An Examination of Cultural and Cognitive Mechanisms Facilitating Positive Youth Development in American Indian Communities

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Project Abstract

American Indian and Alaska Natives have long had cultural ways of teaching children that likely contributed to their developing abilities to successfully self-regulate in ways conducive to positive adjustment and adaptation. Historically, many of these cultural activities were prohibited by the US government and relocation to cities was actively supported as a way to improve their lives. Today, approximately 60% of American Indians live in urban communities and many others move between reservation and urban communities frequently. Regardless of setting, urban or reservation, there is a high prevalence of preventable deaths in American Indian communities indicating an urgent need for developmental research investigating mechanisms that promote positive development in American Indian youth. For example, unintentional injury and suicide are the two leading causes of death for American Indian youth ages 5 to 24 years.

Research on the role executive functions (specifically: inhibitory control - the ability to resist distractions and selectively attend to relevant information; working memory - the ability to hold information in mind and work with it; and mental flexibility - the ability to shift attention or adjust to change) play in promoting the development of self-regulation demonstrates much promise for understanding cognitive mechanisms of positive youth development. Cultural engagement likely contributes to the development of executive functions through practices that involve physical exertion (e.g., traditional dancing, running, and the planting of prayer sticks) and engage attentional control, working memory, and inhibition (e.g., story-telling, learning how and when to participate in complicated rituals and ceremonies, learning complicated clan structures and the rules of conduct associated with them). Indeed, a number of mainstream studies have found that physical exercise and social engagement support the development of executive functions and the prefrontal cortex on which they rely. Given the mobility of American Indians today, it is important to examine the extent to which American Indian youth in different settings (urban and reservation) engage in cultural activities, and whether engagement in cultural activities promotes the development of executive functions and contributes to positive developmental outcomes over time.

Given that American Indian youth are disproportionately exposed to high levels of violence, poverty and discrimination, indicators of risk must be assessed in order to properly understand mechanisms promoting positive youth development. Specifically, exposure to environmental strain needs to be examined as high levels of stress negatively impact the development of executive functions.

In the current study, American Indian youth affiliated with one tribe will be recruited from an urban city (n = 75) and a reservation community (n = 75) and followed over a period of 4 years with the
participants recruited from 3rd grade classrooms. Indicators of environmental strain (analysis of cortisol levels found in hair samples, self-reports of exposure to violence and discrimination, and video diaries), cultural engagement (participation in cultural activities, enrollment in urban Indian centers, participation in religious activities, and tribal language knowledge), executive function (neurocognitive assessments of inhibitory control, working memory, and mental flexibility), and self-regulatory outcomes (depressive symptoms, alcohol and drug use, problem behaviors and delinquency, academic success, and social competence) will be collected 6 times.

A series of dynamic cascade models will be explored to determine if significant differences exist between the two communities on any of the assessments and in the developmental trajectories leading to self-regulatory successes and failures over time. Specifically, the models will test the following hypothesis: 1) impaired executive function will mediate the cumulative impact of high levels of environmental strain and low levels of cultural engagement predicting increasingly negative indicators of self-regulation over time; 2) high environmental strain will be moderated by high cultural engagement which will contribute to the normative development of executive function and normative indicators of self-regulation over time; and 3) low environmental strain in conjunction with high cultural engagement will predict enhanced executive function which will predict enhanced self-regulation as indicated by low levels of problem behaviors and depressive symptoms and high levels of social competence. Importantly, the use of dynamic cascade models can potentially identify key factors that can alter the course of development as well as identify time points where the cascade of negative effects leading to negative self-regulatory outcomes can be weakened or intensified. Moreover, the results of this study have the potential to give American Indian tribes the information they need to include cultural activities as evidence-based practice in programs aimed at intervention and prevention.