



# Add Health Parent Study

## Overview & Some Initial Findings

V. Joseph Hotz

DUPRI Seminar Presentation

August 18, 2019

---

## **Add Health Parent Study (AHPS) funding:**

R21 AG042663-01, *Locating the Parents of Add Health*, K. M. Harris, V. J. Hotz, & J. A. Seltzer, PIs.

R01 AG042794-01, *Add Health Parent Study: Phase I*, V. J. Hotz & K. M. Harris, PIs.

---

***PIs:***

Kathleen Mullan Harris, PI, UNC

V. Joseph Hotz, PI, Duke

***Co-PIs:***

Suzanne Bianchi (1952-2013)

Jason Boardman, Colorado

Virginia Chang, NYU

Angela Duckworth, Penn

Jack Iwashyna, Michigan

Hedwig Lee, Washington U-St. Louis

Shelly Lundberg, UCSB

Matt McQueen, Colorado

Candice Odgers, UC-Irvine

Lisa Pearce, UNC

Seth Sanders, Cornell

Judith A. Seltzer, UCLA

Karen Sugden, Duke

Eric Whitsel, UNC

Emily Wiemers, Syracuse

Yang Claire Yang, UNC

***Staff:***

Francesca Florey, Project Manager, Duke

Mandy Monath, Data Manager, UNC

Vladislav Slanchev (Post-Doc) L&M Policy  
Research

Katsuya Oi (Post-Doc) Northern Arizona U

**Marwa AlFakhri, Grad Student, Duke** <sub>3</sub>

# What is the AHPS?

- A data source to study aging processes in 2+ generations & intergenerational linkages in health, behaviors & relationships.





# Motivating Research Questions with **AHPS** and **Add Health** Data

- 
- Many ***health conditions & behaviors*** run in families:
    - ***Cardiovascular disease*** (CVD)
    - ***Obesity***
    - ***Substance abuse***, e.g., alcoholism, smoking, drugs.
  - How can we use ***parents' health*** to ***better understand*** their (adult) ***children's health trajectories***?
  - How do ***changes in parents' health & behaviors*** influence & predict their ***children's health trajectories***?

- **Cognitive ability** (e.g., IQ) **predictive** of range of **outcomes**, include **health, education**, etc.
- Growing evidence that **non-cognitive skills, personality traits & aversion to risk & impatience** also **predictors** of **behaviors**, e.g., personal finances, marriage & divorce, etc.
- Are these skills & traits **correlated across generations?**
- Do they help account for **commonalities & differences** in **health & well-being across** the 2 **generations?**

# Intergenerational Relationships

- Caring for ***Baby Boomer Generation***
  - ***Family members*** are important source of ***caregiving*** for ***elderly*** who are ***ill & disabled***
    - Arno et al. (1999) estimate costs of informal care provided by family = \$197B; costs of than nursing home care = \$83B; costs of formal home health care = \$32B.
  - ***Will kids take care of their step-dads?***
    - Incidence of ***divorce*** or ***non-marital fertility*** is sizable for those in ***Baby Boomer Generation***.
    - Figuring out its consequences are crucial for assessing costs to families & adequacy of public policy of caring for this generation over the next 20-30 years.



# Intergenerational Relationships

- Substantial evidence that ***social connectedness*** (or ***loneliness***) is correlated with many ***aspects of health***.
  - How important is the ***connectedness*** (or ***estrangement***) of family members on ***health & well-being***?
- Does ***quality*** of ***parent-(teen)child*** relationships ***predict parent-(adult)child*** relationships?
  - Do ***parent-(teen)child*** relationships ***predict later life health & well-being*** of ***each generation***?

# Intergenerational Mobility

---

- Growing evidence that ***what parents do & don't do*** for ***young children and adolescents*** is important for whether ***initial inequality in economic & social status*** and ***health*** is ***perpetuated***.
- Does ***what parents do & don't do*** in a child's ***adult life*** continue to matter?

- Can & do **families help support each other financially**, in **good times** & in **bad times**?
  - This depends on **financial & economic situations** of **each generation** & **nature of ties** between them.
  - It also depends on each generation's **knowledge** of the other generations needs & circumstances.



# **Add Health Parent Study**

## **Sample Design & Data Collection**

# Origins of Add Health Parent Study

---

- In **Wave I** (1995) of **Add Health Study**, a *parent* (mostly mothers) of each **Add Health Sample Member (AHSM)** was interviewed.
- Parents referred to as **Wave I Parent (W1P)**.
  - At Wave I they were 35-50 years old.
  - Asked questions about **AHSM**, themselves and their then **Spouse/Partner**.

# Data Collected on Parents in Wave I of **Add Health Study**

## **A: About themselves**

- Age, race, ethnicity
- Marital status
- Religion, church attendance
- Education
- Work, disability
- Income, material hardship
- Neighborhood conditions
- Marital history
- Life happiness
- **General health**
- **Health behaviors (alcohol & tobacco use)**

## **B: About their Spouse/Partner**

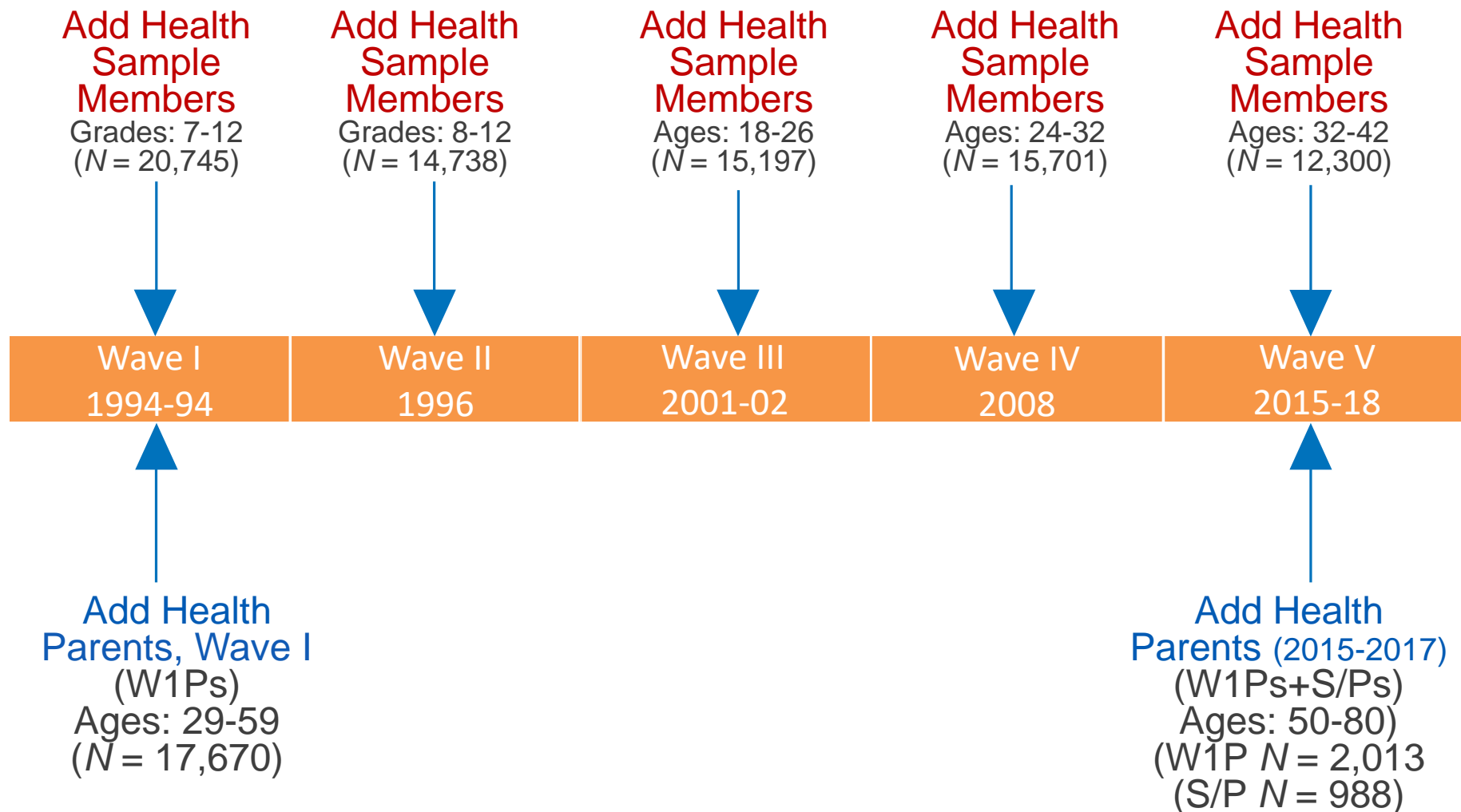
- Sex, age, race, ethnicity
- Religion
- Education
- Work, disability
- Public assistance
- Relationship satisfaction
- Life happiness
- **General health**
- **Health behaviors (alcohol & tobacco use)**

## **C: About their AHSM Child(ren)**

- Relationship to child
- Presence of bio parents in household
- Child's friends
- Educational expectations
- Involvement in child's school and schoolwork
- **Relationship with child**
- **Cognitive functioning**
- **Health, health insurance**
- **Birthweight**
- **Health behaviors**
- Communication about sex
- Child's social life
- **Family health history (child, bio mother, bio father)**
- Disability
- For twins: determination of fraternal vs identical

- **Add Health Parent Study** 20-year follow-up interview of subsample of **W1Ps**.
- These W1Ps were re-interviewed around **Wave V** of **Add Health Study** in years 2015-2017.
  - **W1Ps** were 55-70 years old.
  - Collected data on:
    - Themselves and their families, especially their health. (more below)
    - Their relationships with their (now adult) **AHSMs** and their current spouses.
    - Family health histories
    - Obtained permissions to link data about their health (Medicare & Medicaid records) and their housing. (more below)
  - Much of data collected parallels that collected in previous Waves of **Add Health Study**.
- Also interviewed current **spouses or partners (S/Ps)** of **W1Ps**.
  - May or may not have been a parent of **AHSMs** back at **Wave I**.
  - Data collected from **S/Ps** paralleled that collected from W1P.

# Timeline of AHPS & Add Health Surveys





# AHPS Sampling Plan 1

- Design of **AHPS** [Parents (2015-17)]
  - Parents, i.e., **Wave I Parents (W1Ps)**, were sampled based on **AHSMs** so as to preserve population-representativeness properties.
  - **AHPS** target “population” were W1Ps that:
    - Were biological, adoptive or step-parent of **AHSM** at Wave I.
    - Were not deceased or incarcerated at time of sampling
    - Had at least one **AHSM** that was not deceased at time of sampling

~13,585 **W1Ps** were in target population & had total of 15,562 **AHSMs**.

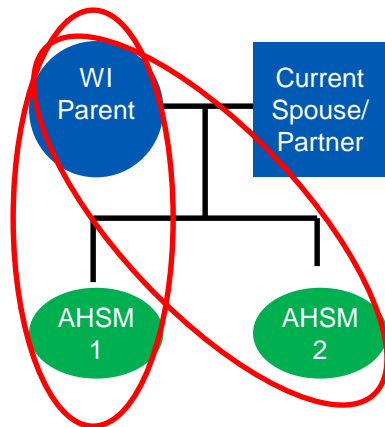
  - Sampling had to deal with fact that some **AHSMs** has the same **W1P**.
    - As will be discussed on Thursday, we sampled on basis of **Add Health “families”** lowering sampling rate of parents with multiple **AHSMs**.
  - Field work was undertaken using **two replicates** of targeted **W1Ps**. [Replicate 2 started later to insure adequate effort to complete cases in Replicate 1.]

## AHPS Sampling Plan 2

---

- Design of **AHPS** [Parents (2015-17)] cont.
  - **W1Ps** initially contacted via telephone – or in-person – for **Screening Interview**.
    - **W1Ps** were asked if their **AHSMs**, were still alive. If not, they were dropped.
    - **W1Ps** were asked if they **currently** had **spouse or partner (S/P)**. If so, their spouse/partners were included in sample and targeted for interview.
    - **Eligible W1Ps** and **S/Ps** were scheduled for interviews [In-person interviews and some telephone screenings resulted in immediate interviews.]
  - Challenges occurred in completing screeners. Once, scheduled, we completed interviews of **W1Ps** at high rates. Lower rates of completing **S/P** interviews.

## WI Family Cluster A

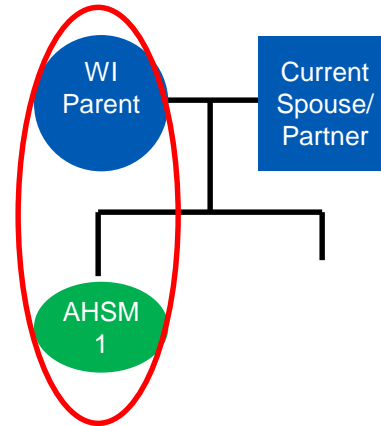


**2 AHSM – WI Parent Pairs**

**2 Parent-Figures**

(WI Parent & Current Spouse/Partner)

## WI Family Cluster B

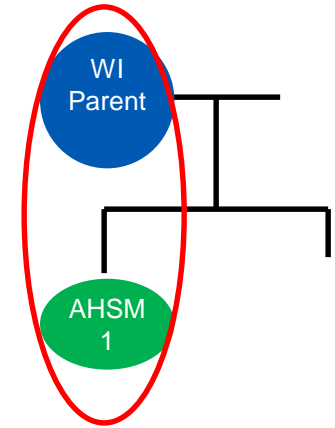


**1 AHSM – WI Parent Pair**

**2 Parent-Figures**

(WI Parent & Current Spouse/Partner)

## WI Family Cluster C



**1 AHSM – WI Parent Pair**

**1 Parent-Figure**

(WI Parent)

- Some Family Clusters include both biological parent-figures of **AHSMs**; Others include bio parent & step-parent.
- **AHSMs** in multiple-AHSM Family Clusters include twins, non-twin full sibs &/or half-sibs.

# Completion Rates (W1Ps)

| <b>Wave 1 Parents (W1Ps)</b>           | Total | Replicate<br>1 | Replicate<br>2 |
|--|-------|----------------|----------------|
| Sample Pool of W1Ps                    | 3,805 | 2,691          | 1,114          |
| Target Sample for W1Ps                 | 3,108 | 2,198          | 910            |
| Non-completed Screeners                | 1,702 | 1,138          | 564            |
| Completed Screeners but Not Interviews | 89    | 63             | 26             |
| Completed Screeners & Interviews       | 2,013 | 1,489          | 524            |
| Completion Rate (Completes/Target)     | 64.8% | 67.7%          | 57.6%          |

# Completion Rates (S/Ps)



| <b>W1Ps' Spouse/Partners</b>         | Total | Replicate<br>1 | Replicate<br>2 |
|--------------------------------------|-------|----------------|----------------|
| W1Ps Completed Screener & Interview  | 2,013 | 1,490          | 524            |
| Eligible/Available S/Ps              | 1,269 | 943            | 326            |
| S/Ps Completed Interview             | 988   | 757            | 231            |
| Completion Rate (Completes/Eligible) | 77.9% | 80.3%          | 70.9%          |

## AHPS – AHSM “Pairs”

---

- When combined with data on children in **Add Health (AHSMs)**, the **2,013 W1Ps** in **AHPS** yields **2,247** parent-child “pairs” with which to conduct various analyses.

- Data collected about their
  - *Health & health behaviors*
  - *Cognition, Personality & Preferences*
  - *Family Relationships & Nature of Family Network*
  - *Economic Capacities & Well-Being*
- Same data also collected from **current spouse/partners** of these parents
- These data were collected around same time period as **Wave V** of **Add Health Study**.

- **Health and Health Conditions**

- Physical and mental health, medications inventory (**Add Health**, HRS, NSHAP)
- Health insurance, access to care (HRS)
- Health behaviors (**Add Health**, HRS, NSHAP)
- Chronic disease, disability, acute health shocks (**Add Health**; HRS)
- Social integration, support, strain and stress (NSHAP, HRS, MIDUS)

- **Personality, Cognitive Processing & Preferences**

- Big 5 (**Add Health**, Wave IV)
- Duckworth Grit Index (**New**)
- Word Recall Tests (**Add Health**, Wave IV)
- Counting Backwards (HRS)
- Risk & Patience/Time Preferences (**GSOEP**)

- **Relationships btwn generations**

- Gathering Family Rosters (one up, one down) (**PSID**)
- Time & Money Transfers (**PSID**)
- Long Term Transfers & Financial Help (**PSID**)
- Notions of Safety Net provided & expected (**New**)
- Parents' Perceptions & Knowledge of (Adult) Child's situations & behaviors (**New**)

- **Economic & time capabilities**

- Employment (HRS)
- Labor Market Earnings (HRS)
- Retirement: Pensions received & expected (HRS)
- Housing (HRS, PSID)
- Assets & Income from Assets (HRS)
- Debt (HRS, PSID)



## Additional Information Collected for Future Studies:

- Consents to link **Administrative Records** (present, past & future)
  - **Medicare & Medicaid**
  - **Housing valuations** & foreclosures of place-of-residence
- Collection of **Family Health Histories** with leave-behind questionnaire
  - Ask about health conditions & age-of-death for deceased parents.
  - So we have **health data** on **3-generations**.
  - 75% completion rates,More on these data below.
- Option in future to use **place-of-residence** info to link:
  - Economic, demographic status of neighborhoods
  - Food environments
  - Environments for exercise, etc.
  - Others.

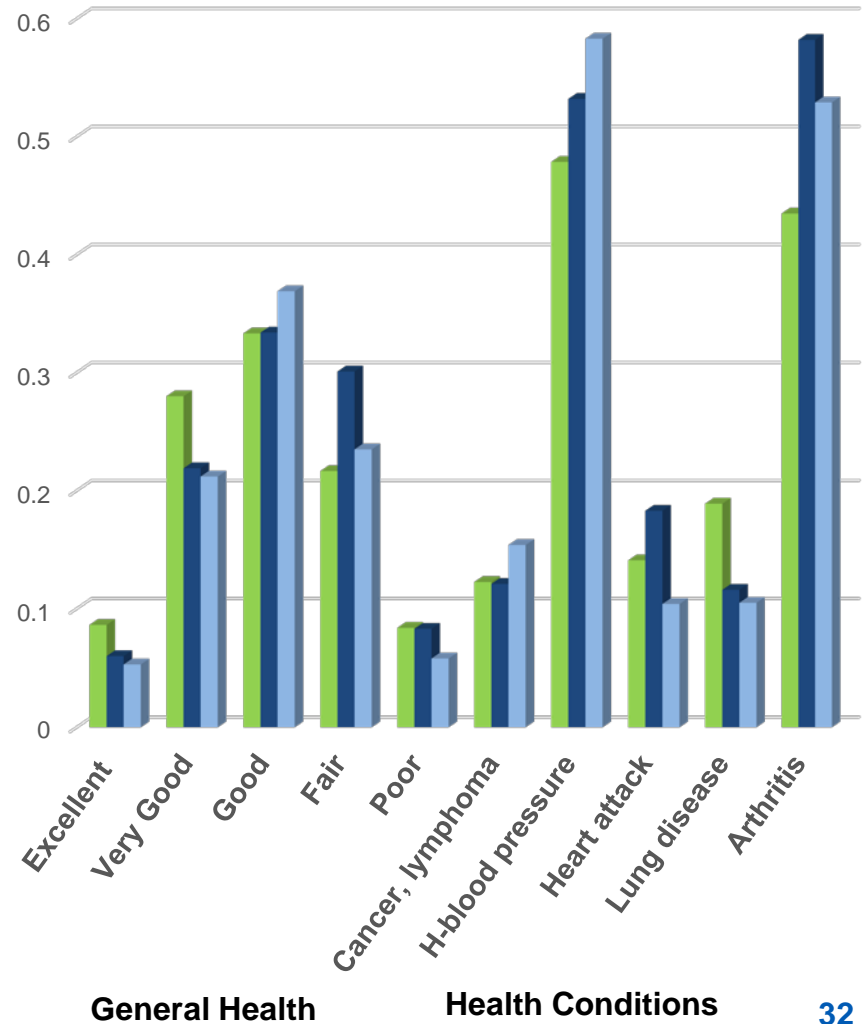
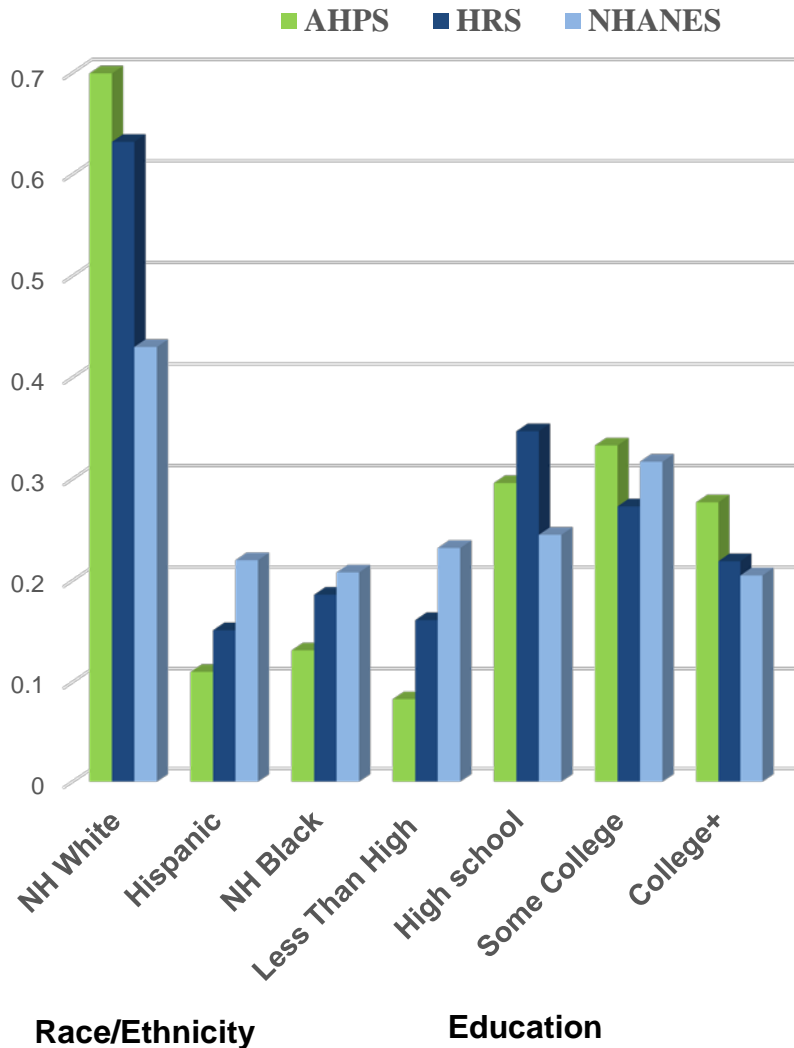
Such possibilities for adding linked contextual data through **Add Health Ancillary Data Process**.



# **AHPS** Benchmarked against Other Health-Related Data Sets

- Majority of **AHPS W1Ps** interviewed at Wave I (97%) are *female* & all *had children*.
- We *compare* **AHPS W1Ps** in **Parent (2015-17)** *with* women in **HRS** & **NHANES**.

# Comparison of AHPS with HRS & NHANES





# **AHPS & Add Health Linked Data: Ways to Use It**

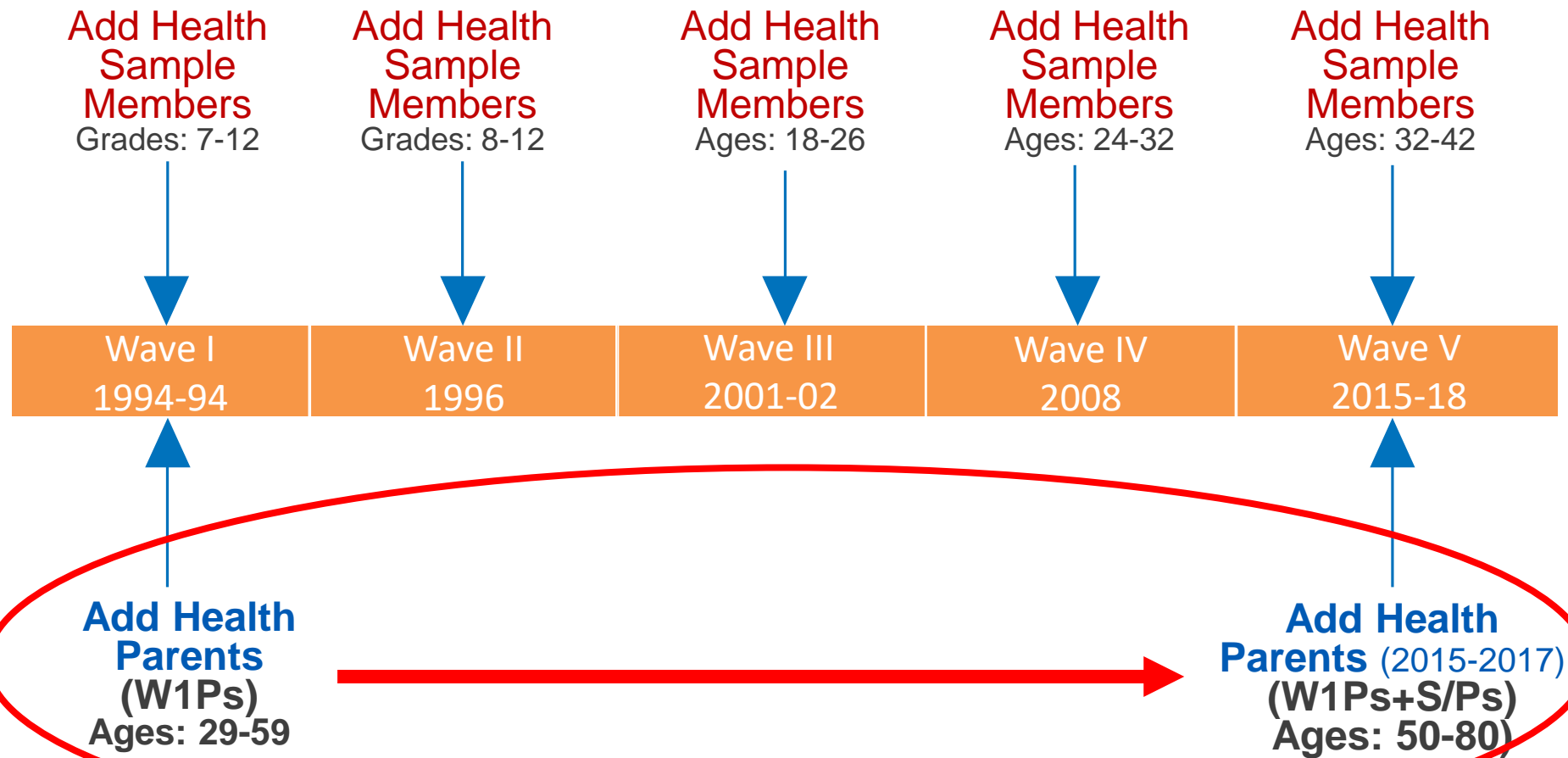
# At Least 4 Ways to Use Linked Data

---

- **Longitudinal** (2-waves) analyses of parents to study life cycle changes
- **Contemporaneous** comparisons of status & interactions **between generations**
- **Intergenerational correlations** of outcomes & attainment at **comparable ages**.
- Intergenerational analyses with “**sibling**” **comparative designs**.

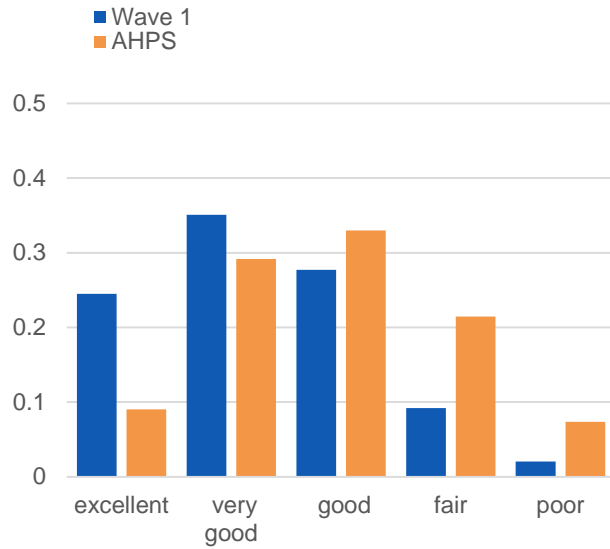
- One can use data on **Parents @ Wave I** and **Parents @ Wave V** to changes over life course, i.e., **changes with age**.
- These **two waves** of data on parents contain **comparable measures** of general health, health behaviors & some other outcomes at **ages 29-59 & at 50-80**.

# Parents' Changes with Age

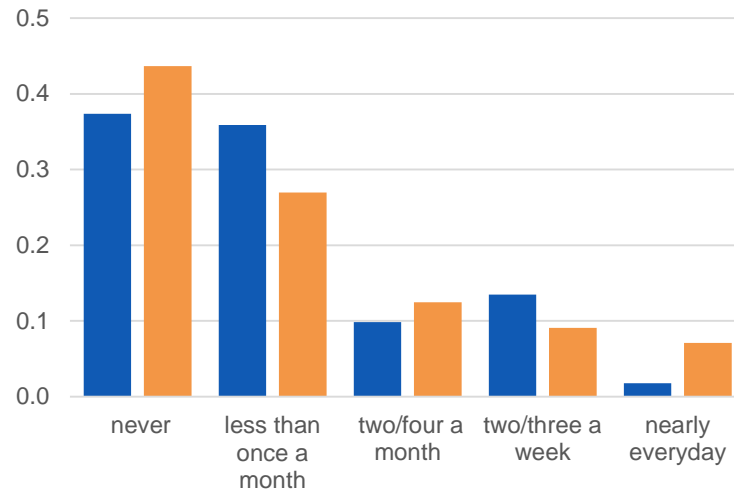




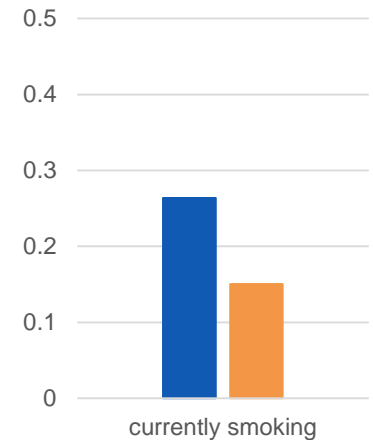
# Parents' Changes with Age



Self-Reported  
General Health

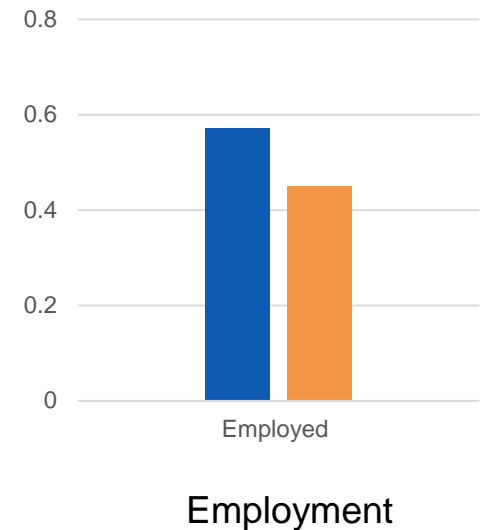
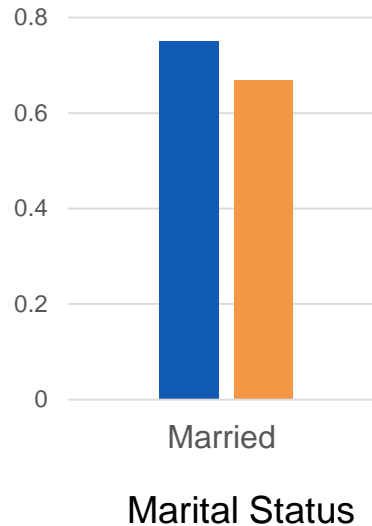
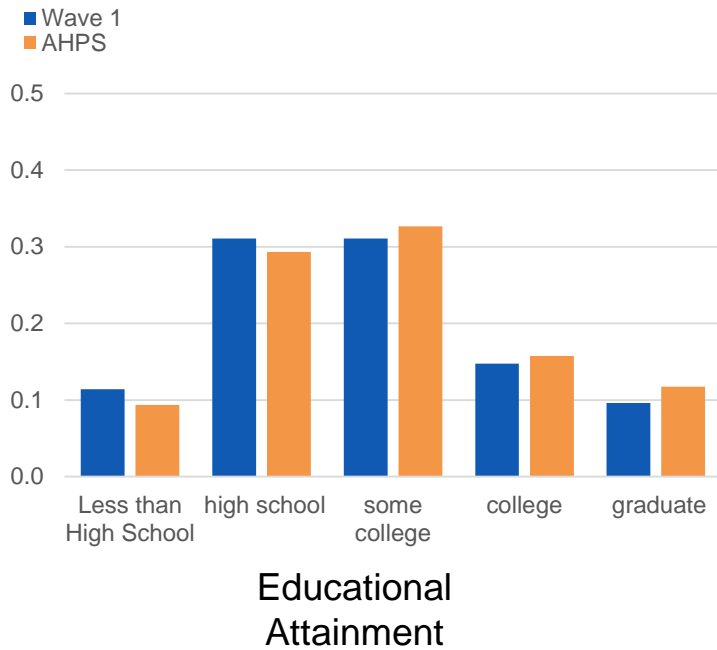


Typical Drinking



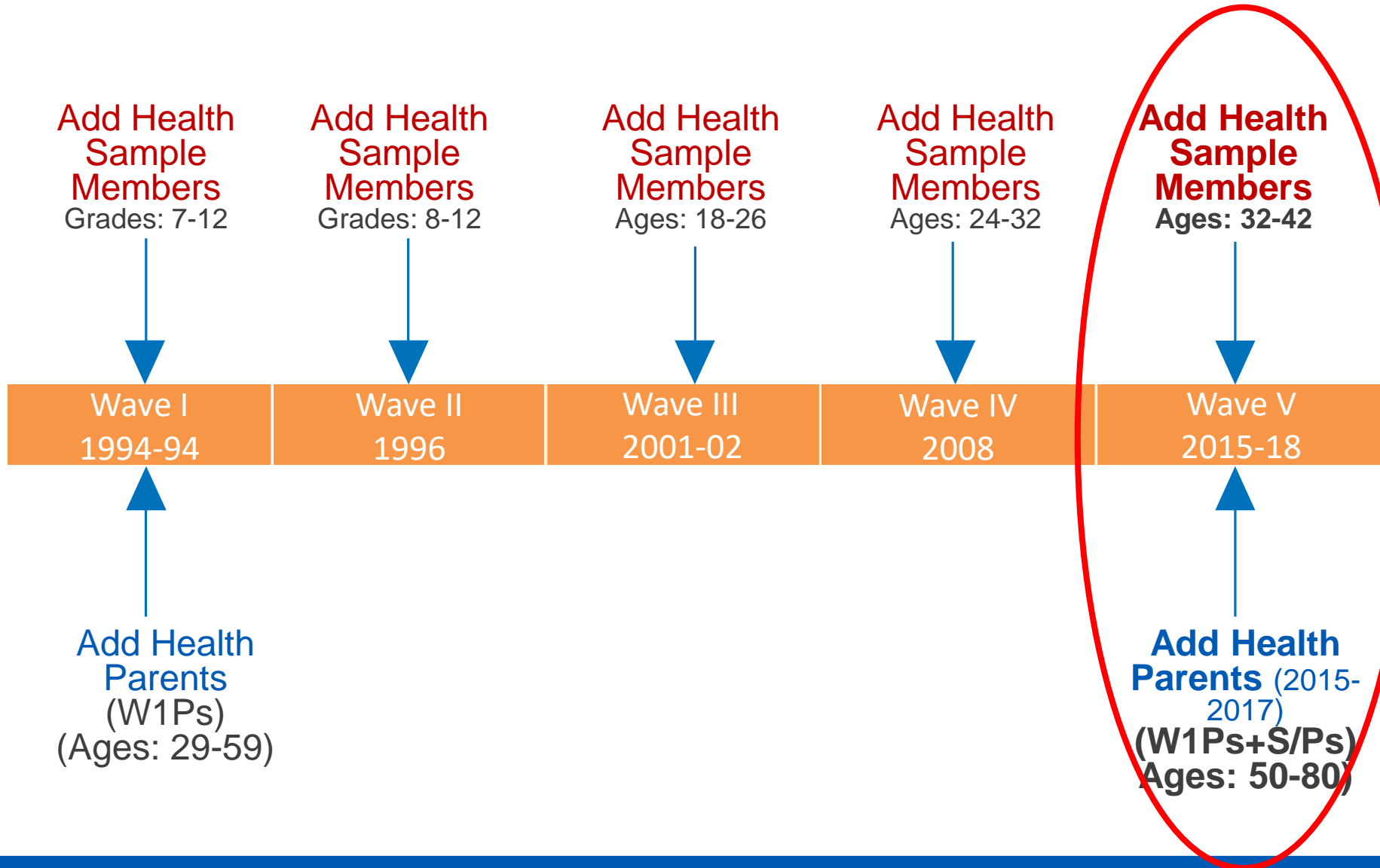
Currently Smoking

# Parents' Changes with Age



- We also can compare **AHSMs @ Wave V** with their **Parents @ Wave V** to examine *contemporaneous linkages & relationships* when both are adults. See next slide.

# Contemporaneous Comparisons across the Generations 2

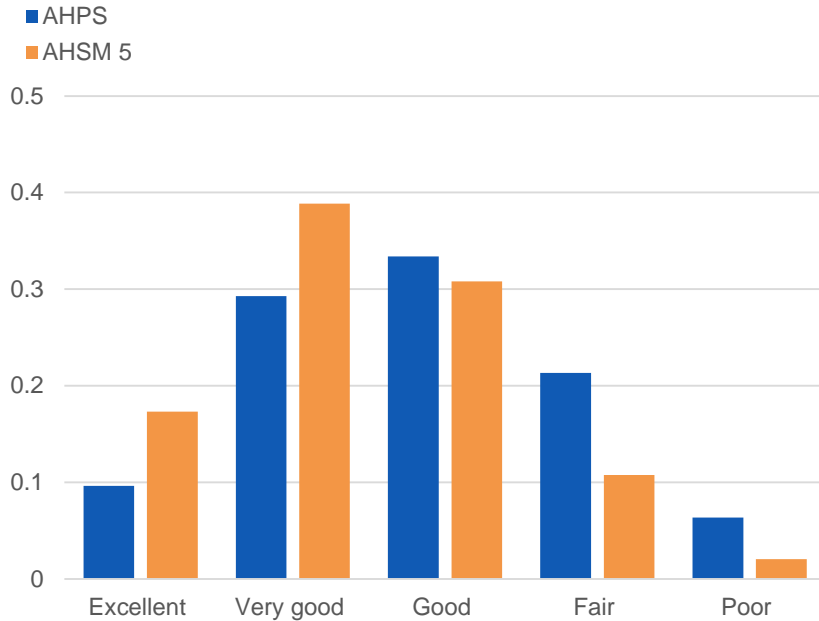


# Contemporaneous Comparisons using Parent-Child Pairs at Wave V

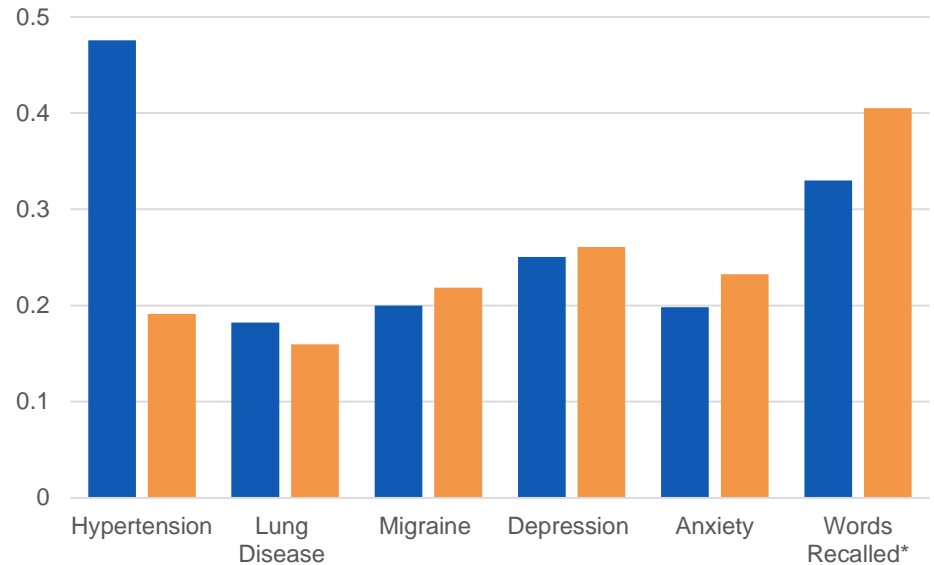
---

- A total of **1,701 AHSMs** in Wave V have parents (**W1Ps**) in **AHPS**.
- There are **1,581 W1Ps** in matched sample.
- Tabulations below restricted to this subsample of parents.

# Contemporaneous Comparisons: Intergenerational Mobility & Connectedness

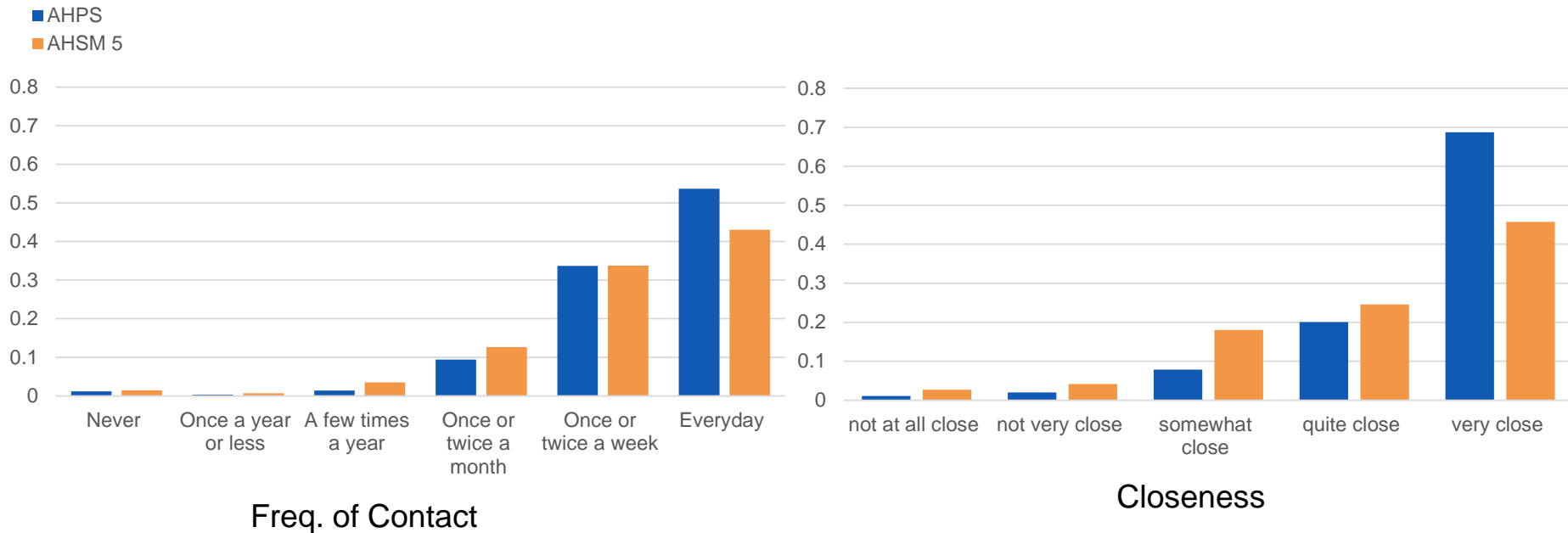


Self-Reported  
General Health

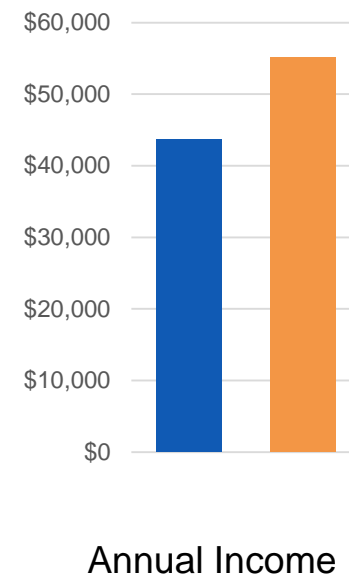
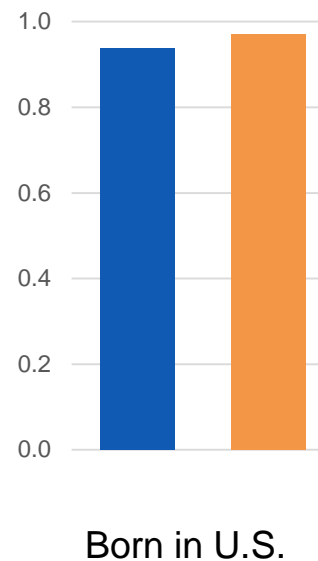
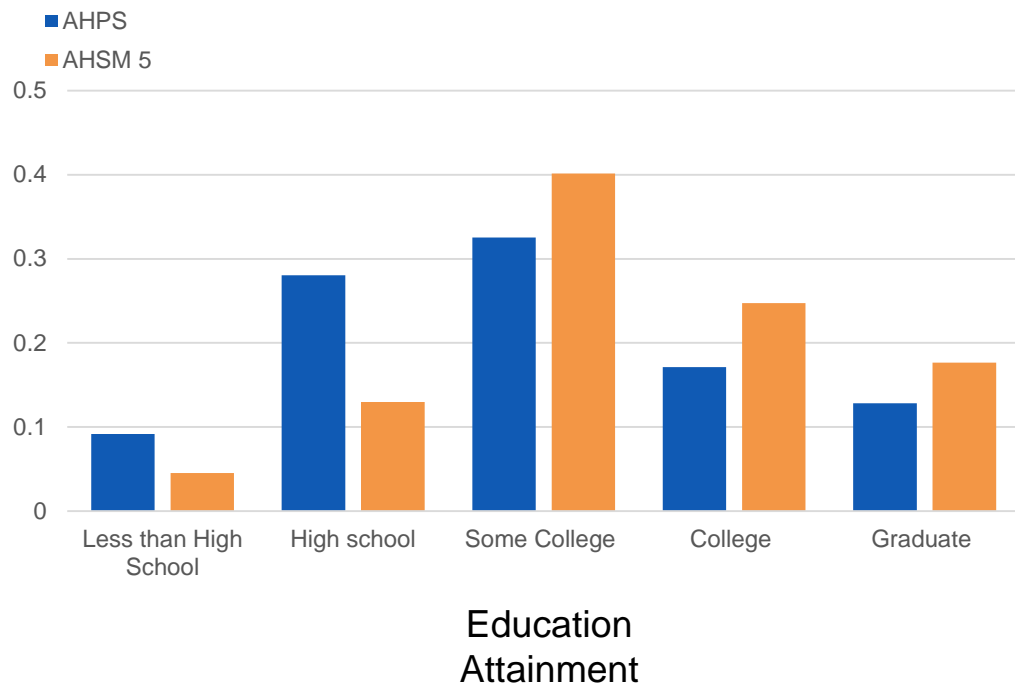


Prevalence of Health  
Conditions & Other Health  
Indicators

# Contemporaneous Comparisons: Intergenerational Mobility & Connectedness



# Contemporaneous Comparisons: Intergenerational Mobility & Connectedness-3

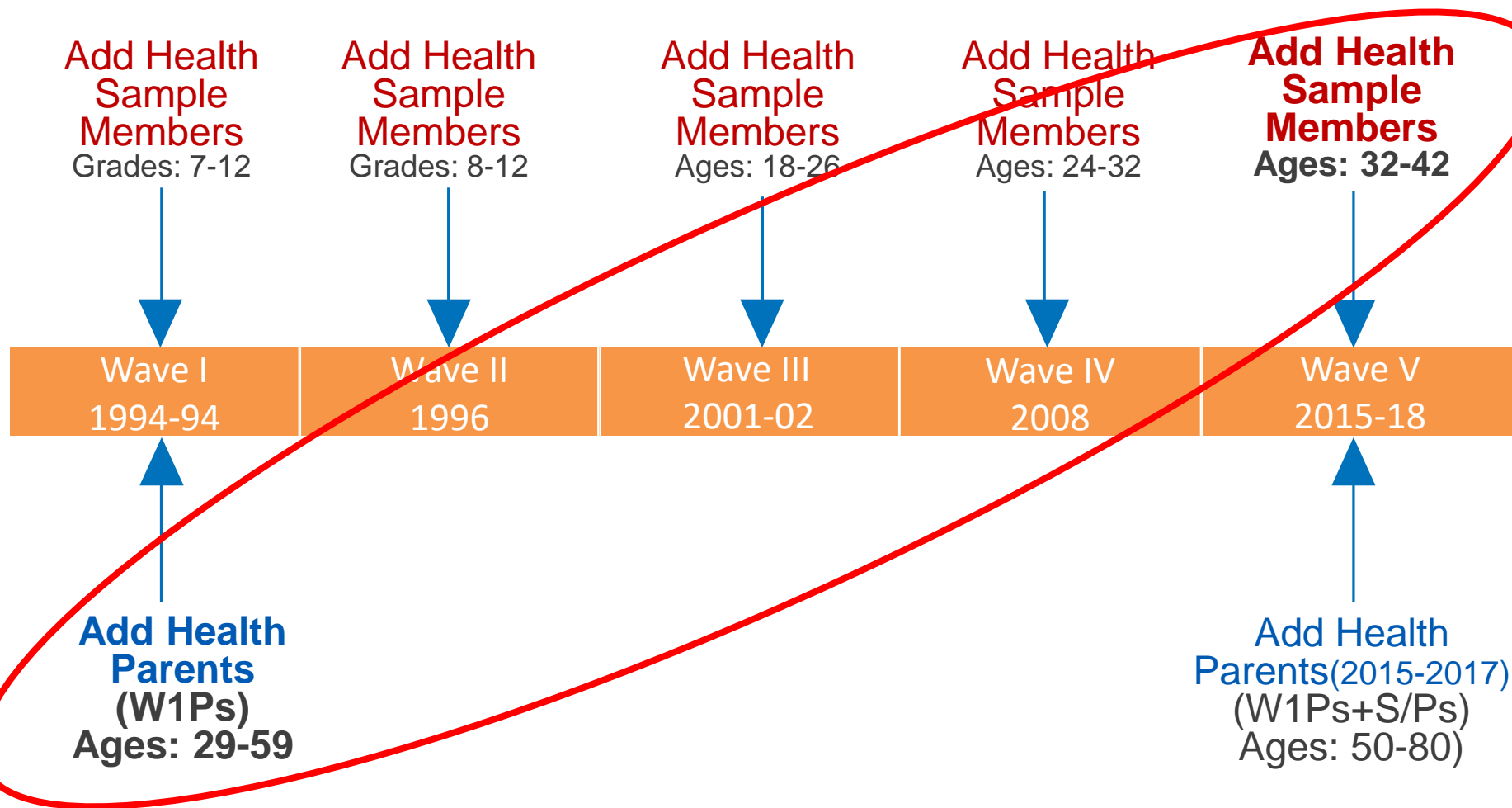




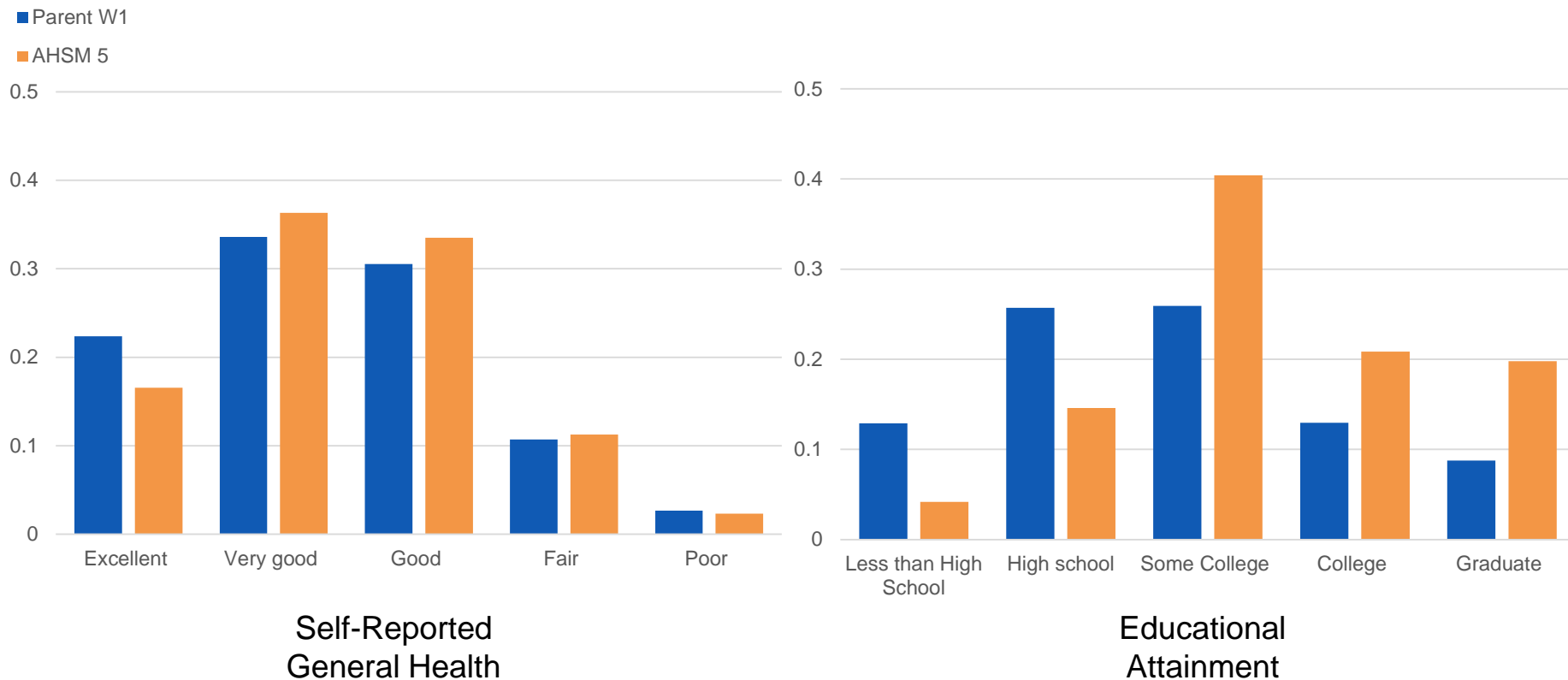
# Intergenerational Correlations

- One can also examine more traditional ***intergenerational correlations*** taken at ***comparable*** (adult) ***ages*** of parents and children.
- These correlations can be calculated using data when ***each*** generation is around the ***same age*** (~40) using data for **Parents @ Wave I** and their **AHSMs @ Wave V**. See next slide.

# Intergenerational Correlations 2



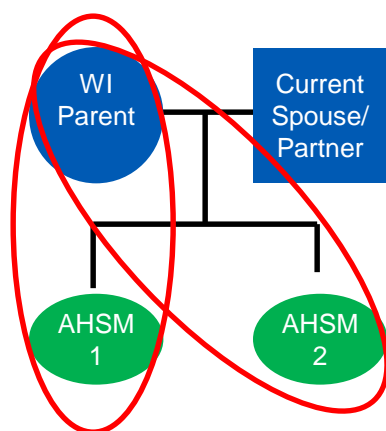
# Intergenerational Correlations 4



- Finally, **Add Health** Design of *multiple children* (**AHSMs**) with common parent (**W1P**) presents opportunities for “**sibling**” *comparative designs* for studying intergenerational health and behaviors.
- Note, as well, that genetic data for AHSMs could be exploited.

# Composition of AHSM and AHPS “Pairs”

## WI Family Cluster A

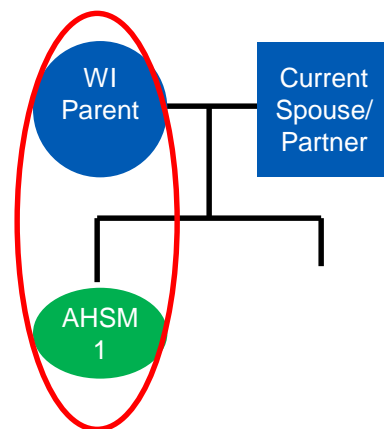


**2 AHSM – WI Parent Pairs**

**2 Parent-Figures**

(WI Parent & Current Spouse/Partner)

## WI Family Cluster B

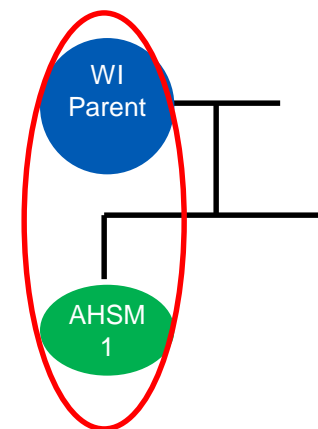


**1 AHSM – WI Parent Pair**

**2 Parent-Figures**

(WI Parent & Current Spouse/Partner)

## WI Family Cluster C



**1 AHSM – WI Parent Pair**

**1 Parent-Figure**

(WI Parent)

- Some Family Clusters include both biological parent-figures of AHSMs; Others include bio parent & step-parent.
- AHSMs in multiple-AHSM Family Clusters include twins, non-twin full sibs &/or half-sibs.



# Using Family Health Histories to Study Multigenerational Prevalence of Chronic Diseases

from Duke, N.N., T.D. Jensen, K.M. Perreira, V.J. Hotz & K.M. Harris (2021). “Family Health History in Add Health: Role of Family Health History in Predicting Midlife Chronic Disease Outcomes” (under review).

- Family health histories (FHH) source for predicting individuals' own health & wellness.
- Routinely collected & included in personal health records.
- FHHs reflect intergen transmission of health via heritable factors, learned health behaviors, etc.
- FHHs used to predict risks of some diseases & health conditions, since CVD, diabetes, cancer, depression run in families.
- Most evidence is FHH of first-degree relatives.
  - Less known about FHHs of multiple generations.
- Most studies look role of FHH on particular condition/disease.
  - Fewer studies use look at range of conditions/diseases, esp. for multiple generations & for population-representative sample.
- This study leverages data from Add Health & FHH collected from W1P in AHPS to address some of the above deficiencies.

**Add Health Parent Study  
Family Health History**

ID:

FHHA 0673468947  
Page 1 of 2

Is your parent still alive?

**Biological Mother**

yes → How old is she? Age in years:

no → When did she die? Age at death:

don't know

**Biological Father**

yes → How old is he? Age in years:

no → When did he die? Age at death:

don't know

**Consider only your biologically related relatives, and please fill the answers for each of the following conditions. . . .**

| <i>Your biological . . .</i>        | <i>mother</i>         |                       |                       | <i>father</i>         |                       |                       | <i>any brother /sister</i> |                       |                       | <i>aunts/uncles</i>   |                       |                       | <i>any grandparent</i> |                       |                       |
|-------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|
|                                     | <i>yes</i>            | <i>no</i>             | <i>don't know</i>     | <i>yes</i>            | <i>no</i>             | <i>don't know</i>     | <i>yes</i>                 | <i>no</i>             | <i>don't know</i>     | <i>yes</i>            | <i>no</i>             | <i>don't know</i>     | <i>yes</i>             | <i>no</i>             | <i>don't know</i>     |
| Coronary Heart Disease              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| If yes, diagnosed before age 55?    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Heart Attack                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| If yes, 1st one before age 55?      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Stroke                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| If yes, 1st one before age 55?      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Diabetes or high blood sugar        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Hypertension or high blood pressure | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| High Cholesterol or Hyperlipidemia  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Cancer ever                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Prostate Cancer ever                |                       |                       |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |



Add Health Parent Study  
**Family Health History (continued)**

ID:

FHHa 7426468940  
 Page 2 of 2

|   | <i>mother</i>         |                       |                       | <i>father</i>         |                       |                       | <i>any brother /sister</i> |                       |                       | <i>aunts/uncles</i>   |                       |                       | <i>any grandparent</i> |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|
|   | <i>yes</i>            | <i>no</i>             | <i>don't know</i>     | <i>yes</i>            | <i>no</i>             | <i>don't know</i>     | <i>yes</i>                 | <i>no</i>             | <i>don't know</i>     | <i>yes</i>            | <i>no</i>             | <i>don't know</i>     | <i>yes</i>             | <i>no</i>             | <i>don't know</i>     |
| If yes, prostate cancer before age 60?              |                       |                       |                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Breast cancer ever                                  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| If yes, breast cancer before age 50?                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Colorectal (or colon) cancer ever                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| If yes, Colorectal (or colon) cancer before age 55? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Ovarian Cancer ever                                 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                       |                       | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Lung cancer ever                                    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Other Cancer ever                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| If so, which ones (specify): →                      | _____                 |                       |                       | _____                 |                       |                       | _____                      |                       |                       | _____                 |                       |                       | _____                  |                       |                       |
| Depression  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Dementia or Alzheimer's Disease                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Heavy alcohol use or alcoholism                     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Obesity   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Asthma  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| Arthritis   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |

**Table 1. Sample Characteristics, AHSMs & W1Ps\***

|                                | AHSM (G4) | W1P - Mother (G3) |
|--------------------------------|-----------|-------------------|
|                                | Mean or % | Mean or %         |
| <b>Age</b>                     | 37.4      | 62.9              |
| <b>Sex</b>                     |           |                   |
| Female                         | 46.4%     | 100.0%            |
| Male                           | 53.6%     |                   |
| <b>Race/Ethnicity</b>          |           |                   |
| NH White                       | 82.9%     | 84.2%             |
| NH Black/African/African Ameri | 7.7%      | 7.0%              |
| NH Asian                       | 1.0%      | 1.0%              |
| NH Other/Native American       | 1.1%      | 2.1%              |
| Hispanic                       | 7.4%      | 5.7%              |
| <b>Education</b>               |           |                   |
| High School or Less            | 17.5%     | 42.3%             |
| Some College                   | 38.7%     | 31.5%             |
| College Degree or More         | 43.8%     | 26.2%             |

\*Based on Wave V data, Weighted statistics.

**Table 2. Health Conditions across 4 Generations (Weighted)**

|  | AHSM (G4) <sup>1</sup> | W1P Mother (G3) <sup>1</sup> | Maternal Grandparent (G2) <sup>2</sup> | Any Maternal Great Grandparent (G1) <sup>2</sup> |
|--|------------------------|------------------------------|--|--|
|  | %                      | %                            | %                                      | %  |
| <b>Heart Attack</b>                            |                        |                              |  |  |
| Female   | 0.1                    | 12.2                         | 16.0                                   | 30.5   |
| Male   | 1.3                    |                              | 31.4                                   |  |
| <b>Stroke</b>                                  |                        |                              |  |  |
| Female   | 0.1                    | 3.0                          | 16.9                                   | 21.3   |
| Male   | 0.2                    |                              | 15.7                                   |  |
| <b>Diabetes</b>                                |                        |                              |  |  |
| Female   | 4.6                    | 19.0                         | 26.4                                   | 23.3   |
| Male   | 5.2                    |                              | 21.8                                   |  |
| <b>Hypertension</b>                            |                        |                              |  |  |
| Female   | 15.6                   | 44.1                         | 48.9                                   | 23.8   |
| Male   | 21.6                   |                              | 41.0                                   |  |
| <b>Elev. Cholesterol</b>                       |                        |                              |  |  |
| Female   | 11.3                   | 48.1                         | 30.2                                   | 11.2   |
| Male   | 15.5                   |                              | 25.6                                   |  |
| <b>Obesity</b>                                 |                        |                              |  |  |
| Female   | 38.9                   | 40.3                         | 19.5                                   | 15.4   |
| Male   | 41.2                   |                              | 10.5                                   |  |
| <b>CVD Factor Risk Index (0-4)<sup>3</sup></b> |                        |                              |  |  |
| Female   | 0.7                    | 1.5                          | 1.2                                    | 0.7  |
| Male   | 0.8                    |                              | 1.0                                    |  |
| <b>Cancer</b>                                  |                        |                              |  |  |
| Female   | 2.5                    | 13.7                         | 33.4                                   | 33.7   |
| Male   | 2.1                    |                              | 34.6                                   |  |
| <b>Depression</b>                              |                        |                              |  |  |
| Female   | 34.1                   | 25.5                         | 25.1                                   | 6.5  |
| Male   | 18.9                   |                              | 11.0                                   |  |

<sup>1</sup>Self-reported by AHSM or W1P, respectively, in Wave V surveys.

<sup>2</sup>Reported by W1P in FHH at Wave V.

<sup>3</sup>CVD Risk Factor Index is sum of Diabetes, Hypertension, Elev. Cholesterol and Obesity.

**Table 3. Effects of Multi-Gen Family History of Chronic Diseases on Incidence of Same Disease for AHSM (G4)**

|  | <i>Diabetes</i>             |             | <i>Hypertension</i> |             | <i>Elev. Cholesterol</i> |             | <i>Obesity</i> |             |
|--|-----------------------------|-------------|---------------------|-------------|--------------------------|-------------|----------------|-------------|
|  | Model 1                     | Model 4     | Model 1             | Model 4     | Model 1                  | Model 4     | Model 1        | Model 4     |
| W1P Mother (G3) Had <sup>1</sup>                     | 2.13                        | 1.21        | 1.19                | 1.07        | <b>1.66</b>              | <b>1.61</b> | <b>2.26</b>    | <b>1.77</b> |
| Maternal Grandfather (G2) Had <sup>2</sup>           |                             | <b>2.41</b> |                     | 1.18        |                          | 0.57        |                | 1.07        |
| Maternal Grandmother (G2) Had <sup>2</sup>           |                             | 0.68        |                     | 1.26        |                          | 1.10        |                | 0.95        |
| Any Maternal Great Grandparent (G1) Had <sup>2</sup> |                             | <b>3.05</b> |                     | 1.29        |                          | <b>2.81</b> |                | 1.40        |
|  | <i>CVD Risk Index (0-4)</i> |             | <i>Cancer</i>       |             | <i>Depression</i>        |             |                |             |
|  | Model 1                     | Model 4     | Model 1             | Model 4     | Model 1                  | Model 4     |                |             |
| W1P Mother (G3) Had <sup>1</sup>                     | <b>1.17</b>                 | <b>1.11</b> | <b>3.44</b>         | <b>3.10</b> | <b>1.97</b>              | <b>1.87</b> |                |             |
| Maternal Grandfather (G2) Had <sup>2</sup>           |                             | 1.01        |                     | 0.85        |                          | 1.07        |                |             |
| Maternal Grandmother (G2) Had <sup>2</sup>           |                             | 0.99        |                     | 0.39        |                          | 1.52        |                |             |
| Any Maternal Great Grandparent (G1) Had <sup>2</sup> |                             | 1.07        |                     | 0.56        |                          | 0.74        |                |             |

**TABLE NOTES:**

(a) **Model 1** includes health condition of Mother (G3) but no covariates or health conditions of G1 or G2.

(b) **Model 4** includes all G1-G3 corresponding health conditions + sociodemographics + other risk factors (modifiable ones). Joint significance of ages of G4 & G3 and current age or age-at-death of G3 were tested but were not significant for any of models.

(c) **Estimates are Adjusted Relative Odds of AHSM having disease given that older generation had it.** Estimates for CVD Risk Index indicate effect of additional risk factor on AHSM's Index.

(d) **Odds statistically different from 1.00 at 0.05 level** are denoted in **RED**.

(e) Tests for Joint Significance of Effects of Chronic Conditions of G1 (Any), G2 (both) & G3 (Maternal) were all statistically significant at conventional levels.

<sup>1</sup>Self-reported by AHSM or W1P, respectively, in Wave V surveys.

<sup>2</sup>Reported by W1P in FHH at Wave V.

- We find that ***FHHs of first-degree relative often most predictive*** of occurrence of ***many conditions/diseases*** (cholesterol, obesity, CVD risk, cancer, depression) at midlife, ***conditions/diseases of other generations matter for some***, e.g., diabetes, cholesterol.
- We also ***find overall contribution of health histories of all older generations*** (G1, G2, G3), even if not individually significant.
- We ***don't find effect of FHH of hypertension***.
  - FHH of early onset of hypertension may matter (Framingham Heart Study), although we don't have timing data for onset in AHPS FHH.

- **AHPS Parents Phase 2** data is *now available* through a ***Restricted-Use*** Data Contract.
- Apply for the above data, as well as the **AHPS Parents Phase 1** & **Add Health** data, through the **CPC Data Portal**.
- ***Public release*** version of data will be available in **May 2019** via ***ICPSR*** & ***Dataverse***.
- Data on ***therapeutic measures*** from medications log will be available at later date.
- To ***keep informed*** about data releases ***sign up*** for the Add Health list serve by emailing **[addhealth@unc.edu](mailto:addhealth@unc.edu)**.

---

- **Special Issue of *Advances in Life Course Research***

- Issue will cover Data Features & Initial Findings of Add Health – Add Health Parent Linkages & Relationships
- Articles in Issue will provide:
  - Some documentation of the data
  - Assessment of properties (e.g., representativeness) of AHPS sample
  - First-passes through different domains of AHPS data
  - Illustrate some of the possible data-linkage possibilities.
- Target publication date: late 2021.

- 
- If you have any questions and/or want to discuss possible uses of these data, feel free to contact me at:

[v.joseph.hotz@duke.edu](mailto:v.joseph.hotz@duke.edu)