



Refusal Reasons: Changes in Refusal Reasons Over Time in the National Health and Nutrition Examination Survey (NHANES), 2017-2019, 2021, 2022

Federal Committee on Statistical Methodology (FCSM)

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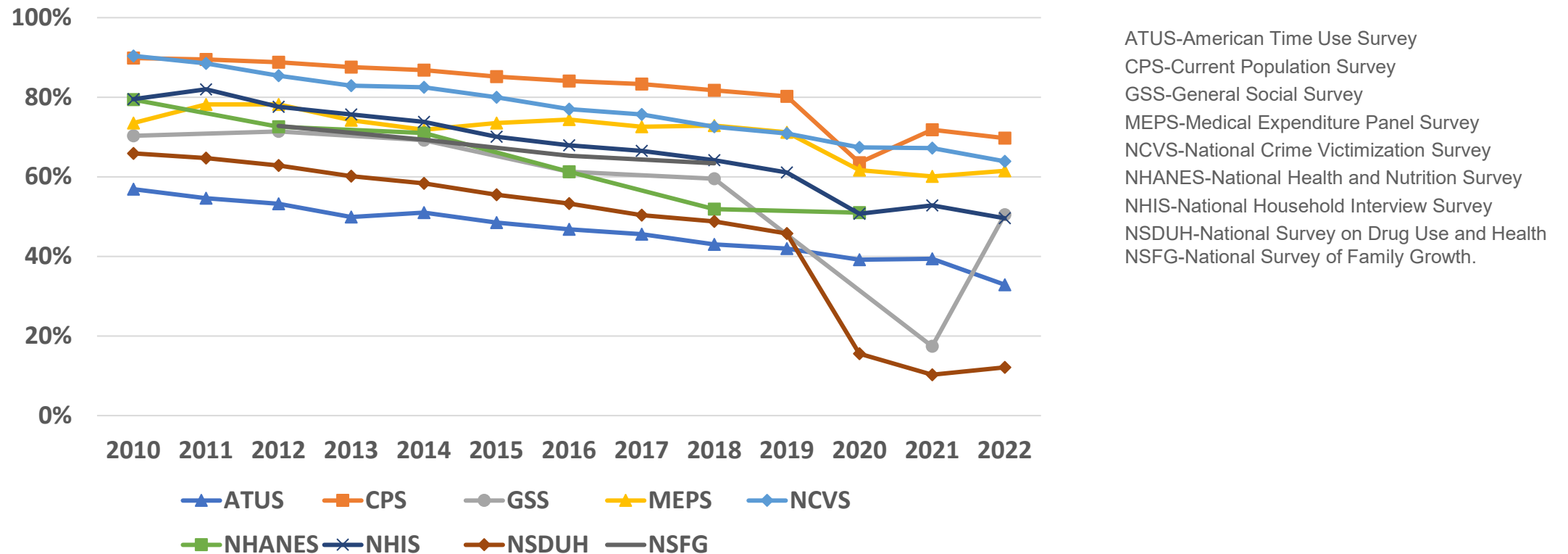
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Disclaimer

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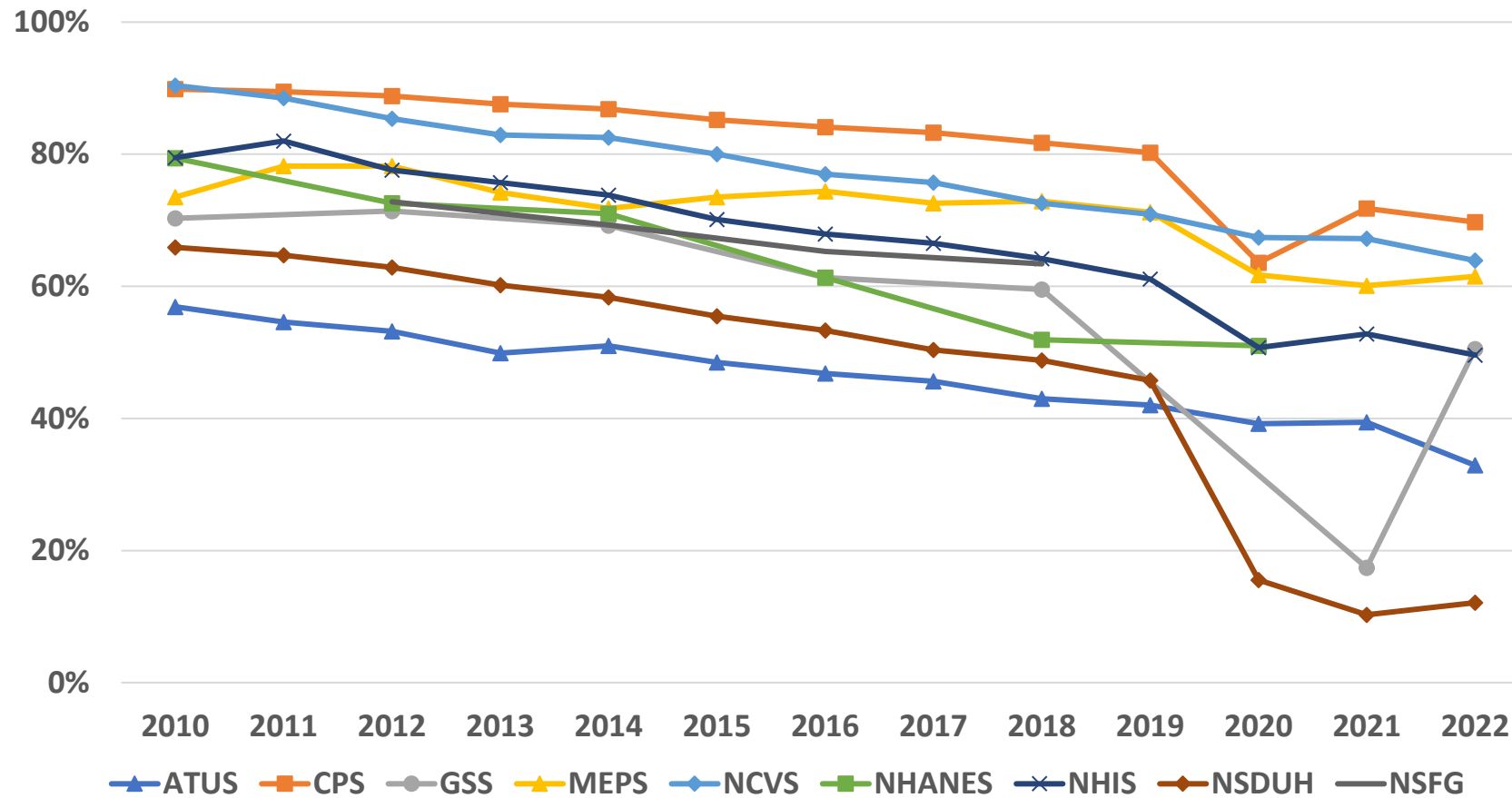
Unit Nonresponse is a Problem

- One of the most challenging survey methodology issues
- Steadily decreasing response rates since 2010*



*Williams, D., and Gonzalez, J. (2024). The Dueling Roles of Public Trust and Survey Participation. AAPOR 79th Annual Conference, Atlanta, GA. Retrieved from <https://aapor.confex.com/aapor/2024/meetingapp.cgi/Paper/2566>.

Unit Nonresponse is a Problem



Modes and methods vary across these surveys in ways that explain differences across them

NHANES
Aug '21 – Aug '23

Interview RR:
35%
(unconditional)

Exam RR:
26%
(unconditional)

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Refusals an Important Part of Unit Nonresponse

- Understanding **why** participants refuse to respond to surveys can provide insights about people's 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)

Bates, N. and Creighton, K. (2000). The Last Five Percent: What Can We Learn from Difficult/Late Interviews? Proceedings of the Section on Government Statistics and Section on Social Statistics, American Statistical Association, pages 120–125

Boyle, J., Dayton, J., ZuWallack, R., and Lachan, R. (2023). "The Shy Respondent and Propensity to Participate in Surveys: A Proof-of-Concept Study." *Survey Practice* 16, no. 1 (January 12, 2023). (accessed at <https://doi.org/10.29115/SP-2014-0026>).

Medway, R., Scardaville, M., Paek, C., Dias, P., Kaiser, A., Megra, M., and Pulizzi, S. (2022). National Household Education Surveys Program of 2019: Qualitative Study of Nonresponding Household (NCES 2022-043). U.S. Department of Education. Washington, DC: National Center for Education Statistics (accessed at <https://nces.ed.gov/pubs2022/2022043.pdf>).

Olson, K., (2013). Paradata for Nonresponse Adjustment. *The ANNALS of the American Academy of Political and Science* 645(1) 142-170 (accessed at <https://doi.org/10.1177/00027162459475>).

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 units (DU) and sampled persons (SP) refusal reasons over time?
 - 2) Do any trends over time look similar in DUs with and without minors?

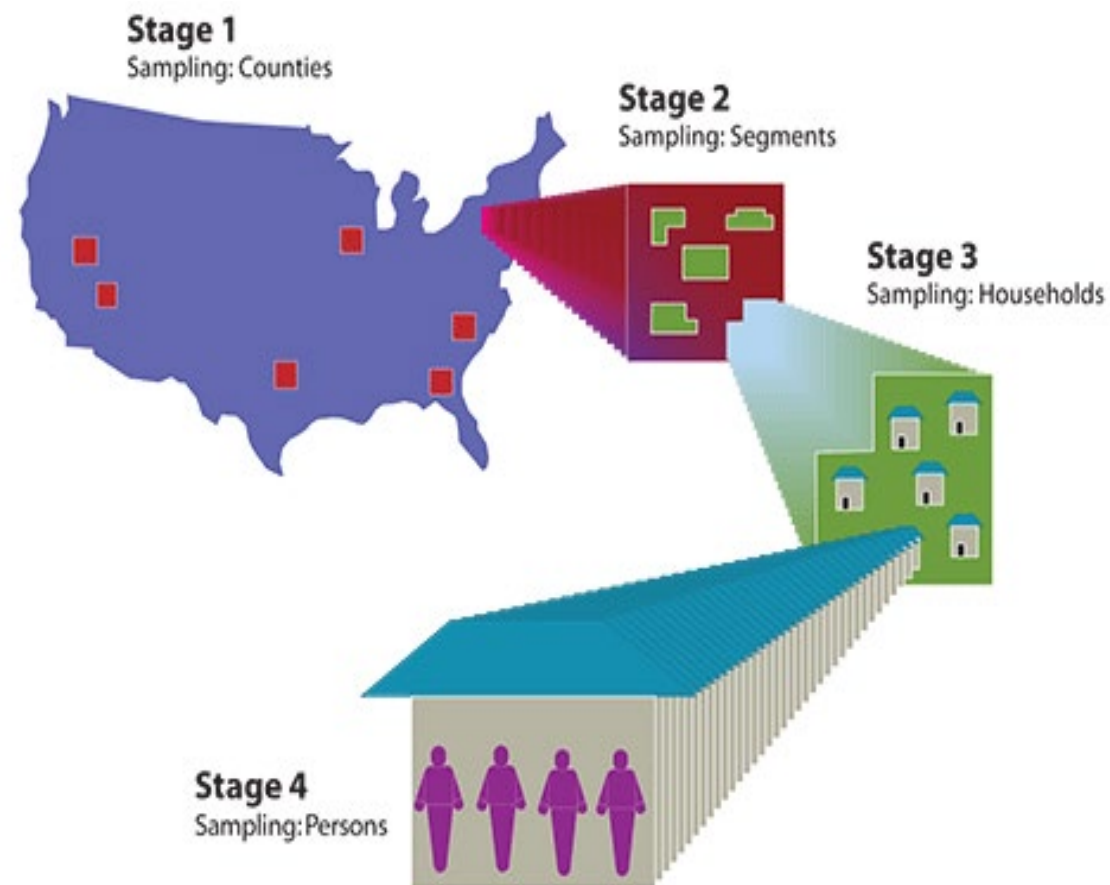
Methods

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 repeated cross-sectional survey that includes:
 - Interview, including a household component
 - Examination, including health exams and lab tests
 - Dietary intake interviews

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



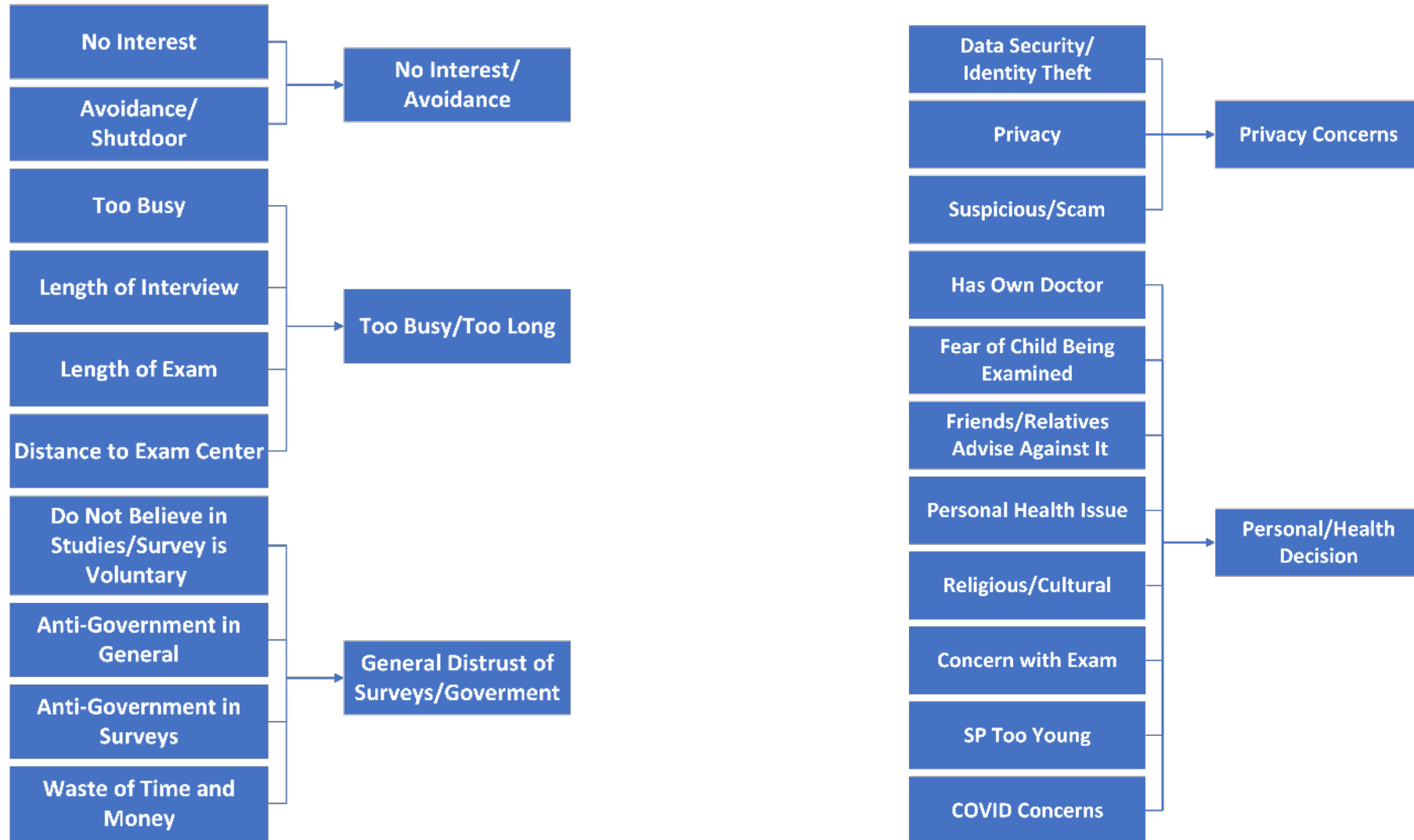
Evaluating Refusals in 2017-2019, 2021, 2022

- Refusal reasons came from the 2017-2019, 2021, 2022 NHANES data collection years to evaluate survey refusals from:
 - 8,289 screener DUs refusers out of 67,090 total DUs
 - 15,123 adult SPs interview refusers out of 34,310 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 DUs or SPs

Creating 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 the last refusal reason

List of Refusal Reason Categories



Statistical Analysis Approach

- Trend tests performed for each DU and SP grouped refusal grouped overall, and by the presence of a minor (and not providing a reason)
- Analysis used linear trend analysis, 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 – Significant Trend for Most Refusal Reasons and No Reason Provided

Refusal Reason (grouped)	2017 (n=754) %	2018 (n=1,255) %	2019 (n=1,569) %	2021 (n=2,531) %	2022 (n=1,918) %	Linear Trend Test	
No Interest/Avoidance	49.3	41.4	44.6	47.0	48.2	p<.001	↑
General Distrust of Surveys or Government	7.6	5.4	5.2	10.2	15.1	p<.001	↑
Too Busy/Too Long	3.6	6.4	5.0	5.0	6.8	p<.001	↑
Privacy Concerns	7.6	9.8	8.3	6.1	6.7	p=.748	
Personal Health Decision	2.8	2.9	0.7	1.4	1.2	p<.006	↓
Did not provide a reason*	37.5	45.0	44.3	37.8	30.1	p<.006	↓

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

↑ Statistically significant increasing linear trend

↓ Statistically significant decreasing linear trend

SP Level - Significant Trend for All Refusal Reasons

Refusal Reason (grouped)	2017 (n=2,333) %	2018 (n=2,608) %	2019 (n=2,389) %	2021 (n=3,624) %	2022 (n=3,808) %	Linear Trend Test	
No Interest/Avoidance	52.7	49.0	37.0	43.4	47.2	p<.001	↓
General Distrust of Surveys or Government	3.1	3.0	4.7	13.8	18.1	p<.001	↑
Too Busy/Too Long	19.8	19.1	21.1	16.1	18.9	p<.001	↓
Privacy Concerns	3.7	5.1	9.6	7.8	7.8	p=.001	↑
Personal Health Decision	9.3	9.4	4.6	5.0	4.0	p<.001	↓
Did not provide a reason*	25.8	27.8	35.1	24.1	14.9	p>.493	

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

↑ Statistically significant increasing linear trend

↓ Statistically significant decreasing linear trend

SP Level - Significant Trend for All Refusal Reasons and No Reason Provided 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) %	2022 (n=2,911) %	Linear Trend Test	
No Interest/Avoidance	52.9	48.2	38.4	45.4	48.2	p<.001	↓
General Distrust of Surveys or Government	3.2	3.4	4.2	13.5	18.9	p<.001	↑
Too Busy/Too Long	18.3	16.9	21.2	15.0	17.9	p<.006	↓
Privacy Concerns	3.5	5.0	9.1	8.7	7.7	p=.000	↑
Personal Health Decision	11.5	10.7	5.6	5.9	4.5	p<.001	↓
Did not provide a reason*	25.7	29.1	34.2	22.4	13.3	p<.001	↓

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

↑ Statistically significant increasing linear trend

↓ Statistically significant decreasing linear trend

SP Level - Significant Trend for Most Refusal Reasons and No Reason Provided When Minor Present in Household

Refusal Reason (grouped)	2017 (n=719) %	2018 (n=847) %	2019 (n=802) %	2021 (n=945) %	2022 (n=897) %	Linear Trend Test	
No Interest/Avoidance	51.0	49.3	32.7	37.6	44.0	P=.607	↓
General Distrust of Surveys or Government	3.2	2.0	5.4	13.9	15.4	p<.001	↑
Too Busy/Too Long	22.0	24.1	20.4	18.3	22.1	P=.032	
Privacy Concerns	4.5	4.6	11.8	6.3	7.8	p<.001	↑
Personal Health Decision	5.7	6.9	3.5	2.9	2.2	p<.002	↓
Did not provide a reason*	26.0	25.0	36.9	29.0	20.2	p<.001	↓

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

↑ Statistically significant increasing linear trend

↓ Statistically significant decreasing linear trend

Conclusions

Summary

- No interest/avoidance and too busy/too long were most common refusal reasons
- General Distrust of Surveys or Government shows the highest percentage increase for both DUs and SPs
- Personal Health Decision shows a decrease for both DUs and SPs (< 10% across years)
- Most refusal reasons (at DU and SP level overall and by presence of a minor) show statistically significant change over time
 - DU: Privacy Concerns didn't change over time
- DU and SPs not providing a reason increased for three years, but decreased in 2021 and 2022

DU and SP Summary-Only Distrust Increased for All Levels of Analysis

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

↑ Statistically significant increasing linear trend

↓ Statistically significant decreasing linear trend

Study Limitations

- Categorization was only based on one rater
- Refusal reasons were only recorded when household members expressed them
 - We can't know what people don't tell us
- Interviewers likely vary in how they perceive and record reasons
- Only examined trends comprising five years
 - Plan to include demographic analysis (look for us at AAPOR 2025)
- Only minor vs. no minor in the dwelling unit was explored
 - Other factors may influence refusal reasons

Future Directions

- 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, collect better reasons for not participating, and better refusal conversion
- Plan to explore modeling approaches which include SP demographic characteristics, household factors, and neighborhood features

Future Directions (cont)

- Guidance and recommendations from two internal surveys:
 - 2019 Gaining Cooperation Study
 - Participant Experience Survey (2021-2023)
- Will government distrust trend continue or plateau in future NHANES cycles?

Acknowledgements

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Thank you!
Questions?

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