

Report of Professional Development Assignment Spring 2017

Submitted by Meghan McDevitt-Murphy, PhD

I have appreciated this period of relief from teaching and administrative responsibilities as an opportunity to proceed further in a new direction in my program of research. Over the last few years, I have been working toward applying a novel theoretical framework to the understanding of posttraumatic stress disorder (PTSD). I have been able to immerse myself in this research over the last several months, and have made progress on an ongoing grant-funded project that seeks to characterize PTSD from the perspective of behavioral economics. I have also written a theoretical manuscript articulating a model of PTSD from the behavioral economics framework (as well as three other papers). I have collaborated on one major grant submission, and I am writing an additional grant proposal to be submitted in October 2017.

Research Conducted

I received grant funding from the Consortium to Alleviate PTSD (CAP) to conduct a research study to explore PTSD from the perspective of behavioral economics. This perspective entails a greater focus on the outwardly observable behavior associated with PTSD, as opposed to the internal (i.e., thoughts, feelings) experiences associated with PTSD. Most psychosocial interventions (i.e., psychotherapies) that are currently in use to address PTSD focus primarily on one's thoughts and feelings. These therapies have demonstrated efficacy, however there are still individuals who are moderately to severely symptomatic after undergoing psychotherapy for PTSD, and the research also suggests that there are many people who simply never seek therapy from a professional, due to a number of barriers. One such barrier is that the idea of confronting one's trauma is overwhelming to many individuals and they are hesitant to seek therapy due to trauma-related avoidance. Avoidance, generally, is one of the most pernicious aspects of PTSD; some individuals with PTSD are extremely fearful of being reminded of their traumatic events that they avoid engaging in many routine activities. Avoidance is also thought to contribute to the high rate of co-occurring substance misuse among individuals with PTSD. The co-occurrence of PTSD and substance misuse has been a primary interest of mine over the majority of my career. Behavioral economics has been a useful framework in the area of substance abuse research, although it has been unexplored in the area of PTSD. I believe that this perspective could lead to important developments in our understanding of how the symptoms of PTSD become severe, and how they interfere with functioning.

One of my ultimate goals in this line of research is to develop therapeutic tools that could be deployed remotely (i.e., via smartphone), and that would help to promote greater engagement in life, including increased use of social support as well as increased goal-directed activity. These tools would serve as a first step in treatment seeking for many individuals, or could function as an adjunct to psychotherapy for others. With my current project, we are collecting data to learn more about the day-to-day activities of individuals with PTSD, and we will look at the ways that different activity patterns predict PTSD severity and functional impairment assessed at a later time point. The project involves recruiting potential participants (veterans with PTSD) from the community, interviewing them in our laboratory space, and then maintaining contact with them while they monitor their activities for 3 weeks with a mobile device. When data collection is complete, we will examine how different activity patterns prospectively predict PTSD severity and functional impairment.

Manuscripts written:

I have been working to publish papers exploring this new approach for PTSD. I have written a theoretical article presenting the framework of behavioral economics as context for understanding PTSD. In this article, I integrated findings from animal and human research across different aspects of PTSD. I am in the process of final revisions for this article and plan to submit it by mid-September. Relatedly, I have an empirical manuscript that explores some research questions derived from the framework of behavioral economics for PTSD that is also close to submission (having completed several rounds of revisions with my co-authors).

In terms of submitted papers, I have submitted four manuscripts over the course of my PDA term and the following summer. All were based on empirical studies, and were written with graduate students. One manuscript was submitted to the *Journal of Trauma and Dissociation*, one was submitted to the *Journal of Sleep Research*, one to *Alcoholism: Clinical and Experimental Research*, and one to *Drug and Alcohol Dependence*.

Grant Proposals:

During the Spring/Summer of 2017, I worked with my colleague, Robert Klesges (who was at University of Tennessee Health Sciences Center, and has moved to The University of Virginia) on a grant proposal to the Department of Defense (DoD). I will serve as PI of the subcontract. This project will further develop a brief alcohol intervention that we have worked on together with a team of investigators in Memphis, San Antonio, and Virginia. This particular grant application proposed a study to target alcohol misuse among intelligence officers, an important group given their security clearances. We submitted a pre-application to DoD, and we were invited to submit a full proposal (submitted June 2017). For this grant mechanism, pre-applications serve as a first round of review and only the most promising pre-applications are selected to move on to the next round where a full application is invited. We are hopeful that this grant will be funded.

I am also working on two applications that will be submitted in October 2017. On the first of these, I will serve as PI, and I am developing a grant application as PI that I will submit to the National Institutes of Health. I am seeking funding for laboratory-based studies where I will test hypotheses derived from behavioral economics, related to PTSD.

The second grant that I will be submitting in the coming months is a collaborative project with Dr. Karen Derefinko at the University of Tennessee Health Sciences Center in Memphis. This proposal will focus on a preventive intervention for opioid addiction. We will focus on individuals at high risk for developing an addiction to an opiate medication. Research suggests that surgery is a critical event, where surgery patients are prescribed opiates for their post-surgical pain, and then may have difficulty weaning off the medication.

Papers presented: During Spring 2017, I submitted several proposals to conferences that will occur over the next few months. I was also invited to give a presentation at the annual Combat PTSD conference in San Antonio, TX in October 2017. Along with my graduate students, I had several proposals selected for the annual convention of the International Society for Traumatic Stress Studies in November 2017. Of note, one of the proposals I submitted was selected as a featured talk for this conference.

Talks given to professional audiences: N/A

Other Collaborative Activities: Over the course of this PDA, I have had time to nurture collaborations with colleagues at other institutions, with whom I have planned joint grant proposals (one planned for October 2017, one for early 2018).