COGNITIVE PREDICTORS OF EVERYDAY FUNCTIONING IN THE WOMEN'S INTERAGENCY HIV STUDY

F06

David E. Vance[1], Pauline M. Maki[2], Dangyang Yu[3], Raha Dastgheyb[4], Gayle Springer[5], Kathryn Anastos[6], Deborah R. Gustafson[7], Kathleen M. Weber[8], Derek M. Dykxhoom[9], Joel Milam[10], Monica M. Diaz[11], Seble G. Kassaye[12], Drenna Waldrop[13], Yanxun Xu[14], Leah H. Rubin[15] for the MACS/WIHS Combined Cohort Study

[1]School of Nursing, University of Alabama at Birmingham, Birmingham, AL, USA, [2]Department of Psychiatry and Psychology, University of Illinois at Chicago, Chicago, IL, USA, [3]Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, MD, USA, [4]Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD, USA, [5]Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA, [6]Albert Einstein College of Medicine and Montefiore Medical Center, Bronx, NY, USA, [7]Department of Neurology, State University of New York Downstate Health Sciences University , Brooklyn, NY, USA, [8]CORE Center, Cook County Health and Hektoen Institute of Medicine, Chicago, IL, USA, [9]Dr. John T. Macdonald Foundation Department of Human Genetics, Miami, FL, USA, [10]Department of Epidemiology and Biostatistics, University of California, Irvine, CA., USA, [11]Department of Neurology, University of North Caroline at Chapel Hill, Chapel Hill, NC, USA, [12]Department of Medicine, Division of Infectious Diseases and Travel Medicine, Georgetown University, Washington, DC, USA, [13]Nell Hodgson Woodruff School of Nursing, Emory University, Atlanta, GA, USA, [14]Division of Biostatistics and Bioinformatics at The Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University School of Medicine, Baltimore, MD, USA, [15]Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, USA

BACKGROUND

- Nearly 30-50% of people with HIV (PWH) have HIV-Associated Neurocognitive Disorder (HAND). As people age with HIV and developed age-related cognitive declines, it is hypothesized that such cognitive impairments may become worse, negatively impacting everyday functioning in both instrumental activities of daily living (IADLs) and basic activities of daily living (BADLs).
- Nearly 30% of people with HIV experience an impairment of cognition that can interfere with performing instrumental activities of daily living (IADL), which is a source of distress for them and their support network.
- In this descriptive study, we tested the relationship between the Lawton & Brody IADL scale and neuropsychological test performance in HIV-uninfected women and women with HIV (WWH) from the Women's Interagency HIV Study (WIHS).

METHODS

- In this cross-sectional study, completed cognitive performance data across 7 domains and the Lawton and Brody IADL scale were assessed in WWH and HIV-uninfected women from the WIHS.
- A series of weighted logistic mixed effect models were conducted to examine associations between cognitive performance and functional outcomes (IADL total score and item level scores). How you tested it.
- Models were conducted in the overall sample (WWH + HIV-uninfected), WWH only, Virally Suppressed (VS)-WWH, and HIV-uninfected women

RESULTS

- There were 2,025 participants in the sample including 1,320 WWH (85% VS, 57% ≥50 years of age) and 617 HIV-uninfected women (50% ≥50 years of age).
- Among all participants, motor function was the main cognitive domain showing an impaired IADL.
- Poorer motor function was associated with poorer function in *getting where you need to go* (P<0.001), *dressing* (P=0.001), *home repairs* (P<0.001), *housekeeping* (P<0.001), *cooking* (P=0.001), and *laundry* (P<0.001).
- In women <50 years (younger), poorer motor function was associated with poorer function in *getting where you need to go* (P=0.007), *cooking* (P=0.003), and *home repairs* (P=0.009).

Motor functioning was the cognitive ability most associated with self-reported IADL performance (i.e., dressing) followed by executive functioning (i.e., social functioning).

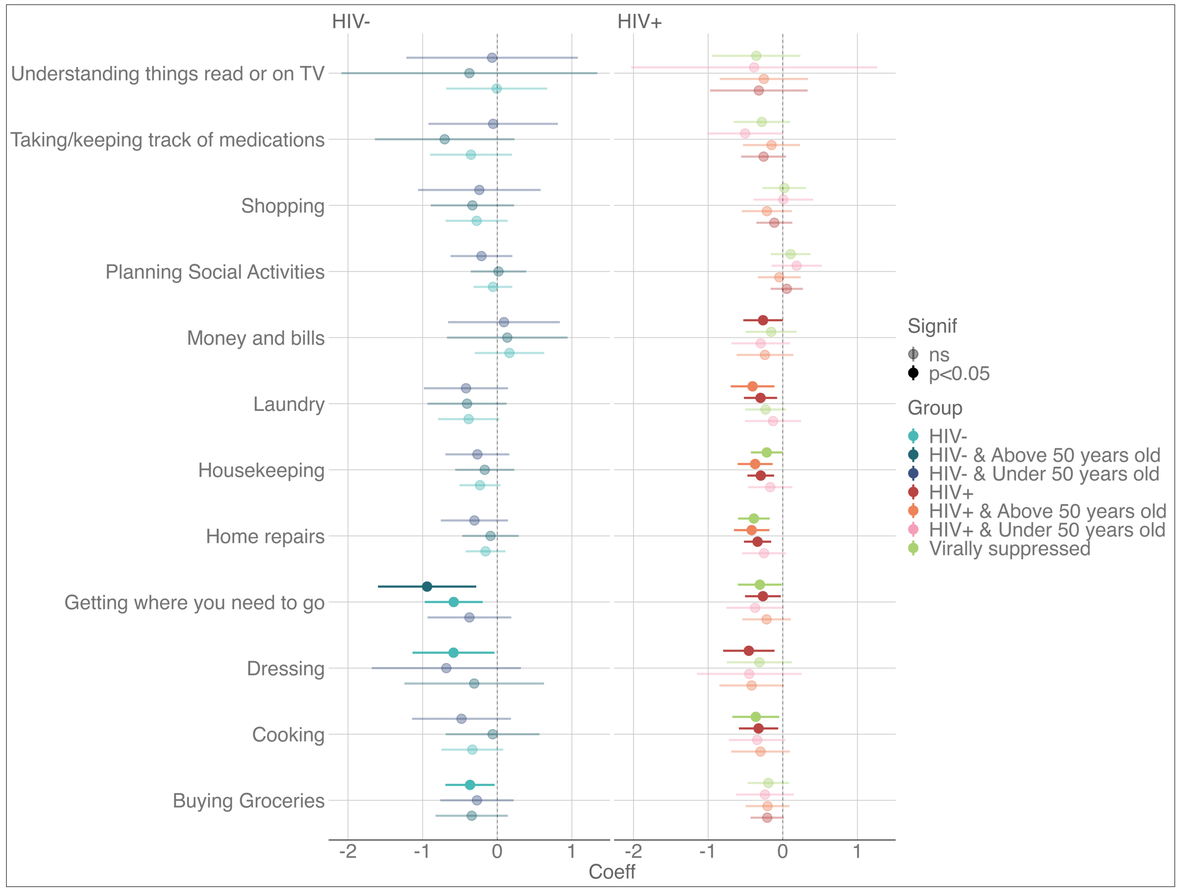

Figure 1. Motor domain by IADL faceted by HIV status.

RESULTS (cont.)

- In women ≥50 years, motor function was associated with poorer function in *getting where you need to go* (P=0.006), *home repairs* (P=0.001), *housekeeping* (P=0.003), and *laundry* (P=0.002).
- Among WWH, poorer motor function was associated with poorer function in *dressing* (P=0.01), *home repairs* (P<0.001), *housekeeping* (P=0.001), and *laundry* (P=0.009), and was driven by older WWH. Moreover, poorer executive function was associated with reduced ability to *plan social activities* (P=0.007).
- There were no associations between motor function and IADLs among younger WWH.
- Among all VS-WWH, motor function was associated with difficulty completing *home repairs* (P<0.001) only. In HIV-uninfected women, motor function was the only domain associated with IADLs.

CONCLUSIONS

- Since motor and executive performance were related to poorer function in certain IADLs, strategies such as domain-specific cognitive training could improve everyday functioning.

ADDITIONAL KEY INFORMATION

Author Contact Information

- D. E. Vance contact – deviance@uab.edu

Acknowledgements

The contents of this publication are solely the responsibility of the authors and do not represent the official views of the National Institutes of Health (NIH). MWCCS (Principal Investigators): Atlanta CRS (Ighovwerha Ofotokun, Anandi Sheth, and Gina Wingood), U01-HL146241; Baltimore CRS (Todd Brown and Joseph Margolick), U01-HL146201; Bronx CRS (Kathryn Anastos and Anjali Sharma), U01-HL146204; Brooklyn CRS (Deborah Gustafson and Tracey Wilson), U01-HL146202; Data Analysis and Coordination Center (Gypsyamber D'Souza, Stephen Gange and Elizabeth Golub), U01-HL146193; Chicago-Cook County CRS (Mardge Cohen and Audrey French), U01-HL146245; Chicago-Northwestern CRS (Steven Wolinsky), U01-HL146240; Northern California CRS (Bradley Aouizerat, Jennifer Price, and Phyllis Tien), U01-HL146242; Los Angeles CRS (Roger Detels and Matthew Mimiaga), U01-HL146333; Metropolitan Washington CRS (Seble Kassaye and Daniel Merenstein), U01-HL146205; Miami CRS (Maria Alcaide, Margaret Fischl, and Deborah Jones), U01-HL146203; Pittsburgh CRS (Jeremy Martinson and Charles Rinaldo), U01-HL146208; UAB-MS CRS (Mirjam-Colette Kempf, Jodie Dionne-Odom, and Deborah Konkle-Parker), U01-HL146192; UNC CRS (Adaora Adimora), U01-HL146194. The MWCCS is funded primarily by the National Heart, Lung, and Blood Institute (NHLBI), with additional co-funding from the *Eunice Kennedy Shriver* National Institute Of Child Health & Human Development (NICHD), National Institute On Aging (NIA), National Institute Of Dental & Craniofacial Research (NIDCR), National Institute Of Allergy And Infectious Diseases (NIAID), National Institute Of Neurological Disorders And Stroke (NINDS), National Institute Of Mental Health (NIMH), National Institute On Drug Abuse (NIDA), National Institute Of Nursing Research (NINR), National Cancer Institute (NCI), National Institute on Alcohol Abuse and Alcoholism (NIAAA), National Institute on Deafness and Other Communication Disorders (NIDCD), National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institute on Minority Health and Health Disparities (NIMHD), and in coordination and alignment with the research priorities of the National Institutes of Health, Office of AIDS Research (OAR). MWCCS data collection is also supported by UL1-TR000004 (UCSF CTSA), UL1-TR003098 (JHU ICTR), UL1-TR001881 (UCLA CTSI), P30-AI-050409 (Atlanta CFAR), P30-AI-073961 (Miami CFAR), P30-AI-050410 (UNC CFAR), P30-AI-027767 (UAB CFAR), and P30-MH-116867 (Miami CHARM).

The authors gratefully acknowledge the contributions of the study participants and dedication of the staff at the MWCCS sites.