Database: Projects in Progress

Add Your Project Study: Both

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Working Title: Early Adulthood Measure of Frailty and the Shared Associations with Processing Speed Performance

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Description (4-5 sentences): The proposed research aims to create a frailty index score for later adulthood, where frailty refers to multi-domain deficits in functioning and health. The frailty measure derived for CATSLife will be used to test how mid-life frailty is associated with processing speed performance. We will also evaluate whether concurrent SES (measured by years of education) may moderate the associations between frailty and processing speed performance (Brunner et al., 2018). Frailty Indices (FI), based on the Accumulation of Deficits Model (Mitnitski et al., 2001; Rockwood & Mitnitski, 2007), have been developed to look at the prevalence of frailty in aging populations for purposes such as screening, mortality risk, and as a potential estimation of biological age. However, less work has investigated constructing an FI for younger to middle-aged adults. Moreover, there is limited research on how earlier life frailty is associated with current cognitive performance and function (Fabrício et al., 2020; Sargent et al., 2018). Studies of older adults suggest that in late life processing speed may predict frailty (Gale et al., 2017), but associations in earlier developmental periods is unknown. By using data from CATSLife, we have constructed a 24-item frailty index measure based on scoring guidelines established in Searle et al. (2008) and consists of anthropomorphic measures, objective health, and perceived health and engagement. Although, Searle et al. (2008) original measure consisted of 30 items, which previous work (Kehler et al., 2008) examining frailty younger adults have utilized short developed scales. The next steps in the proposed research project will use the created frailty measure and examine how frailty and SES are associated with processing speed performance using the Colorado Perceptual Speed and the Digit Symbol tests. Lastly, we will examine the interrelationship of frailty between sibling pairs to determine bounds of reliability of the FI measure.

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Fabrício, D. M., Chagas, M. H. N., & Diniz, B. S. (2020). Frailty and cognitive decline. *Translational Research*, *221*, 58–64. https://doi.org/10.1016/j.trsl.2020.01.002

Gale, C. R., Ritchie, S. J., Cooper, C., Starr, J. M., & Deary, I. J. (2017). Cognitive Ability in Late Life and Onset of Physical Frailty: The Lothian Birth Cohort 1936. *Journal of the American Geriatrics Society*, *65*(6), 1289–1295. https://doi.org/10.1111/jgs.14787

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Mitnitski, A. B., Mogilner, A. J., & Rockwood, K. (2001). Accumulation of deficits as a proxy measure of aging. *The Scientific World Journal*, *1*, 323-336.

Rockwood, K., & Mitnitski, A. (2007). Frailty in relation to the accumulation of deficits. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *62*(7), 722-727.

Sargent, L., Nalls, M., Starkweather, A., Hobgood, S., Thompson, H., Amella, E. J., & Singleton, A. (2018). Shared biological pathways for frailty and cognitive impairment: A systematic review. *Ageing Research Reviews*, *47*, 149–158. https://doi.org/10.1016/j.arr.2018.08.001

Searle, S. D., Mitnitski, A., Gahbauer, E. A., Gill, T. M., & Rockwood, K. (2008). A standard procedure for creating a frailty index. *BMC geriatrics*, *8*(1), 1-10.

Sample(s): CATSLife

Process Stage: Idea Formation

Start Date (YYYY-MO): 2020-11

Last Update (YYYY-MO): 2020-11