

# Refusal Reasons: Changes Over Time and Differences Between Household Types in the National Health and Nutrition Examination Survey (NHANES), 2017-2019, 2021

Federal Committee on Statistical Methodology (FCSM)

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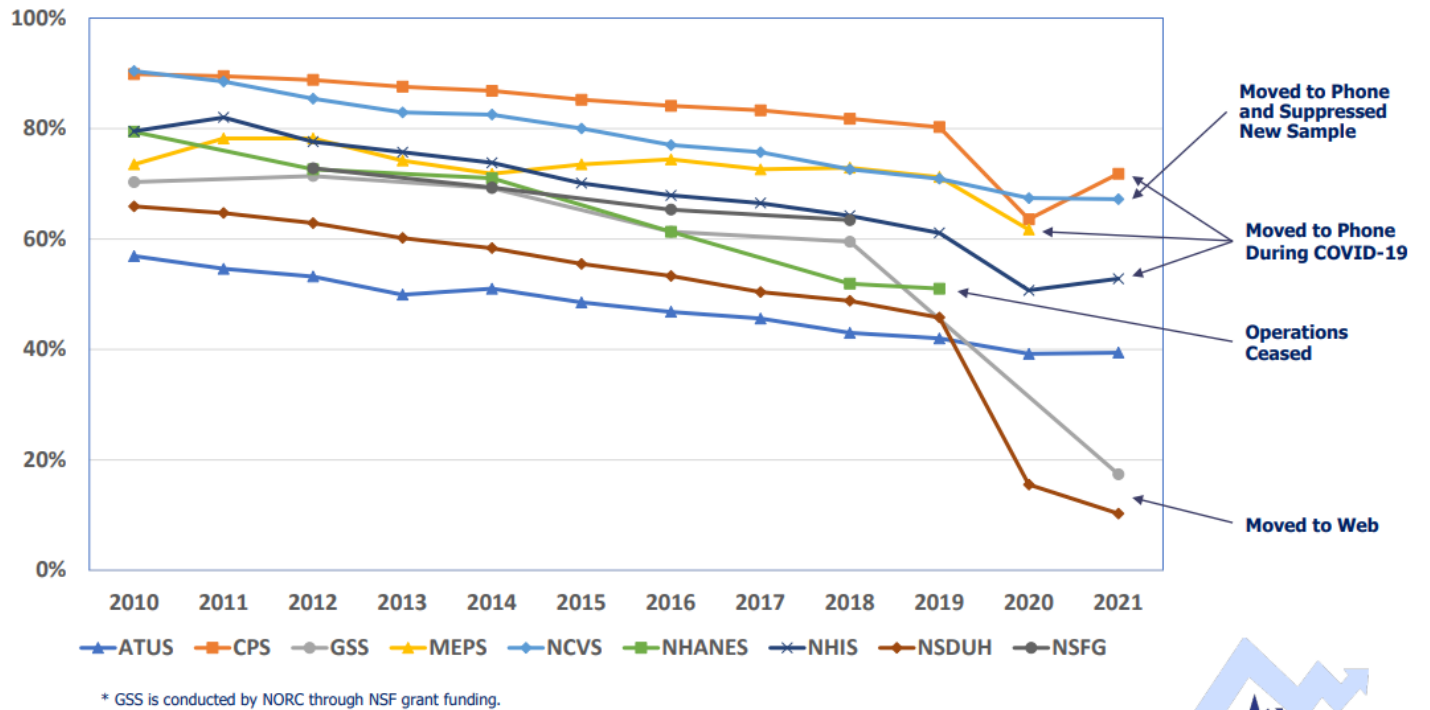
*\* During the time this research was conducted, Kevin Chuang was a guest researcher at the National Center for Health Statistics (NCHS) through the Research Participation Program at the Centers for Disease Control and Prevention (CDC) administered by the Oak Ridge Institute for Science and Engineering (ORISE) fellowship program through an interagency agreement between the U.S. Department of Energy and CDC*

# Disclaimer

The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention

# Unit Nonresponse is a Problem

- Nonresponse is one of the most challenging issue for survey methodologists, especially due to steadily decreasing response rates since mid-1990's



ATUS-American Time Use Survey; CPS-Current Population Survey; GSS-General Social Survey; MEPS-Medical Expenditure Panel Survey; NCVS-National Crime Victimization Survey; NHANES-National Health and Nutrition Survey; NHIS-National Household Interview Survey; NSDUH-National Survey on Drug Use and Health; NSFG-National Survey of Family Growth

Source: Williams, D.. 2022. Survey Nonresponse: Trends, Challenges, and Strategies. Presented at the Federal Economic Statistics Advisory Committee. <https://apps.bea.gov/fesac/meetings/2022-12-09/williams-survey%20response.pdf>.

# Refusals an Important Part of Unit Nonresponse

- Understanding **why** participants refuse to respond to surveys can provide insights about people's and survey participation
  - Personality (Boyle, et al 2023)
  - Mindsets (Bates and Creighton, 2000 and Olsen, 2013)
  - Societal-level drivers
  - Nonrespondent typology (Medway, 2022, based on NHES:2019)

# Study Objective and Research Questions

- Examine refusal reason(s) from sampled households and adults in National Health and Nutrition Examination Survey (NHANES)
- Two research questions:
  - 1) Are there significant trends in dwelling unit and sampled adult refusal reasons over time?
  - 2) Do any trends over time look similar in dwelling units with and without minors?

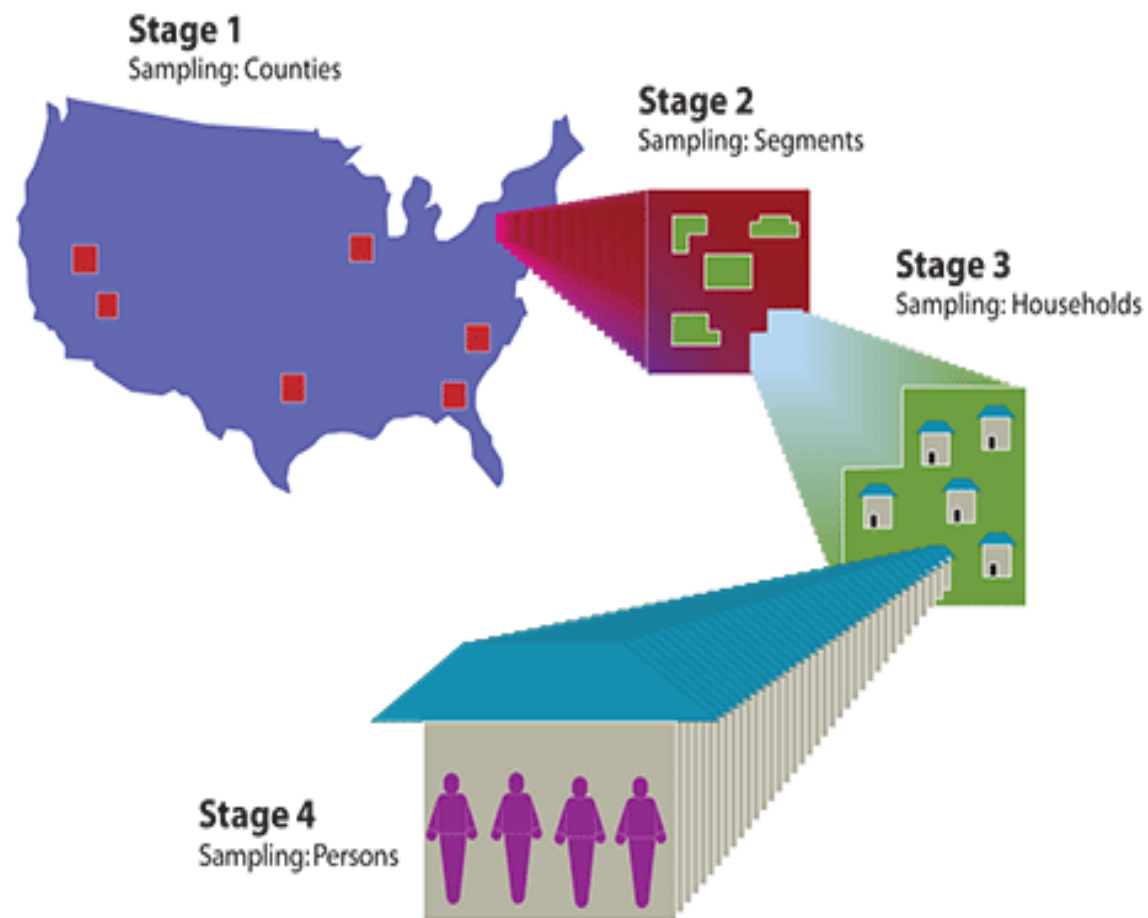
# Methods

# What is NHANES?

- Goal: To assess the health and nutritional status of adults and children in the U.S.
- Collects person-level demographic, health, and nutrition information
- A nationally representative cross-sectional survey that includes:
  - Interview, including a household component
  - Examination, including physical exams, and dietary components

# NHANES Sample Design

- Complex multistage probability sample design
- Selected households are screened to identify eligible participants





# NHANES Sample Design (cont)

- Cross-sectional
- Noninstitutionalized civilian resident population
- Target sample: 5,000 individuals examined annually
- Data released in 2-year cycles



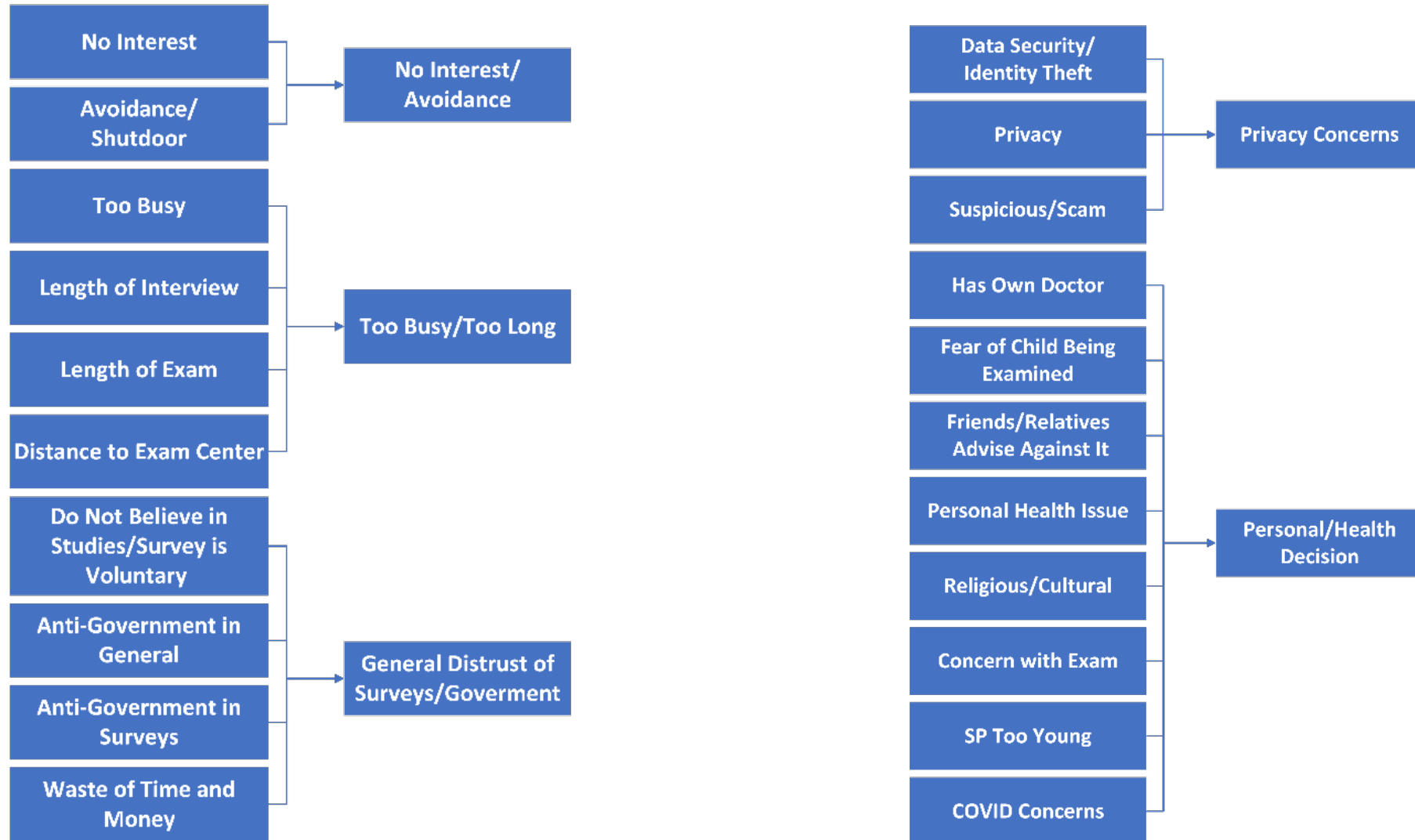
# Evaluating Refusals in 2017-2019 and 2021

- Refusal reasons came from the 2017-2019 and 2021 NHANES data collection years to evaluate survey refusals from:
  - 6,109 screener Dwelling Unit (DU) refusers out of 54,722 total DUs
  - 10,954 adult Sampled Persons (SP) interview refusers out of 23,740 total SPs (completes, SP refused screener, and other)
- DUs and SPs analyzed separately in two steps
- MEC refusals not included in this study
- Interviewers recorded up to 3 refusal reasons at any contact with a DU or SP

# Creation of Refusal Reason Categories

- 5 categories of reasons created from 21 detailed refusal reasons used at DU and SP levels
  - Combined conceptually similar reasons
- Final refusal reasons (from final contact) in each year
- When more than one refusal reason per DU or SP was recorded (at the final contact) within the larger five categories, it was coded as one refusal reason

# List of Refusal Reason Categories



# Statistical Analysis Approach

- Trend tests performed for each DU and SP refusal reason, including the presence of a minor (and not providing a reason)
- Analysis used orthogonal polynomial contrasts, in accordance with NCHS guidelines\*

\* Ingram DD, Malec DJ, Makuc DM, Kruszon-Moran D, Gindi RM, Albert M, et al. 2018. “National Center for Health Statistics Guidelines for Analysis of Trends.” National Center for Health Statistics. Vital Health Stat 2(179).

# Results

# DU Level - Three Reason Trends Significant

Refusal Reason (grouped)	2017 (n=754) %	2018 (n=1,255) %	2019 (n=1,569) %	2021 (n=2,513) %	Linear Trend Test	
No Interest/Avoidance	49.3	41.4	44.6	47.0	p=.901	
General Distrust of Surveys or Government	7.6	5.4	5.2	10.2	p<.001	↑
Too Busy/Too Long	3.6	6.4	5.0	5.0	p=.469	
Privacy Concerns	7.6	9.8	8.3	6.1	p=.011	↑
Personal Health Decision	2.8	2.9	0.7	1.4	p<.003	↓
Did not provide a reason*	29.2	34.0	36.1	30.4	p=.175	

\*Percentages do not add to 100% because DUs that reported a refusal reason can report more than one refusal reason.

↑ Significant increasing linear trend

↓ Significant decreasing linear trend

# SP Level - Five Reason Trends Significant

Refusal Reason (grouped)	2017 (n=754) %	2018 (n=1,255) %	2019 (n=1,569) %	2021 (n=2,513) %	Linear Trend Test	
No Interest/Avoidance	52.7	49.0	37.0	43.4	p<.001	↓
General Distrust of Surveys or Government	3.1	3.0	4.7	13.8	p<.001	↑
Too Busy/Too Long	19.8	19.1	21.1	16.8	p<.009	↓
Privacy Concerns	3.7	5.1	9.6	7.8	p=.001	↑
Personal Health Decision	9.3	9.4	4.6	5.0	p<.009	↓
Did not provide a reason*	26.1	27.6	36.0	25.6	p=.001	↓

\*Percentages do not add to 100% because DUs that reported a refusal reason can report more than one refusal reason.

↑ Significant increasing linear trend

↓ Significant decreasing linear trend



# SP Level - Five Reason Trends Significant When No Minor Present in Household

Refusal Reason (grouped)	2017 (n=1,614) %	2018 (n=1,761) %	2019 (n=1,587) %	2021 (n=2,679) %	Linear Trend Test	
No Interest/Avoidance	52.9	48.2	38.4	45.4	p<.001	↓
General Distrust of Surveys or Government	3.2	3.4	4.2	13.5	p<.001	↑
Too Busy/Too Long	18.3	16.9	21.2	15.0	p<.006	↓
Privacy Concerns	3.5	5.0	9.1	8.7	p=.000	↑
Personal Health Decision	11.5	10.7	5.6	5.9	p<.001	↓
Did not provide a reason*	25.7	29.1	34.4	22.6	p=.004	↓

\*Percentages do not add to 100% because SPs that reported a refusal reason can report more than one refusal reason.

↑ Significant increasing linear trend

↓ Significant decreasing linear trend

# SP Level - Four Reason Trends Significant When Minor Present in Household

Refusal Reason (grouped)	2017 (n=1,543) %	2018 (n=1,774) %	2019 (n=1,899) %	2021 (n=2,148) %	Linear Trend Test	
No Interest/Avoidance	51.0	49.3	32.7	37.6	p<.001	↓
General Distrust of Surveys or Government	3.2	2.0	5.4	13.9	p<.001	↑
Too Busy/Too Long	22.0	24.1	20.4	18.3	p<.009	↓
Privacy Concerns	4.5	4.6	11.8	6.3	p=.368	
Personal Health Decision	5.7	6.9	3.5	2.9	p<.001	↓
Did not provide a reason*	26.6	26.0	37.4	29.3	p=.017	↑

\*Percentages do not add to 100% because SPs that reported a refusal reason can report more than one refusal reason.

↑ Significant increasing linear trend

↓ Significant decreasing linear trend

# Conclusions

# DU and SP Trend Significance Tests Summary

	Level of Analysis			
	Dwelling Unit	Sampled Person (SP)	SP with No Minor in Household	SP With Minor in Household
Refusal Reason (grouped)				
No Interest/Avoidance	Not sig.	↓	↓	↓
General Distrust of Surveys or Government	↑	↑	↑	↑
Too Busy/Too Long	Not sig.	↓	↓	↓
Privacy Concerns	↓	↑	↑	Not sig.
Personal Health Decision	↓	↓	↓	↓
Did not provide a reason*	Not sig.	↓	↓	↑

↑ Significant increasing linear trend

↓ Significant decreasing linear trend

# Findings Summary

- No interest/avoidance and too busy/too long were most common refusal reasons
- Most refusal reasons (at DU and SP level overall and by presence of a minor) show statistically significance change over time
  - DU: No Interest, Too Busy, & Personal Health Decisions didn't change over time
  - SP: No change in Privacy Concerns when minor in HH, but increase when there was no minor in HH
- General Distrust of Surveys or Government shows the highest percentage increase
- Personal health decision shows a decrease
- SPs not providing a reason decreased over the four years

# Study Limitations and Solutions

- Only examined trends comprising four years
  - Plan to include 2022 and 2023 data in next analysis (look for us at AAPOR 2024)
- Only minor vs. no minor in the dwelling unit was explored
  - Other factors influence refusal reasons
    - Plans to explore predictive model including SP demographic characteristics, household factors, and neighborhood features
- Changes in interviewing staff and training over time may influence reasons recorded
  - Interviewer variation in their ability to convert refusals to completes
  - Additional training, especially role-playing may reduce non-response, but also collect better reasons for reasons for participate

# Acknowledgements

- Recognition of dozens of Westat field interviewers over the past 5 years providing refusal reason paradata for the study
- Several Westat and NHANES reviewers for their comments

**Thank you!**  
**Questions?**

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