

When I was eight years old, my grandmother took a serious fall, sustaining a subdural hematoma; only the swift actions of highly skilled hospital staff saved her life. She suffered cognitive deficits in memory, speech, and concentration, and my desire to help triggered interests in cognitive psychology and neurology. These interests became passions when I was accepted into a unique three-year science research program at my high school. After an initial period of exploration, I specified a research topic, reached out to university faculty in search of a mentor, and began the research process. Harvard University Professor Ellen Langer became my mentor and her psychology lab became my incubator. I helped design and pre-test an intervention for patients with mild cognitive impairment, allowing me to transform my ideas into purposeful practice.

This intervention was a three-week program designed to help improve cognition, fluid intelligence, and quality of life in people with mild cognitive impairment (MCI), an early-onset form of Alzheimer's Disease (AD). It utilized specific exercises that patients would complete at home or for in-lab psycho-educational sessions. They were designed to attenuate the cognitive and quality of life decline associated with MCI that is often associated with the individual's attribution of a clear, specific, and unremitting progression of disease. Relative to what is remembered, forgetting is actually less frequent than what many patients perceive; a change in their mindset along these lines may be critical in delaying progression of cognitive decline in addition to providing the patient/caregiver with increased well-being.

Although my grandmother inspired me to delve into such an immense topic, I was still

fairly naive to the actual scope of the problem and the importance that my research could have in legitimately helping to improve lives. This is why in addition to my research, two years ago, I co-founded a musical group called Sounds for Seniors, a club in my high school that plays music for elderly citizens in care centers such as Care One in Livingston, New Jersey. Many of them have some type of mental ailment that involves deficits in memory and a variety of other neurological processes. Performing music for them revealed to me two things: the first was the extent to which their disease affects them, and how necessary it is for us to help in anyway we can. Playing music puts a smile on their faces and brightens up their day. It gives them time to talk to us about the past, ask the musicians questions, and create a dialogue that has emotionally attached me to the research I am continuing to work on. Not only has the music helped improve the quality of their life, albeit once a week on Sunday mornings, but it has encouraged me to continue doing this research in college. Our senior population is rising exponentially, which means that diagnoses are becoming more frequent. The fight against Alzheimer's must only get stronger, and I fully intend on being in the front lines.