

# Allostatic Load and Subjective Disease Risk **Predicts Perceived Environmental Control** Graham Harper '24 | Advised by Dr. Michael Casey

## Abstract

The development of our cognition, perceptual abilities, and fears are pervasive throughout our lifespan. Embodied chronic stress, known as allostatic load, may be such a factor that adversely impacts aging across our development. Perceived control over our environment is influenced by chronic stressors, as certain psychosocial facets of allostatic load have been found to impact these very environmental affordances. This study examines the relationship between subjective feelings of age, subjective disease risk, chronic condition status, facets of allostatic load, and perceived environmental control and mastery. The present study has utilized the third wave of the MIDUS data collection project and the collected measures of chronological and subjective age, subjective cancer and heart attack risk, and perceived control. The study found that an older subjective age significantly predicted variability in perceived control, above that of subjective disease risk and the number of chronic conditions.

# Methods

- The present study utilized data from the third wave of the Midlife in the United States data collection project, which surveyed individuals about facets of life quality and health.
- This study primarily examines feelings of subjective age and their impact on perceived control. Subjective feelings of age are best described as our perception of our internal age that are regardless of our chronological An individual's selfreported age may be lower or higher than their chronological age and this effect may not fixed across the lifespan.

#### Procedure

- Descriptive statistics and an initial correlation matrix was run to examine the relationships among selected variables.
- An iterative stepwise regression model was run which estimated the effect of the number of chronic conditions, subjective heart attack and cancer risk, and the subjective age conditions of feels older, feels younger, and feels the same as chronological age.

Cha Cha  $\frac{\text{Cha}}{*p < }$ 

*Note* – Change in  $R^2$  – Step 2 is .015 and change in  $R^2$  – Step 3 is .022. Both changes are significant to the <.001 level. Comparator is Feels Younger.

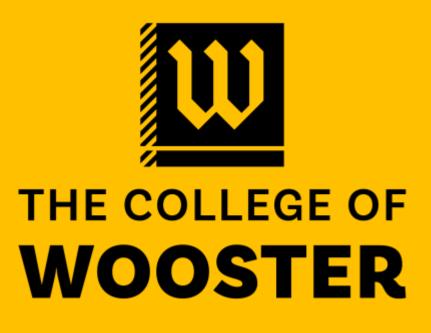
• This study found that among participants in the third wave of the MIDUS study, feeling older than your chronological age was a significant predictor of perceived control over and above the number of chronic conditions possessed by participants and subjective disease risk conditions.

 Among mounting evidence that ageist beliefs and mentor Dr. Ng, who expanded my policies have a deleterious impact on perceptions of the aging experience and overall quality of life; these and healthcare can look like going results indicate that there should be a greater forward. emphasis placed on preserving individuals' feelings of References subjective age as it may mitigate negative effects such Hess, T. M., O'Brien, E. L., Voss, P., Kornadt, A. E., Rothermund, K., Fung, H. H., & Popham, L. E. (2017). Context influences on the relationship as lower quality of life, frailty, and hospitalization and between views of aging and subjective age: The moderating role of culture and domain of rehospitalization risk (Hess et al., 2017). functioning. *Psychology and Aging*, 32(5), 419.

## Results

Stepwise Multiple Regression between	n Perceived C	Control,
Number of Chronic Conditions, Age C	Conditions, ar	nd Subjective
Cancer and Heart Attack Risk		
Perceived Control		Beta
Model 1		
Number of Chronic Conditions		10***
Model 2		
Number of Chronic Conditions		10***
Subjective Cancer Risk		08***
Subjective Heart Attack Risk		04
Model 3		
Number of Chronic Conditions		09***
Subjective Cancer Risk		07***
Subjective Heart Attack Risk		02
Feels Older		51***
Feels Younger		
Feels Same		13
Change in R <sup>2</sup> – Step 1	.09***	
Change in $R^2$ – Step 2	.02***	
Change in $R^2$ – Step 3	.02***	
*p < .05, **p < .01, ***p < .001		

#### Conclusion



The results of the regression found that subjective age, specifically those that felt older than their chronological age, explained more variance in perceived environmental capabilities than that of chronic condition status and subjective disease risk. Those that felt older than their actual age accounted for the most variance in perceived control, indicating that individuals with a higher subjective age had lower perceived control in their daily life.

#### Acknowledgements

I would like to extend my most sincerely gratitude to my primary advisor and mentor Dr. Casey. I will look back on our many meetings fondly, and your insight was pivotal to the success of this project. I would also like to extend a thank you to my ideas and views on what public health