RANDS 10 Probability Sample Technical Documentation

Overview

The National Center for Health Statistics (NCHS) Division of Research and Methodology (DRM) contracted NORC at the University of Chicago (NORC) to conduct round 10 of the Research and Development Survey (RANDS), referred to as RANDS 10 in this documentation.

RANDS is designed to evaluate estimation approaches for health outcomes from recruited panels and quantitative methodologies for measuring error. In RANDS 10, questions related to whole person health, quality of life, social and family connections, diet, physical activity, stress, sleep, spirituality, health management and discrimination were included, along with some follow-up probe questions aiming to gain deeper insights into panelists' responses. To increase the scope of potential respondents and to evaluate mode effects in panel surveys, both phone-mode and web-mode panelists were included in the RANDS 10 probability sample. In addition, RANDS 10 was also administered to non-probability opt-in survey participants as online web surveys only. This technical documentation describes the sampling methodology and weighting for the probability-based panelists in RANDS 10.

NORC conducted RANDS 10 from April 18, 2024, to May 13, 2024. This documentation describes the sampling approach, data collection timeline, response rate, and sample weighting for the probability sample of the survey.

Sampling

The target population for this study consisted of the general population of the United States aged 18 and older. The source of the sample for this study was NORC's AmeriSpeak Panel (http://amerispeak.norc.org/). Funded and operated by NORC at the University of Chicago, AmeriSpeak is a probability-based panel designed to be representative of the U.S. household population. Randomly selected U.S. households were sampled from the NORC National Frame and then contacted by U.S. mail, telephone, and through face-to-face field interviews for recruitment to the Panel (https://amerispeak.norc.org/us/en/amerispeak/about-amerispeak/panel-design.html). As of early 2022, the AmeriSpeak Panel included more than 40,000 U.S. households and provided sample coverage of approximately 97% of the U.S. household population.

For RANDS 10, NORC collaborated with NCHS' Division of Research and Methodology on a stratified sample design to obtain a random and representative sample of U.S. adults aged 18 and over from the AmeriSpeak Panel. The target population was stratified by age (18-34, 35-49, 50-64, 65+), race/Hispanic ethnicity (Hispanic, Non-Hispanic Black, Non-Hispanic All Other), education (Associate's degree/some college or less, Bachelor's degree or above), sex (male, female) and annual household income (less than $75,000, greater than or equal to $75,000) for a total of 96 sampling strata. Then, NORC performed sampling independently within each stratum, favoring panelists who were not selected in the most recent AmeriSpeak survey. The sampling ratios varied by stratum to account for differential nonresponse for each stratum to ensure a representative sample of the target population. If more than one panelist were available in one

household, random within-household sampling was carried out to ensure only one adult from the household was eligible for sampling.

Summary of Field Work

RANDS 10 was administered in English via either online web surveys or phone interviews. On April 3, 2024, NORC invited a small sample of AmeriSpeak web-mode panelists for a pretest and collected 145 pretest interviews. Several changes were made following the pretest: (1) demographic questions for the opt-in panelists were added before fielding the main survey; (2) prompts for the web versions of MODNO, VIGNO, and STRNGNO questions were updated; (3) for PSQI_1, PSQI_2, PSQI_3, "at night", "each night" and "morning" were removed from the questions, respectively; (4) in PSQI_4, "at night" was replaced with "on an average day" in the question, with a number box of minutes added for the response; (5) response option text of PSQI_5 and PSQI_78GRID was updated from "week" to "month". Pretest interviews were not included in the final data.

For the sampled web-mode panelists, NORC sent e-mail invitations/reminders along with text messages. The soft-launch invitation email was sent to some of the sampled web-mode panelists on April 18, 2024, followed by an email reminder sent on April 21. Invitations to additional sampled panelists were sent via e-mail on April 22, with an email reminder sent to the soft-launch invited and the additionally invited web panelists on April 25 and April 30. The remainder web-mode panelists sampled were invited on April 29, with an email reminder sent on May 2. Email reminders were sent to the total sample on May 6 and May 9. Text messages were sent to the invited web-mode panelists who agreed to receive text messages on May 11.

For the sampled phone-mode panelists, NORC dialed their numbers from April 22, 2024, to May 12, 2024. In RANDS 10, all responding AmeriSpeak panelists took the survey in their preferred mode.

In total, out of 6,342 panelists sampled, 5,017 completed the interviews (4,588 by web mode and 429 by phone mode), resulting in an overall completion rate of 79.1%. The weighted cumulative response rate was 15.8%. An additional 298 AmeriSpeak respondents were removed from the dataset prior to post-stratification weighting. Among these 298 respondents, 112 started but did not complete the survey and 186 respondents either completed the survey in less than one third of the median duration and/or had high refusal/skipping rates (defined as refused/skipped more than 50% of eligible questions). All 186 respondents completing the survey quickly or with high refusal/skipping rates were panelists responding through online web surveys.

NCHS did not provide an incentive for participation in RANDS, although NORC offered a non-cash, point-based incentive for responding to surveys such as RANDS, which can be traded for gift cards or other non-cash prizes.

Table 1 reports the sample sizes and response rates by sampling strata.

Table 1. RANDS 10 Response Rates by Sampling Strata

Race/Ethnicity	Education Level	Age Group (Year)	Sex	Income	Total Sample per Stratum	Completes per Stratum	Response Rate
Non-Hispanic All Other	Associate degree/some college or less	18-34	Male	<$75,000	231	159	68.83%
Non-Hispanic All Other	Associate degree/some college or less	18-34	Male	≥$75,000	127	82	64.57%
Non-Hispanic All Other	Associate degree/some college or less	18-34	Female	<$75,000	179	118	65.92%
Non-Hispanic All Other	Associate degree/some college or less	18-34	Female	≥$75,000	170	117	68.82%
Non-Hispanic All Other	Bachelor degree or more	18-34	Male	<$75,000	43	34	79.07%
Non-Hispanic All Other	Bachelor degree or more	18-34	Male	≥$75,000	174	139	79.89%
Non-Hispanic All Other	Bachelor degree or more	18-34	Female	<$75,000	43	32	74.42%
Non-Hispanic All Other	Bachelor degree or more	18-34	Female	≥$75,000	235	185	78.72%
Non-Hispanic All Other	Associate degree/some college or less	35-49	Male	<$75,000	90	75	83.33%
Non-Hispanic All Other	Associate degree/some college or less	35-49	Male	≥$75,000	191	155	81.15%
Non-Hispanic All Other	Associate degree/some college or less	35-49	Female	<$75,000	73	57	78.08%

Non-Hispanic All Other	Associate degree/some college or less	35-49	Female	≥$75,000	151	119	78.81%
Non-Hispanic All Other	Bachelor degree or more	35-49	Male	<$75,000	19	12	63.16%
Non-Hispanic All Other	Bachelor degree or more	35-49	Male	≥$75,000	190	155	81.58%
Non-Hispanic All Other	Bachelor degree or more	35-49	Female	<$75,000	19	16	84.21%
Non-Hispanic All Other	Bachelor degree or more	35-49	Female	≥$75,000	183	151	82.51%
Non-Hispanic All Other	Associate degree/some college or less	50-64	Male	<$75,000	122	100	81.97%
Non-Hispanic All Other	Associate degree/some college or less	50-64	Male	≥$75,000	232	195	84.05%
Non-Hispanic All Other	Associate degree/some college or less	50-64	Female	<$75,000	111	86	77.48%
Non-Hispanic All Other	Associate degree/some college or less	50-64	Female	≥$75,000	181	154	85.08%
Non-Hispanic All Other	Bachelor degree or more	50-64	Male	<$75,000	25	21	84.00%
Non-Hispanic All Other	Bachelor degree or more	50-64	Male	≥$75,000	161	144	89.44%
Non-Hispanic All Other	Bachelor degree or more	50-64	Female	<$75,000	27	20	74.07%
Non-Hispanic All Other	Bachelor degree or more	50-64	Female	≥$75,000	132	117	88.64%

Non-Hispanic All Other	Associate degree/some college or less	65+	Male	<$75,000	214	182	85.05%
Non-Hispanic All Other	Associate degree/some college or less	65+	Male	≥$75,000	164	145	88.41%
Non-Hispanic All Other	Associate degree/some college or less	65+	Female	<$75,000	303	266	87.79%
Non-Hispanic All Other	Associate degree/some college or less	65+	Female	≥$75,000	154	136	88.31%
Non-Hispanic All Other	Bachelor degree or more	65+	Male	<$75,000	66	58	87.88%
Non-Hispanic All Other	Bachelor degree or more	65+	Male	≥$75,000	135	118	87.41%
Non-Hispanic All Other	Bachelor degree or more	65+	Female	<$75,000	79	71	89.87%
Non-Hispanic All Other	Bachelor degree or more	65+	Female	≥$75,000	104	91	87.50%
Non-Hispanic Black	Associate degree/some college or less	18-34	Male	<$75,000	71	45	63.38%
Non-Hispanic Black	Associate degree/some college or less	18-34	Male	≥$75,000	16	8	50.00%
Non-Hispanic Black	Associate degree/some college or less	18-34	Female	<$75,000	101	73	72.28%
Non-Hispanic Black	Associate degree/some college or less	18-34	Female	≥$75,000	24	17	70.83%

Non-Hispanic Black	Bachelor degree or more	18-34	Male	<$75,000	10	6	60.00%
Non-Hispanic Black	Bachelor degree or more	18-34	Male	≥$75,000	12	9	75.00%
Non-Hispanic Black	Bachelor degree or more	18-34	Female	<$75,000	15	10	66.67%
Non-Hispanic Black	Bachelor degree or more	18-34	Female	≥$75,000	23	17	73.91%
Non-Hispanic Black	Associate degree/some college or less	35-49	Male	<$75,000	38	28	73.68%
Non-Hispanic Black	Associate degree/some college or less	35-49	Male	≥$75,000	20	15	75.00%
Non-Hispanic Black	Associate degree/some college or less	35-49	Female	<$75,000	47	30	63.83%
Non-Hispanic Black	Associate degree/some college or less	35-49	Female	≥$75,000	28	20	71.43%
Non-Hispanic Black	Bachelor degree or more	35-49	Male	<$75,000	5	5	100.00%
Non-Hispanic Black	Bachelor degree or more	35-49	Male	≥$75,000	23	19	82.61%
Non-Hispanic Black	Bachelor degree or more	35-49	Female	<$75,000	8	7	87.50%
Non-Hispanic Black	Bachelor degree or more	35-49	Female	≥$75,000	28	20	71.43%
Non-Hispanic Black	Associate degree/some college or less	50-64	Male	<$75,000	45	37	82.22%

Non-Hispanic Black	Associate degree/some college or less	50-64	Male	≥$75,000	24	16	66.67%
Non-Hispanic Black	Associate degree/some college or less	50-64	Female	<$75,000	58	44	75.86%
Non-Hispanic Black	Associate degree/some college or less	50-64	Female	≥$75,000	35	29	82.86%
Non-Hispanic Black	Bachelor degree or more	50-64	Male	<$75,000	3	3	100.00%
Non-Hispanic Black	Bachelor degree or more	50-64	Male	≥$75,000	17	14	82.35%
Non-Hispanic Black	Bachelor degree or more	50-64	Female	<$75,000	6	5	83.33%
Non-Hispanic Black	Bachelor degree or more	50-64	Female	≥$75,000	18	15	83.33%
Non-Hispanic Black	Associate degree/some college or less	65+	Male	<$75,000	57	46	80.70%
Non-Hispanic Black	Associate degree/some college or less	65+	Male	≥$75,000	14	12	85.71%
Non-Hispanic Black	Associate degree/some college or less	65+	Female	<$75,000	87	66	75.86%
Non-Hispanic Black	Associate degree/some college or less	65+	Female	≥$75,000	17	12	70.59%
Non-Hispanic Black	Bachelor degree or more	65+	Male	<$75,000	13	10	76.92%
Non-Hispanic Black	Bachelor degree or more	65+	Male	≥$75,000	13	12	92.31%

Non-Hispanic Black	Bachelor degree or more	65+	Female	<$75,000	18	16	88.89%
Non-Hispanic Black	Bachelor degree or more	65+	Female	≥$75,000	8	6	75.00%
Hispanic	Associate degree/some college or less	18-34	Male	<$75,000	106	56	52.83%
Hispanic	Associate degree/some college or less	18-34	Male	≥$75,000	26	17	65.38%
Hispanic	Associate degree/some college or less	18-34	Female	<$75,000	161	108	67.08%
Hispanic	Associate degree/some college or less	18-34	Female	≥$75,000	51	35	68.63%
Hispanic	Bachelor degree or more	18-34	Male	<$75,000	15	11	73.33%
Hispanic	Bachelor degree or more	18-34	Male	≥$75,000	27	25	92.59%
Hispanic	Bachelor degree or more	18-34	Female	<$75,000	18	14	77.78%
Hispanic	Bachelor degree or more	18-34	Female	≥$75,000	37	27	72.97%
Hispanic	Associate degree/some college or less	35-49	Male	<$75,000	77	58	75.32%
Hispanic	Associate degree/some college or less	35-49	Male	≥$75,000	46	28	60.87%
Hispanic	Associate degree/some college or less	35-49	Female	<$75,000	70	54	77.14%

Hispanic	Associate degree/some college or less	35-49	Female	≥$75,000	44	35	79.55%
Hispanic	Bachelor degree or more	35-49	Male	<$75,000	7	5	71.43%
Hispanic	Bachelor degree or more	35-49	Male	≥$75,000	36	31	86.11%
Hispanic	Bachelor degree or more	35-49	Female	<$75,000	7	6	85.71%
Hispanic	Bachelor degree or more	35-49	Female	≥$75,000	34	28	82.35%
Hispanic	Associate degree/some college or less	50-64	Male	<$75,000	42	29	69.05%
Hispanic	Associate degree/some college or less	50-64	Male	≥$75,000	23	21	91.30%
Hispanic	Associate degree/some college or less	50-64	Female	<$75,000	56	43	76.79%
Hispanic	Associate degree/some college or less	50-64	Female	≥$75,000	36	33	91.67%
Hispanic	Bachelor degree or more	50-64	Male	<$75,000	5	5	100.00%
Hispanic	Bachelor degree or more	50-64	Male	≥$75,000	22	17	77.27%
Hispanic	Bachelor degree or more	50-64	Female	<$75,000	7	6	85.71%
Hispanic	Bachelor degree or more	50-64	Female	≥$75,000	18	16	88.89%

Hispanic	Associate degree/some college or less	65+	Male	<$75,000	37	36	97.30%
Hispanic	Associate degree/some college or less	65+	Male	≥$75,000	11	9	81.82%
Hispanic	Associate degree/some college or less	65+	Female	<$75,000	53	46	86.79%
Hispanic	Associate degree/some college or less	65+	Female	≥$75,000	13	12	92.31%
Hispanic	Bachelor degree or more	65+	Male	<$75,000	6	6	100.00%
Hispanic	Bachelor degree or more	65+	Male	≥$75,000	10	9	90.00%
Hispanic	Bachelor degree or more	65+	Female	<$75,000	5	5	100.00%
Hispanic	Bachelor degree or more	65+	Female	≥$75,000	6	4	66.67%

Sample Weighting

The final RANDS 10 sample was weighted to account for the sample design and was further weighted to U.S. population compositions, accounting for differential nonresponse and under-coverage of some groups on the sample frame. Sample weights and survey design information must be used in the analysis of these data to produce results with meaningful population representativeness.

Derivation of statistical weights first started with panel base sampling weights. Since the AmeriSpeak Panel is a probability panel, the panel base sampling weights were computed as the inverse probability of selection from the NORC National Frame or other address-based sample frames for the supplemental panel samples. NORC adjusted the panel sampling weights for nonresponse and under-coverage. The sample design and recruitment protocol for the AmeriSpeak Panel involved subsampling initial non-respondent housing units for an in-person follow up. The subsample of housing units that were selected for nonresponse follow-up (NRFU) had their panel base sampling weights inflated by the inverse of the subsampling rate. The base sampling weights

were further adjusted to account for unknown eligibility and nonresponse among eligible housing units, using weighting classes defined by some household characteristics, including partisan score, political party identification, the presence of young adult(s), and demographic subgroups. The household-level nonresponse-adjusted weights were then post-stratified to external counts of the number of households per census division obtained from the U.S. Census Bureau Current Population Survey (CPS). Final household weights were assigned to each eligible adult in the recruited household, with weight adjustment carried out at the person-level to account for non-responding adults within the household. Furthermore, the person-level panel weights were adjusted by raking to external population totals associated with age, sex, education, race/Hispanic ethnicity, housing tenure, household telephone status, and Census Division using information obtained from the CPS to obtain the final panel weights.

The RANDS 10-specific base sampling weights were derived using a combination of the final panel weights (described above) and the probability of selection into RANDS 10 associated with the sampled panel member. Since not all sampled panel members responded to the survey interview, an adjustment is needed to account for non-respondents. This adjustment decreases potential nonresponse bias associated with probability-sampled panel members who did not complete the survey. The nonresponse-adjusted survey weights for the study were calculated first by a weighting class method, with the weighting classes defined by age, race/Hispanic ethnicity, sex, and education, followed by raking the overall survey sampling weights to general population totals associated with the following socio-demographic characteristics: age, sex, education, race/Hispanic ethnicity and Census Division. Any extreme weight was trimmed based on a criterion of minimizing the mean squared error associated with key survey estimates and then weights were re-raked to the same population totals. Once weighting adjustment achieved the goal of matching the CPS population post-stratum totals, the weights provided by NORC (WEIGHT_AMSP) were proportionally adjusted to sum to the total number of RANDS 10 probability-sampled respondents (n=5,017).

The NORC-provided weights were further calibrated by NCHS through raking using information from the 2023 National Health Interview Survey (NHIS). In order to correct for potential biases due to differences between probability-sampled respondents of RANDS 10 and the 2023 NHIS, the RANDS weights were adjusted by raking to the percentage estimates of demographic, health, and social variables from the 2023 NHIS (i.e. age; sex; race/Hispanic ethnicity; education; marital status; household income; employment status; diagnosed asthma; use of health information technology; and difficulty doing errands due to a physical, mental, or emotional condition). The final calibrated weights (WEIGHT_CALIBRATED) were proportionally adjusted to sum to the total number of probability-sampled respondents in the RANDS 10 (n=5,017).

Suggested Citation

National Center for Health Statistics. RANDS 10 Probability Sample Technical Documentation. Hyattsville, Maryland. 2025.