

RANDS 10 Non-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 non-probability sample in RANDS 10.

The non-probability sample was recruited through Cint-Lucid's non-probability panel (<https://www.cint.com>). This documentation describes the data collection and the development and suggested use of balancing weights (WEIGHT_OPTIN_BALANCED) for the non-probability sample. Note that while the RANDS 10 non-probability sample does not have a known survey sampling design and cannot be used to produce nationally or sub-nationally representative estimates, the balancing weights were developed to combine the RANDS 10 probability and non-probability samples to evaluate the responses acquired from both samples.

Summary of Field Work

The target population for this study consisted of the general population of the United States aged 18 and older. The source of the non-probability sample for this study was the Cint-Lucid's non-probability panel. To control the sample composition and reduce weight variation, NORC defined quota buckets for the defined strata that reflect known population distribution, and worked with Cint to slowly recruit respondents over the field period to adequately fill each stratum. For the non-probability sample, RANDS 10 was administered in English via online web surveys. Responses from the non-probability panel were collected from April 18, 2024, to May 10, 2024.

In total, 5,420 panelists completed the RANDS 10 questionnaire. An additional 101 panelists were removed from the dataset prior to weighting adjustment due to either completing the survey in less than one third of the median duration and/or high refusal/skipping rates (defined as refused/skipped more than 50% of eligible questions).

NCHS did not provide an incentive for participation in RANDS.

Development and Suggested Use of Balancing Weights

When examining a combined RANDS 10 dataset consisting of both the probability and the non-probability samples for the same questions, some potential confounding factors could be different in distribution between these two types of samples. To avoid interpretations of responses biased by potential confounding factors, variables of age, race/Hispanic ethnicity, education, marital status and metropolitan status were applied to balance the two samples using inverse propensity scores. As the sampling procedures of the probability sample are well documented, the probability sample was treated as a benchmark for the non-probability sample to match. A logistic regression using the above-mentioned five variables determined propensity scores suitable for creating balancing weights (WEIGHT_OPTIN_BALANCED) for the non-probability sample. This weighting operation results in the creation of a pseudo-sample consisting of two strata: one stratum consisting of AmeriSpeak panelists with unit weights (weight of 1 for each respondent), and a non-probability stratum consisting of panelists from the Cint-Lucid non-probability panel with weights to approximately match the sample proportions of the above-mentioned five variables to the stratum consisted of AmeriSpeak panelists. For practitioners to analyze the results using both probability and non-probability samples, the probability and non-probability files can be horizontally concatenated and analyzed with the balancing weight (WEIGHT_OPTIN_BALANCED). This pseudo-sample can be treated as a complex survey design structured as “weighted simple random sampling with replacement” within strata. Please note that the pseudo-sample cannot be used to produce nationally and sub-nationally representative estimates, and the balancing weight in the non-probability sample should not be used with any other weights in the probability sample.

Suggested Citation

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