What Are the Common Core Variables across the HRS Family of Studies?

GATEWAY TO
GLOBAL AGING DATA

g2aging.org

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Motivation*

- NIA invests in the HRS ATW U24, HCAP U24, and Gateway to Global Aging Data projects because they prioritize cross-national analyses

- Without harmonization, the feasibility and utility of cross-national research is limited

- As the HRS and HCAP studies expand to new countries we need to think carefully about key concepts, recommended contents, and best practices for the HRS and HCAP studies

* Based on Minki's presentation at the Gateway Harmonization workshop

Gateway's Mission
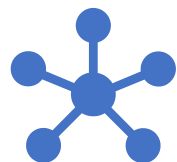
Be

Be a data and information hub for global aging research

Make

Make data 'Science Ready'

- Reduce the up-front costs of understanding complex, longitudinal data available

Stimulate

Stimulate global aging research

Gateway's recommended questionnaire & white papers

- Released earlier this month to highlight core content modules, variables, and question framing to maximize harmonization across the international HRS studies.
  - https://g2aging.org/user-guide

- Goals:
  - Promote harmonization in new HRS-INS
  - Support existing studies wanting to add new constructs or strengthen harmonization of existing survey protocols

- We have also produced a list of cross-study core question coverage and comparability
  - Your feedback is welcome!

What characterizes HRS?

1. Population representativeness
2. Multidisciplinary contents
3. Longitudinal follow-up
4. Data sharing
5. Comparable/harmonizable survey measures

What characterizes being part of the HRS network?

1. Ex-ante harmonized key contents to enable cross-country analysis

2. Collaborate, willingly share knowledge and experience

3. Release data to larger research community in timely manner

Core content modules

Demographics	Health and health behavior	Physical assessment and biomarkers	Cognition and proxy cognition	Family and social network
Health and long-term care insurance and utilization	Employment, retirement, and pension	Wealth, income, and consumption	Caregiving	Stress and subjective wellbeing
	Childhood health and environment	End-of-life planning	Housing characteristics	

Core content modules

Number of harmonized variables/ Median variable coverage across HRS-INS

|				
Demographics 16 / 69%	Health and health behavior 130 / 67%	Physical assessment and biomarkers 23 / 54%	Cognition and proxy cognition 17 / 68%	Family and social network 36 / 72%
Health and long-term care insurance and utilization 33 / 44%	Employment, retirement, and pension 129 / 40%	Wealth, income, and consumption 93 / 44%	Caregiving 62 / 44%	Stress and subjective wellbeing 86 / 26%
	Childhood health and environment 20 / 30%	End-of-life planning 9 / 0%	Housing characteristics 20 / 28%	

HRS-INS included (14):

HRS, MHAS, ELSA, SHARE, KLoSA, JSTAR, CHARLS, TILDA, NICOLA, CRELES, ELSI, SPS, LASI, MARS

Examples of content modules with many common questions

- Health and health behavior
  - Health conditions – ever diagnosed, hearing
  - ADLs, IADLs, mobility
  - Smoking, drinking, physical activities
- Family networks
  - No of living family members, parents' age
  - HH size, co-residence, transfers
- Employment
  - Job status, occupation, having pension
- Wealth, income, and consumption
  - Primary residence, real estate, business
  - Retirement savings/income, earnings

However, how these questions are asked is <u>not</u> always consistent
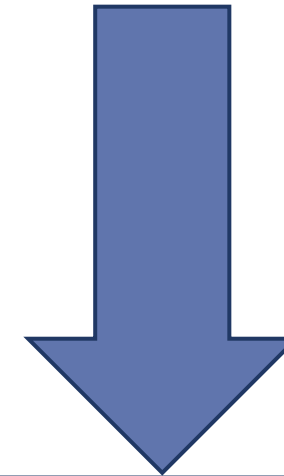
Consistent questions are critical for harmonization

Examples of modules with limited core variable coverage

- Cognition and proxy cognition

- Health and LTC insurance and utilization

- Caregiving

- Stress and subjective well-being

- Childhood health and environment

- End-of-life planning

- Housing characteristics

Easy places for harmonization

1. Need common reference periods for certain items
   o e.g., healthcare use, health behaviors

2. Standardize response options
   o e.g., frequency of social interactions/participation

3. Add common set of recommended questions
   o e.g., brain injury, height and weight, excessive alcohol intake, family demographics (particularly, gender, education, and work status)

4. Collect geographic information (GPS) to link to exposome data

5. Include common interviewer observations

Harder places (but important) for harmonization

1. Strengthen health assessment
   - Objective measurement of vision, hearing, physical activities
   - Biomarker – Follow the Biomarker Network's recommendation!

2. Harmonize question and response options for functional limitations and caregiving
   - To capture care needs and to quantify care received

3. Characterize employment and retirement status
   - Informal labor market in LMICs, changing labor marker in HICs
   - Occupation and industry classifications – code frame changes

Harder places (but important) for harmonization

4. Before/after tax measurement

- o Studies vary on asking income measures before or after taxes
- o Most policies are based on before tax income, making connections with public policies difficult

5. Health and long-term care insurance and use

- o The nature of health and long-term care systems vary by country
- o Aiming to capture covered services, public vs. private providers, use of various types of services and out-of-pocket expenses

6. Stress and psychosocial variables

- o Stress and Emotional Well-being Networks' recommendation
- o Translation of questions needs to be evaluated in cultural context

Harmonized Data in the Gateway Data Enclave

	HRS	ELSA	LASI	SPS	NICOLA
Harmonized **Core**	☑	☑	☑	☑	☑
Harmonized **EoL**	☑	☑	NA	NA	NA
Harmonized **Life-History**	In preparation	☑	NA	NA	NA
Harmonized **HCAP**	☑	☑	☑	☑	NA
Harmonized **COVID**	☑	☑	☑	NA	NA
Harmonized **Exposome**	In preparation	In preparation	In preparation	In preparation	In preparation

Gateway Data Enclave Workshop

- Gateway will host a half-day workshop as part of GSA on Nov 13, 2024

- Prepared two specialized analysis datasets for workshop participants
  - o Cross-country cognition analysis file
  - o Longitudinal disability analysis files

- Exposome team is planning the 2025 Gateway Data Enclave Workshop on Exposome

Core variables by content module

Health and health behavior

- **Common variables:** Diagnosis, onset, and treatment of health conditions

- **Uncommon or inconsistent**
  - Self-reported health – response scale varies
  - How ADL and IADLs are asked inconsistently (e.g., difficulty, need help, receives help)

- **Harmonization recommendation**
  - Anchoring vignettes for self-reported health
  - Differentiate difficulty in ADL/IADL from needing help and receiving help

Health and health behavior

- **Easy additions**
  o Traumatic brain injury and when
  o Hearing and vision loss and when
  o Self-reported height and weight
  o Sleep, excessive alcohol use
  o Preventative care (e.g., mammogram)

- **Harder additions**
  o Objective measurement of vision, hearing, physical activities
  o Physical assessment and biomarkers: if not completed, report why

Health and LTC Insurance and Use

- **Common variables:** Number of hospital stays and doctor visits, out-of-pocket spending for these, any private health insurance coverage, but reference periods are inconsistent

- **Missing or uncommon:** Insurance policies and covered services, medication coverage and use, long-term care, dental, and vision care use

- **Easy harmonization step:** Standardize reference period (i.e., one year)

- **Ideal additions:** Collect all insurances in a loop format, ask about other missing or inconsistently asked measures

End-of-Life Planning

- Most studies do not ask questions on end-of-life (EoL) planning, but they are brief and straightforward to ask

- Core topics
    - o **Wills and trusts:** Do you have a will? Have you placed assets in a trust? Who are the recipients of will and trusts?

    - o **End of life wishes:** Have you discussed care or medical treatment should you become seriously ill? Made legal arrangements? If so, who has authority? Do you have living will, or specific instructions for what should be done in certain circumstances? Do you wish to receive any possible care to prolong life?

Caregiving

- **Common variables:** Received any care, gave informal care

- **Uncommon or inconsistent:** Frequency and intensity of care, caregiver relationship, the nature of the care

- **Harmonization step:**
  - o Tie care receiving with needing care for ADL and IADL separately, quantify care received, identify care provider (e.g., spouse, children, paid help, social service)
  - o Tie care giving with family and friend network, quantify care provided, identify to whom care was given (e.g., the sick, disabled, demented, grandchildren)

Stress and Subjective Well-being

- These measures are inconsistent across studies
  - Depressive symptoms: differences in CES-D/EURO-D assessments; differences in scales (binary v. Likert); differences in number of CES-D questions
  - Life satisfaction: a single item, 5-item Diener's scale, domain-specific life-satisfaction

- **Easy harmonization step:** Standardize scales

- **Common questions:** Life-satisfaction (single-item), job satisfaction, loneliness, Cantril's ladder

- **Less common but recommended questions:** Life satisfaction (multi-item, domain-specific), neighborhood, discrimination, CASP

Demographics

- **Common variables:** Birth year, age, gender, education, marital status, race/ethnicity

- **Uncommon or inconsistent:** Birth month, years of education, marital history, religion, immigration history

- **Key harmonization step:** Map education category to International Standard Classification of Education (ISCED) categories

- **Easy additions:** Years of education, place of birth, religion

- **Harder additions:** Marital history, immigration history

Family and social network

- **Common variables:** Household size, number of living children and siblings, whether mother/father alive, co-residence with child, transfers to kids or parents

- **Uncommon or inconsistent:** Parent and children demographics, weekly contact with children; transfer to/from co-residing children

- **Easy additions:** Children's education, employment, marital status

- **Harder additions:** Social strain and support with spouse, children, relatives, and friends,

Childhood health and environment

- **Common variables:** Overall rating of childhood health, parental education

- **Uncommon or inconsistent:** Childhood health conditions

- **Easy additions:**
  - Urban/rural residence, missed school due to health, financial status of family during childhood
  - Childhood household features (# rooms, books, fixed bath, piped water, inside toilet, central heating, electricity)

- **Harder additions:**
  - Home environment when growing up (e.g., parents alcohol/drug abuse, physical abuse, parental dispute)

Housing characteristics

- **Common variables:** Number of rooms in the house, disability features, running hot/cold water in house, electricity

- **Uncommon or inconsistent:** Stairs required to move around home, whether anyone smokes in the home, cooking fuel, location, and exhaust

- **Recommended additions:** High-speed internet, number of stories, heating and cooking fuel types

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Employment, Retirement, and Pensions

- **Easy harmonization step:** For unemployed, ask if they were actively looking for work in the last 4 weeks

- **Easy additions:** Job, firm, and workplace characteristics; weeks worked, job satisfaction

- **Harder harmonization:** Occupation and industry types

- **Harder additions:** Job/pension loops to collect detailed information for individuals will multiple jobs/pensions; modules on job requirements, perceptions, and stress

Income, Wealth, and Consumption

- **Common variables:** Earnings, total income, wealth and consumption, and value and mortgage on main home

- **Uncommon or inconsistent:** Components of these measures (e.g., business, investments, liquid accounts)

- **Easy harmonization step:** For earnings, need a consistent reference period (e.g., last tax year)

- **Easy additions:** Components of these measures

- **Harder additions:** Topical loops to identify income and wealth sources (e.g., business, wage and salary, and pension) independently and support cross-wave tracking, non-responding spouse income

Key Takeaways (1/2)

- Without survey harmonization, the feasibility and utility of cross-national research is limited

- 48% of the common core variable questions are asked across studies – this is a great success!

- Some content areas have poor coverage of core variables

  o Health behaviors
  o End-of-life planning
  o Caregiving
  o Health and LTC insurance and use

  o Stress and subjective wellbeing
  o Housing characteristics
  o Cognition

Key Takeaways (2/2)

- Having common variables is not sufficient for harmonization
  - Questions also need to be asked and administered consistently
- The Gateway's common core questionnaire and accompanying two white papers provide a useful framework for further harmonization: https://g2aging.org/user-guide

GECC | GATEWAY EXPOSOME COORDINATING CENTER

The GECC is an interdisciplinary project that advances AD/ADRD research by serving as a centralized hub for accessing, harmonizing, linking, and sharing exposome data for AD/ADRD risk, resilience, and disparities.

The human exposome

Encompasses exposures to environmental factors throughout life, starting from conception and pregnancy.

Climate

Physical Environment

Social Environment

Policy

Community Services

Life Experiences

How these many interrelated exposomes across multiple domains are linked to biological outcomes that lead to AD/ADRD?

Goals

Be a centralized hub for:

- **Identifying** research priorities through inclusive consensus-building

- **Developing** guidance for measuring, harmonizing, and using exposome data

- **Creating** novel exposome measures and data

- **Disseminating** open-access resources to the broader research community

- **Capacity building** through guidance documents, publications, and workshops

The Gateway is a free public resource designed to facilitate cross-national and longitudinal studies on aging using the HRS international network of studies.