



Division of Research and Methodology's Research and Development Survey

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Outline

- Overview of the Research and Development Survey (RANDS)
- Current RANDS research areas
- RANDS during COVID-19
- Future directions and questions for BSC

What are RANDS data?

- Recruited commercial probability sampled survey panels
 - Not “opt-in” or convenience sample
 - Coverage, response, and mode differ between RANDS and NCHS’ household surveys
 - Also subject to greater sampling variability
 - Typically thought of as “web panels” but other modes are available
- **Why?**
 - Relatively nimble and inexpensive platform for data collection

Purpose of RANDS

- Question-response research
 - How can embedded experiments and probes complement and extend cognitive interviewing for identifying measurement error?
- Estimation research
 - How do estimates from RANDS differ from those from NCHS core household surveys?
 - How can data from RANDS be combined with NCHS' household surveys?
- Resource for methodological research for external researchers
 - Public-use files and RDC files
 - Web page (and RANDS identifier) launched in April 2020

RANDS Program So Far...

- First round fielded in 2015
- To date, four rounds of collection completed, two are in the field, and we have one planned.
 - Completed:
 - RANDS 1 (NHIS), 2 (NHIS), and 3 (opioids and disability)
 - RANDS during COVID-19, Round 1
 - *RANDS during COVID-19, Round 2*
 - *RANDS 4 (opioids and disability)*
 - Planned:
 - RANDS 5 (NSFG)
 - RANDS during COVID-19, Round 3
- RANDS 1 and 2 collected by Gallup; all later rounds by NORC

Adapting RANDS for Estimation: RANDS during COVID-19

- Traditional NCHS surveys require advanced planning and cannot always adapt quickly to collect data on major events in real-time
- RANDS, as a largely web-based survey, could provide some information on COVID-19 in a rapid and timely way
- NCHS worked with the Office of Management and Budget to adapt the purpose of RANDS from a strictly methodological survey to one that could produce a limited set of experimental estimates
- The new survey was named RANDS during COVID-19 to distinguish it from previous versions of RANDS

RANDS webpage launched in April 2020



The screenshot shows the RANDS webpage layout. At the top right, there are social media icons for Facebook, Twitter, LinkedIn, Email, and YouTube. The main header features the RANDS logo, where the letter 'R' is inside a magnifying glass, and the text 'RANDS' is in large blue letters. Below this, a teal banner contains the text 'Research and Development Survey'. The main content area has two paragraphs of text. Below the text is a navigation menu with four light blue buttons, each with an icon and text.

RANDS

Research and Development Survey

The **Research and Development Survey (RANDS)** is an ongoing series of surveys conducted by the Division of Research and Methodology at the National Center for Health Statistics. These surveys use recruited, probability-sampled, commercial survey panels, and are designed to explore the feasibility of using these panels to collect information on national health outcomes and to augment NCHS' question evaluation and research program with quantitative methodologies for measuring error.

Research involving RANDS has included methods to detect measurement error and to calibrate survey estimates. Several topics have been included on the RANDS questionnaires, including access to healthcare and utilization, chronic conditions, food security, general health, health insurance, opioid use, physical activity, psychological distress, and smoking.

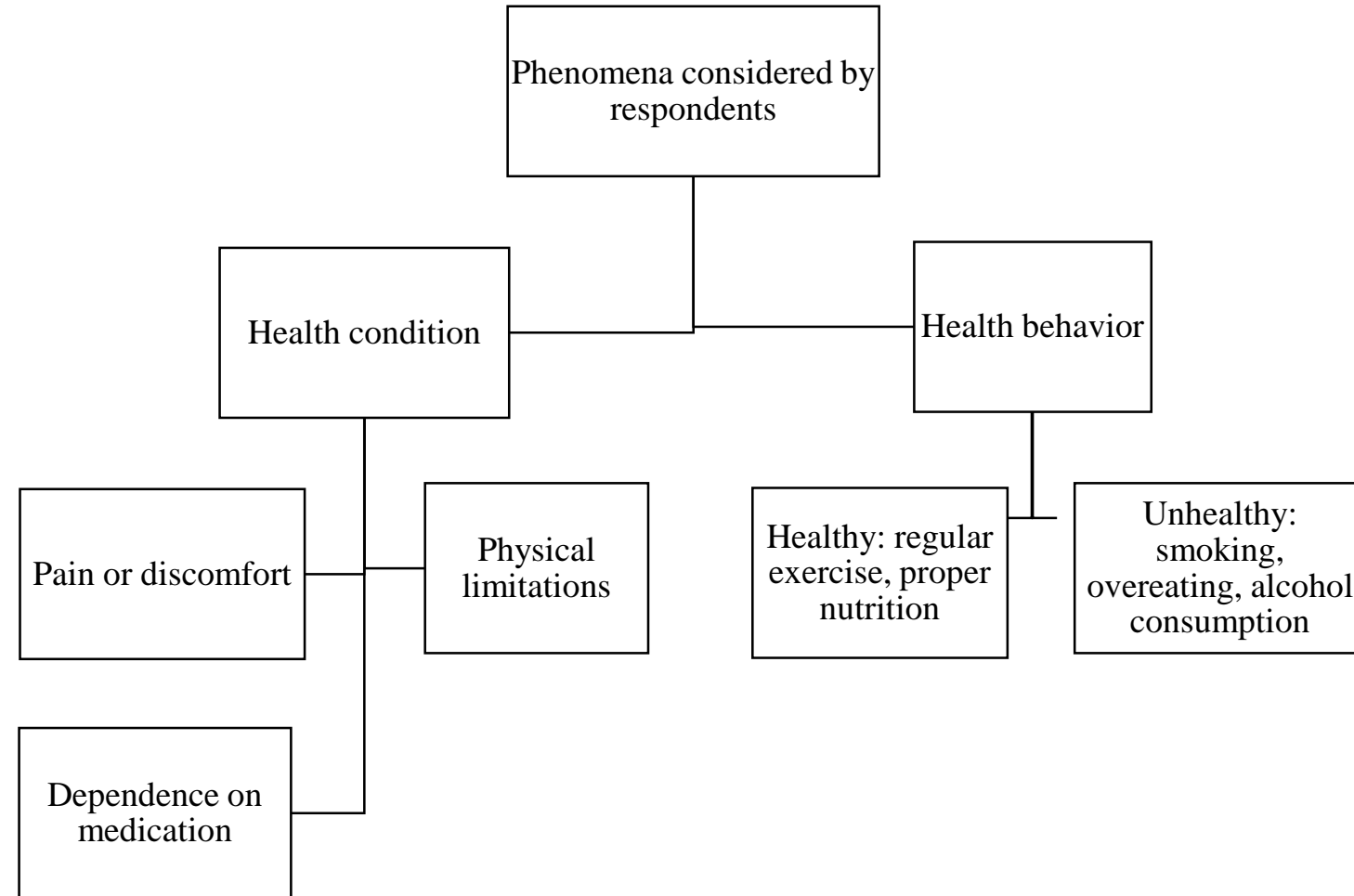
-  **About RANDS**
Learn more about RANDS
-  **Data and Documentation**
Access RANDS data and documentation
-  **Publications**
View reports and research articles published about RANDS
-  **Presentations**
View presentations about RANDS

RANDS Research

- Measurement research goals:
 - Embedded split sample experiments of alternative questions
 - Extension of cognitive interview finding to embedded probes
 - Empirical research for specific questions
- Estimations research goals:
 - Methods for adjusting or calibrating RANDS data with core NCHS surveys, including variance estimation and test statistics
 - Identification of reference periods for calibration data
 - Variable selection for successful adjustment
- Over 30 presentations on both measurement and estimation topics
- One published journal article, 2 'in press' articles, 1 book chapter, 1 Q-bank report, and 3 JSM proceedings, two NCHS reports in clearance/publications

Question evaluation research: Results from cognitive interviewing study of general health status question

Figure 1. Visual representation of cognitive interviewing study findings for the general health question.



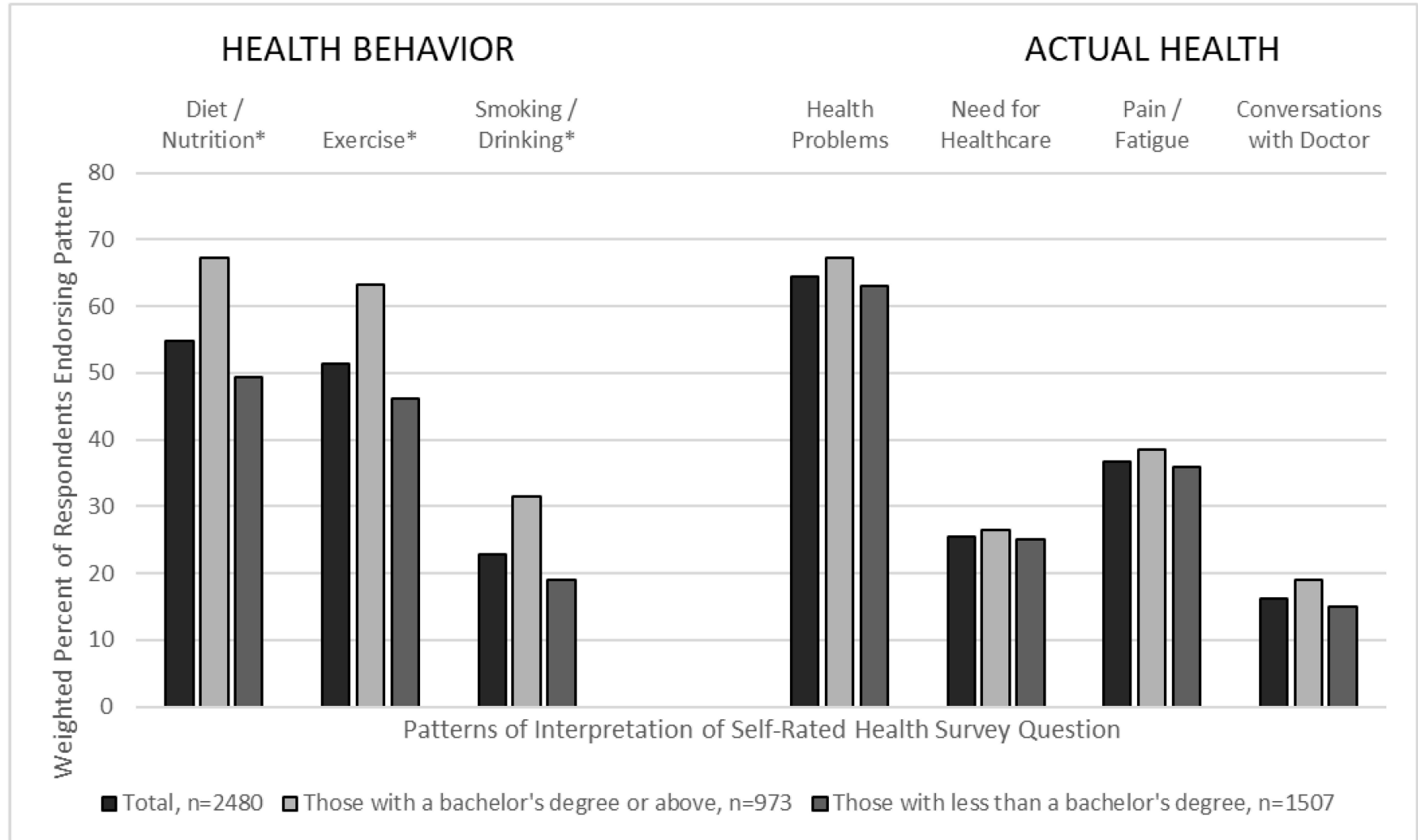
Question evaluation research: Embedded probes added to RANDS

Figure 2. Embedded Construct Probe for the RANDS General Health Question

- In general, would you say your health is excellent, very good, good, fair or poor?
- When you answered the previous question about your health, what did you think of? (Mark all that apply)
 - My diet and nutrition
 - My exercise habits
 - My smoking or drinking habits
 - My health problems or conditions
 - The amount of times I seek health care
 - The amount of pain or fatigue I have
 - My conversations with my doctor

Question evaluation research: RANDS probe results of general health status question

Figure 3. Weighted percent estimates for patterns of interpretation used when answering self-rated health question, based on probe responses, by educational attainment (bachelor's degree or higher compared to less than a bachelor's degree): RANDS 2, 2016



Question evaluation research: Study of NHIS and National Survey on Drug Use and Health (NSDUH) past-year opioid use question

NHIS: During the past 12 months, have you taken any opioid pain relievers prescribed by a doctor, dentist or other health professional? Examples include hydrocodone, Vicodin, Norco, Lortab, oxycodone, OxyContin, Percocet and Percodan. Yes/No

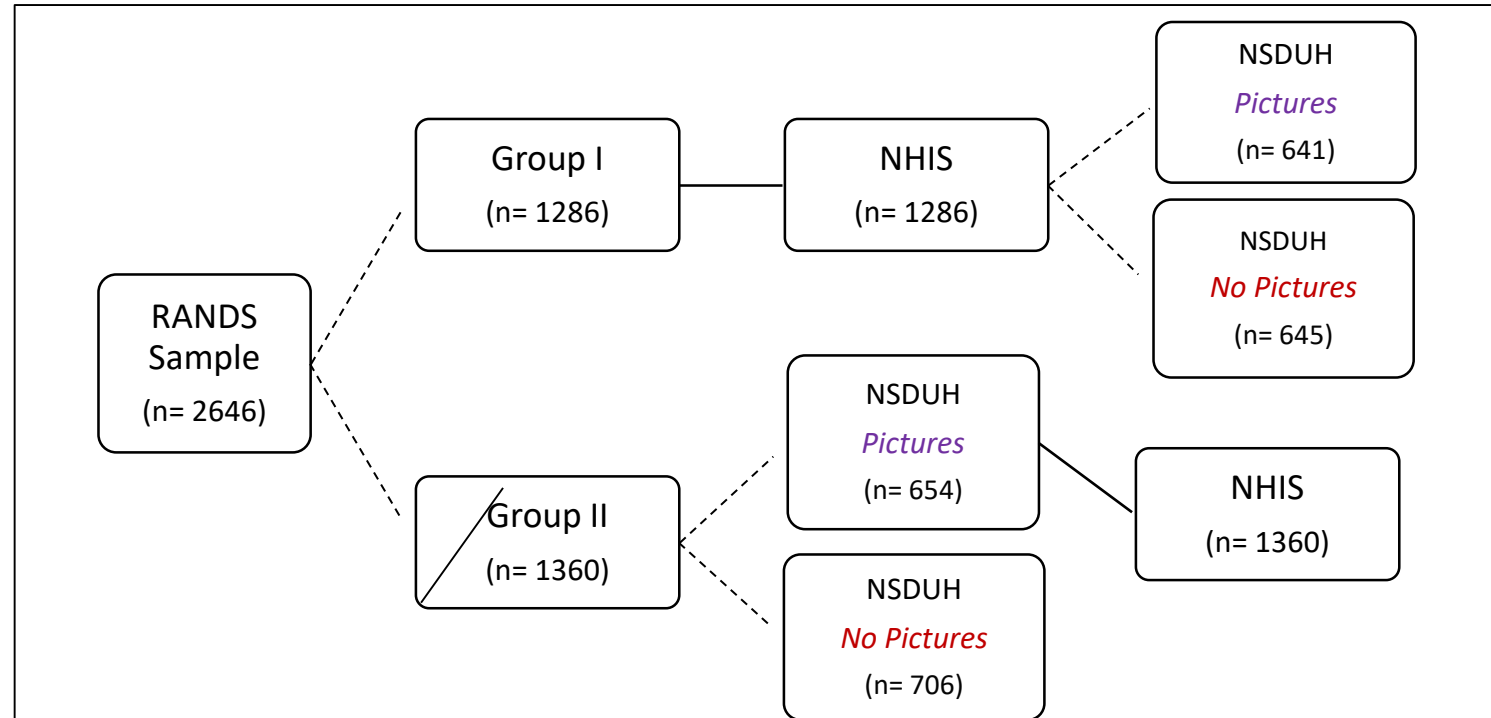
NSDUH: Please look at the names of the pain relievers shown below. In the past 12 months, which, if any, of these pain relievers have you used? List of 40 medications...

OR

Please look at the names and pictures of the pain relievers shown below. Please note that some forms of these pain relievers may look different from the pictures, but you should include any form that you have used. In the past 12 months, which, if any, of these pain relievers have you used? List of 40 medications accompanying pictures of the individual pills...

Question evaluation research: Study of NHIS and NSDUH past-year opioid use question. Experimental framework

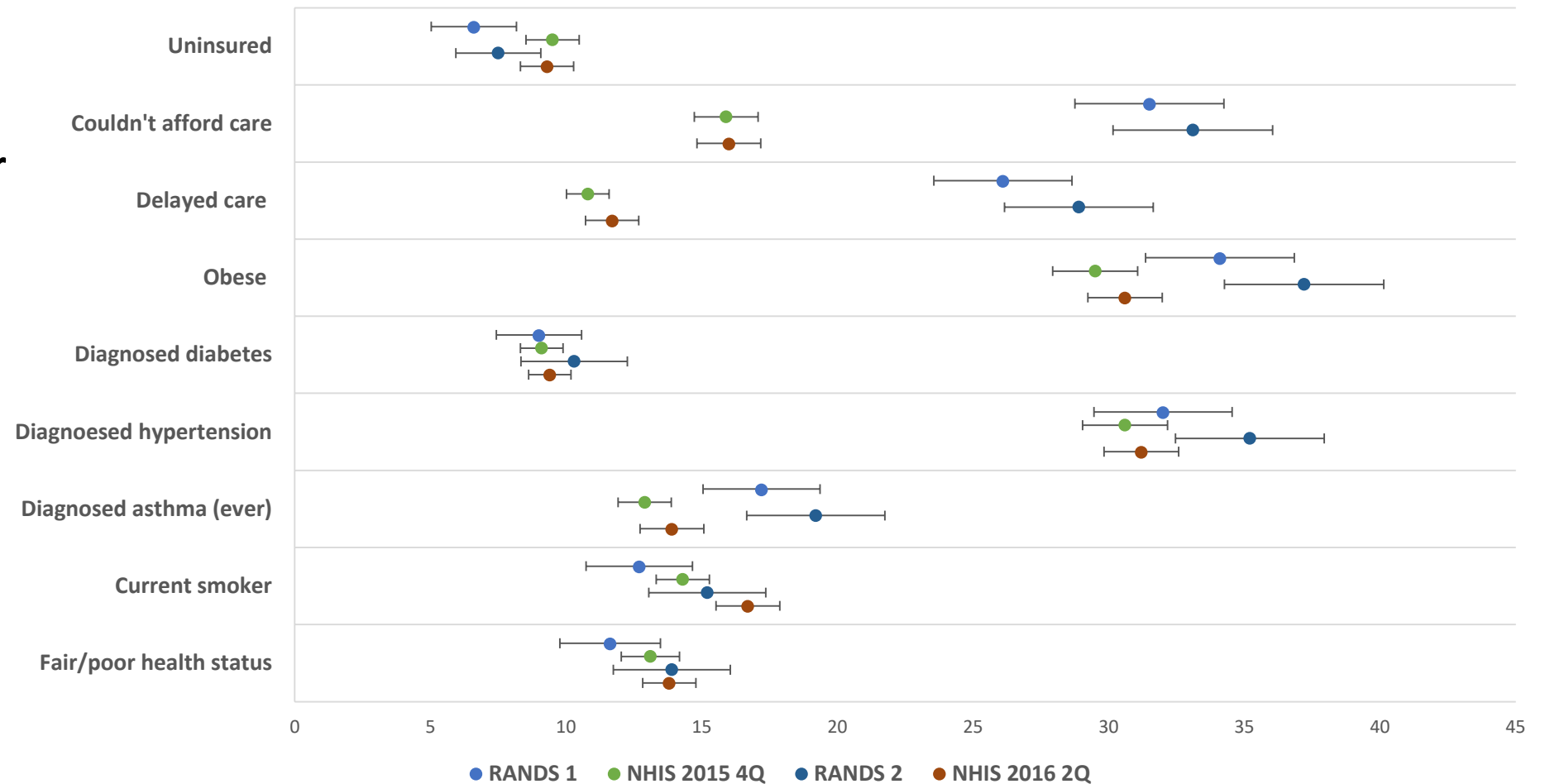
Figure 4. Visual representation of split sample experimental design for opioid use questions.



- Estimated prevalence of past-year opioid use: NHIS: 22.5%; NSDUH: 29.4%

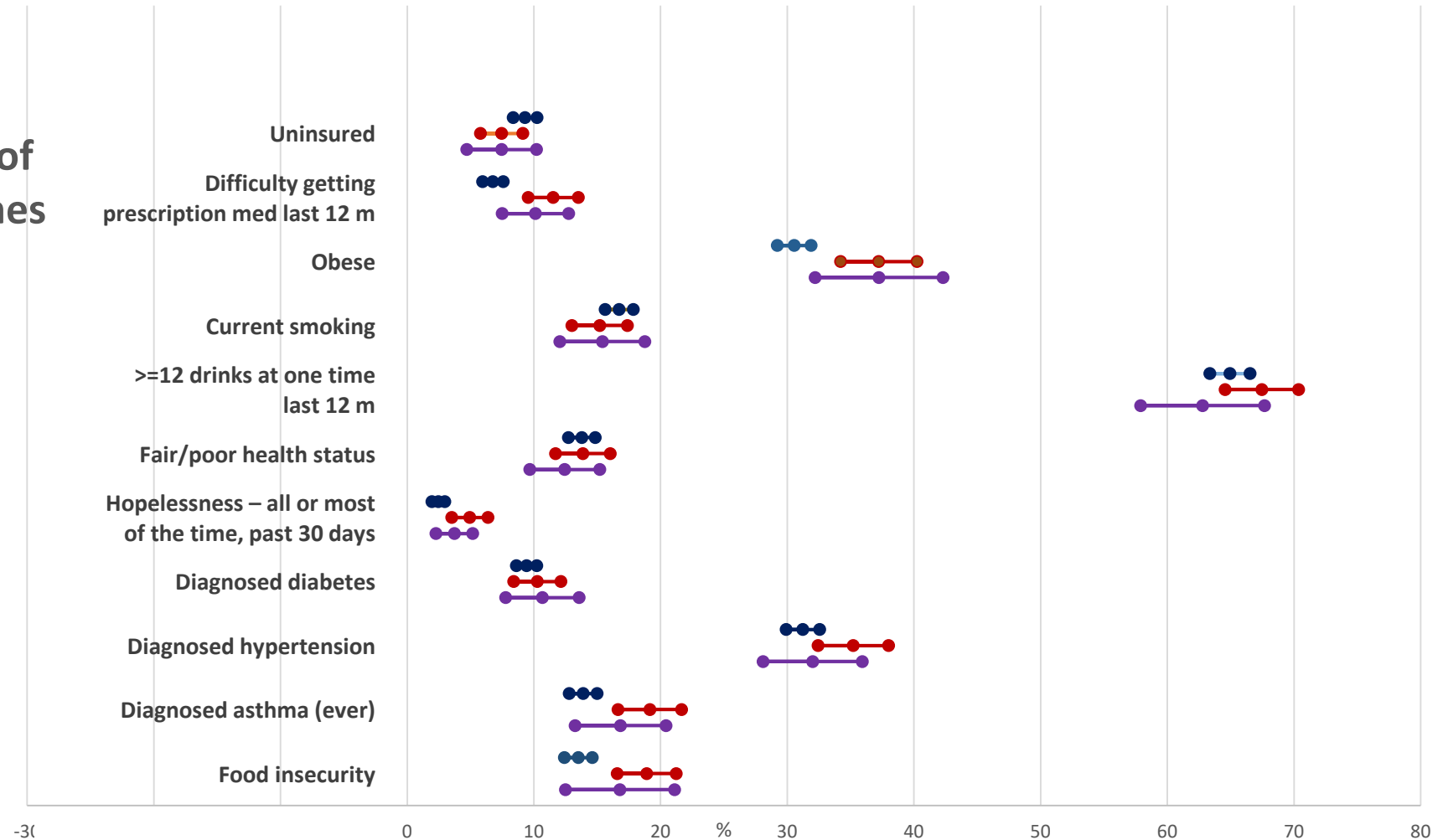
Estimation research: Comparison of RANDS 1, RANDS 2, with corresponding quarters from NHIS

Figure 5. Percent Estimates and 95% Confidence Intervals for Selected Health Variables from:
RANDS 1
NHIS 2015, 4th quarter
RANDS 2
NHIS 2016, 2nd quarter



Estimation research: Comparison of NHIS and RANDS estimates with and without propensity score adjustment

Figure 6. Estimates (%) of Selected Health Outcomes for RANDS 2, using:
 NHIS 2016 Q2 weights
 Gallup weights
 Propensity adjusted weights



Additional RANDS research studies

Measurement research:

- examination of closed and open-ended probes
- effects of probes on question responses
- *possible*, evaluation of natural language processing for open ended probes

Estimation research:

- jackknife variance estimator for combined estimates
- choice of reference survey
- variable selection for adjustment and calibration models
- development/assessment of alternative adjustment models

RANDS during COVID-19

- Designed as two-round survey, with a longitudinal design
- Web and phone mode, with a minimum sample size of 6,000 in the first round and 5,000 in the second round
- Questionnaire includes the following constructs (* Indicates Variables for Experimental Estimates):
 - Health Status, Chronic Conditions, Depression and Anxiety
 - Loss of Work due to Illness with COVID-19*
 - Health Insurance and Health Care Access
 - Telemedicine Access and Use*
 - COVID-19 Related Health Care and Behaviors
 - Reduced Access to Health Care*

RANDS during COVID-19, continued

- Round 1 collected in June 9-July 6 and Round 2 collected August 3-August 20.
- Data from both the probability sampled panel (NORC Amerispeak) and the opt-in platform (NORC Dynata)
 - Round 1: probability-sampled: 6,800 interviews (completion rate 78.5%, 94% web); 6,220 Dynata
 - Round 2: probability-sampled 5,981 interviews (completion rate 69.1%, 93% web); 5,502 Dynata
 - 5,452 Amerispeak completed both round 1 and round 2
- Still a research survey
 - Evaluating of performance of COVID-19 questions
 - Comparison and calibration of opt-in and probability samples; phone and web samples
 - Methods for understanding differences between rounds

RANDS during COVID-19: Data Release

- Experimental Estimates from Round 1 released on August 5, 2020 using the probability-sampled RANDS data
 - Work loss due to illness, telemedicine access and use, missed health care
 - Estimates shown by age group, race and Hispanic origin, sex, education, metro/non-metro status, one or more reported chronic conditions and selected chronic conditions (current asthma, diabetes, hypertension)
 - Estimates calibrated to 2018 NHIS on demographic and chronic health conditions
 - First time NCHS has released estimates labeled 'experimental'

RANDS During COVID-19 – Round 1 Results

NCHS @NCHStats · Aug 12
New #RANDS data available on rise in Telemedicine use during COVID-19 pandemic go.usa.gov/xfsYX @NCHStats @CDCgov

NCHS
National Center for Health Statistics

RANDS During COVID-19

Was your last doctor's appointment over the phone or by video? **If so, you are not alone.** Access new data on the use of telemedicine during COVID-19.

Learn more on the NCHS website at: www.cdc.gov/nchs/covid19/rands.htm.

NCHS 5,427 Tweets Follow
Learn more on the NCHS website at: www.cdc.gov/nchs/covid19/rands.htm.

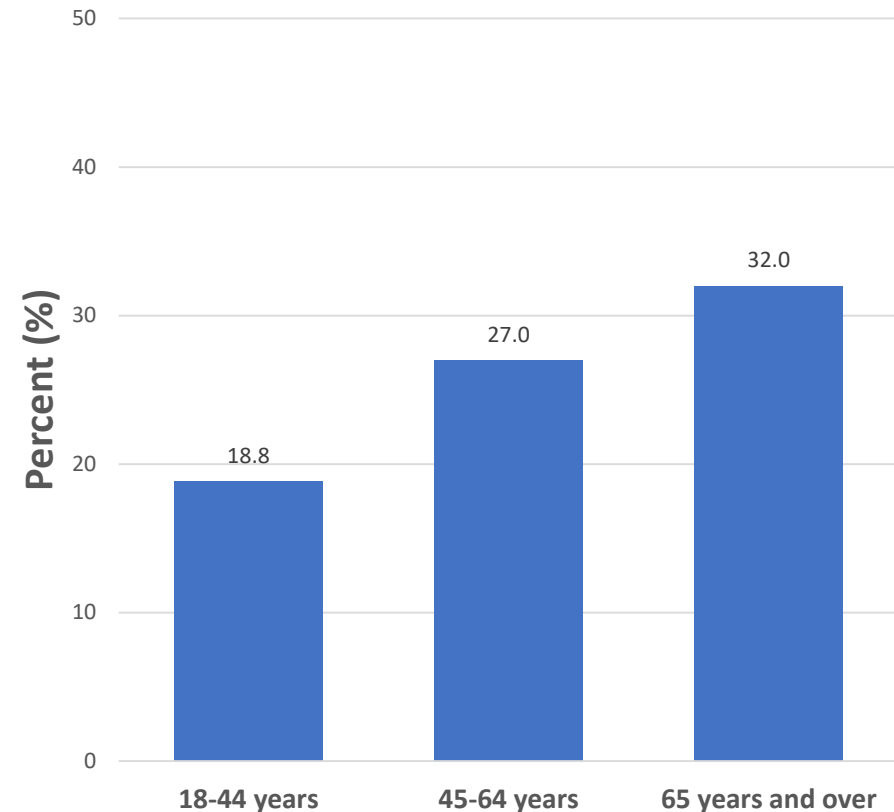
NCHS @NCHStats · Aug 11
Was your last appointment with your physician over the phone or by video? If so, you are not alone. Access new data on the use of #telemedicine appointments during COVID-19. Learn more at: go.usa.gov/xfvDC

NCHS @NCHStats · Aug 11
Almost half of U.S. adults (48.4%) have delayed medical care in the last two months for any reason go.usa.gov/xfvrd #RANDS

Telemedicine Use

- Overall, 24.2% of adults in the U.S. scheduled one or more telemedicine appointments in the last two months

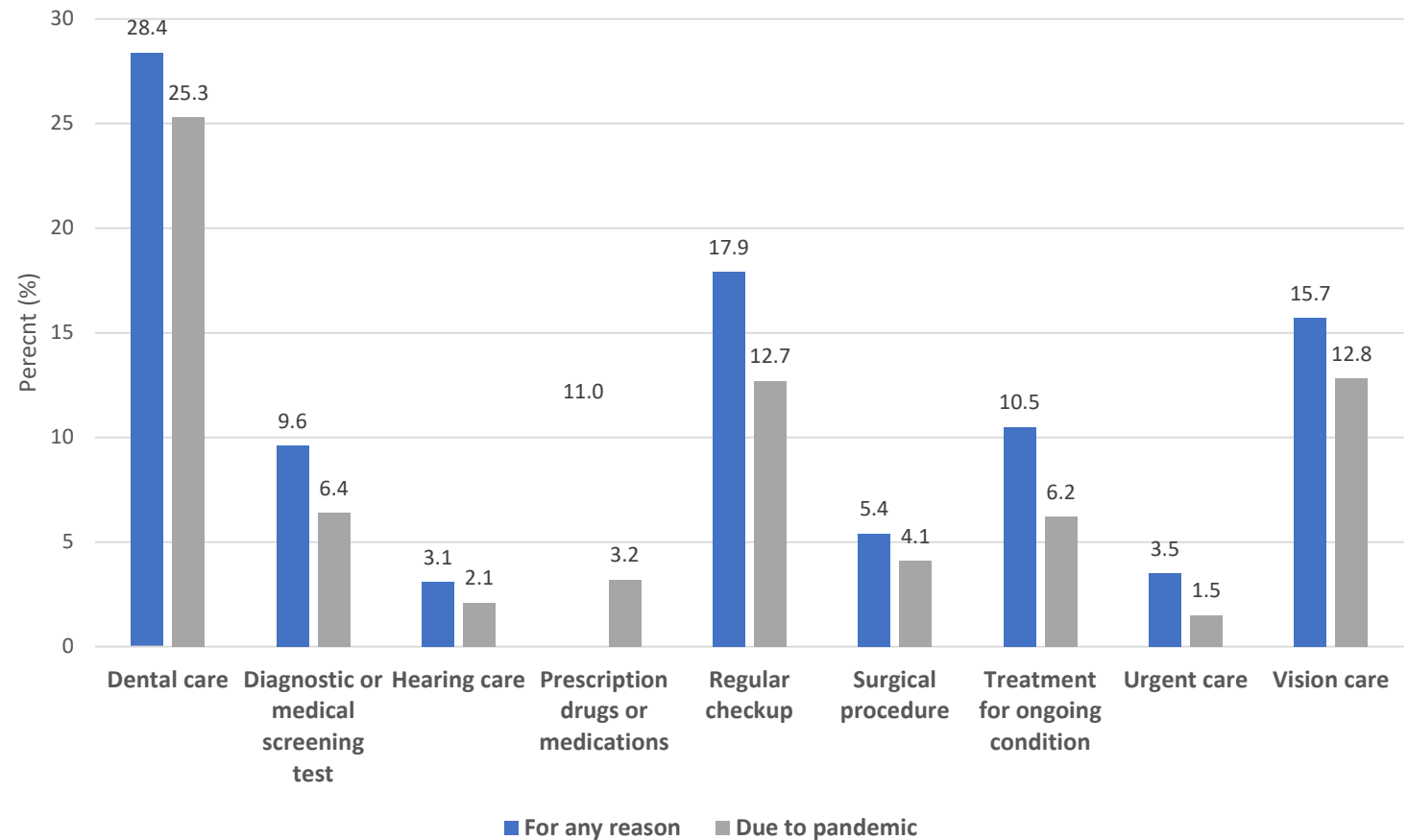
Figure 7. Percent of adults who scheduled one or more telemedicine appointments in last two months by age



Reduced Access to Care by Type of Care

- Certain types of care were impacted by the pandemic more than others

Figure 8. Percent* of adults unable to receive care for any reason and due to the pandemic, by type of care



*Percents compared to all other adults, including those who received care and those who didn't seek care

Question evaluation research: Telemedicine Access Question on RANDS during COVID 19

- Wording
 - “In the last two months, has this provider offered you an appointment with a doctor, nurse, or other health professional by video or by phone?”
- An open-ended web probe was added to the questionnaire following the survey question:
 - “How do you know whether your provider offers telemedicine, or not?”
- Team of 4 CCQDER researchers coded the responses from both the probability and opt-in survey respondents
- Initial results suggest measurement error in about 25% - 30% of respondents (not weighted), largely due to those who confused ‘offered’ with ‘use’ and those who knew about their provider having telemed options but were not specifically asked to set up an appt

Summary

- RANDES is being used to evaluate survey questions and conduct measurement research using probes and split samples, extending current cognitive interviewing methods and tools
- RANDES is being used to evaluate methods for combining external data with reference surveys for estimation
- RANDES is being used to produce experimental estimates for COVID-19

Future directions

- How can data from commercial panels best be used to support core data collections?
- Are there other statistical, survey methodology, or data science questions that could be considered using the RANDS platform?
- If we were to use RANDS for experimental estimates for other situations, are there other estimation, measurement, or communication issues we should consider?



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<https://www.cdc.gov/nchs/rands/index.htm>

<https://www.cdc.gov/nchs/covid19/rands.htm>

