GSA Webinar Series

The Harmonized Cognitive Assessment Protocol: A New HRS Data Resource

DEVELOPED AND PRESENTED BY THE UNIVERSITY OF MICHIGAN WITH FUNDS FROM THE NATIONAL INSTITUTE ON AGING
HARMONIZED COGNITIVE ASSESSMENT PROTOCOL: A NEW HRS DATA RESOURCE

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GSA Webinar
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DATA ON COGNITION IN THE HRS

• Previous webinar featured sources of cognition data in the Health and Retirement Study (HRS)
• View archived recording on HRS website
  hrs.isr.umich.edu/about
    >documentation>archived webinars
• Here we focus in much more detail on the Harmonized Cognitive Assessment Protocol (HCAP)
GOALS OF HCAP

• Provide better data on cognitive impairment and dementia in the US population
• Provide data for cross-national comparisons through harmonization with HRS sister studies
HCAP: A PROJECT AND A DATASET

• HCAP refers to both the larger cross-national harmonization project and to the HRS portion of this larger project
  • Most of our time today is focused on the HRS data resource that we call HCAP
  • We will point you to resources that describe the HCAP equivalent in the HRS sister studies that are part of HCAP (the harmonization project)
HCAP STRATEGY

• Administer an expanded battery of cognitive tests and informant interviews to a random subsample of HRS respondents aged 65 and older

• Collaborate with research teams from the HRS international family of studies to develop and implement similar cognitive testing protocols across studies
WHAT’S DIFFERENT ABOUT HCAP?

• HCAP has more breadth and depth than HRS core cognition measures
• HCAP has similar breadth and depth as the Aging, Demographics, and Memory Study (ADAMS) but is much less costly
• HCAP combines the strengths of both sources of cognition data in the HRS (core and ADAMS)
WHAT’S DIFFERENT ABOUT HCAP?

• Specifically designed for cross-national comparisons
  • Created in close consultation with sister study PIs
• Created in consultation with leading experts in dementia epidemiology
SELECTING THE HCAP SAMPLE

- Subset of HRS respondents
- 65+ years old (born 1952 or earlier)
  - Allows study of early stages of cognitive decline and linkage to Medicare
- Completed HRS 2016 core interview
- 2016 core interview self or proxy

**BUT**

- HCAP can only be a self-interview
- One-half of uncoupled respondents
- One respondent from each coupled household
HCAP INTERVIEW DESIGN

• Conducted in the respondent’s home
• Interviewers received special training
• Two interviews:
  • 1-hour respondent interview
    • Cognitive test battery and CES-D
    • Optional olfaction test at the end
  • 20-minute informant interview
    • Individual nominated by respondent
    • Questions about the respondent’s functioning and changes in abilities over the last 10 years

CES-D=Center for Epidemiologic Studies Depression Scale
HCAP INTERVIEW DESIGN

- Field period between June 2016 and October 2017
- Of 4,425 eligible cases, 3,496 completed the HCAP interview for a final response rate of 79%
CONSIDERATIONS IN TEST SELECTION

• Cover a range of cognitive domains
• Substantial overlap with the initial ADAMS assessment (2002–2003) to facilitate comparisons to the earlier study
• Could be administered by trained survey interviewers in the home in about 1 hour
• Could be administered in comparable format by survey interviewers in other countries, including low-income countries
• Credibility and acceptance within the scientific community
• Could be re-administered longitudinally
PROCESS IN TEST SELECTION

• Reviewed the content of ADAMS, Rush Religious Orders Study (ROS), Memory and Aging Project (MAP), 10/66 dementia studies, the Indianapolis-Ibadan Dementia Project, and the UK Medical Research Council Cognitive Function and Ageing Study
  • Core elements
    • Mini-Mental State Examination
    • CERAD word list immediate and delayed recall
    • Semantic Fluency (Animal Naming Test)
• Conducted statistical analyses of data from ADAMS and the ROS/MAP studies
• Identified common tests across multiple studies and cognitive domains
• Assessed rates of missing data for these tests and prioritized tests with low rates of missing data
• Tests with the greatest predictive power were included

CERAD=Consortium to Establish a Registry for Alzheimer’s disease
In order of administration:
- Mini-Mental State Examination (MMSE)
- HRS TICS (3 items: object naming and President)
- CERAD Word List Learning and Recall – Immediate
- Semantic fluency (Animal Naming Test)
- Letter Cancellation Test
- Timed Backward Counting (from MIDUS)
- Community Screening Instrument for Dementia (CSI-D; 4 items)
- CERAD Word Recall-Delayed
- Story Recall – Immediate
- CERAD Word List– Recognition

CERAD=Consortium to Establish a Registry for Alzheimer’s disease
MIDUS=Midlife in the United States
TICS=Telephone Interview for Cognitive Status
CERAD=Consortium to Establish a Registry for Alzheimer’s disease; CES-D=Center for Epidemiologic Studies Depression Scale; NSAHP=National Social Life, Health, and Aging Project
INFORMANT MEASURES

- Jorm IQCODE
- Blessed Dementia Rating Scale
- 10-66 Dementia Research Group Informant Questionnaire
- CSI-D Cognitive Activities Questionnaire
- New HRS-developed activity questions
  - Activities inside (e.g., watching TV, reading, using a computer) and outside (e.g., driving, shopping, using public transportation) the home
- Whether the respondents had been diagnosed with Alzheimer’s disease, stroke, Parkinson’s disease, or memory problems

CSI-D=Community Screening Instrument for Dementia;
IQCODE=Informant Questionnaire on Cognitive Decline in the Elderly
AVAILABLE IN SISTER STUDIES

- ELSA (England) [https://www.elsa-project.ac.uk/hcap](https://www.elsa-project.ac.uk/hcap)
- HAALSI (South Africa)
- LASI (India) [https://lasi-dad.org/](https://lasi-dad.org/)
- MHAS (Mexico) [http://www.mhasweb.org/DocumentationQuestionnaire.aspx](http://www.mhasweb.org/DocumentationQuestionnaire.aspx)
- CHARLS (China)
- All have MMSE, HRS-TICS, CERAD Word List Learning and Recall – Immediate, and Semantic Fluency (Animal Naming Test)
- The studies that currently have data available are linked at the Gateway to Global Aging site: [https://g2aging.org/](https://g2aging.org/)
ACCESSING THE DATA
HCAP DATA SUMMARY

- HCAP 2016 (Early V1.0)
- Released January 2019
- Sample is 3,496 respondents
- Sensitive Health Data

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Harmonized Cognitive Assessment Protocol (HCAP)

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<thead>
<tr>
<th>Name</th>
<th>Documentation</th>
<th>Release Date</th>
<th>Link</th>
</tr>
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<tbody>
<tr>
<td>Harmonized Cognitive Assessment Protocol</td>
<td>• Data Description</td>
<td>Jan 2019</td>
<td>More Info</td>
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<td>(HCAP) 2016 (Early V1.0)</td>
<td>• Codebook</td>
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<tr>
<td></td>
<td>• Questionnaire</td>
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ACCESSING SENSITIVE DATA

• Scroll to the bottom of the Sensitive Health Data page for complete instructions
  • Create an account, if you do not already have one
  • Complete the Sensitive Data Access Use Agreement and the Sensitive Data Order Form
  • You will be notified when access to download the files has been granted
ACCESSING SENSITIVE DATA

• Once you receive your approval notification, login at the HRS Data Download System website

• In the HRS Special Access Files box on the right side of the page, you will now see links to the data set(s) that you have requested

• If you have VDI access, you can fill out the Sensitive Data Order Form to have HCAP data added
DOCUMENTATION

USER GUIDES

DATA DESCRIPTION
Don’t skip this important information on file structure and using the data files

RECENT PAPER
DEALING WITH MISSING DATA: IMPUTATION

- Data not missing at random
- To minimize the effect of missing data HRS imputes missing data to yield a more complete data set
- Imputations on HCAP are underway
FOLLOW UP

• Second wave of respondent and informant HCAP data collection is in the field now
• Targeted to all surviving members of the original HCAP sample and to a new “age-in” random sample of those aged 65–68 years in 2020
• Data to assess change in cognitive function and incidence of new cognitive impairment and dementia
• Identification of long-term longitudinal cognitive trajectories will also be possible from ongoing biennial cognitive testing within the core HRS interview
Currently developing a diagnostic algorithm using HCAP respondent and informant data to assign a research diagnosis of normal, mild cognitive impairment (MCI), or dementia.

Details of this algorithm and the resulting diagnostic classifications will be published in a future paper and will be included in future releases of the HCAP data.

Diagnostic approach will allow diagnoses to be assigned in a reproducible and comparable way with data collected at different points in time or in different countries.

Use of modern psychometric measurement models can accommodate bias in cognitive assessment if such bias can be detected to diminish cultural and/or language effects in cognitive testing.

Will also allow for case ascertainment ratings to be made on a common metric of measurement and the identification of impairment thresholds that are equivalent in different samples.

Public release of the raw scores from the cognitive tests and informant reports allows researchers to develop their own diagnostic algorithms as well.
Questions?

- We will not be using the “raise hand” feature today
- Please use the “questions” feature accessible on the right side of your screen
- If we do not get to all of the questions today, we will email responses after the webinar
Webinar Evaluation

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 and we hope you enjoyed the program!
Other Health and Retirement Study videos on GSA’s YouTube

- Introduction to the Health and Retirement Study
- Data on Cognition
- Biomarkers and Physical Measures Data
- HRS Sample Design, Weighting, and Complex Variance Estimation
- Psychosocial Data in the HRS

hrsquestions@umich.edu
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Thank You

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  - Promote/advocate for education/awareness on aging across disciplines
  - Foster application of research into policy development

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