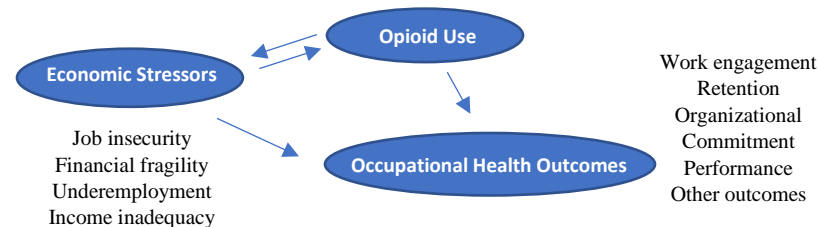


Regardless of signs of recovery from the economic crisis of 2007-2008, economic issues remain salient, and many Americans continue to experience stress due to their economic situation. **Economic stress consists of both subjective and objective evaluation of one's financial and employment-related stress**<sup>1</sup>. My research will focus on four forms of economic stress: income inadequacy, financial fragility, underemployment, and job insecurity. Financial stress occurs when individuals perceive their personal financial situation to be insufficient to afford their needs and wants (perceived income adequacy) and are unable to cope with unexpected expenses (financial fragility), consequently leading to financial strain. While the unemployment rate in the United States is relatively low (below 5%), many workers are still experiencing employment-related stress due to underemployment and job insecurity. Underemployed workers hold jobs that insufficiently use their skills, abilities, education, or qualifications and may also receive less hours and pay than desired. Job insecurity is an individual's subjective evaluation of the "perceived threat to the continuity and stability of employment as it is currently experienced"<sup>3</sup>. Employee perceptions of job insecurity have been empirically shown to increase stress, reduce mental, physical, and work-related wellbeing, and predict organizational commitment and turnover intention at work<sup>2-6</sup>. Perceived job insecurity may induce more stress than actual job loss or unemployment because the anticipation of job loss may prevent coping strategies to manage the stress. Along with unemployment, job insecurity has been a popular focus of economic stress research. **However, there has been less concentration given to occupational health impacts of broader financial issues** (e.g. <sup>19</sup>).

Economic stressors linked to the Great Recession, such as job insecurity, are associated with increased somatic symptoms experienced by individuals and a greater likelihood of alcohol abuse as a potential coping mechanism<sup>7</sup>. Relationships have also been found between perceived job insecurity of men and psychotropic drug use<sup>8</sup>. Additionally, empirical evidence suggests that illicit drug use may be a coping strategy for recessions and unemployment<sup>9</sup>. **To my knowledge, research has not examined opioid use as a mediator of the relationships between economic stress and occupational health.**

For decades, the United States has struggled with an opioid epidemic. Opiates are drugs derived from the opium poppy plant that chemically interact with opioid receptors on nerve cells in the brain and in the nervous system to produce pain relief and pleasurable effects<sup>10</sup>. Opioid overdoses are driven by synthetic opioids (i.e. fentanyl), semi-synthetic opioids (i.e. oxycodone), and heroin and have led to four times more of American opioid-related deaths in 2015 compared to 1999<sup>11-12</sup>. Long-term opioid use frequently starts with the treatment of acute pain<sup>13</sup>. Prescribed opioid pain relievers are the prescription drugs most often misused, resulting in a 72.2% increase in deaths due to synthetic opioids – not including illegally produced fentanyl – from 2014 to 2015<sup>14</sup>. The number of opioid prescriptions written in 2012 would have been enough for every adult in the United States to have one bottle of opioid painkillers<sup>11</sup>. This longstanding problem has led to many societal consequences. The overuse and misuse of opioid substances costs the United States 80 billion dollars each year in healthcare, criminal justice, and productivity costs<sup>15</sup>. **While the consequences of opioid use have been well-researched in other social domains**<sup>16-17</sup>, **the relationships between opioid use and the workplace have received less attention.** Current research shows that opioid use is related to absenteeism and work productivity<sup>18</sup>. My research will bridge this important gap in the literature on economic stressors, opioid use, and work-related outcomes.

Broadly speaking, my goal is to establish a stream of research that will answer the following questions: (1) **What is the nature of the relationship between multiple economic stressors (job insecurity, fragility, underemployment, and income adequacy) and opioid use?** (2) **What are the causal mechanisms linking opioid use and economic stress?** (3) **How does opioid use relate to occupational health outcomes?** Particularly I am interested in the impact on employee work engagement such as organizational commitment and turnover intentions.



This project will be a short-term investment with long-term goals. My short-term goals are to focus on the first two questions to establish the relationship between economic stressors and opioid use, as well as to identify causal factors to help explain the relationship. I will be analyzing a series of archival datasets and in-process data collection to test these relationships. Currently, my advisor Dr. Bob Sinclair is administering a longitudinal study online through Amazon's Mechanical Turk (MTurk) that includes the variables of interest for my research (economic stressors, opioid use, and multiple occupational health outcomes). The first wave of this data collection is complete with over 700 participants. I also have access to multiple additional sources of survey data including other unpublished MTurk data sets, studies of retail employees, nurses, and larger population surveys. To test these initial relationships, I will conduct Multiple Regression Analyses and Structural Equation Modeling as applicable to each dataset. Having access to many existing and in-progress datasets will facilitate my short-term productivity and provide me with experience so that I can collect my own data in the future.

My long-term goals are to continue expanding on economic stress and opioid use to link their relationship to organizational and occupational health outcomes. I would like to further explore the workplace implications and potential interventions if opioid use is found to be a coping mechanism for managing both employment-related and financial economic stress. My current resources for data sets and collection will allow me to pursue my research interests and become a scholar in this area of this research.

The NSF Graduate Research Fellowship will help me establish a program of work that will advance knowledge and have broader social impact. The proposed program of work will advance knowledge by **bridging gaps in the literature** concerning the causal links among economic stressors, opioid use, and work-related outcomes. In the long run, I hope to **establish a program of multidisciplinary collaborative research** connecting my work in applied psychology with scholarship in economics, public health, and business. Understanding the intricacies of the relationships between the variables of interest will have broader social impact as we will be able to **identify potential antecedents of opioid use to create social or organizational interventions**. This knowledge will help organizations better understand how to address issues of economic stressors and opioid use and ultimately mitigate negative occupational health outcomes.

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