NCHS Rapid Surveys System™

Preferred Reporting Items for Complex Sample Survey Analysis

Round 3: Data collected January-February 2024

Last revised July 26, 2024

CDC

U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

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Overview

In the *Journal of Survey Statistics and Methodology*, Seidenberg, Moser, and West (2023) proposed an itemized checklist to guide researchers publishing analyses using complex sample survey data. This checklist—the Preferred Reporting Items for Complex Sample Survey Analysis (PRICSSA)—is intended to help eliminate analytic and reporting errors and increase transparency and reproducibility. NCHS is providing the following information to support researchers publishing analyses using Rapid Surveys System Round 3 (RSS-3) data.

Additional information about data collection methods, year-specific content, and other useful resources for the RSS-3 is available in the *RSS-3 Survey Description* document, available at:
https://www.cdc.gov/nchs/data/rss/round3/survey-description.pdf and the *RSS-3 Quality Profile* available at https://www.cdc.gov/nchs/data/rss/round3/quality-profile.pdf.
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PRICSSA-related Content, in Brief

- Name and wave of survey: NCHS Rapid Surveys System Round 3 (RSS-3)

- Data collection mode: Two commercially available probability-based online panels—NORC at the University of Chicago's (NORC's) AmeriSpeak panel and Ipsos's KnowledgePanel—with some telephone supplementation for the AmeriSpeak panel

- Dates of data collection: January 15–February 15, 2024 (January 18–February 15, 2024, for the AmeriSpeak Panel and January 15–February 02, 2024, for the KnowledgePanel)

- Target population: Adult noninstitutionalized population 18 and older residing in the 50 U.S. states and Washington, DC

- Populations excluded: Persons in long-term care and correctional facilities, persons with no fixed household address

- Design: Stratified cluster sample (AmeriSpeak Panel) and probability proportional to size sampling (KnowledgePanel)

- Variance estimation: Taylor Series Linearization

- Weight and design variables

    - Weight: WEIGHT_M1

- o PSU: P_PSU_R

- o Stratum: P_STRATA_R

- Unweighted sample size: 8,375 adults (4,205 adults for the AmeriSpeak Panel and 4,170 adults for the KnowledgePanel)

- Unweighted survey completion rate: 39.7% (27.4% for the AmeriSpeak Panel and 72.0% for the KnowledgePanel)

- Unweighted final cumulative response rates, incorporating panel recruitment and retention rates: 4.8% (AmeriSpeak Panel) and 4.4% (KnowledgePanel). For more information on calculation of final response rates, please see www.cdc.gov/nchs/data/rss/round3/quality-profile.pdf.

Unlike the first two rounds of RSS, only one sample was drawn from each panel for RSS-3.

Table 1: PRICSSA-related Content, in Detail

Rapid Surveys System Round 3 (RSS-3)	
1.1 **Data collection dates**	The RSS-3 interviews were conducted between January 15–February 15, 2024 (January 18–February 15, 2024, for the AmeriSpeak Panel and January 15–February 02, 2024, for the KnowledgePanel.
1.2 **Data collection mode(s)**	Interviews for the KnowledgePanel were conducted solely by web with no nonresponse follow-up. Interviews for AmeriSpeak were also primarily web-based; however, telephone interviews were used for panelists known to prefer completing surveys over the phone.
1.3 **Target population**	The target population for RSS-3 is all noninstitutionalized U.S. adults aged 18 and older residing in the 50 U.S. states and Washington, DC. Persons in long-term care and correctional facilities, persons with no fixed household address are excluded.

1.4 **Sample design**	RSS uses two online panels: Ipsos KnowledgePanel and NORC AmeriSpeak. These panels are based on probability samples of the population of U.S. households and are designed to serve as sampling frames for sample selection and production of national estimates. All members of both panels complete questions about demographics and household composition before participating in any surveys. The RSS only includes panelists 18 or older in the sample.
	5,790 KnowledgePanel panelists were sampled for an expected 4,000 completes, and 15,322 AmeriSpeak panelists were sampled for an expected 4,000 completes.
1.5 **Survey response rate(s)**	5,790 KnowledgePanel panelists were sampled for final yield of 4,170 completes, and 15,322 AmeriSpeak panelists were sampled for a final yield of 4,205 completes, leading to completion rates of 72.0% and 27.4% respectively.
	Final response rates that reflect not only the survey completion rate but also the panel recruitment and retention rates are 4.4% for KnowledgePanel and 4.8% for AmeriSpeak.
2.1 **Missingness rates**	For most measures in RSS-3, percentages with unknown values are typically small. Over 53.6 percent of the items on the combined dataset had an item nonresponse rate less than 1%. For the combined dataset, only six items had an item nonresponse rate in excess of 5%.
	Variables were imputed by the panel providers for their internal weighting procedures and in post-processing for weighting to the National Health Interview Survey (NHIS). The percent of values imputed ranged from 0.0% to 7.1%. Imputation flags can be used to identify imputed values in the data file.
2.2 **Observation deletion**	Cases were removed if the survey was completed in less than a minimum time or skipped more than half of the eligible questions. Overall, 2.8% of RSS-3 records were removed due to speeders or respondents with high refusal rates.

2.3 **Sample sizes**	Sample sizes for RSS-3 are as follows: 8,375 adults (4,205 adults for the AmeriSpeak Panel and 4,170 adults for the KnowledgePanel)
2.4 **Confidence intervals and standard errors**	NCHS recommends using two-sided 95% confidence intervals calculated using the Clopper-Pearson method adapted for complex surveys by Korn and Graubard. Standard errors used in this calculation should be obtained using software (e.g., SUDAAN) that takes into account the complex sampling design of RSS. NCHS uses the Taylor series linearization method for variance estimation.
2.5 **Weighting**	The composite calibrated weight, WEIGHT_M1, should be used to generate national estimates based on both panel providers. This weight accounts for sampling probabilities and nonresponse and is calibrated to control totals from the NHIS.
2.6 **Variance estimation**	Users of the public-use and restricted-use files should use the Taylor series linearization method to estimate variances. Sample design variables are provided in the data files for this purpose. This method requires the use of statistical software with this functionality. Analysts who instead apply simple random sampling techniques to RSS-3 data generally will produce standard error estimates that are, on average, too small and are likely to produce results that are subject to excessive Type I error.
2.7 **Subpopulation analysis**	To compute accurate standard errors, NCHS recommends that subpopulation analyses be carried out using the full data file instead of subsetting the data file to the subpopulation of interest. This can be done with the SUBPOPN statement in SUDAAN or an equivalent procedure with another software package that supports complex design variance estimation.
2.8 **Suppression rules**	NCHS recommends suppressing percentages that do not meet the criteria specified in *National Center for Health Statistics Data Presentation Standards for Proportions*. These standards include thresholds for sample size, absolute and relative confidence interval width, and degrees of freedom.
2.9 **Software and code**	To appropriately analyze RSS-3 data, it is necessary to utilize weights and variance estimation variables and software that can appropriately analyze complex samples. This includes, but is not limited to, SUDAAN, Stata, SPSS, SAS, and R software packages.

2.10 **Singleton problem**	Taylor Series Linearization requires at least two PSUs per stratum for variance estimation. NCHS uses the MISSUNIT option in SUDAAN to account for the presence of strata with only one PSU.
2.11 **Public/restricted data**	For data users and researchers throughout the world, public-use data files are freely available on the internet. Analysts interested in working with RSS data that were suppressed or edited to protect confidentiality may apply to access unmodified restricted-use data files through the NCHS Research Data Center (RDC). Codebooks listing variables available only on restricted-use files are available on the RSS website.
2.12 **Embedded experiments**	Unlike the first two rounds of RSS, only one sample was drawn from each panel for RSS-3. In previous rounds, two samples were drawn from each panel for the purpose of evaluating two data collection methodologies implemented by each of the panel providers. More information on this experiment can be found in *RSS-2 Survey Description* document, available at: https://www.cdc.gov/nchs/data/rss/round2/survey-description.pdf. There were no embedded experiments in RSS-3.

Other Resources

All information in this document has been summarized from the *NCHS Rapid Surveys System Round 3 Survey Description* and the *Quality Profile*:

National Center for Health Statistics. Quality Profile, Rapid Surveys System Round 3. Hyattsville, Maryland. August 2024. Available from: https://www.cdc.gov/nchs/data/rss/round3/quality-profile.pdf.

National Center for Health Statistics. Survey Description, Rapid Surveys System Round 3. Hyattsville, Maryland. August 2024. Available from: https://www.cdc.gov/nchs/data/rss/round3/survey-description.pdf.

Additional information may also be found in the following publication:

Parker JD, Talih M, Malec DJ, et al. National Center for Health Statistics data presentation standards for proportions. National Center for Health Statistics. Vital Health Stat 2(175). 2017. Available from: https://www.cdc.gov/nchs/data/series/sr_02/sr02_175.pdf.

Suggested citation

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