Supervision Request

Name:

Title of your Topic: Cognitive Deficits Due to Bipolar Disorder and Sleep Disturbance

Subject Area: Clinical Psychology, Neuropsychology

Briefly describe your proposed topic (250 words).

It has been well documented that people with bipolar disorder suffer from deficits in working memory and executive functioning, even in euthymic periods. These same cognitive deficits are seen both in people who are experimentally sleep deprived, as well as those with insomnia. Another key aspect of bipolar disorder is sleep difficulty, as sleep disturbance is a common prodrome of both mania and depression, and is also associated with the onset of hypomania or mania. My project will ultimately examine a sample of participants who have been diagnosed with bipolar disorder and are euthymic, and are concurrently experiencing sleep problems, with aims to uncover whether sleep difficulty acts as a moderator of cognitive deficits.

First, I am interested in learning about the neural mechanisms involved in working memory and executive functioning in a healthy population. I would then like to research the specific deficits experienced by people who are sleep deprived, people who have insomnia, and people who have bipolar disorder separately. Ultimately, I would like to synthesize this information to understand the cognitive deficits experienced by people who suffer from both bipolar disorder and sleep disturbances.

Why do you want to pursue this independent study option and what benefit will you gain from it?

On a broad level, I am interested in pursuing this independent study option because I believe this is an amazing opportunity to work closely with an esteemed Cambridge professor. I am only just starting my academic career, and to have the ability to work with a professor and researcher of this caliber right now is a unique opportunity I feel I would be ill-advised not to embrace. More specifically though, I am planning to work on an honors thesis when I return to Berkeley in the fall. This project will be examining working memory and executive functioning deficits that are suffered by the specific population described above: people who have bipolar disorder, are currently euthymic, and are experiencing sleep problems during this inter-episode period. During the summer, it is essential that I begin researching this topic on my own. A major component of my project will be a comprehensive literature review about performance on cognitive tasks in a wide variety of populations: people without mental illness or sleep disturbance, people with sleep problems, people with bipolar disorder, and finally, the targeted population of people with both sleep problems and bipolar disorder. Because this is a topic about which I plan spend my last year at Berkeley writing, doing a supervision is the perfect way to begin researching before I return, as well as receive more feedback on my project.
Briefly describe any relevant work you have already done in the area.

For the past year, I have worked as a Research Assistant in the Golden Bear Sleep and Mood Research Clinic on the Berkeley campus. There, I have been involved in a randomized control trial of cognitive behavioural therapy as a treatment for sleep disturbance during euthymic periods of bipolar disorder. First, I am responsible for leading participants through a cognitive assessment lasting around three hours. This assessment involves both interviews and computer tasks. I am also responsible for reviewing the data collected from these assessments and entering it into a database on the computer. These are the data with which I will be working when I write an honors thesis next year. Because of my role in this study, I am already familiar with the methodology used to assess cognitive deficits. I have also already begun reading about sleep disturbance and bipolar disorder.

I have also taken some classes that are relevant to this subject matter. I have taken Clinical Psychology, where I learned about the symptoms and diagnosis of many mental illnesses, including bipolar disorder. In addition, I have taken Neuropsychology, where I learned about the regions of the brain that underlie many cognitive processes, including working memory and executive functioning.

Taken together, my experience has allowed me to become familiar both with past and present literature about the topics of sleep disturbance and bipolar disorder, as well as the specific data collected and how it is analyzed.

Please list below any books or other sources which may be relevant for the topic.


Choo et al., Dissociation of cortical regions modulated by both working memory load and sleep deprivation and by sleep deprivation alone. Neuroimage 2005; 25:579-87.


Smith et al. The impact of moderate sleep loss on neuropsychologic signals during working-memory task performance. Sleep 2002; 25:784-794

Varkevisser et al. Chronic Insomnia and Performance in a 24-Hour Constant Routine Study