Welcome

Health and Retirement Study
Data on Cognition

Webinar Agenda

– Part I: HRS Cognitive Functioning Data Resources Overview
– Q&A
– Part II: Tour of the HRS Cognition Documentation Website
– Q&A
Webinar Speakers

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Institute for Social Research
University of Michigan
Quick Audience Poll

• Please tell us who you are:
  – Academia
  – Industry
  – Government
  – Medical Practice
  – Other
HEALTH AND RETIREMENT STUDY: DATA ON COGNITION

Amanda Sonnega, PhD
Lindsay Ryan, PhD
GSA Webinar
March 27, 2018
LIFE COURSE TRAJECTORIES IN NORMAL VERSUS PATHOLOGICAL COGNITIVE AGING
HRS SHOWS RATES ARE DECLINING

Two HRS cohorts ages 65+
Dementia prevalence 2000=11.6%, 2012=8.8%
Education increased from 11.8 to 12.7 years; more education associated with lower risk of dementia
Increases in cardiovascular risk profile (hypertension, diabetes, and obesity) 2000-2012
Conclusion: more research needed!
DATA ON COGNITION IN THE HRS

Three main sources:

• Range of measures in the core interview
• Supplementary clinical study of dementia
  o Aging, Demographics, and Memory Study (ADAMS)
• Healthy Cognitive Aging Project
  o Currently finishing data collection

We’ll review and show you where to find relevant documentation for each of these data sources
PRACTICAL CONSIDERATIONS IN MEASURE SELECTION

• Limited interview time

• Multiple survey interviewers

• Telephone and in-person computer-assisted interviews

• Few existing measures designed for large-scale national surveys with older adults

• Data users from different disciplines have different needs and research questions (hence range of generic measures)

• Need for self and proxy measures
COGNITION MEASURES IN HRS CORE: SECTION D

- **Immediate and Delayed Free Recall**
  - List of 10 nouns for a possible score of 0-10 (1998-2016)
  - 20-noun list in 1992 and 1994

- **Serial 7s**
  - A working memory and mental processing task in which respondents count backwards from 100 by 7 for a total of five trials for a possible score of 0-5

- **Count Backwards**
  - From 10 and 86 (10 numbers)

- **Vocabulary (crystallized knowledge)**
  - Define 5 words from one of two sets:
    - repair, fabric, domestic, remorse, plagiarize
    - conceal, enormous, perimeter, compassion, audacious

- **Mental Status**
  - Measures (with a possible combined score of 0-10)
    - Name the U.S. president and vice president by last name (>65 yrs)
    - Name two described objects (scissors and cactus) (>65 yrs)
    - Time orientation – report the day’s date (>65 yrs)
• **Self-Rated Memory** *(Section D)*
  - How would you rate your memory at the present time? Would you say it is excellent, very good, good, fair, or poor?
  - Compared with (previous wave interview), would you say your memory is better now, about the same, or worse now than it was then?

• **Self-Reported Diagnosis** *(Section C)*
  - Has a doctor ever told you that you have a memory-related disease?

• **Need for Cognition** in Psychosocial Leave-Behind *(Section LB)*
NEW COGNITION MEASURES IN HRS CORE SINCE 2010

• Quantitative Reasoning (Numeracy)
  • Everyday Numbers
    If the chance of getting a disease is 10 percent, how many people out of 1,000 would be expected to get the disease?
  • Number Series Problems
    Respondent hears a patterned series of numbers that includes one blank slot. The task is to determine the missing number (6 series given)

• Verbal Fluency
  • Respondent is asked to name as many examples as possible from a given category within a 1-minute time period

• Verbal Analogies
  • Module given to 10% HRS Sample in 2012
  • E.g., Mother is to Father as Daughter is to ______.
## COGNITION IN HRS CORE: WAVE DIFFERENCES

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PROXY QUESTIONS: SECTION D

• For when R is unwilling or unable to answer for themselves
  • Often spouse or other close relative

• Ratings
  • How would you rate R’s memory at the present time?
  • How would you rate R’s ability to make judgments and decisions?
  • How would you rate R’s ability to organize (his/her) daily activities?

• Jorm IQCODE: 16-item version (example)
  • Compared with two years ago, how is (R’s first name) at remembering things about family and friends, such as occupations, birthdays, and addresses? Has this improved, not much changed, or gotten worse?

• Behavior problems (example)
  • Now, thinking about some current behaviors, does (R’s first name) ever get lost in a familiar environment?

• Proxy report of dementia diagnosis
DEALING WITH MISSING DATA: IMPUTATION

• Data not missing at random due to age skips, attrition, proxy respondents
• To minimize the effect of missing data HRS imputes missing data to yield a more complete data set
• Imputations available in separate file for 1992-2014
AGING, DEMOGRAPHICS, AND MEMORY STUDY (ADAMS)

• First national community-based study of dementia in the US
• N=1,770 HRS respondents age 70+ selected from HRS 2000 and 2002 waves
• Stratified by five levels of cognitive functioning: high, moderate, and low normal functioning versus borderline impaired, low functioning (proxy information)
• Normal functioning strata stratified by age group (70-79, 80+) and gender
• N=856 completed the interview in 2001-2003
• Extensive in-home clinical evaluations and neuropsychological assessments to determine a diagnosis of normal function, cognitive impairment not dementia (CIND), or dementia
• Followed over 10 years for four waves (A-D)
ADAMS: WHAT’S AVAILABLE?

For all four waves:
• Clinical and medical history
• Clinical Dementia Rating Scale
• Family History of Memory Problems
• Informant Questionnaire
• Blessed Dementia Scale
• Modified Hachinski Ischemic Score
• Dementia Severity Rating Scale
• Neuropsychiatric Inventory (e.g., trail making, CERAD tests, symbol digit test)
• Composite International Diagnostic Interview
• CIDI Depression Screen
• Memory Impairment Screen
• Buccal DNA sample for APOE genotyping, height/weight, BP, pulse
• Standardized Neurological Physical Examination
• Current prescription medications
• Caregiving Questionnaire
PREVALENCE OF DEMENTIA AND COGNITIVE IMPAIRMENT NOT DEMENTIA (CIND)

US estimates from ADAMS

Plassman et al. (2007). *Neuroepidemiology*, 29,125-132
WHY HCAP?

- ADAMS was an *intensive* 3-hour cognitive assessment using specially trained interviewers
- The aim of HCAP was to develop a less intensive (and less expensive) cognitive assessment that will still provide valid data on cognitive impairment and dementia in the US population
- Designed to provide comparable data in other countries with HRS sister studies
  - H also stands for harmonized
HCAP DESIGN

• A cognitive interview that can be administered by a lay interviewer to HRS respondents and a nominated informant

• Use the results of that cognitive testing (in conjunction with other HRS data) to determine whether the HRS respondent has cognitive impairment or dementia
Two interviews:

- 1-hour respondent interview
  - cognitive test battery (some overlap with HRS core and ADAMS)
- 20-minute informant interview
  - Individual nominated by respondent
  - Questions about the respondent’s functioning and changes in abilities over the last 10 years
  - HCAP is only a self-interview—no proxies
HCAP SAMPLE

- Subset of HRS respondents
- 65+ years old
- 1/2 of uncoupled respondents
- 1 respondent from each coupled household
- Completed HRS 2016 interview
- Self or proxy
  - BUT
- HCAP can only be a self-interview
• Sample is around 3,400 respondents
• Respondent tests include a variety of copyrighted neuropsychometric tests as well as HRS core measures
• Expected to be released as Sensitive Health Data – like ADAMS
Respondent tests include:
- MMSE
- CERAD Word List Learning Recall and Recognition CERAD Constructional Praxis
- Animal Naming
- Symbol Digit Substitution Test
- Story Recall via Brave Man and Logical Memory
- Letter Cancellation
- Backwards Counting (from MIDUS)
- Number Series (from HRS)
- TICS (from HRS)
- Raven’s Standard Progressive Matrices (a subset)
- CES-D
- (Optional) Smell Test (from NSHAP)

Informant questionnaires include:
- Jorm IQ-Code
- Blessed
- 10-66 activity questions
- New HRS-developed activity questions

Heeringa SG et al. (2009). Aging, Demographics and Memory Study (ADAMS): Sample Design, Weighting and Analysis for ADAMS.


• Data descriptions for each data product
Part I Clarifying Questions?

- We will not be using the raised hand feature today
- Please use the questions feature accessible on the right hand side of your screen
- If we do not get to all of the questions today, we will email responses after the webinar
Part II: Tour of the HRS Website

- [http://hrsonline.isr.umich.edu/](http://hrsonline.isr.umich.edu/)
Health and Retirement Study
Data on Cognition

- Archived recording on GSA’s YouTube
- Copy of today’s slides

Save The Date:
- HRS Biomarkers Data: Tuesday, April 24 at Noon ET

www.geron.org/webinar
In an effort for continual improvement, we would like to hear your thoughts. Please provide feedback by clicking the survey link at the end of the webinar.

Thank you again—we hope you enjoyed the program!
Part II Clarifying Questions?

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Thank you

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  – 5,500+ interdisciplinary members around the world touching all facets of aging

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  – Promote multi- and interdisciplinary research in aging
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