Research Assessment #14

Date: January 21, 2022

Subject: Cognitive Control in Pediatric Obsessive-Compulsive and Anxiety Disorders: Brain-Behavioral Targets for Early Intervention

MLA Citation:

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Assessment:

As someone with Obsessive Compulsive Disorder (OCD) I wanted to learn more about the cognitive preventions of the disorder as well as the behavioral targets for early intervention in children. Moreover as anxiety and OCD are comorbid and often have similar symptoms, I wanted to research anxiety as well.

OCD is characterized by intrusive and bizarre behaviors and worries, as well as underlying mechanisms like repetitive and distressing thoughts. However, although patients with OCD recognize their behaviors are unreasonable they still seem to not be able to control these repetitive behaviors. This is why I find it extremely important to research cognitive preventions for this disorder, as it feels like one is sort of trapped in their compulsions. One construct that may help facilitate brain maturation to help youth with OCD is cognitive control and identifying neural circuits underlying these psychological constructs. Patients with OCD often result in avoidance, however this reinforces repetitive negative thinking so instead practicing cognitive control is crucial. I find this prevention tactic very interesting and useful as it is a set of

capacities that supports goal-directed behavior in the face of difficulties. Healthy development through adolescence is characterized by improvements in cognitive control performance so I believe making this known is so important for youth who are struggling and feel like their OCD is never ending.

In terms of actual data, cognitive control subprocesses revealed largely equivalent performance between OCD and healthy children (Fitzgeraled et. al). I found this to be surprising as I assumed children with OCD would struggle to keep their thoughts regulated over children without the disorder. In children with OCD, hypo-activation was detected during task switching, cognitive conflict, and planning. Moreover in terms of anxiety, problems with executive functions such as difficulties concentrating are included in the symptoms. Deficiencies in the prefrontal cortex during control processes may also relate to non OCD anxiety disorders. For both OCD and anxiety, compensatory mechanisms for youth are enlisting maturing task control networks. As children with less mature task control (TC) networks seem to have less capacity for cognitive control this made sense to me.

Furthermore, treatment outcomes of pediatric anxiety also depend on the engagement of TC Networks. TC Network alterations enhance cognitive control and thereby can help patients overcome symptoms. I find cognitive training at an early stage of OCD to be an extremely important preventive measure, as it can improve children's quality of life into adulthood. Cognitive control training can enhance activation of the TC Networks and resolve neurocognitive insufficiencies. Cognitive control training can also increase behavioral capacity and resolve interference between distressing and repetitive thoughts. In fact, computer-delivered games have been developed for cognitive training, which is an avenue that highly intrigues me. I want to try and learn how to build a cognitive training game, so I can incorporate it into my final

product project. Learning about this new idea of cognitive control hit so close to home as someone who struggles with OCD. This area of study is something I am so motivated to learn more about.