



Using Web Probing to Rapidly Pretest the Census Bureau's Household Pulse Survey



Jessica Holzberg, U.S. Census Bureau
Robin Kaplan, Bureau of Labor Statistics
Paul Scanlon, National Center for Health Statistics

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The challenge

- Unprecedented timeline for federal data collection: One month from inception to launch in April 2020
- This left little time for pretesting, but expert review didn't seem like enough
 - No existing “pandemic survey question” bank to pull from
 - Terminology around the pandemic was still evolving
 - Wide impacts of the pandemic on people's lives = diverse content sponsored by a variety of federal agencies in one survey
- Could not do in-person cognitive interviewing
- Our solution: web probing

Pretesting strategy

- **Phase 1 questionnaire: 2 rounds of web probing**
- **Phase 2 questionnaire: 1 round of web probing**
- Phase 3 questionnaire: 1 round of web probing + 15 remote cognitive interviews

Research questions

- Overall, are questions understood and answered as intended?
- How should we refer to the COVID-19 pandemic in the survey?
- Are changing reference periods throughout the survey salient and understood?
- What other content should we consider asking questions about in later phases?

Data collection

- Larger scale web probing than anything we've done before at the Census Bureau
- Drew random samples from Census Bureau's nationwide nonprobability panel
 - About 21,000 emails selected for each of the three rounds
 - Emails selected for a prior round were ineligible for selection in later rounds
- One initial invitation and up to two reminders if they had not clicked a link in a previous email
- Emails sent via GovDelivery with link to Qualtrics survey
- English only

Data collection (cont.)

	Phase 1, Round 1	Phase 1, Round 2	Phase 2, Round 1
Field period	April 24-May 2, 2020	May 8-17, 2020	July 8-20, 2020
Emails sent	April 24, 26, 29	May 8, 10, 13	July 8, 10, 12
Initial email open rate	11%	10%	10%
Initial email click rate	3%	3%	3%
Number of completes	973	944	672

Web probing instrument

- Probes embedded into a copy of the Household Pulse Survey
- Mixture of different probes:
 - Open-ended and closed-ended
 - Concurrent and retrospective
 - Question-specific and general
- Split-ballot pretested some survey questions and probe types

Overall, are questions understood and answered as intended? Example: K-12 education

- Initial questions referred to a singular child: “During the **last 7 days**, about how many hours did **the student...**”
 - have live contact either by phone or video with their teachers?
 - spend on ALL learning activities? Include time spent with teachers and household members and time spent alone.
- How should respondents with multiple children in school answer?
- **Phase 1 (Round 2) Probes (open-ended):**
 - When you were answering this question, who were you thinking about?
 - How did you come up with your answer to this question?

K-12 education (cont.)

- Respondents were thinking of all their children, but accounting for them in different ways
 - Summed up hours for all children: *“This figure includes learning activity time for two school-age children”*
 - Averaged across all children: *“I have three children, and the answers vary for each. I spoke to each to collect their times...and then supplied the average to the question.”*
- A few respondents said they were not sure how to handle this
- Revised to refer to “student(s)” and added instruction: “Enter total number of hours for all students.”

K-12 education (cont.)

- Did it work? Phase 2 tested revisions
- **Probe:** How did you come up with your answers to these questions?

Added	40% (n = 23)
Averaged	22% (n = 13)
Some other method	10% (n = 6)
No time on learning activities	28% (n = 16)
Total	100% (n = 58)

K-12 education (cont.)

- Still a mixture of strategies
- Decided to change to categorical questions pretested elsewhere
 - Overall easier to report than # of hours
 - Expected less variation across children

“During the last 7 days, on how many days did the student(s) have live contact with their teachers in person, by phone, or by video?”

- None, 1 day, 2-3 days, 4 or more days

“During the last 7 days, about how much time did the student(s) typically spend on all learning activities relative to a school day before the coronavirus pandemic?”

- Much less, a little bit less, as much as, a little bit more, much more

How should we refer to the COVID-19 pandemic in the survey?

- “COVID-19” v. “coronavirus”
- Early on, also some debate among methodologists about using “outbreak” v. “pandemic”
 - Potential for different connotation of breadth: when COVID-19 first began (“outbreak”) and when its impact grew (“pandemic”)
- Probes
 - To you, does “coronavirus” mean the same thing as “COVID-19”?
 - When do you think the coronavirus [pandemic/outbreak] began?
 - When did the coronavirus [pandemic/outbreak] first affect your daily life?

To you, does “coronavirus” mean the same thing as “COVID-19”?

Yes, totally the same	48% (n = 325)
Yes, mostly the same	39% (n = 265)
No, mostly different	10% (n = 71)
No, totally different	3% (n = 21)
Total	100% (n = 682)

When do you think the coronavirus [pandemic/outbreak] began?

	Pandemic	Outbreak
Before October 2019	3% (n = 11)	4% (n = 15)
October 2019	5% (n = 19)	5% (n = 18)
November 2019	19% (n = 73)	20% (n = 76)
December 2019	29% (n = 115)	32% (n = 122)
January 2020	22% (n = 87)	20% (n = 77)
February 2020	12% (n = 48)	13% (n = 51)
March 2020	10% (n = 40)	6% (n = 23)
April 2020	0% (n = 0)	1% (n = 2)
Total	100% (n = 393)	100% (n = 384)

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When did the coronavirus [pandemic/outbreak] first affect your daily life?

	Pandemic	Outbreak
Before October 2019	0% (n = 0)	0% (n = 1)
October 2019	0% (n = 1)	1% (n = 2)
November 2019	1% (n = 2)	1% (n = 3)
December 2019	1% (n = 5)	1% (n = 4)
January 2020	3% (n = 12)	4% (n = 16)
February 2020	17% (n = 65)	15% (n = 58)
March 2020	75% (n = 294)	75% (n = 287)
April 2020	3% (n = 11)	3% (n = 10)
Total	100% (n = 390)	100% (n = 381)

When did the coronavirus [pandemic/outbreak] first affect your daily life?

	Pandemic	Outbreak
Before October 2019	0% (n = 0)	0% (n = 1)
October 2019	0% (n = 1)	1% (n = 2)
November 2019	1% (n = 2)	1% (n = 3)
December 2019	1% (n = 5)	1% (n = 4)
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How should we refer to the COVID-19 pandemic in the survey? (cont.)

- Most respondents thought COVID-19 and coronavirus meant the same thing
- No differences for other probes by terminology, but disagreement about when the pandemic/outbreak “began”
 - More consensus on when pandemic/outbreak affected their lives
- Reinforced importance of using concrete reference periods (e.g., “in the last 7 days”) as opposed to referring to “during” the pandemic or “since” it began
- Stuck with plan to use “the coronavirus (COVID-19) pandemic,” followed by references to “coronavirus”

Are changing reference periods throughout the survey salient and understood?

- Variety of reference periods used due to different sponsor interests, sometimes interspersed

Before March 13, 2020

In the next 4 weeks

Since March 13, 2020

During February 2020

In the last 7 days

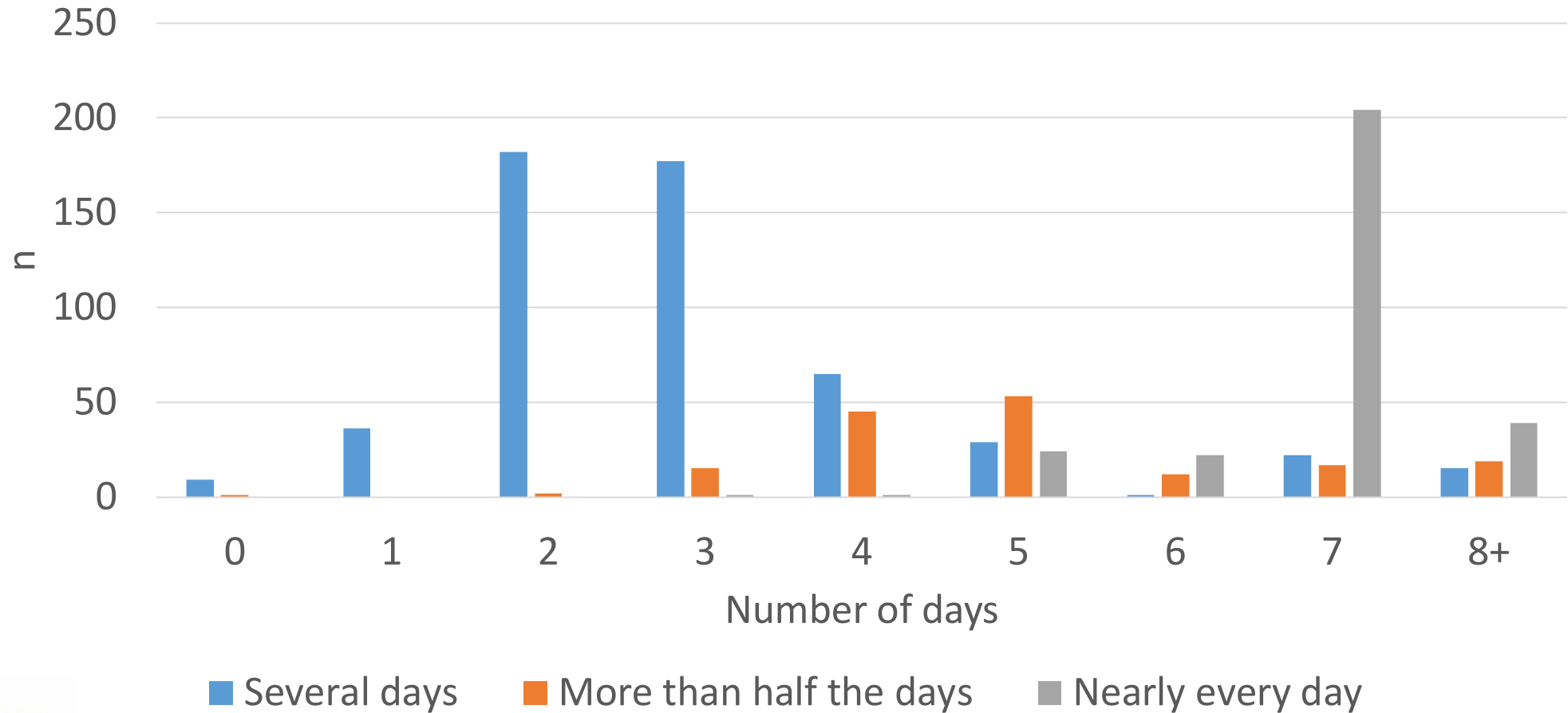
Example: Mental health

- Two questions before series: “next four weeks,” no reference period
- “Over the last 7 days, how often have you been bothered by...”
 - “Feeling nervous, anxious, or on edge?”
 - “Feeling down, depressed, or hopeless?”
- Response options: Not at all, several days, more than half the days, nearly every day
 - Does this work for the last 7 days?
- Probe: How many days did you feel [nervous, anxious, or on edge] / [down, depressed or hopeless]?

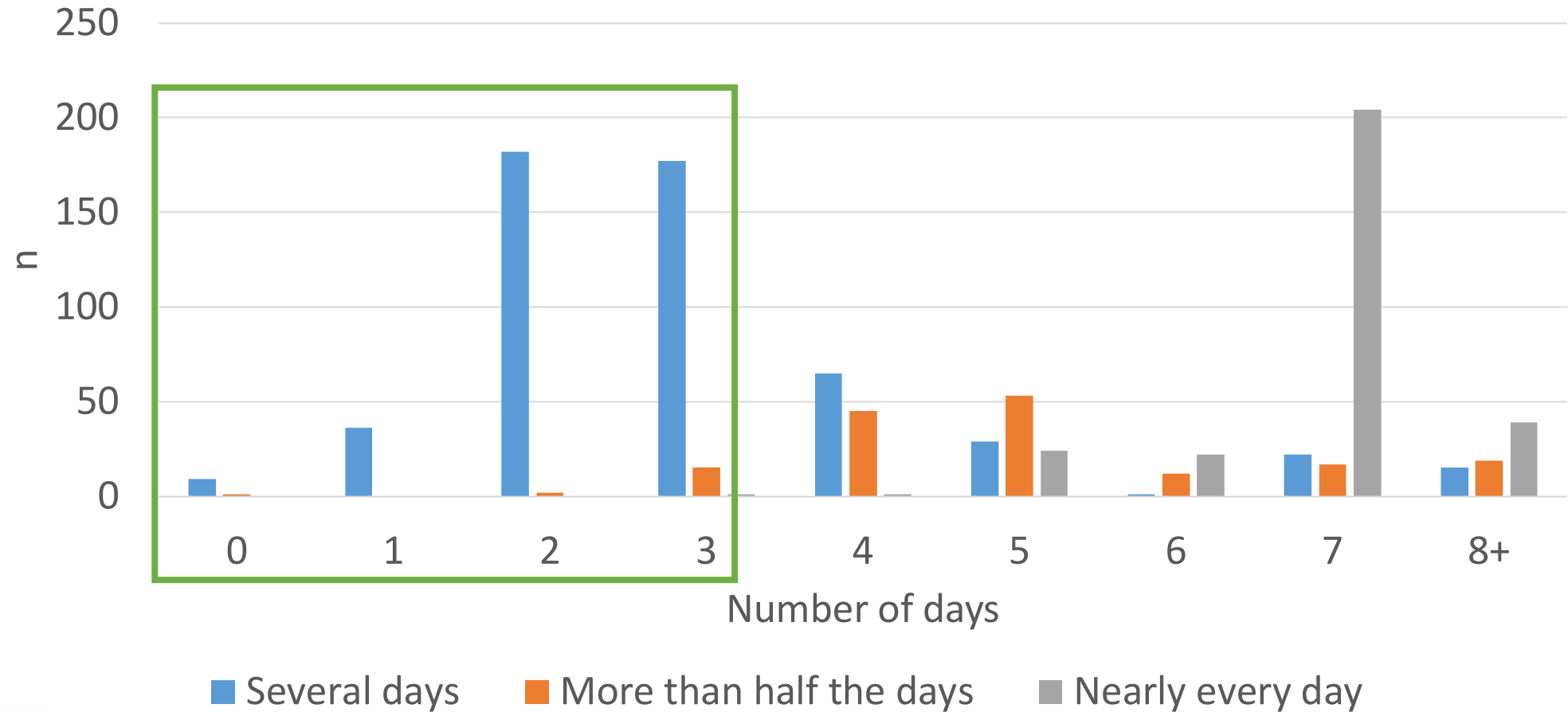
Over the last 7 days, how often have you been bothered by feeling [nervous, anxious, or on edge] / [down, depressed or hopeless]?

	Nervous, anxious, or on edge	Down, depressed, or hopeless
Not at all	30% (n = 245)	47% (n = 383)
Several days	34% (n = 283)	33% (n = 269)
More than half the days	13% (n = 106)	8% (n = 62)
Nearly every day	24% (n = 195)	13% (n = 106)
Total	100% (n = 829)	100% (n = 820)

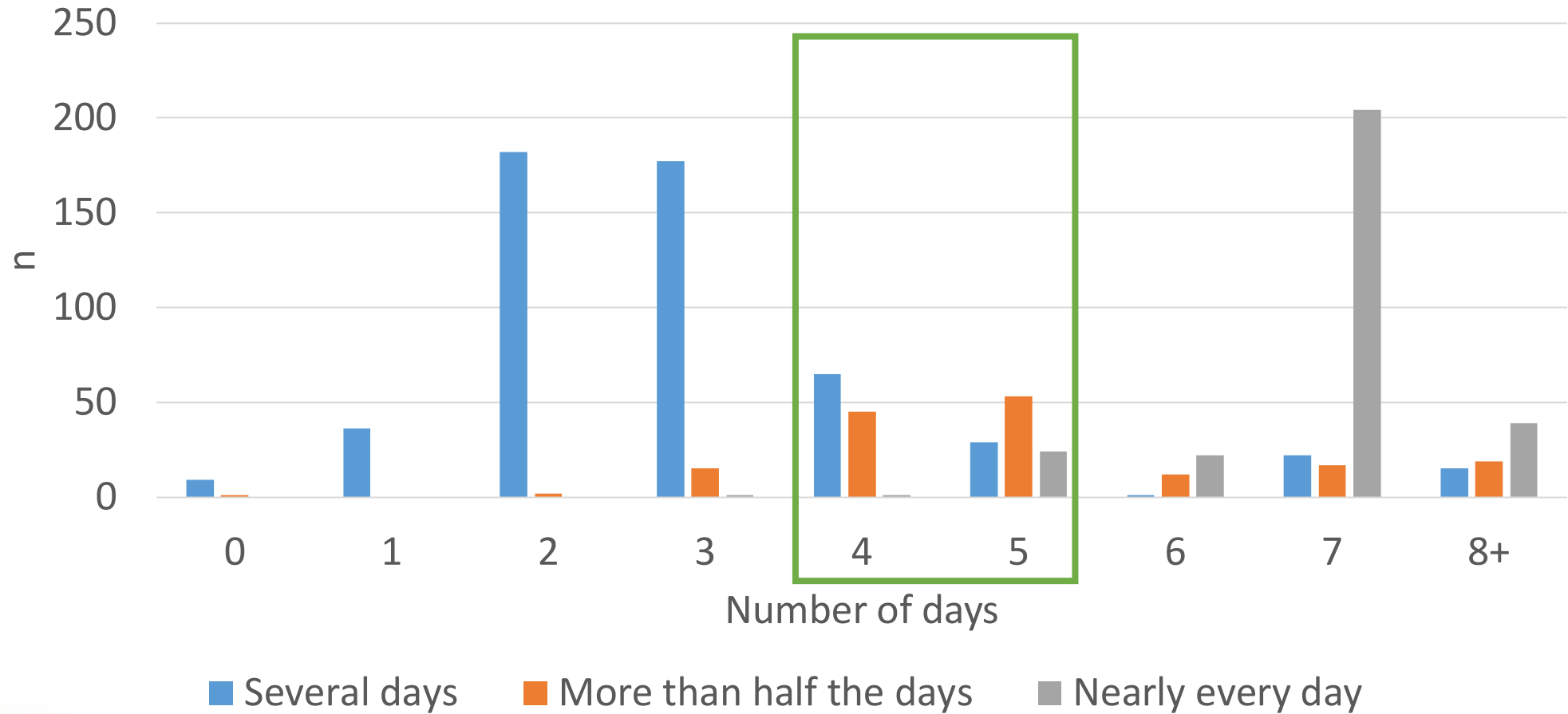
How many days did you feel [nervous, anxious, or on edge] / [down, depressed or hopeless]?



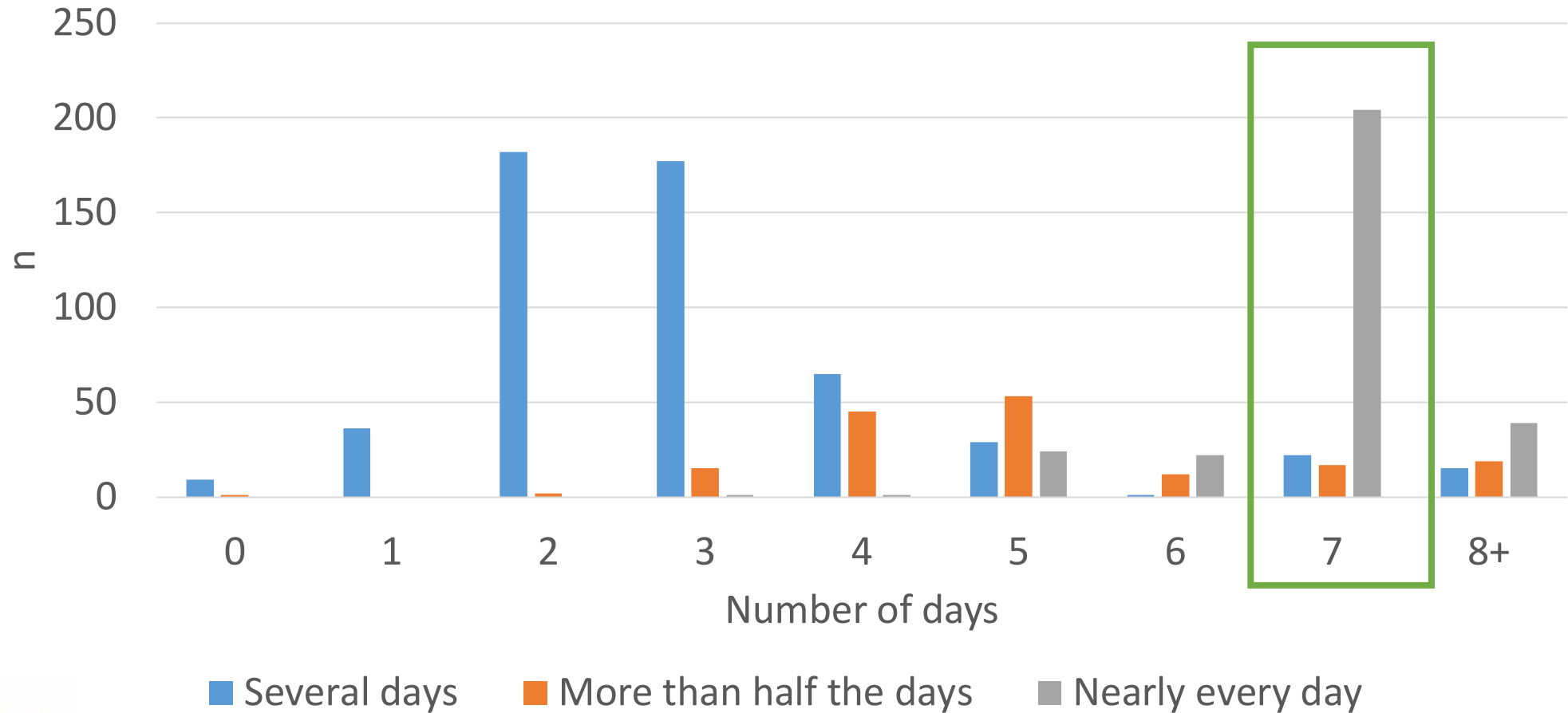
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How many days did you feel [nervous, anxious, or on edge] / [down, depressed or hopeless]?



How many days did you feel [nervous, anxious, or on edge] / [down, depressed or hopeless]?



Reference periods (cont.)

- Very few respondents gave an answer over 7 days, indicating the reference period was noticed
- A little fuzziness between categories, especially for 4/5 days
- Decided benefits of using existing categories outweighed potential cons

What other content should we consider asking questions about in later phases?

Probe: “List the ways that the coronavirus pandemic has affected your life”

- Social isolation
 - *“I am isolated more often than not.”*
 - *“Can’t see my daughter or get out of this house.”*
 - *“Cannot go out to sporting events, to church or any other outside the home activities that I love to do.”*
- Disruptions to physical wellness, sleep
 - *“Hard to get exercise”*
 - *“Decrease in sleep and appetite”*
- Working from home
 - *“Telecommuting for work, the [place] I work is physically closed.”*
 - *“Go into work twice a week for half days and work from home other days.”*

Future content (cont.)

- Changes to living situations
 - *“We were going to move by the end of May anyway but are now moving early [since it doesn’t matter where we live now].”*
 - *“Adult child has moved back home.”*
- Trip/travel cancellations
 - *“Can’t go on cruise.”*
 - *“A lot of things that were planned were then cancelled.”*

Overall takeaways

- Yes, writing and testing questions is hard
- Clear improvement over expert review only in a hurry
- Fast, hands-off data collection
- Still a lot of effort required for:
 - Developing probes
 - Programming/testing web probing instrument
 - Analysis, especially for open-ended responses
- Trade-offs between open and closed-ended probes
 - Open-ended responses: easier to write, harder to analyze
 - Closed-ended responses: harder to write, easier to analyze

Overall takeaways (cont.)

- Fitness for use- not the best tool for certain types of questions
- Importance of iterating to test recommendations
- Interagency coordination strengthened methodology

Limitations

- Our nonprobability panel may be more knowledgeable about data and the Census Bureau
- Demographics tend to skew white, older, and highly educated
 - Major factor in decision to conduct remote interviews for Phase 3 (many new questions about young children in household)
- Could not target specific kinds of respondents

Next steps and future research

- Deciding on pretesting methodology for next phase
- Leveraging text analysis software
- Rapid pretesting—blip or new standard expectation?

Thank you!

Jessica.Holzberg@census.gov

Demographics of respondents

	Phase 1, Round 1	Phase 1, Round 2	Phase 2, Round 1
Age	26% 18-44 35% 45-60 40% 61+	26% 18-44 33% 45-60 41% 61+	22% 18-44 33% 45-60 45% 61+
Sex	64% female	61% female	64% female
Race	72% white	75% white	71% white
Ethnicity	88% non-Hispanic	91% non-Hispanic	88% non-Hispanic
Education	68% Bachelor's or higher	67% Bachelor's or higher	63% Bachelor's or higher
Household size	22% 1 person 39% 2 people 39% 3+ people	23% 1 person 37% 2 people 40% 3+ people	23% 1 person 39% 2 people 38% 3+ people