

Recruitment and Retention of Minority Participants in the Health and Retirement Study

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Purpose: Minority oversamples of African Americans and Hispanics have been a key feature of the Health and Retirement Study (HRS) design from its origins in 1992. The objective of this article was to assess the quality of the HRS with respect to the recruitment and retention of minority respondents. **Design and Methods:** To evaluate minority recruitment efforts, we examine baseline response rates for the early baby boom cohort that was added in the 2004 wave and the representativeness of this cohort with regard to demographic, socioeconomic, and health characteristics. To evaluate retention, we focus on minority differentials in 2008 interview, nonresponse and mortality outcomes for the full HRS sample. We also examine minority differentials in participation in supplemental components of the HRS. **Results:** Minority response rates at baseline and in longitudinal follow-ups for the main HRS interview have been equal to or better than that of majority Whites. Conversely, response rates to some specific supplemental components have been lower for minority sample members. **Implications:** The oversample strategies that the HRS has employed have been successful at identifying and recruiting minority participants at response rates very comparable with that of Whites and others. Minority differentials in participation in supplemental components have been overcome to some extent through interviewer training and targeted follow-up strategies. The HRS experience suggests that well-trained interviewers can overcome most if not all of whatever race and ethnic differentials exist in willingness to participate in surveys, including those involving biological data collection.

Key Words: Survey participation, Racial and ethnic disparities, Response rates, Physical measures, Biomarkers

Racial and ethnic disparities in health have been the focus of much research and a major priority area for federal research funding over the past decade. *Healthy People 2010*, the health policy blueprint of the Department of Health and Human Services, set two overarching goals, one of which is “to help our nation eliminate health disparities among different segments of our population” (U.S. Department of Health and Human Services, 2000). The divergent health patterns of African Americans and Hispanics compared with non-Hispanic Whites challenge fundamental notions of fairness and contribute to the declining relative position of American health and life expectancy among the world’s developed nations (Anderson, Bulatao, & Cohen, 2004). There is no comparable blueprint for economic policy, but racial and ethnic disparities in income and wealth are also substantial and are related to the health differences. These disparities can only be reduced by understanding their origins, and that understanding requires data on racial and ethnic minorities of sufficient quality and quantity to address the needs of research.

Longitudinal studies are crucial for understanding how health and economic disparities evolve with aging. One of the best longitudinal data resources is the Health and Retirement Study

(HRS). The HRS is a large, national panel study of Americans older than 50 years that began in 1992. The primary focus of the HRS is on the intersection between health, retirement, and economic status in later life. The survey provides detailed information on each of these topics, as well as on employment history and availability of pensions, work disability and related benefits, family composition and resource transfers, and health insurance and utilization of health services. The measurement of health in the HRS is multidimensional, encompassing a range of chronic diseases, disability, cognition, depression, and sensory functioning, as well as risk factors (smoking, drinking, exercise, body weight). In recent waves the study was expanded to include biomarkers and enriched psychosocial measures, which greatly enhance the potential for studying mechanisms underlying disparities in health.

An important goal of the HRS is to support research on racial and ethnic disparities, as described in a special issue of *The Gerontologist* shortly after the study began (Jackson, Lockery, & Juster, 1996). To achieve this, the study has oversampled African American and Hispanic populations in each incoming cohort. In addition to having adequate sample sizes of minority respondents to support subgroup analysis, it is important that respondents in each subgroup are representative of the populations that they are intended to represent. In a panel survey, such as the HRS, both the initial recruitment of the sample and the retention of that sample in follow-up waves are critical. In this article, we assess how well the HRS has done with respect to recruitment and retention of minorities in the sample. Before turning to that, however, we provide an overview of issues pertaining to recruitment and retention of participants in surveys and a summary of how the HRS has provided insights into minority disparities in health as an illustration of the value of having adequate representation of minority groups in surveys.

Minority Participation in Survey Research

There are many different factors that may influence whether individuals participate or do not participate in surveys and these factors may differ across social and demographic groups (Groves & Couper, 1998; Groves, Dillman, Eltinge, & Little, 2002). Individuals who are highly mobile may be difficult to locate, reducing their likelihood of participation. Those who are working and/or who

have other time constraints may be difficult to contact and/or reluctant to give up any of their time to participate in a survey. In addition, individuals who feel marginalized or less socially connected to their communities or the larger society may be less inclined to take part in surveys. This latter hypothesis has often been put forward to explain differential participation of race and ethnic minority subgroups in survey research (Groves & Couper). As noted in the following, however, the evidence is mixed as to whether there are differentials in survey participation by race and ethnicity.

Some strategies that are employed by surveys to enhance participation of minorities in surveys include offering the interview or questionnaire in alternate languages, maintaining a diverse interviewer team with respect to race and ethnicity, and matching interviewers and respondents on race and ethnicity (Pennell et al., 2004). Although not specifically targeted at minority participants, other strategies used to enhance participation include training interviewers to be attentive to the questions and concerns that are raised by sample members and to respond effectively and, in panel surveys, investing resources into locating respondents who have moved (Couper & Ofstedal, 2009) and maintaining the same interviewer for a given respondent across waves (Hill & Willis, 2001).

Many national surveys oversample race and ethnic minority groups to attain adequate numbers of participants in those groups to support subgroup comparisons by race and ethnicity. Some examples include the National Health and Nutrition Examination Survey, the National Health Interview Survey (NHIS), and surveys that use the NHIS as a sample frame such as the Medical Expenditures Panel Survey and the Longitudinal Study of Aging. The HRS also follows this strategy. A common approach used to obtain oversamples of race and/or ethnic minorities is to include in the sample frame increased numbers of specific geographic areas (domains) that have higher-than-average concentrations of the target groups. Other areas with average or lower-than-average concentrations of minorities are also included in the frame to ensure national representation, and minority households or individuals in those areas are included in the sample. The sample is drawn from across the domains to reach the targeted number of households in each race and ethnic group. This approach is used by the University of Michigan's Survey Research Center for the surveys it conducts, including the HRS (Heeringa & Conner, 1995; Heeringa et al., 2004).

Most national surveys use area probability samples, which are drawn from listings of addresses. The address listings typically do not contain any information on the residents of the household. As a result, information on demographic characteristics of all sampled households or individuals is usually unknown, making it infeasible to calculate cross-sectional or baseline survey response rates for demographic subgroups. Two studies for which response rates are reported by race and ethnicity are the National Survey of American Lives (NSAL) and the National Latino and Asian American Study of Mental Health (NLAAS), which are part of the Collaborative Psychiatric Epidemiology Studies. Both of these studies were carried out by the Survey Research Center at the University of Michigan and used the general method described previously to achieve oversamples of minority groups (Heeringa et al., 2004). The NSAL, a household-based study of adults of all ages (aged 18 or older) that was carried out in 2001–2003, achieved an overall response rate of 71.5%. Response rates for the two target minority groups in the NSAL (African Americans and Afro-Caribbeans) were slightly higher than that for non-Hispanic Whites. The NLAAS, which focused exclusively on Latino and Asian American adults and was conducted in 2002–2003, achieved response rates of 75.5% for the Latino sample and 65.6% for the Asian sample, yielding an overall response rate of 73.2%. A third study, the National Social Life, Health and Aging Project (NSHAP) also reports response rates by minority status. NSHAP is a longitudinal study of individuals aged 57–85 years and is drawn from the 2004 household screener that was undertaken for the HRS. The baseline wave was conducted in 2005–2006, and the first follow-up wave is scheduled for 2010–2011. Baseline response rates in NSHAP were 79.5% for minority households and 75.1% for nonminority households (O’Muirheartaigh, Eckman, & Smith, 2009). Thus, contrary to common expectations, both the NSHAP and the NSAL studies (which included a mix of minority and nonminority participants) achieved higher response rates among minority compared with nonminority sample members.

Once an individual or a household has participated in one wave of a survey, extensive information is typically available about their characteristics. As a result, for longitudinal surveys it is possible to conduct detailed analyses of the correlates of sample attrition (or the converse, sample retention)

across waves. Many studies of this sort have been conducted, and here we highlight those that have examined minority differentials. Several of the surveys reported on had lower retention rates for minority participants. For example, the Midlife in the United States National Study of Health and Well-Being experienced lower rates of retention for non-Whites compared with Whites (Radler & Ryff, 2010). The Survey of Income and Program Participation also experienced lower retention rates for minority participants, both Black and other non-White groups (compared with Whites) (Zabel, 1998). In the Panel Study of Income Dynamics, there were no differences in retention rates between Blacks and Whites over the first 21 waves of the study; however, other non-Whites were retained at a lower rate than Whites (Zabel, 1998). In contrast, the Retirement History Study (the predecessor to the HRS) found significantly higher retention rates for Blacks compared with non-Blacks in later waves of the survey, although the difference was quite small (Goudy, 1985). The Medical Expenditures Panel Survey exhibited no differences in retention at Wave 2 by race and/or ethnicity (Cohen, Machlin, & Branscome, 2000). The evidence on race and ethnic differentials in sample retention from prior studies is thus mixed, with most showing somewhat lower retention rates for minority participants but others showing the reverse or no differentials by race or ethnicity.

Minority Disparities in Health: Evidence From the HRS

As noted previously, an important goal of the HRS is to support research on race and ethnic disparities. The minority samples in the original 1992 HRS cohorts have been used extensively in research on health differences among racial and ethnic groups. Study of the early waves of the HRS has clarified the large differences between Blacks and Whites in both the prevalence and the incidence of hypertension, diabetes, stroke, and functioning loss (Hayward, Crimmins, Miles, & Yang, 2000). Blacks generally experience onset of these conditions at an earlier age than Whites (Crimmins, Hayward, & Seeman, 2004). The life cycle period when the racial gap in health is potentially at its greatest is at ages in the 50s and early 60s (House et al., 1994). Racial and ethnic differences have also been explored in relation to cognition. In a recent study using multiple waves of HRS data, Mehta and colleagues (2008) found that, net of

demographic, socioeconomic, and health characteristics, older Blacks were at higher risk of experiencing cognitive decline than Whites. No difference was observed between Hispanics and Whites.

The HRS provides the only source for studying age-specific onset of health conditions including biological risk among a national sample of Americans. Other data sets, such as the National Health and Nutrition Examination Surveys and the NHISs, allow only the study of race-ethnic differences in the prevalence of conditions; yet, it is the study of incidence rates that clarifies the differences in the age at which health changes. Because HRS has a large amount of data on social, psychological, and economic circumstances, it provides the opportunity for fuller examination of causal mechanisms than other data sets. HRS also provides links to Medicare records so that ethnic and racial differences in treatment and treatment outcome can be determined and linked to subsequent health outcomes. Understanding differences in the onset of health problems and progressive deterioration of health with age is central to unraveling the mechanisms underlying racial and ethnic disparities.

Perhaps the most common use of HRS data on race and ethnicity has been to study the three-dimensional relationships among race/ethnicity, socioeconomic status (SES), and health. A large number of studies have asked to what extent observed health disparities by race and ethnicity can be “explained” by differences in education, income, or wealth. Most studies have found that SES accounts for some, but not all, of the observed health differences (Bond, Krueger, Rogers, & Hummer, 2003; Crimmins et al., 2004; Guralnik & Leveille, 1997; Hayward et al., 2000; Schoenbaum & Waidmann, 1997).

The HRS has provided a useful national sample in which to study the life cycle factors affecting stroke, one of the conditions from which Blacks suffer more than Whites (Glymour, Avendano, Haas, & Berkman, 2008). Childhood conditions and adult SES largely explain race differences in stroke onset. In this case, HRS provided value in understanding racial differences in stroke that are often examined in local medical studies that have generally excluded the Deep South and stroke belt (Glymour & Avendano, 2009).

Economists in particular have focused on the reverse causality from health to income and wealth (Smith, 1998). This determination of bidirectional causality has been made possible because of the extensive information on income and wealth over

long periods of the life course available in HRS, as well as through the link to Social Security records. Low social status puts people on different health and income paths early in life. As health deteriorates with age, more people stop or reduce their working and experience reductions in both income and lifetime wealth. These processes differ markedly by race and fuller understanding of these links in different economic times will be important.

Racial and ethnic differences in health are also affected by differential availability of health insurance and use of health services. HRS data have been used to document lower health insurance coverage rates for Hispanics, even after controlling for employment and other factors (Angel & Angel, 1996). Immigrant elders display poorer health and functioning than native-born Hispanics, with the differences shrinking with duration in country, underscoring the need to be able to control for nativity among Hispanic respondents to understand the meaning of health differences (Angel, Buckley, & Sakamoto, 2001). The detailed data in the Medicare files allow for examination of racial and ethnic differences in treatment for specific health conditions that helps to understand the source of some health differentials. For instance, Dunlop and colleagues (2008) found that older Blacks and Hispanics (older than 65 years) were less likely than Whites to get hip or knee surgery. In contrast, Cornman and Freedman (2008) found no difference in the use of assistive devices between Black and White older adults. However, directives for end-of-life care differ by race, in that Blacks are less likely to choose to limit care at the end of life (Hopp & Duffy, 2000).

More subtle models of racial and ethnic differences allow for differences in behavior and in the structural relationships among variables. Lee and colleagues (2007) found that self-rated health predicted actual mortality outcomes better for Whites than for Blacks and that the difference could not be explained by differences in education. Another study found that education explains less of the variance in health among Blacks than among Whites (Luo & Waite, 2005). The HRS has also shown the bidirectionality of the links between some health behaviors and outcomes. Lower physical activity among minorities, usually thought to be a cause of poor health, is in part explained by poorer health (He & Baker, 2005).

Recent studies indicate that, although significant, differences in health behavior do not fully explain health disparities by race and SES (Lantz

et al., 1998; Hayward et al., 2000). Part of the missing explanation is that psychological experience and concomitant physiological responses that might be captured with biological measures have effects on health that are not mediated by obvious health behaviors. The recent addition of physical measures and biomarkers and enhancement of psychosocial content on the HRS may allow more detailed investigation of these issues.

Data and Methods

The HRS is an ongoing panel survey of a nationally representative sample of men and women older than 50 years in the United States. More than 30,000 persons have participated in the study at some point since its inception. The HRS began in 1992 as a longitudinal study of a preretirement cohort of individuals born in 1931–1941, and their spouses of any age. The sample was subsequently augmented with additional cohorts in 1993 (the Asset and Health Dynamics of the Oldest-Old or AHEAD cohort, born 1923 and earlier) and 1998 to represent the entire population 51 years and older in 1998 (b. 1947 and earlier). Since then, the steady-state design calls for refreshment every 6 years with a new 6-year birth cohort of 51- to 56-year-olds. This was done in 2004 with the early baby boomers (b. 1948–1953) and will be done in 2010 with the mid-boomers (b. 1954–1959). Both the early baby boomers and the mid-boomers were identified through a brief (5 minute) household screening interview that was undertaken in 2004 with more than 38,000 households.

The HRS conducts core interviews every 2 years using a mixed-mode design of telephone and face-to-face interviews. The primary mode used for baseline interviews and for sample members aged 80 years and older is face-to-face. Up through 2002, the primary mode for follow-up interviews with sample members younger than 80 years was telephone. In 2004, a larger number of interviews were done in person, and beginning in 2006, half of the sample is assigned to an in-person interview each wave. The study began with a sample of community-dwelling individuals residing in the United States; however, follow-up interviews are attempted with all sample members regardless of where they live, including those in institutions, as well as those who have moved out of the country. When sample members die, an interview is conducted with a family member to learn about the circumstances surrounding the death and the disposition of assets

(referred to as an exit interview). Core interviews are attempted with all surviving members of the baseline sample each wave (with the exception of a small percentage who have been removed from the study permanently upon request), regardless of their participation in the prior wave. This has helped maintain the representativeness of the HRS sample over the course of the study (Kapteyn, Michaud, Smith, & van Soest, 2006).

In addition to the core interview, HRS also conducts a number of supplemental studies, mainly in the form of mail and Internet surveys that are conducted between interview waves. These supplemental studies have been conducted since 1999 and have covered such topics as household spending, prescription drug use, diabetes treatment and self-management, disability vignettes, and parental investment in the human capital of their children.

The HRS began experimenting with collecting physical measures and biomarkers in pilot projects beginning with collection of dried blood spots in the 2003 Diabetes Mail Survey and with a small set of physical performance tests and anthropometric measurements in the 2004 core interview. These pilot efforts led to a full-scale implementation of physical measures and biomarkers in the 2006 wave, in what is referred to as an enhanced face-to-face interview. Measurements include blood pressure, height, weight, waist circumference, and tests of lung function, grip strength, walking speed, and balance. In addition, a saliva sample is obtained for DNA genotyping and blood samples are obtained for analysis of hemoglobin A1c, total and high-density lipoprotein cholesterol, C-reactive protein, and cystatin C. The enhanced face-to-face interview also includes a self-administered questionnaire (SAQ) on psychosocial topics that is left with respondents at the end of the interview and they are asked to mail back upon completion. The enhanced face-to-face interview is administered to half of the sample in one wave, and the other half in the next wave; thus, each respondent receives it every other wave (i.e., every 4 years).

HRS has offered monetary incentives to respondents since the beginning of the study. The incentive amount for the basic core interview has increased over time, from \$20 in 1992 to \$50 in 2008. In 2004, both newly recruited respondents and panel respondents received a \$40 incentive. Participants in the enhanced-face-to-face sample who are asked to complete the physical measures, biomarkers, and psychosocial SAQ receive an additional incentive of \$20–\$40, depending on the

wave. Respondent incentives are also offered for the supplemental studies, typically about \$20 for each supplement. No incentives were offered for the 2004 household screening interview until late in the field period, at which point unscreened households in the three minority domains were mailed a \$5–\$10 incentive as an end-game strategy to boost screening response rates in those domains.

In each wave, sample members are sent a pre-contact letter 1–2 weeks before the interviewer attempts to contact them to conduct or schedule the interview. For panel respondents (those who have participated in a prior wave), interviewers then typically call the respondent to schedule a time to conduct the interview. For households in the screening sample, interviewers make an in-person visit to the address and attempt to conduct the screening interview on the spot. In 2004, individuals who screened in as eligible were offered the option of completing the main interview immediately following the screening interview or scheduling it for a later time. Panel respondents receive their incentive in the form of a check with the pre-contact letter, whereas baseline respondents receive it at the time of the interview.

To facilitate participation of Hispanic Americans in the HRS, the core interview and most of the supplemental studies and components are available in Spanish, in addition to English. HRS maintains a group of bilingual interviewers, and Spanish-speaking participants are offered a choice of whether they would like to complete the core interview in Spanish or English. All printed materials related to the core interview (e.g., respondent letters, brochures, consent forms, psychosocial questionnaire) are available in both Spanish and English. Respondents who opt to complete the core interview in Spanish are sent Spanish versions of contact materials and questionnaires for the supplemental studies. In 2004, 5% of the total sample and 51% of Hispanic participants completed the core interview in Spanish. If Spanish interviews were not offered, HRS would miss a large and important group of Hispanics. This is becoming increasingly important as HRS continues to refresh the sample with younger cohorts, for which the percentage of Hispanics in the population has increased.

From the start of the study in 1992, the sample design for the HRS has included a 2:1 oversampling of African American and Hispanic populations. However, the overall sampling rate for the baby boom cohorts added in 2004 and 2010 was set at only 60% of the level used in 1992. As a result,

even with the 2:1 oversample of African Americans and Hispanics, the sample sizes for these minority groups are considerably smaller than they were when HRS began. To address this issue, HRS will supplement the minority sample in the early baby boom (EBB) and mid-baby boom cohorts in the 2010 wave, boosting the number of Hispanic and African American respondents in these cohorts by more than 1,000 each.

The objective of this article was to assess the quality of the HRS with respect to recruitment and retention of minority respondents. To evaluate minority recruitment efforts, we focus on the EBB cohort that was added to the study in the 2004 wave and examine two different indicators: baseline response rates and the representativeness of the sample with regard to demographic, socioeconomic, and health characteristics. To evaluate the success of HRS with respect to retention of minority respondents, we examine minority differentials in 2008 interview, nonresponse and mortality outcomes for the full HRS sample. In addition to these core interview outcomes, we also examine minority differentials in participation in a variety of supplemental studies and components of the HRS, including off-wave mail and Internet surveys and the physical measures/biomarkers and psychosocial SAQ components of the enhanced face-to-face interview.

Results

Recruitment of Minority Oversamples

We focus here on the recruitment of the minority oversample for the EBB cohort (b. 1948–1953) in the 2004 wave. The results of that effort are shown in Table 1. Census tracts within the Survey Research Center's sampling frame were assigned to one of four domains for sampling. Tracts with total population densities of at least 10% African American or 10% Hispanic were assigned to the three oversample domains: Domain 2 with at least 10% African American and less than 10% Hispanic, Domain 3 with at least 10% Hispanic and less than 10% African American, and Domain 4 with at least 10% African American and at least 10% Hispanic. Domain 1 consists of tracts with less than 10% African American and less than 10% Hispanic.

Table 1 shows response rates for both phases of the effort: screening and interviewing. The screening response rate is calculated as the number of households for which a screening interview was completed divided by the total number of sampled households that were not determined to have been

Table 1. Response Rates for Early Baby Boom Cohort, by Minority Stratification Domain

	Domain 1	Domain 2	Domain 3	Domain 4	Total
Household results					
Screened eligible households	1,282	581	541	351	2,755
Screener response rate	91.9	91.8	92.0	88.3	91.2
Interviewed households ^a	994	454	418	293	2,159
Interview response rate	77.5	78.1	77.3	83.5	78.4
Overall response rate ^b	71.2	71.7	71.1	73.8	71.5
Individual results					
Eligible individuals	2,177	853	875	515	4,420
Interviewed individuals	1,639	636	650	414	3,339
Interview response rate	75.3	74.6	74.3	80.4	75.5
Overall response rate ^b	69.1	68.4	68.3	71.1	69.0

Notes. Definition of domains: Domain 1 = nonminority (<10% Black or Hispanic); Domain 2 = high-density Black only (>10% Black, <10% Hispanic); Domain 3 = high-density Hispanic only (>10% Hispanic, <10% Black); Domain 4 = high-density Black and Hispanic (>10% Black and >10% Hispanic).

^aHouseholds for which at least one interview was completed.

^bOverall response rate is the product of the screener response rate and the interview response rate.

vacant. The interview response rates are presented at both the household and the respondent levels. At the household level, the interview response rate is calculated as the number of households for which an interview was conducted with at least one sampled individual divided by the number of households known to contain an eligible sample member. At the respondent level, it is calculated as the number of individuals who completed a baseline interview divided by the total number of known eligible respondents. The overall response rates presented in Table 1 are the product of the screener and interview response rates.

In both the screening and the interview phases, there was little difference in response rates across the domains. The screening response rate was

slightly lower in Domain 4 than in the other three domains, whereas both household and individual interview response rates were somewhat higher in that domain, resulting in negligible differences in the overall response rates. Screening and interviewing rates were very similar for the African American and nonminority domains in the 1992 sample recruitment but slightly lower in the Hispanic domain (Heeringa & Conner, 1995).

More detail on response rates from 2004 is shown in Table 2, which shows response rates of minority (African American and Hispanic) separately from nonminority (all other) households. This detail is not available for Domain 1 because race and ethnicity were not used to screen households in Domain 1 and, thus, the information was not collected. All households containing an age-eligible person in Domain 1 were selected for inclusion in the HRS, whereas only half of non minority households in Domains 2–4 were asked to participate. Minority households had higher response rates than nonminority households in all three of the minority oversample domains, with the largest differences observed in Domain 2.

Table 2. Interview Response Rates of Early Baby Boom Households, by Domain and Minority Status: Health and Retirement Study 2004

	Screened eligible	Interviewed	Interview response rate (among screened)	Overall response rate ^a
Domain 2				
Minority	355	293	82.5	75.7
Nonminority	227	163	71.8	65.9
Domain 3				
Minority	279	221	79.2	72.9
Nonminority	262	197	75.2	69.2
Domain 4				
Minority	254	218	85.8	75.8
Nonminority	97	78	80.4	71.1

^aProduct of interview response rate and screener response rate. Screener response rate assumed to be the same for minority and nonminority households within a domain.

Representativeness of Minority Oversamples

The 2004 minority oversample produced a sample that, although small in size, represents the population reasonably well. Table 3 compares the 2004 HRS and the Current Population Survey (CPS) from the same year on educational attainment by race/ethnicity for persons aged 51–56. Education levels and disparities in education are strongly similar in the two surveys. Hispanics are

Table 3. Education by Race and Ethnicity, HRS Compared With CPS, Persons 51–56 Years of Age in 2004

Race/ethnicity	% Less than high school		% College graduate	
	HRS	CPS	HRS	CPS
White/other	6.5	6.9	35.3	36.0
African American	17.1	18.8	19.6	21.6
Hispanic	40.1	48.1	12.9	12.8

Note. HRS = Health and Retirement Study; CPS = Current Population Survey.

more than twice as likely to have left school before completing high school as African Americans, who in turn are more than twice as likely not to have completed high school than Whites and others. College graduation rates show a similar ordering. Differences between the two studies are greater for the numerically small minority samples, as one might expect.

Table 4 compares HRS and CPS on work. Again, the two studies are very close and show the same strong patterns by race and ethnicity. Among men, Whites and others have somewhat higher employment rates than Hispanics, whereas African American men are much less likely to be working. Among women, Hispanics are the least likely to be working, although the differentials across the three groups are not as large. The most substantial differences between HRS and CPS are for Hispanic and African American women, where CPS reports lower employment rates. Although it is possible that this reflects some lack of representativeness in the HRS sample, it is also possible that this could be the result of methodological differences. CPS asks a household reporter about work activities of others in the household, whereas in HRS both husbands and wives respond for themselves. Self-employment, or irregular and infrequent work, might tend to be underreported by a household reporter.

Table 4. Percent Currently Working by Sex and Race/Ethnicity, HRS Compared With CPS, Persons 51–56 Years of Age in 2004

Race/ethnicity	% Men		% Women	
	HRS	CPS	HRS	CPS
White/other	83.1	81.7	73.8	71.6
African American	65.1	64.2	69.5	65.8
Hispanic	76.7	78.2	62.9	57.2

Note. HRS = Health and Retirement Study; CPS = Current Population Survey.

Table 5. Self-Reported Prevalence of Common Conditions by Race/Ethnicity, HRS Compared With NHIS, Persons 51–56 Years of Age in 2004

Race/ethnicity	Hypertension		Diabetes	
	HRS (%)	NHIS (%)	HRS (%)	NHIS (%)
White/other	33.7	31.3	10.8	8.0
African –American	56.4	52.4	19.7	19.1
Hispanic	37.3	32.2	14.3	14.5

Note. HRS = Health and Retirement Study; NHIS = National Health Interview Survey.

Nativity can be an important mediator of effects of Hispanic origin. HRS and CPS Hispanic respondents report similar backgrounds. Of Hispanic respondents recruited into HRS in 2004, 41.3% were U.S.-born. In CPS, 38.0% of comparably aged Hispanic respondents were U.S.-born.

Finally, in Table 5 we show a comparison of health between HRS minority respondents sampled in 2004 and the comparable age-groups in the NHIS. Hypertension is reported slightly more often in HRS for all groups, but the patterns are very similar across the two studies. African Americans have much higher rates of both hypertension and diabetes than do Whites, with Hispanics having hypertension rates above but closer to Whites and diabetes prevalence about midway between Whites and Blacks.

Panel Retention

We showed previously that baseline response rates for minority participants were as high or higher than those for nonminorities. As shown in Table 6, the same is also generally true for continued participation in the panel. That table shows the 2008 response status of surviving members of each of the entry cohorts that constitute the full HRS sample. For example, the initial HRS cohort of 1992, which included birth years 1931–1941, had a 78.3% response rate among all 7,675 surviving nonminority participants in 2008, compared with 79.5% for Blacks and 77.3% for Hispanics. In the AHEAD, children of the depression age, and war baby cohorts, Hispanics and Blacks both had higher 2008 response rates than Whites. Most of the difference is due to the lower rates of permanent attrition (removed from sample) in the minority groups. Although not shown here, we examined whether there are regional differences in retention rates within race and ethnic groups. For the most part the differences are small; however, Hispanics have slightly higher retention rates in

Table 6. Response Status in 2008 for Non-deceased Sample Members, by Cohort (year of entry into the study) and Race/Ethnicity

	2008 status			N
	Interviewed (%)	Nonrespondent, still in sample (%)	Removed from sample (%)	
HRS cohort (1992)				
Hispanic	77.3	11.0	11.7	954
Non-Hispanic Black	79.5	10.3	10.2	1,493
Other	78.3	8.5	13.2	7,675
AHEAD cohort (1993)				
Hispanic	88.0	7.2	4.8	166
Non-Hispanic Black	82.1	6.9	11.0	290
Other	81.2	7.1	11.7	2,052
CODA cohort (1998)				
Hispanic	87.1	10.9	2.0	101
Non-Hispanic Black	88.6	9.9	1.5	131
Other	85.9	8.2	5.9	1,407
War baby cohort (1998)				
Hispanic	85.4	12.6	2.0	198
Non-Hispanic Black	88.7	9.6	1.7	354
Other	82.7	11.8	5.5	1,904
Early baby boom (2004)				
Hispanic	84.3	12.6	3.1	508
Non-Hispanic Black	86.2	13.0	0.8	516
Other	85.5	13.1	1.4	2,343

Note. HRS = Health and Retirement Study; AHEAD = Asset and Health Dynamics of the Oldest-Old; CODA = Children of the Depression Age.

the South Central region and lower rates in the South Atlantic region compared with other regions, and Blacks have slightly lower rates in the Northeast compared with other regions.

Participation in Physical Measures and Biomarkers

Although the response rates of minorities to the core HRS data collection compare favorably with those of Whites, minority respondents were not as cooperative in 2006 with the new request for physical performance measures and biological

specimens (see Table 7). In 2006, HRS randomly assigned half of the sample to receive these measurements. Of those who were asked to complete each of the measures, minority respondents were less likely than Whites and others to comply. The differences were greatest for dried blood spots, with an 11.3 percentage point difference between non-Hispanic Whites and African Americans.

In an effort to improve participation in the physical measures and biomarkers in 2008 and reduce the minority differentials, interviewers were debriefed about reasons for nonparticipation and any particular concerns that were raised by minority respondents following the 2006 wave. Common concerns had to do with how the samples would be used, who would have access to them, and a general distrust in government-sponsored studies, especially those collecting biological specimens, due to concerns related to past studies such as the Tuskegee syphilis experiment. These concerns were reviewed with the interviewers during training for the 2008 wave and strategies for addressing them were presented and practiced. In addition, techniques that were found to be effective for conducting the measurements during 2006 production were included in the 2008 training, and new ways of helping interviewers to feel more confident in

Table 7. Cooperation Rates With Request for Biomarkers and Physical Measures, by Race/Ethnicity: Health and Retirement Study 2006 and 2008

	Measure		
	Physical measures (%)	Saliva (%)	Blood (%)
2006			
Hispanic	86.6	81.3	81.0
Non-Hispanic Black	84.7	75.8	70.8
White and other	92.5	84.4	82.1
2008			
Hispanic	92.6	86.7	88.8
Non-Hispanic Black	89.6	77.9	80.2
White and other	93.6	85.0	87.5

presenting the request to respondents were reinforced. Examples of new techniques included using the thumb as an alternative to one of the middle fingers for the blood sample, demonstrating best practices for holding the lancet to achieve the most effective cut, waiting for a full drop of blood to form before dropping the spot onto the card, and instructing interviewers to check the back of the collection card to ensure that an adequate blood sample was obtained. As a result of these enhancements to the training, interviewers had a better understanding of the importance of the measurements and how they would be used by researchers, they were better able to convey that to respondents and quell any concerns that respondents raised, and they were more confident in their ability to conduct the measurements successfully.

Finally, more targeted monitoring activities were used during the 2008 wave to track participation in each component of the study at the interviewer level. Interviewers who had lower-than-average consent rates for the physical measures and/or biomarkers or who obtained blood samples that were inadequate for analysis were followed up with by their team leaders. Interviewers were provided with scanned images of the collection cards that they thought contained adequate samples, but for which there was an insufficient quantity of blood to perform the analysis. Low-performing interviewers often received additional training or were paired up with a high-performing interviewer to discuss challenges and successful strategies for gaining cooperation and obtaining high-quality measurements. Together, these efforts paid off with substantial increases in biomarker response rates for the other half of the sample that received them in 2008. For African Americans, the increase in the cooperation rate for the blood sample was 9.4 percentage points, nearly all of the 2006 differential with Whites. However, White cooperation rates also rose by 5 percentage points. Hispanic cooperation rates also increased substantially, due in part to improved recruitment of bilingual interviewers. Although the breakdowns are not shown here, most of these gains came through increases in consent rates, but there was also some improvement in completion rates conditional on consent, particularly for the physical measures.

One of the more frequent suggestions that is made for improving cooperation of minorities with requests for biological samples is to match them with interviewers of the same race. The evidence from both 2006 and 2008 suggests that this

Table 8. Cooperation Rates for Physical Measures and Biomarkers, by Race of Interviewer and Race of Respondent: Health and Retirement Study 2006 and 2008

	2006		2008	
	White (%)	Black (%)	White (%)	Black (%)
Physical measures				
White	92.6	85.7	94.3	88.9
Black	86.4	80.8	90.7	85.1
Saliva				
White	85.0	76.3	86.5	79.2
Black	77.3	71.7	78.5	73.7
Blood				
White	82.8	73.6	88.6	82.7
Black	72.5	66.4	79.9	78.7

is not a particularly helpful strategy, at least for Blacks in HRS (see Table 8). In both waves, the lowest response rates came from the combination of Black respondents and Black interviewers. Multivariate analysis of physical measure and biomarker consent rates in the 2006 wave confirmed the importance of race of interviewer as a significant predictor of consent (Sakshaug, Couper, & Ofstedal, 2010). One possible explanation for these results is that Black respondents are more comfortable declining requests made by an interviewer of the same race. Another is that Black interviewers are more understanding about objections to biomarkers and, thus, do not push as hard to persuade respondents of any race who express reluctance to participate in this component. Whatever the case, it is important to note that, on other measures of interviewer performance, Black interviewers do every bit as well as White interviewers.

Participation in Supplemental Components

Lastly, we examine response rates for several supplemental studies and components of the HRS, shown in Table 9. As with the physical measures and biomarkers, minority respondents tend to be less likely than Whites to participate in supplemental studies. Hispanic and Black respondents had consistently lower response rates than Whites and others on all these supplements. Differentials are generally on the order of 10%–20%, and they are especially pronounced for the Consumption and Activities Mail Survey (CAMS) and the Internet Survey. Minority respondents were also less likely to complete the blood sample for the 2003 Diabetes Mail Survey. Response rates are fairly similar for Hispanic versus Black respondents on most supplements, and

Table 9. Response Rates for Mail Surveys, Internet Survey, and Psychosocial Self-Administered Questionnaire (SAQ), by Race/Ethnicity

	Hispanic (%)	Non-Hispanic Black (%)	White and other (%)
2003 Diabetes Mail Survey			
Questionnaire	69.7	72.4	83.9
Blood sample	40.7	36.2	58.7
Consumption and Activities Mail Survey ^a			
2001	65.9	64.3	80.9
2003	64.5	64.3	82.0
2005	56.9	58.3	76.0
2007	57.8	60.6	76.8
2005 Prescription Drug Mail Survey			
Total response	77.7	81.7	91.0
Excluding phone follow-up ^b	61.1	62.3	82.4
Internet Survey ^c			
2003	70.6	62.8	82.8
2006	53.3	51.8	72.7
2007	55.6	50.9	74.5
Psychosocial SAQ			
2006			
Total response	80.5	80.5	91.2
Excluding phone follow-up ^b	72.9	72.7	89.0
2008	74.9	76.8	87.1

^aPrior to 2005, the Consumption and Activities Mail Survey sample was restricted to respondents who participated in the preceding core interview wave. In 2005 and 2007, this restriction was dropped, leading to a drop in response rates between 2003 and 2005.

^bThe telephone follow-ups for both the Prescription Drug Study and the Psychosocial SAQ were targeted primarily at minority respondents in an effort to increase response rates for those groups.

^cIn 2003, the Internet sample was restricted to respondents who reported in the prior core interview that they had Internet access and would be willing to participate in an Internet survey. In 2006 and later waves, the sample included all respondents who had reported Internet access in a prior wave. This led to a drop in Internet response rates between 2003 and 2006.

where differences do exist they tend to favor Black respondents. An exception is the Internet Survey, for which the response rate in each wave is higher for Hispanic than for Black respondents.

Two of the supplemental studies included a telephone follow-up with individuals who had not completed the questionnaire within a month of receiving it. These include the 2005 Prescription Drug Mail Survey and the 2006 Psychosocial SAQ. The telephone follow-ups were targeted at specific subgroups that had particularly low questionnaire

Table 10. Response Rates for Mail Surveys and Psychosocial Self-Administered Questionnaire (SAQ) for Hispanic Sample Members, by Language of Most Recent Core Interview

Supplement	English (%)	Spanish (%)
2003 Diabetes Mail Survey		
Questionnaire	72.4	67.3
Blood sample	50.8	32.1
Consumption and Activities Mail Survey		
2001	68.1	63.9
2003	67.8	61.2
2005	62.8	51.2
2007	63.8	52.1
2005 Prescription Drug Mail Survey		
Total response	81.8	74.6
Excluding phone follow-up	68.0	56.0
Psychosocial SAQ		
2006		
Total response	81.6	79.3
Excluding phone follow-up	72.9	73.0
2008	78.3	71.7

return rates, including minority groups. In both cases, the telephone follow-up was effective at reducing minority differentials in the final response rate, although it did not eliminate them completely.

Language is an important factor in the lower response rates for Hispanics on a number of these supplements. As noted previously, the core interview and most of the supplemental studies and components are available in both English and Spanish. As shown in Table 10, response rates among English-speaking Hispanics tend to be somewhat higher than among Spanish-speaking Hispanics. Differentials are especially pronounced for the blood sample component of the 2003 Diabetes Mail Survey, the 2005 and 2007 rounds of the CAMS survey, and the 2005 Prescription Drug Mail Survey (excluding phone follow-up). In contrast, English- and Spanish-speaking respondents were equally likely to respond to the 2006 Psychosocial SAQ. This latter result may be due to the fact that the SAQ is linked to the core interview and was given and explained to the respondent by a bilingual interviewer at the end of the interview. This equivalence in response rates between English- and Spanish-speaking Hispanics is not observed for the 2008 SAQ, however.

Discussion

The oversample strategies that the HRS has employed have been successful at identifying and

recruiting minority participants at response rates very comparable with that of Whites and others. This is evident in baseline response rates, which have been very similar for minority and non-minority households, as well as in attrition rates, which do not differ for minority participants versus Whites and others. In addition, the characteristics of minority participants in HRS are similar to those of minority participants in large, national cross-sectional surveys, suggesting the samples are representative.

For supplemental studies and special components of the HRS, minority differentials in participation do exist. The minority differential in participation rates for the physical measures and biomarkers in 2006 was a particular concern to study leadership, given the importance of these measures for elucidating mechanisms underlying minority differentials in health. The differentials were especially marked for the saliva and blood samples, and particularly for Blacks. This may be indicative of some degree of mistrust of biological measurements on the part of Black respondents, as has been found in some clinical studies (Corbie-Smith, Thomas, & St. George, 2002). As a result of a more focused interviewer training, in which concerns raised by respondents in 2006 were addressed, and more intensive monitoring procedures during the 2008 wave, participation rates improved between 2006 and 2008 and minority differentials were reduced.

Likewise, minority differentials in participation in the mail surveys and psychosocial questionnaire have also been addressed in various ways. The telephone follow-ups for the 2005 Prescription Drug Mail Survey and the 2006 Psychosocial SAQ demonstrate that this can be an effective mechanism for reducing differentials in participation for key subgroups.

The bottom line message from the HRS experience is that well-trained interviewers can overcome most if not all of whatever race and ethnic differentials exist in willingness to participate in surveys (at least for middle-aged and older participants), including those involving biological data collection. The biggest differentials in response rates within HRS are for those activities that have no direct contact whatever with interviewers and that is true for Internet surveys, mail surveys, and requests for self-administered blood samples. When those self-administered requests are supplemented with interviewer-administered telephone follow-ups, the differentials are greatly reduced. There are no differentials in core response rates at baseline or in

follow-ups where interviewers are directly involved. The differentials we saw in 2006 cooperation rates with requests for blood samples were substantially reduced by the next wave when interviewer training could emphasize lessons learned in 2006.

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