in the diagnosing and treating of mental disorders and behavior problems, using technology like PET scans, helps pinpoint that activity the occurs in the brain and tracking the biological influences that cause mental issues and disorders. Most mental disorders such as ADHD are accompanied by other mental issues that require treatment in order to address the "main issue"; however, most social workers are not aware of this finding. Social workers can do what neuroscientists cannot and vice versa, but embracing both concepts can produce a revolution within both the medical science and the social sciences fields.

Background Research

Positron Emission Tomography scans, also known as PET scans, were invented in 1953 by Dr. Gorden L. Brownwell. The idea of PET scans, later evolved by Michael E. Phelps, and has become a new phenomenon. A machine used in the medical world as early as the 1970s, PET scans have continued to advance in technology.

When undergoing a PET scan, the patient is injected with a low dose of radionuclide, also known as "tracer," which absorbs the radiation given off by the scanner and enables the scanner to pick up the radiation, creating images of the body so that defects can be detected. In most cases, PET scans are not typically utilized for mental diseases and disorders, but, in some cases, their use has resulted in successful outcomes.

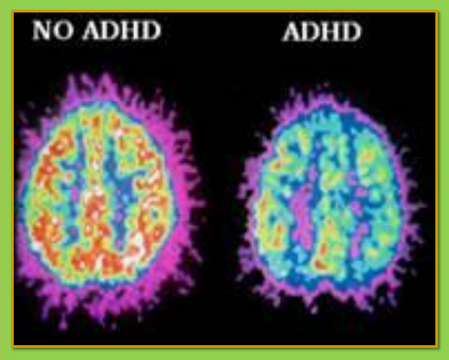
Combining neuroscience with social sciences such as social work has created a emerging revolution in the medical and social science worlds. Finally, the lack of hard science in social work has stalled as neuroscience makes its way in the diagnoses and treatment plans for patients who struggle with mental disorders and or behavior problems.

Hypotheses

•Social workers dealing with children and adolescents have a low awareness of the value of neuroscience.

• Social workers who do use neuroscience in their practice may not necessarily focus on what the published research says in terms of how necessary neuroscience in social work is.

Preliminary Results: ADHD Affected Children



•There are two million children in the US alone who are affected with ADHD. That is one out of 25-30 children; nearly two in every classroom.
•85% of children with ADHD will also have another condition that affects their development and learning.
•PET scan comparison: Tracing brain activity- Child 's brain with ADHD disease-affected brain compared to child 's brain with no ADHD , normal brain. Image found at www.adhd.org.nx

Without the knowledge of neuroscience to help diagnose and treat mental disorders and behavior problems, the situation is written off as something that can be "resolved" with medication. However, instead of trying to determine the best practice to for the issue, affected children are placed on drugs as a "quick fix." Photo found on Google Images

• More specific would be the benefits of neuroscientific findings for purposes such as working with patients with dysfunctional human-bonding relationship issues associated with, for example, impulsivity in decision-making (or judgment) (Farmer, 2007).

• Rosemary L. Farmer further explains the necessity of using neuroscience in social work for these six reasons:
1. A neuroscientific revolution has occurred. Although this revolution may not provide all the answers, it needs to be acknowledged and understood.
2. Neuroscientific insights can be of immediate and direct benefit in improving our understanding of human behavior and practice.
3. The probability is that neuroscience over time will yield additional powerful insights, and we must be ready—intellectually, emotionally, and institutionally— to understand these developments.
4. Neuroscience is enhancing our understanding of what it is to be human; the relevance of this will depend on whether one's conception of social work is narrow or broad.
5. Neuroscience can help social workers and other human service professionals to cope with the increasing professional difficulties they face; clinical practice is becoming more difficult, as practitioners encounter an increasing complexity of human and societal problems and diagnoses.
6. Human service professionals should aspire to contribute to neuroscientific understanding by engaging more fully in cross-disciplinary study and by developing more comprehensive conceptualizations—the hallmark of social work intervention—of psychosocial adaptation.

Methodology

•A specifically designed survey will be distributed at the Nation Association of Social Work Conference that will be held in Milwaukee, WI this fall.

• I will survey roughly 15-20 social workers who specifically deal with children and adolescents. The survey will include five to ten reasons in regards to using neurology in social work with 4 to 5 different answers.

• Questions posed about the importance of neuroscience in social work and how often it is utilized will be examined.

• The survey will show what type of social workers use neuroscience and in what contexts, and the data will be compared to who uses it, when it is used, and where it is used the most.

Conclusion

This research should identify the best practice, either referring a client to a psychiatrist for prescribed medication or using interpersonal therapy with a medical scientific basis, like neurology, for diagnosing and treating mental disorders and behavior problems among children and adolescents.

Bibliography

•Farmer, R. L. (2008). *Neuroscience and social work practice: the missing link*. Santa Monica, CA: SAGE Publications.

•Mattox, R, & Harder, J. (2007). Attention deficit hyperactivity disorder and diversity populations. *Child and Adolescent Social Work Journal*, *24*(2), Retrieved from http://www.springerlink.com/content/4m454j25537j6454/

•*Professionals in ADHD.* (1998). Retrieved June 16, 2010 from Netdoctor.co.uk, Netdoctor: http://www.netdoctor.co.uk/adhd/professionalsinadhd.htm.

Acknowledgements

•McNair Scholars Undergraduate Research Program

•Dr. James Winship MSW, Ph.D

•Jean Duve Berghammer MSW, LCSW

• Carolina Calvillo, Ph.D student

• Dr. Mary Ann Emery, Ph.D Languages and Literatures