

Cognitive Evaluation of the National Center for Health Statistics' 2018 Research and Development Survey

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This report presents the results of the cognitive evaluation of the 2018 Research and Development Survey (RANDS 3) conducted by the National Center for Health Statistics' Division of Research and Methodology (DRM). RANDS is an ongoing, periodic online survey conducted by DRM using commercially-available, probability-based online survey panels. It differs from other NCHS survey systems (such as the National Health Interview survey, or NHIS, and the National Health and Nutrition Examination Survey, or NHANES) in that its goal is not to produce national or sub-national estimates, but rather to function as a platform for conducting cognitive evaluation and other methodological work. Specifically, RANDS is used to supplement cognitive evaluation studies conducted by NCHS using more traditional methods, such as cognitive interviewing, by employing emerging question evaluation methodologies such as web probing.

Web probing is a method of questionnaire evaluation that uses targeted, embedded probe questions (typically referred to as "web probes") in web survey questionnaires. These probes are designed to uncover respondents' response processes and potential sources of measurement error, and are included in internet survey questionnaires directly following the question or questions under evaluation¹. Using the findings of qualitative interviews, close-ended web probes are intended to expand the findings from cognitive interviews from a purposive, non-statistical sample to a wider population using a statistical survey sample. Unlike reactive and emergent probes used in cognitive interviews, web probes must be set ahead of time like any other survey question. However, if designed correctly and administered to a statistical sample, these probes allow researchers to determine the extent of the patterns of interpretation found during cognitive interviews across a population, and to then examine whether certain patterns of interpretation are more common in certain sub-groups of that population.

To this point, RANDS has been administered three separate times. In 2015 and 2016 RANDS 1 and RANDS 2 were administered to web respondents using the Gallup Panel. RANDS 3 was administered in Spring of 2018 to web respondents of NORC at the University of Chicago's Amerispeak Panel. Because one of the main programmatic goals of RANDS is to use a web survey to evaluate existing and proposed questions for NCHS surveys, the questionnaires for all three RANDS so far have included survey items from the National Health Interview Survey (NHIS); in addition, RANDS 2 and RANDS 3's questionnaires featured a series of items being considered for inclusion on the NHIS as well as web probes.

This report details the cognitive testing project used to evaluate the proposed questions for inclusion in RANDS 3, conducted across three iterative rounds of interviews. The first two rounds were interviewer-administered and were used to determine which NHIS items would appear on the RANDS 3 questionnaire and to understand how each item was interpreted by respondents. Following the analysis of these two rounds, the Collaborating Center for Questionnaire Design and Evaluation Research (CCQDER, one of three branches within DRM) wrote a series of web probe questions for inclusion in the RANDS 3 questionnaire. This questionnaire was then programmed by NORC, and a third round of cognitive interviews were conducted using this programmed web questionnaire. This third, self-administered round of interviews was used to not only test the usability of the web survey, but also to ensure that the probe questions functioned as intended.

This report first describes the cognitive interviewing methodology used in this questionnaire evaluation and then presents a detailed question-by-question analysis of the RANDS 3 questionnaire. Unlike most Collaborating Center for Questionnaire Design and Evaluation Research (CCQDER) evaluation reports, no overall findings are presented for the questionnaire as a whole, as the RANDS is (with the exception of the web probes) simply a sub-set of existing or proposed NHIS questions.

¹ For a more detailed discussion of the method, please see Scanlon 2019. As discussed in this reference, web probing emerged as a more practical and flexible version of the practice of inserting probe questions in interviewer-administered or paper questionnaires.

Methods

Cognitive Interviewing Methodology and the Question Response Process

Cognitive interviewing is a qualitative method whose purpose is to evaluate survey questionnaires and determine which constructs the questionnaires' items capture. The primary benefit of cognitive interviewing over non-qualitative evaluation methods is that it provides rich, contextual data into how respondents interpret questions, apply their lived experiences to their responses, and formulate responses to survey items based on those interpretations and experiences.² Thus, cognitive interviewing data allows researchers and survey designers to understand whether or not a question is capturing the specific social constructs they originally wanted, and gives insight into what design changes are needed to advance the survey's overall goals. Additionally, the documented findings of cognitive interviews provide data end users the context needed to more fully understand the quantitative trends that emerge from survey data.

The underlying theory that directs the conduct of cognitive interviews is that of the question response process. Individuals typically interpret survey questions through a four-step process: They first comprehend the underlying construct, then recall the information needed, judge their answer, and finally map their answer onto one of the available response categories, as visualized here in Figure 1.



Figure 1: The Basic Question-Response Process Model²

In reality, these four stages of response are not always in the exact order shown in the basic model, and oftentimes respondents either jump around (by, for instance, considering the response categories before judging what they should or should not report on the survey) or repeat steps (if they decided to try and recall new information after they're judged what they should or should not report on the survey). Additionally, some respondents skip steps in the model, and provide a response to the question that does not necessarily take all the constructs and information provided in the question text or instructions into account (oftentimes simply basing their answer on a personal characteristic, or perceived personal characteristic, such as health status). Nonetheless, the overall goal of cognitive interviewing is to uncover the specific ways respondents perform each of these four steps.

Cognitive interviews are typically administered as one-on-one, in-depth, semi-structured qualitative interviews. Respondents are first asked survey items, and then probed about their answers and the thought processes behind them. These targeted probes attempt to ascertain exactly which constructs the respondents are considering, and how they are judging and formulating their response. This semi-structured design uncovers not only these constructs, but also question response problems that are difficult to observe directly in a survey environment—including interpretive errors and recall inaccuracy.

Cognitive interviewing projects use purposive samples that focus on respondents that have specific characteristics—such as race, education, or occupation—that are assumed to be relevant to the questions being evaluated. When studying questions related to chronic conditions, for instance, the sample would likely consist of both individuals who have chronic conditions and those that do not, allowing for the discovery of both false positive and false negative answers. Because of the limited sample size, not all

² Willis 2004, Miller et al 2015

demographic or occupational groups can be covered in the sample, and the analysis of cognitive interviewing does not provide generalizable findings in a statistical sense.

The analysis of cognitive interviewing data involves the iterative synthesis and reduction of the findings—beginning with a large amount of textual data (the raw transcripts and notes from the interviews themselves) and ending with cognitive schemata and conclusions that serve the overall purpose of the study. A cognitive interviewing study’s goal is to produce a conceptual understanding of a question’s performance. This end analytic product is often best understood as a cognitive schema, examples of which are presented throughout this report and illustrated in a standard format. As shown in a prototypical cognitive schema below in Figure 2, the phenomenon or construct under consideration is shown on the left-hand side of the figure, and the various pathways respondents use to understand or judge this phenomenon branch off to the right. Each of these rectangles represent the different patterns of interpretation or judgement, depending on the individual schema, that respondents within the cognitive interviewing sample used when responding to a question. Occasionally, the actual survey answers that each of these patterns of interpretation produced across the sample are also shown and are represented by ovals to the far right-hand side of the figure.

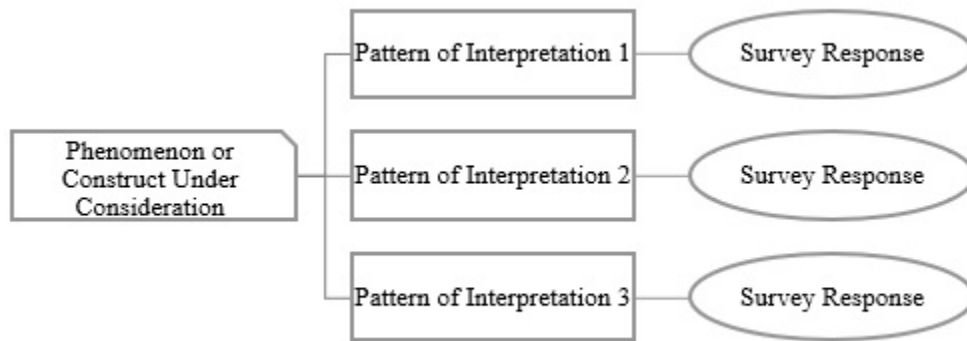


Figure 2: Prototypical Cognitive Schema Used Throughout This Report

Specific Methods

For the evaluation of the RANDS 3 questionnaire, a purposive sample of 59 respondents was recruited to participate in cognitive interviews across the three rounds of testing.

Table 1: Select Sample Demographics by Cognitive Interviewing Round

	Round 1	Round 2	Round 3	Total
Male	14	14	12	40
Female	5	7	7	19
Black	15	11	5	31
White	3	7	13	23
AIAN	1	3		4
Asian			1	1
Refused		1		1
High School/GED	4	7		11
Some College	8	7	5	20
Bachelors	6	4	10	20
Post-Grad	1	3	4	8
18-39	4	4	12	20

40-59	9	12	6	27
60+	6	5	1	12
\$0-19,999	9	7		16
\$20K-49,999	7	6		13
\$50K-79,999	2	3	7	12
\$80K +	1	5	12	18
Total	19	21	19	59

As RANDES itself is a general-population survey about a wide range of topics, the sample was purposively recruited to produce a diverse sample across several characteristics, including gender, age, race, educational attainment, and income. Respondents were recruited through a variety of media, including newspaper and online advertisements. Table 1 above breaks down the sample demographics by round of testing.

Most of the 59 interviews were conducted in NCHS’ Questionnaire Design Research Laboratory in Hyattsville, MD, though a few respondents who could only participate outside of business hours or who were unable to gain admittance to the NCHS facility (due to citizenship status) were interviewed outside the lab. These interviews were held in a public space, such as a coffee shop, which was agreed to by both the interviewer and the respondent. In either case, interviews were limited to 60 minutes in length. Respondents in Rounds 1 and 3 were read the RANDES questions and probed verbally; respondents in Round 2 read the questionnaire on Gallup’s web survey interface while the CCQDER interviewer observed and asked follow-up probes. Respondents received \$40 for participating in the interview.

The sample was split into two for each round, with each half receiving a slightly different questionnaire. This was done not only to limit the length of the interviews, but also to allow CCQDER to test different forms of the same questions. In particular, different versions of the self-rated health, e-cigarette, and affect disorder questions were administered across the two forms.

Following the interviews, researchers entered their notes into CDC’s Q-Notes software, which is a qualitative analysis program designed specifically for the storage and analysis of data from cognitive interviews.³

Question by Question Analysis

Please note that the order of the question-by-question analysis does not exactly match the order of the final questionnaire (see Appendix A). For the ease of use of this report, conceptually-similar questions that were separated in the final survey (in order to limit framing effects for instance) are grouped here. Many of the questions detailed below have been evaluated by CCQDER and others in the past, and references to these prior studies are provided.

³ <http://wwwn.cdc.gov/qnotes>

General Health Section

PHSTAT

Version 1 **Would you say your health in general is excellent, very good, good, fair, or poor?**

1. **Excellent**
2. **Very Good**
3. **Good**
4. **Fair**
5. **Poor**

Version 2 **Would you say your health in general is very good, good, fair, or bad, or very bad?**

1. **Very Good**
2. **Good**
3. **Fair**
4. **Bad**
5. **Very Bad**

PHSTAT was administered to all respondents. Two versions of this question were tested in this cognitive interviewing project (and later included on the 2019 RANDS): a version (Version 1, currently used on the NHIS) with an uneven series of answer categories and a version (Version 2, used extensively in European health surveys) with a balanced series of answer categories. As part of a larger effort to consider the cross-cultural measurement implications, cognitive interviews focused specifically on determining which constructs the two versions capture and whether respondents use different patterns of judgements when answering them.

Interpretation of the Construct:

In general, respondents understood this question to be asking about their perceptions of their overall health and well-being. As found in previous studies, respondents considered a range of interpretations that can be broadly grouped into health habits and health status.⁴ Health habits include concepts such as diet, exercise, smoking, consuming drugs and alcohol, and sleep; health status include the presence or absence of chronic conditions, pain, and/or psychological conditions (such as depression or anxiety), the ability to complete activities of daily living, and whether or not the respondent seeks healthcare.

Both versions of the question appeared to largely capture the same constructs, as shown below in Table 2:

Table 2: Constructs Captured by the Two Versions of PHSTAT

Construct	Version 1	Version 2
Diet	•	•
Exercise	•	•
Smoking/Drinking/Drugs	•	•
Sleep	•	
Healthcare Habits	•	•
Financial Health		•
Presence/Absence of Health Conditions	•	•

⁴ Canfield et al 2003, page 10; Willson 2004, page 26; Scanlon 2017, page 5

Pain	•	•
Affect/Psychological Conditions	•	•
Ability to Do Tasks on Own	•	•

Judgement of Response:

The findings of this cognitive interviewing project in regards to how respondents judge their answers to the self-rated health question largely follows previous studies.⁵ However, given the much larger sample size of this project as compared to the previous ones, as well as the focus of the probing specifically on the judgement and response steps of response to this question, we are able to present a much more refined schemata than in previous reports.

In general, respondents judged their response either by comparing their current health to someone or something, or by making a direct judgement without an explicit comparison. Across the cognitive interviewing sample (as well as in the previous studies' samples), the former was the most common approach. Within these two larger approaches, respondents used several individual strategies for determining their overall health, as illustrated in the schema below:

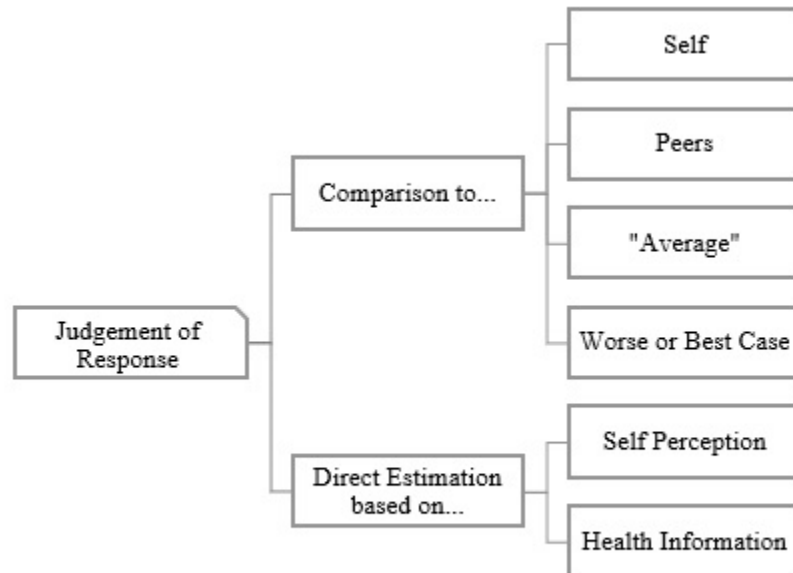


Figure 1: Patterns of Judgement for PHSTAT

Across both versions of the question tested in this project, respondents largely judged their answers by comparing their current health status to some other person—real or imaged. The most common variant of this was to make a comparison to one’s self—wherein the respondent would think about their own health in the past and examine whether or not they were better or worse off than they had been. For instance, one respondent who answered Version 2 “Very Good” explained that he “...eats a lot more organic and mostly home-cooked food, compared to five months ago” when he was eating mostly fast food. He therefore arrived at his answer by comparing his current health (which he conceptualized by focusing on his diet) to that of a few months ago before he made a behavior change.

Some respondents made comparisons to their peers—friends, family, or acquaintances. In doing so, these respondents more or less attempted to standardize their potential range of health and make in their mind

⁵ Canfield et al 2003, page 10; Scanlon 2017, pages 6-7.

an accurate judgement. For instance, one respondent in her late 60s who answered “Very Good” using Version 1 compared herself to other older acquaintances and did not compare her health to younger people.

Other respondents made comparisons to more-or-less ideals—not real people they knew and interacted with, but rather their conceptions of “an average” person, a person dealing with a worse-case scenario, or the paragon of health. For example, one respondent who answered “Good” to Version 2 explained that he did not choose “Very Good” because he was overweight in comparison to “to other people in the general population.” Likewise, another respondent who answered “Fair” to Version 2 reported that they did not answer “Bad” because although he has a number of health conditions and is in extensive pain, someone who is in constant pain is worse off than him, so he did not feel it was accurate to answer lower. This phenomenon was particularly stark on the positive side of the scale, with a number of respondents expressing an inability to answer “Excellent” (in Version 1) or “Very Good” (in Version 2) because they felt like they did not meet the ideal of health. For instance, one respondent who answered “Good” explained that he did not believe that anyone could answer “Excellent” because he or she could always have better health and habits: “Excellent is a very high standard: no pain and great health. I’m just average, a normal person.” However, this respondent did not note any specific health problems or problematic health behaviors.

A few other respondents did not make explicit comparisons, and instead used more direct judgements. The most common of these appeared to be a heuristic based on the respondents’ in-the-moment perception of their health. These respondents tended to explain their health by saying that they ate well (or poorly), exercised a lot (or not enough), had or did not have health conditions, etc. However, unlike the respondents above who explicitly compared their current state to the past, these respondents appeared to have a scale of sorts in mind based on the construct they were considering and simply made a judgement based on that. For instance, one respondent who answered “Very Good” in Version 2 explained his answer by saying, “My blood pressure is very good, I don’t drink, I don’t smoke, I don’t do any drugs...I haven’t been sick in a long time.” Because he met all of these thresholds, he was able to choose the best answer category. Likewise, another respondent who received Version 2 and answered “Very Good” simply explained her response by saying, “I’ve always been a healthy person.”

Additionally, a few respondents explained that they based their answer directly on what a medical or healthcare professional has told (or has not) told them. For instance, one respondent who answered “Good” noted that a doctor recently told him his health was “above average,” which he figured equated to the “Good” answer category. Others noted that they were limited in how positively they could judge their health because they had never been explicitly told they had perfect health. For example, one respondent who received Version 2 and answered “Good” was asked why he did not use the “Very Good” category, even though he reported that he was a very healthy person. He explained that he had never “confirmed” his suspicions with a doctor, saying that without explicitly hearing it from his doctor, “You can’t be 100% sure.”

PROBE1 When you answered the previous question about your health, what did you think of?

Please select all that apply.

1. Your diet and nutrition
2. Your exercise habits
3. Your smoking or drinking habits
4. Your health problems or conditions
5. Your *lack of* health problems or conditions
6. The amount of pain that you have
7. Your ability to do daily activities without assistance
8. The amount of sleep you get
9. Your mental or emotional health
10. Other, please specify [Cognitive Interviews Only]

PROBE1 was administered to all respondents. This question is a probe designed to quantify the constructs captured by the previous question, PHSTAT. A similar question was tested for, and administered on, the second round of RANDS in 2016.⁶ This question was only administered in the second two rounds of cognitive interviewing and usability testing. Initially, the same form of PROBE1 that was administered on RANDS2 was used here. Throughout the iterative testing, some changes were made that led to the final version seen above.

The initial set of answer categories (“My diet and nutrition,” “My exercise habits,” “My unhealthy behaviors such as smoking or drinking habits,” “My health problems or conditions,” “The amount of times I seek health care,” “The amount of pain or fatigue that I have,” and “My conversations with my doctor”) caused some confusion and limited some responses. These problems stemmed from two separate issues: first, the initial set was both not inclusive enough to properly function as a close-ended construct probe, and second, the set was also too broad in that it included items that respondents understood to be asking about *how* they formulated their answer (i.e. their judgement) instead of *what* they were answering about (their interpretation).

In the first case, respondents expressed confusion over whether to include both the lack and presence of health conditions in the “My health problems or conditions” category. This was particularly the case for respondents who explained that they did not have any conditions. For instance, one respondent who eventually answered only using the first two categories (diet and exercise) explained that she did not have any health conditions, which did not seem to fit into the “problems or conditions” category. As such, a separate “...*lack of* health problems...” answer category was added. Similarly, a few respondents who did not drink or smoke felt uncomfortable with the phrasing “...unhealthy behaviors such as smoking and drinking,” believing that this category could not indicate a lack of those behaviors. The wording of this category was then changed to “...smoking or drinking habits,” which ameliorated this confusion in later interviews. Additionally, during the initial interviews that included PROBE1, some respondents used the “other” category to speak about 1) their ability (or lack thereof) to do household tasks or activities of daily living and 2) mental health issues (which some respondents did not believe should be lumped into the health problems or conditions category). These categories were added to the final version of the question.

The second broad issue with the initial set of answer categories was that it was not squarely focused on the comprehension stage of response (which is the intent of the probe), but rather also included some items that related more to the judgement step. Specifically, the answer categories about healthcare

⁶ Scanlon 2017, page 7. The previous version of this question included answer categories 1, 2, and 4, as well as variants of answer categories 3, 6 and 8.

seeking behavior and conversations with doctors were understood by respondents more in terms of how they formulated a response on the PHSTAT scale than in terms of specific aspects of their health. As such, these terms were removed from the list of PROBE1’s answer categories. After these changes were made, no respondents used the “other” category to speak about healthcare behavior or conversations with their provider, indicating that these edits did not negatively affect the functioning of this web probe.

PROBE2

PROBE2 was administered to all respondents. In an attempt to better understand the interpretation and judgement behind the ways respondents answer the self-rated health question (PHSTAT), the decision was made to include direct probes about specific aspects of the respondents’ health. This is conceptually in contrast to the indirect probe (PROBE1, above), which follows a more traditional format for close-ended web probing by providing respondents a list of answer categories and instructing them to select all that apply. By including both an indirect probe and a set of direct probes, the goal was to be able to better understand which aspects of health are, and are not, salient when judging their response to PHSTAT.

Two versions of PROBE2 were considered for inclusion in the final RANDS questionnaire. Version 1 asked respondents to directly categorize various aspects of their lives on an Excellent/Very Good/Good/Fair/Poor five-point scale (identical to Version 1 of PHSTAT, which is used on the NHIS). Version 2 instead asked respondents to indicate their agreement (on a four-point scale) to statements about the same aspects of their health. Following the analysis of the first two rounds of cognitive interviewing, Version 1 was dropped in favor of Version 2. In general, respondents who received Version 1 limited their answers to the middle answer categories, whereas Version 2 had a wider range of response. Additionally, no clear distinction between Excellent and Very Good, and Very Good and Good, emerged across the respondents who received Version 1; on the other hand, respondents who received Version 2 appeared to similarly understand the difference between Strongly Agree (or Disagree) and Somewhat Agree (or Disagree).

PROBE2_A

Version 1 How would you rate your diet and nutrition?

- 1 Excellent**
- 2 Very Good**
- 3 Good**
- 4 Fair**
- 5 Poor**

Version 2 Please rate your agreement with the following statements: I have a healthy diet

- 1 Strongly Agree**
- 2 Somewhat Agree**
- 3 Somewhat Disagree**
- 4 Strongly Disagree**

Respondents universally understood this question to be asking about the quality of their diet and eating habits. The interpretation (and judgement of response) of this question centered upon the duality of “good” or “healthy” food or habits versus “bad” or “junk” food or habits. Upon further probing,

foodstuffs that respondents considered to be “good” included vegetables, fruits, grains, “clean” or unprocessed foods, and water; whereas “bad” foods included carbohydrates, chips, candy, sugar, and processed food. Meats were considered healthy by some respondents and bad by others. Across the cognitive interviews, respondents attempted to judge and weigh the amount of “good” versus “bad” foods when determining their answer.

Beyond weighing their healthy vs. unhealthy food intake, respondents also considered their overall eating habits. Respondents appeared to agree that eating balanced and home-cooked or self-prepared meals was healthy, while eating out at restaurants or eating quickly “on the go” was unhealthy.

PROBE2_B

Version 1 **How would you rate your exercise habits?**

- 1** **Excellent**
- 2** **Very Good**
- 3** **Good**
- 4** **Fair**
- 5** **Poor**

Version 2 **Please rate your agreement with the following statements: I get enough exercise**

- 1** **Strongly Agree**
- 2** **Somewhat Agree**
- 3** **Somewhat Disagree**
- 4** **Strongly Disagree**

Respondents understood this question to be asking about their physical activity habits. In doing so, they thought about exercise broadly—including both active exercise (i.e. working out and playing sports) and physical activities that were not purposely completed for exercise (i.e. walking to and from a destination, carrying heavy objects at work).

Most respondents limited their interpretation to the time of the survey; however, no reference period was provided, and a few respondents instead thought about a longer time period. For instance, one respondent noted that while she has very good exercise habits now, she used to have very bad ones about half a year ago because of a back injury. She felt like she was still regaining her strength, and answered “Poor,” even though she noted that she would have answered “Excellent” or “Very good” if she was only thinking about the present.

PROBE2_C and D

Version 1 **How would you rate your smoking or drinking habits?**

- 1** **Excellent**
- 2** **Very Good**
- 3** **Good**
- 4** **Fair**
- 5** **Poor**

Version 2 **Please rate your agreement with the following statements: I drink more than I should**

- 1** **Strongly Agree**
- 2** **Somewhat Agree**
- 3** **Somewhat Disagree**
- 4** **Strongly Disagree**

Please rate your agreement with the following statements: I smoke more than I should

- 1** **Strongly Agree**
- 2** **Somewhat Agree**
- 3** **Somewhat Disagree**
- 4** **Strongly Disagree**

Version 1 of this question asked about drinking alcohol and smoking together in the same question, whereas Version 2 asked about these separately. In either case, respondents almost universally understood “drinking” to refer to the consumption of alcohol and “smoking” to the use of tobacco cigarettes, cigars, and pipes. However, one respondent who received Version 2 (and answered “Somewhat agree”) thought that drinking referred to consuming all liquids and explained that he thought he drank too much water in the summertime such that it decreased the effectiveness of the various prescription medicines he takes.

A number of respondents who received Version 1 of the question expressed confusion over how they were to answer if they did not drink or smoke or felt their drinking habits were healthy. For instance, one respondent who eventually answered “Very good” reacted to the question by saying:

I don’t smoke and I drink very little. Like once every couple of weeks, a half glass of wine. So, I’m not sure what the answer to that would be.

Likewise, another respondent decided that he could not provide an answer at all, saying:

I don’t smoke; I don’t have *any* smoking habits. It doesn’t apply to me...What’s excellent or poor drinking habits? Does it mean you’re an excellent drinker?

This issue did not emerge in the Version 2 questions; however, since they asked specifically about drinking or smoking “more than I should.” For instance, one respondent who received Version 2 and answered “Strongly Disagree” explained that he never drinks alcohol, and therefore does not drink more than he should.

PROBE2_E

Version 1 **How would you rate the amount of sleep you get?**

- 1** **Excellent**
- 2** **Very Good**
- 3** **Good**
- 4** **Fair**
- 5** **Poor**

Version 2 **Please rate your agreement with the following statements: I'm satisfied with my sleep**

- 1** **Strongly Agree**
- 2** **Somewhat Agree**
- 3** **Somewhat Disagree**
- 4** **Strongly Disagree**

Respondents understood this question to be asking about the quality and quantity of their sleep. Respondents who received Version 1 tended to focus on the quantity of sleep, and in particular throughout about sleep at night. Respondents who received Version 2 considered both how much sleep they got (again, focusing on nighttime sleep) and how good that sleep was (i.e. how restful they felt afterward).

PROBE2_F

Version 1 **How would you rate yourself in terms of your health problems or conditions?**

- 1** **Excellent**
- 2** **Very Good**
- 3** **Good**
- 4** **Fair**
- 5** **Poor**

Version 2 **Please rate your agreement with the following statements: I don't have any major health problems or medical conditions**

- 1** **Strongly Agree**
- 2** **Somewhat Agree**
- 3** **Somewhat Disagree**
- 4** **Strongly Disagree**

Respondents understood this question to be asking about conditions and illnesses. Both acute conditions (i.e. injuries), chronic conditions (i.e. heart disease), and acute illnesses (a recent bout of the flu) were mentioned by respondents. A similar issue as noted above for the Version 1 drinking/smoking question emerged here as well: namely that respondents who had no health conditions were unsure how to answer the question. However, as seen above, this did not occur in Version 2 where respondents were asked specifically about the presence of health conditions.

PROBE2_G

Version 1 **How would you rate yourself in terms of pain?**

- 1** **Excellent**
- 2** **Very Good**
- 3** **Good**
- 4** **Fair**
- 5** **Poor**

Version 2 **Please rate your agreement with the following statements: I frequently experience pain**

- 1** **Strongly Agree**
- 2** **Somewhat Agree**
- 3** **Somewhat Disagree**
- 4** **Strongly Disagree**

Respondents who received Version 1 of the question understood it to be asking about their frequency or intensity of pain. For instance, one respondent who answered “Very Good” was thinking specifically about intensity and noted that she has some cramping from a prescription medication and has a bone bruise, but that “it’s not major” and “it’s not bad.” On the other hand, a respondent who answered “Excellent” noted that he was not in chronic pain, and that he would only feel pain on a “day-to-day basis,” not constantly.

Additionally, as seen above with the Version 1 questions regarding drinking, smoking, and health conditions, a few respondents who had no pain were unsure of what to answer. For instance, one respondent decided that since he had no major pain, he could provide a response:

I don’t know how to answer that. My pain is fair? It’s out of context. I don’t have any pain. How can I rate it, if I don’t have any pain? Pain is subjective...

Version 2, on the other hand, asked respondents whether they agreed that they “frequently experience pain.” Following this wording, respondents mostly interpreted pain in this version only in terms of frequency. Furthermore, respondents who noted they had no (or rarely had) pain did not express confusion over how to respond.

PROBE2_H

Version 1 **How would you rate your ability to do daily activities without assistance?**

- 1** **Excellent**
- 2** **Very Good**
- 3** **Good**
- 4** **Fair**
- 5** **Poor**

Version 2 **Please rate your agreement with the following statements: I'm able to perform my daily activities independently**

- 1** **Strongly Agree**
- 2** **Somewhat Agree**
- 3** **Somewhat Disagree**
- 4** **Strongly Disagree**

Both versions of PROBE2_H captured similar constructs and were judged similarly across the cognitive interviewing sample. Respondents considered activities such as the ability to do household (i.e. cleaning, yardwork), self-care (i.e. grooming, the ability to bathe oneself), and social (errands, activities with friends) tasks when answering the question. Respondents answered at the positive end of either scale if they felt like they were generally or always able to do the tasks they considered and used the negative end of the scales the more they believed they were limited in doing the tasks they wanted and needed to do.

PROBE2_I

Version 1 **How would you rate yourself in terms of how frequently you get sick?**

- 1** **Excellent**
- 2** **Very Good**
- 3** **Good**
- 4** **Fair**
- 5** **Poor**

Version 2 **Please rate your agreement with the following statements: I get sick more often than other people**

- 1** **Strongly Agree**
- 2** **Somewhat Agree**
- 3** **Somewhat Disagree**
- 4** **Strongly Disagree**

Respondents across both versions of Question PROBE2_I largely considered acute illnesses, with most people mentioning colds and the flu. No respondents considered chronic illnesses or conditions. Respondents who answered Version 1 did not clearly differentiate between the first three answer categories—with some respondents who reported that “I never get sick” answering “Excellent” while others used “Very Good” and “Good.” A few of these respondents explained that they felt like they could not report “Excellent” if they had *ever* been sick, but this was not universal.

- RX12M** **At any time in the PAST 12 MONTHS, did you take prescription medication?**
1. **Yes**
 2. **No**

RX12M was administered to all respondents.

Respondents generally understood this question to be asking about all types of prescription drugs for which they had been instructed by a doctor or health professional to take in the last year; however, some clear false negatives emerged. This appeared to be due to framing effects. In the initial rounds of testing, this question was administered directly following a series of questions on pain (see CHPAIN6M/PAIN_2, PAINLMT3/PAINLMT6, and PAIN_4 below). With this framing, some respondents believed that Question RX12M was only asking about prescription pain medication, and not about all prescriptions. For example, one respondent who eventually answered “Yes” but initially said “No” explained that the only medication she was on was blood pressure medicine. After the question was re-read, this respondent explained that she originally thought that she was only supposed to include pain pills, but decided that this was not the case and asked to change her answer.

In the final round of testing (as well as on the final survey questionnaire), this question was asked at the beginning of the survey after only the general health questions. This removed the framing effect of the pain questions, and subsequently, all respondents in this last round understood the question to be asking about all prescriptions and not just about pain medication.

Chronic Condition Section

Respondents answered the chronic condition questions (including items on whether or not they had ever been diagnosed with hypertension, high cholesterol, asthma, diabetes, and chronic lung conditions) in a relatively standard way. As discussed in previous evaluation findings, respondents generally consider either whether or not they have received an “official” diagnosis of a condition from their health care provider or whether or not they have symptoms they relate to the chronic condition under question.⁷ Additionally, a few respondents simply based their answers on their perception of their own good health—explaining that since they were in good health, they did not have a chronic condition. These three patterns of interpretation are illustrated below:

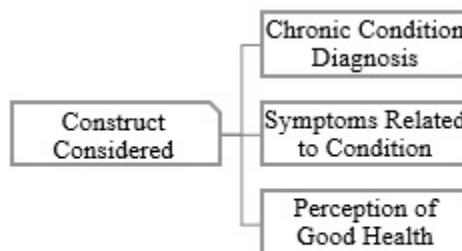


Figure 2: General Patterns of Interpretation for Chronic Condition Items

⁷ Scanlon 2017, pages 30-32.

One finding that emerged across the chronic condition questions relates to a possible source of response error. In questions asking about chronic conditions with more medical or technical names (i.e. asthma, diabetes, and chronic obstructive pulmonary disease), the only “Yes” responses came from respondents who considered whether or not they had received an “official” diagnosis of the condition from a healthcare provider, as shown below (with the survey responses that each pattern of interpretation led to shown in the ovals to the right):

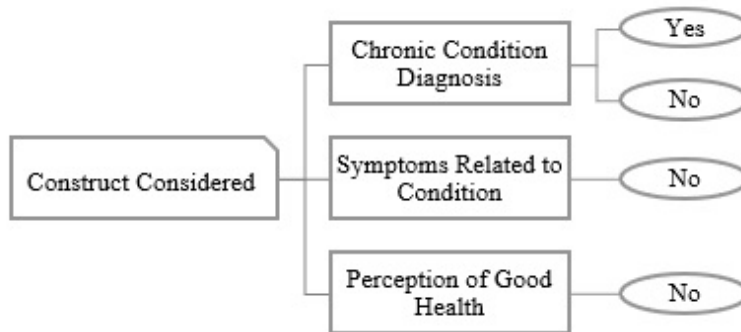


Figure 3: Patterns of Interpretation and Survey Responses for Chronic Condition Items that Use "Medical" Terminology

However, in the items asking about chronic conditions that use less technical and more vernacular terms (e.g. hypertension/high blood pressure and chronic lung conditions), some respondents answered “Yes” and based their response solely on whether or not they had ever received either an elevated cholesterol reading or had experienced symptoms related to lung problems (as shown below in Figure 4). Throughout the cognitive interviews in this evaluation, none of these respondents had actually been diagnosed with either high cholesterol or a chronic lung condition, making their responses false positives. More work is needed in future rounds of question evaluation to refine this issue; however, it does indicate that the term used for the chronic condition is meaningful.

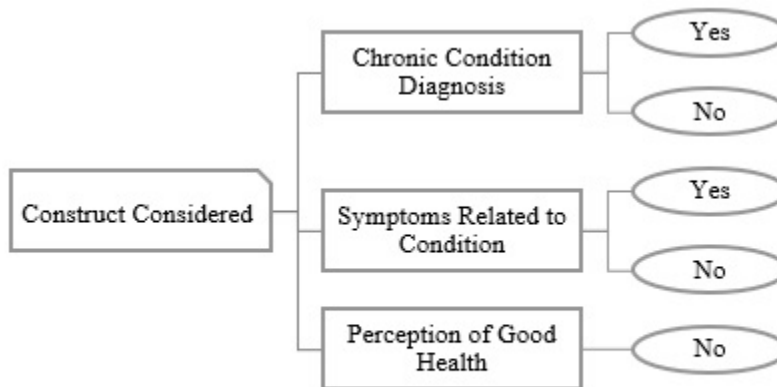


Figure 4: Patterns of Interpretation and Survey Responses for Chronic Condition Items that Use Vernacular Terminology

HYPEV Have you ever been told by a doctor or other health professional that you had hypertension, also called high blood pressure?

1. Yes
2. No

HYPEV was administered to all respondents.

Most respondents understood this question to be asking about whether or not they had ever been diagnosed with chronic high blood pressure or hypertension. A few individual cases of response and interpretive error emerged, consistent with previous evaluations of this question.⁸

Most respondents understood the question to be asking about receiving a formal diagnosis. For instance, one respondent who answered “No” explained that he had been told that he had elevated blood pressure while on an extended course of prednisone. His doctor told him to watch out for some warning symptoms, but when he got off the steroids his blood pressure returned to normal. This respondent decided that since he was never officially diagnosed, he should not answer this question in the affirmative. However, following the discussion above about chronic condition questions that use more vernacular terms (in this case, “high blood pressure”) one respondent did the opposite. He answered “Yes,” explaining that he was currently being monitored by his healthcare providers for high blood pressure since he had a high reading at a recent appointment. However, upon further probing, this respondent revealed that he had not yet been given an official diagnosis of hypertension, and that the point of the monitoring was so the doctors could make that conclusion.

Two other errors emerged. The first was an interpretive error that did not (in this case) result in response error. One respondent explained that she believed that this question was asking about “being uptight about something,” not about a medical diagnosis. Upon further probing, this respondent noted that she had never been told she had high blood pressure or hypertension, so this was not a response error in the end. However, another respondent who answered “No” explained that he was thinking about “hyperactivity,” which he explained as, “hyperactivity is like kids’ [behavior]. A lot of nervous energies. But I’ve never correlated that with high blood pressure.” This respondent reported that he was constantly told that he had high blood pressure by his doctors. However, he did not know the term “hypertension” and thought that he was being asked about “hyperactivity,” which he had heard about. In this case, the interpretative error also led to a false negative response error.

PROBE9 How did you define hypertension?

1. **A feeling when you are stressed or overwhelmed**
2. **A medical condition when a medical professional tells you that you have chronic high blood pressure**
3. **A medical condition when a medical professional tells you that you have had one or two high blood pressure readings**
4. **Something else, please specify [Cognitive Interviews Only]**

PROBE 9 was administered to all respondents.

Given the potential for misinterpretation of the term “hypertension” noted above, as well as that found in previous cognitive interviewing projects, PROBE9 was developed in order to understand the distribution of measurement error. The three answer categories emerged as patterns of interpretation in this and previous projects, and a “Something else” category was included in order to determine if other patterns

⁸ Beatty 2006, Question BPQ.020; Scanlon 2017, page 32.

would emerge. Respondents all appeared to understand the answer categories as intended, and no other patterns emerged. For instance, the respondent who misinterpreted HYPEV as “being uptight about something” selected the first answer category when administered this question.

HYPDIF_A Were you told on two or more different visits that you had hypertension, also called high blood pressure?

1. Yes
2. No

HYPDIF_A was not administered during cognitive testing, though it was included in the final RANDS 3 web survey questionnaire and was included in the final round of usability testing. In that round, one respondent received the question. No cognitive findings are available.

HYPYR During the past 12 months, have you had hypertension, also called high blood pressure?

1. Yes
2. No

(Please note that on the final RANDS web survey questionnaire, HYPDIF_A was administered to respondents who answered “Yes” to HYPEV following PROBE9; only respondents who answered “Yes” to HYPDIF_A received HYPYR on the web survey. This skip logic matches the production NHIS for 2019. In the cognitive interviews, however, all respondents who answered “Yes” to HYPEV went on to receive HYPYR.)

HYPYR was administered to the 16 respondents who answered “Yes” to HYPEV. Most respondents carried their interpretations forward from HYPEV, with most thinking about an official diagnosis of hypertension. However, as was the case in HYPEV, a few respondents thought about receiving or observing (if they took their blood pressure themselves at a store kiosk, for instance) a high blood pressure reading. For instance, one respondent who answered “Yes” explained that he has had elevated readings the last few times he visited his medical provider, but that they are just “monitoring the situation” and no official diagnosis had been given.

A few respondents who answered “Yes” noted that they had not actually had a high blood pressure reading recently (and one respondent said that he had not had one in the past 12 months), but that they were taking blood pressure medicine. These respondents figured that since their doctor continued the prescription, that they still “officially” had hypertension, even if it was not showing up on their blood pressure readings.

HYPMED2 Are you now taking any medicine prescribed by a doctor for your high blood pressure?

1. Yes
2. No

The 16 respondents who received HYPYR also received HYPMED2. All respondents understood the question to be asking whether or not they were currently taking prescription medicine specifically to lower their blood pressure.

- CHLEV** **Have you ever been told by a doctor or other health professional that you had high cholesterol?**
- 1. Yes**
 - 2. No**

Respondents understood this question in two ways: some respondents basically carried over their interpretation from HYPEV and considered whether or not they had been “diagnosed” with high cholesterol; other respondents simply considered whether or not they had ever been told they had an elevated cholesterol reading:

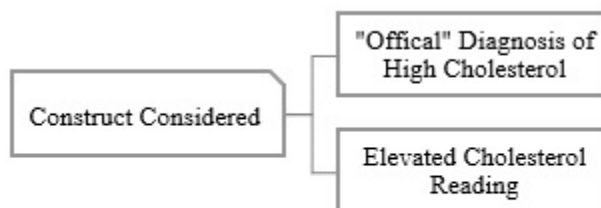


Figure 5: Patterns of Interpretation of CHLEV

For instance, one respondent who focused on the diagnosis answered “Yes” explained that she had been
 ...diagnosed with both the [high] blood pressure and cholesterol at the same appointment...about 18 months ago. They gave me meds for both, and I’m still on them.

On the other hand, respondents who were just thinking about their test results did not mention getting an “official” diagnosis at all. For example, one respondent who answered “Yes” explained that a “long time ago” one of his cholesterol tests came back high, and that his doctor told him to

...manage it with a better diet and with exercise...he never put me on anything, and it was lower the next time [he had a cholesterol test].

In practice, it does not appear that these two interpretations lead to different outcomes, as all the respondents who focused on the diagnosis had either been or not been told they had a high reading; all respondents who thought specifically about readings had been told the results by a doctor or other medical professional. No instances of error in either interpretation emerged.

These findings match an earlier evaluation of this question.⁹

- CHLYR** **During the past 12 months, have you had high cholesterol?**
- 1. Yes**
 - 2. No**

The 18 respondents who answered CHLEV “Yes” went on to receive CHLYR. Respondents carried their interpretations from CHLEV forward into CHLYR: the respondents who considered an “official

⁹ Maitland, Beatty, and Choi 2006, page 44. Please note that the version evaluated in this previous work also included the term “high triglyceride level,” which has been dropped from the standard version of the question in the intervening time.

diagnosis” of high cholesterol previously based their answer on that in this question; respondents who just thought about having an elevated cholesterol reading in CHLEV used that in this question as well. For instance, the respondent who answered “Yes” thinking about a high reading “a long time” that his doctor told him to manage via an improved diet answered this question “No” since his readings went down after that.

Respondents all appeared to understand the reference period of the past 12 months, and no instances of response error emerged.

CHLMDNW2 Are you now taking any medication prescribed by a doctor to help lower your cholesterol?

1. Yes
2. No

The same 18 respondents who received CHLYR went on to receive CHLMDNW2. Respondents universally understood this question to be asking about whether or not they were on prescription medication designed to lower their cholesterol. Respondents who had been instructed by their doctor to make behavioral changes—such as getting more exercise or eating a different diet—but were not prescribed drugs all answered “No” even though they had been told to do something related to lowering their blood pressure by their health providers. For instance, one respondent who answered “No” explained his answer by saying, “[The doctor] just told me to change my diet.”

AASMEV Have you ever been told by a doctor or other health professional that you had asthma?

1. Yes
2. No

Respondents generally understood this question to be specifically asking about whether or not a doctor had ever given them an official diagnosis of asthma, a finding that corresponds to previous evaluations of this question.¹⁰ Most respondents clearly differentiated between the symptoms and the diagnosis of a lung condition and based their answer solely on the latter. For instance, one respondent who answered “No” explained that although she had “...been experiencing strange breathing-type things lately, I’ve never been told it’s asthma.” Likewise, another respondent who answered “No” explained that his doctor had given him a series of inhalers about four-to-five years prior as he was having a hard time keeping his breath while walking up stairs. However, the doctor never told him that he had asthma, and instead insinuated that the issues were “...because I’m a smoker.”

One respondent answered “Don’t know” and explained that he has been officially diagnosed with chronic bronchitis, but that his symptoms apparently did not exactly match that condition. One of his doctors—his pulmonologist—suggested that he may have asthma, but inhalers did not have any affect. His doctors

¹⁰ Maitland, Beatty, and Choi 2006, page 32 and 33. Note that the question evaluated in this project did not use the “by a doctor or other health professional”; Scanlon 2017, page 36.

are still unsure, and think that it may be asthma, but since they have not fully determined this respondent was unsure of what to answer.

Respondents appeared to understand the reference period of “ever;” respondents who reported that they no longer had asthma, but who had at some point in the past been diagnosed, answered the question “Yes.”

AASSTILL Do you still have asthma?

- 1. Yes**
- 2. No**

Fourteen respondents answered AASMEV “Yes” and went on to receive AASSTILL. Respondents carried their interpretations forward from AASMEV and considered whether or not they have been told by a doctor that they still have asthma. Some respondents considered whether they have been affirmatively told by their doctor that they still have it—for instance, one respondent answered “No” and explained that he was diagnosed five years ago, but a year later he was re-evaluated, and his doctor said that he no longer had asthma.

Other respondents focused more on whether or not they still had and used (or were still prescribed) medicines or inhalers. For example, one respondent who answered “No” explained that she was diagnosed as a child and outgrew the condition, noting that she now runs track without having to use an inhaler. On the other hand, another respondent answered “Yes” and said that she was thinking about “If I still get winded a lot. I always have [my inhaler] right here, and I still have to sometimes take a squirt.”

These findings correspond to previous evaluations of this question.¹¹

AASSMYR During the past 12 months have you had an episode of asthma, or an asthma attack?

- 1. Yes**
- 2. No**

The five respondents who answered AASSTILL “Yes” went on to receive AASSMYR. All five of these respondents understood the question to be asking about whether or not they had an asthma attack in the past year, corresponding with the findings from a previous evaluation of this question.¹²

¹¹ Maitland, Beatty, and Choi 2006, page 33. Please note that the specific wording of this question was “Do you still have it?” in reference to the previous question about whether a respondent was diagnosed with asthma; Scanlon 2017, page 36

¹² Scanlon 2017, page 37.

AASSMERYR During the past 12 months have you had to visit an emergency room or urgent care center because of asthma?

1. Yes
2. No

The same five respondents who received AASSMYR went on to receive AASSMERYR. These five all considered whether or not they had been to an ER or an urgent care clinic due to their asthma, matching previous evaluations of this question.¹³ One respondent said “Yes,” though they expressed some confusion. This respondent noted that they had an asthma attack while on vacation and went to see the on-call doctor at the foreign resort they were staying at. At first, this respondent was not sure whether or not this should count for AASSMERYR, but decided that it would because 1) it was an urgent situation and 2) were he home in the United States at the time, he would have gone to an urgent care clinic.

PREDIB Has a doctor or other health professional ever told you that you had prediabetes or borderline diabetes?

1. Yes
2. No

Most respondents understood PREDIB to be asking about whether they had ever been diagnosed with pre- or borderline diabetes. Consistent with prior evaluations of this question, respondents largely considered both pre- and borderline diabetes to be similar and conceptualized them as initial diagnoses that served as a warning for them to modify their health behaviors.¹⁴ For example, one respondent (who answered “No”) succinctly defined what she was considering by saying:

It’s sugar management levels trending towards needing assistance with managing sugar levels. So, it’s more preventative—and opportunity to get sugar levels under control without taking a pill or insulin inulin.

This question followed the same pattern as the other “medical” terminology chronic condition questions (see Figure 3 above), wherein the only people to consider only symptoms or test results (as opposed to also considering whether or not a healthcare provider provided an “official” diagnosis) answered the question “No.” For instance, one respondent explained her no response by noting that she had a blood sugar test a few weeks before the interview and “my sugar levels were fine.” Likewise, another respondent who only thought about the results of a test and answered “No” explained that he was thinking about “...something that is almost diabetes, or on the verge of diabetes...my blood sugar has always been perfect.” Upon further probing, this respondent revealed that to him “perfect” was below the level that triggered a concern about diabetes.

All the respondents who answered “Yes” considered whether they had been explicitly given a diagnosis by their doctor. For instance, one respondent who was diagnosed years ago when growing up in an African country with prediabetes, which he understood as a high propensity to develop full-fledged diabetes. This respondent noted that he does not remember ever having a high blood sugar reading, and his doctors in the United States had never confirmed the initial diagnosis or re-diagnosed him. Another respondent who answered “Yes” explained that while she was trying to quit smoking cigarettes, she began

¹³ Scanlon 2017, page 37.

¹⁴ Dunston et al 2016, page 15; Scanlon 2017, pages 38-39.

eating a lot more candy—as a result her blood sugar increased, and her doctor told her to cut out the candy. She explained to her doctor that it was due to her smoking cessation, but he still diagnosed her with prediabetes (she went on to reduce her candy intake and was never subsequently diagnosed with diabetes).

One respondent, who answered “Yes” appeared to not understand that a diagnosis of prediabetes/borderline diabetes was separate than a diagnosis of diabetes. When asked to explain his “Yes” answer to PREDIB, this respondent explained that when he did some pre-surgery bloodwork a few years ago, it returned a high level of blood sugar, and he was subsequently told he had pre-diabetes by his doctor. However, upon explaining his “Yes” answer to DIBEV (see below), this respondent told the exact same story and indicated that he was actually diagnosed with diabetes following this high sugar reading in his pre- surgery bloodwork.

GESDIB Has a doctor or other health professional ever told you that you had *gestational diabetes*, a type of diabetes that occurs only during pregnancy?

1. Yes
2. No

The eighteen female respondents received GESDIB. This question was not probed extensively, and no cognitive findings are available. This question has been previously evaluated by NCHS.¹⁵

DIBEV Not including prediabetes or gestational diabetes, has a doctor or other health professional ever told you that you had diabetes?

1. Yes
2. No

Respondents largely understood this question to be asking about whether they had been either told by a doctor that they had diabetes or whether they had received any test results that indicated they had the condition. As with PREDIB and the other “Medical” terminology chronic conditions, respondents who used the latter interpretation all answered “No,” whereas all the respondents who answered “Yes” specifically considered whether they had received an “official” diagnosis from a healthcare provider.

Only one respondent who answered “No” to PREDIB went on to answer DIBEV “Yes.” In this case, the respondent noted that his parents ordered him an at-home blood sugar test to see if he was diabetic, as he was experiencing symptoms such as feeling constantly thirsty and having to urinate a lot. After the test came back indicating high blood sugar, he took the results to his doctor who confirmed the test and officially diagnosed him. He explained that he was never told that he had prediabetes, but rather that he “skipped right to diabetes.”

A few respondents indicated confusion or frustration when they received this question, indicating that they thought they had already answered it. For instance, one respondent in the usability round said “Did I skip answering that? Hmm, I must have” when she received DIBEV. These respondents appeared to

¹⁵ Willson 2007, page 18; Dunston et al 2016, pages 24-25.

believe that they had already answered the question when they responded to the previous questions on pre-diabetes and/or gestational diabetes.

These findings confirm previous evaluations of this question; more detailed analyses of this item are available in these projects' reports.¹⁶

DIBAGE **How old were you when a doctor or other health professional first told you that you had diabetes, not including prediabetes or gestational diabetes?**
1. [Open Response]

The five respondents who answered DIBEV “Yes” went on to receive DIBAGE. This question was not probed extensively, and no findings are available. NCHS conducted previous analyses of this question, and the findings are available in their reports.¹⁷

DIBPILL **Are you now taking diabetic pills to lower your blood sugar? These are sometimes called oral agents or oral hypoglycemic agents.**
1. Yes
2. No

The same five respondents who received DIBAGE went on to receive DIBPILL. They all understood the question to be asking about whether or not they took oral medicine to control their diabetes at the time of the interview. Prescriptions such as metformin and Glucophage (a specific brand name of metformin) were mentioned. One respondent who answered “No” explained that while he was prescribed metformin, as of the time of the interview he was not taking the medicine, as he was trying to see if he could manage his diabetes without the pills. Previous evaluations of this item found similar patterns of interpretation and judgement.¹⁸

Usability

No usability issues emerged with the web version of DIBPILL during testing.

DIBINS **Insulin can be taken by shot or pump. Are you now taking insulin?**
1. Yes
2. No

¹⁶ Dunston et al 2016, pages 15-16; Scanlon 2017, pages 37-38.

¹⁷ Dunston et al 2016, pages 18-19; Scanlon 2017, page 39.

¹⁸ Dunston et al 2016, page 21; Scanlon 2017, page 40

The five respondents who received DIBAGE and DIBPILL also received DIBINS. All comprehended this question to be asking whether or not they were taking insulin at the time of the interview. The interpretation of this question corresponded to what NCHS has found through previous evaluations.¹⁹

DIBTYPE According to your doctor or other health professional, what type of diabetes do you have? Is it type 1, type 2, or some other type? If you don't remember or weren't told, that's OK.

1. Type 1
2. Type 2
3. Other type of diabetes
4. Don't Know

This question was added to the questionnaire prior to the usability round of cognitive interviewing (and was administered on the final web survey). Only the three respondents in this final round who answered “Yes” to DIBEV received DIBTYPE. It was not probed systematically, and no findings are available. A similar question has been evaluated previously for both RANDS and for the NHIS.²⁰

NEWLUNG Have you ever been told by a doctor or other health professional that you have Chronic Obstructive Pulmonary Disease, COPD, emphysema, or chronic bronchitis?

1. Yes
2. No

The 2019 NHIS labels this question “COPDEV”.²¹ Previous years of the NHIS also included a question labeled “COPDEV” that only asked about Chronic Obstructive Pulmonary Disease (COPD) and not about emphysema or chronic bronchitis, which were asked about separately. RANDS2 examined the potential of asking about all three of these at once, since chronic bronchitis and emphysema are included in a diagnosis of COPD. The question name used in this report (“NEWLUNG”) is an artifact of the previous evaluations that NCHS used to refine this item.²²

Respondents either considered whether or not they had ever received a formal diagnosis of any of the three lung-related conditions, or they considered whether or not they ever had severe symptoms that they perceived as being indicative of the three conditions. Following the general pattern discussed above for chronic condition questions that use medical terms (see Figure 3), the only “Yes” answers emerged from respondents who considered whether or not they had a formal diagnosis, whereas respondents who focused only on symptoms all answered “No.”

Of the two respondents who answered “Yes,” one appeared to be a case of response error. When asked to explain why she answered the way she did, this respondent explained that she had been told she had

¹⁹ Dunston et al 2016, pages 21-22; Scanlon 2017, page 40

²⁰ Dunston et al 2016, pages 19-20; Scanlon 2017, page 40. The item in this evaluation was named “PROBE9.

²¹ See page 152 in the 2019 NHIS questionnaire, available at:

[ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2019/EnglishQuest.pdf](http://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2019/EnglishQuest.pdf)

²² Scanlon 2017, pages 33-35 and 41-42.

bronchitis: "...Chronic bronchitis, yes that. I was told years ago that I had that." However, after being administered the two follow-up probes to this question (PROBE13 and PROBE14, see below) it emerged that she only had the symptoms related to bronchitis for a week or so. In PROBE 13, this respondent marked both "Chronic bronchitis" and "Bronchitis" and when asked explained that she was not quite sure which she had. These additional data points indicate that the respondent probably had acute, and not chronic, bronchitis.

PROBE13 Which condition were you told you had?

Please select all that apply.

1. COPD
2. Emphysema
3. Chronic Bronchitis
4. Bronchitis
5. Something else, please specify.

Only two respondents received PROBE13, so extensive findings are not available. In both these cases, the respondents were able to select the conditions they believe they had. As noted above, in the case of response error to NEWLUNG, PROBE13 was effective in that the respondent selected "Bronchitis" as the condition they were told they had.

PROBE14 Thinking about the most recent time you had symptoms of Chronic Obstructive Pulmonary Disease, COPD, emphysema, or chronic bronchitis, how long did the symptoms last?

1. Less than one week
2. One week to less than one month
3. One month to less than three months
4. Three or more months

Only two respondents received PROBE14, so extensive findings are not available. Both respondents were able to select an answer category that they believed accurately reflected how long their symptoms lasted. In the case of response error to NEWLUNG described above, the respondent chose "Less than one week," indicating that PROBE14 (in combination with PROBE13) can be used to determine the amount of response error to NEWLUNG.

Opioid Pain Reliever Section

A series of questions on opioid use were included on the RANDS questionnaire in order to build upon previous CCQDER work on the topic. A full report on CCQDER's evaluation of the opioid use (as well

as misuse and disorder) questions that includes the data from the RANDS evaluation will be available on CDC's Q-Bank soon. As a result, specific question-by-question findings will not be reported here.²³

OPIOID1 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.

1. Yes
2. No

OPIOID2 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?

- | | |
|--|--|
| 1. Vicodin | 19. Kadian |
| 2. Lortab | 20. MS Contin |
| 3. Norco | 21. Morphine (generic) |
| 4. Zohydro ER | 22. Extended-release morphine (generic) |
| 5. Hydrocodone (generic) | 23. Duragesic |
| 6. OxyContin | 24. Fentora |
| 7. Percocet | 25. Fentanyl (generic) |
| 8. Percodan | 26. Suboxone |
| 9. Roxicodone | 27. Buprenorphine (generic) |
| 10. Oxycodone (generic) | 28. Buprenorphine plus naloxone (generic) |
| 11. Ultram | 29. Opana |
| 12. Ultram ER | 30. Opana ER |
| 13. Ultracet | 31. Oxymorphone (generic) |
| 14. Tramadol (generic) | 32. Extended-release oxymorphone (generic) |
| 15. Extended-release tramadol (generic) | 33. Demerol |
| 16. Tylenol with codeine 3 or 4 (NOT over-the-counter Tylenol) | 34. Dilaudid or hydromorphone |
| 17. Codeine pills (generic) | 35. Exalgo or extended-release hydromorphone |
| 18. Avinza | 36. Methadone |

OPIOID3 You said you took an opioid pain reliever in the past 12 months. Are you currently taking any opioid pain relievers?

1. Yes
2. No

OPIOID4 About how long have you been taking opioid pain relievers?

1. Less than a week

²³ This report will be updated electronically with the link to CCQDER's opioid report when it is available on Q-Bank.

2. 1 to 4 weeks
3. 1 to 6 months
4. 6 months to a year
5. 1 to 5 years
6. 5 years or more

OPIOID5 About how long were you taking opioid pain relievers?

1. Less than a week
2. 1 to 4 weeks
3. 1 to 6 months
4. 6 months to a year
5. 1 to 5 years
6. 5 years or more

OPIOID6 What were the reasons you took opioid pain relievers the last time?

Please select all that apply.

1. To relieve physical pain
2. To relax or relieve tension
3. To increase or decrease the effect(s) of some other drug
4. To feel good or get high
5. To help with my sleep
6. To help me with my feelings or emotions
7. Because I am “hooked” or I have to have them
8. For a suicide attempt or suicidal thoughts
9. Because of peer pressure, friends, or trying to feel cool

PROBE18 Please select the statements, if any, that apply to you:

1. I’m not sure what an opioid is
2. I have never taken an opioid pain killer in my life
3. I don’t like to take pills; I’m not a pill person
4. I have pain that requires me to take opioid pain killers
5. I use opioid pain relievers responsibly
6. I’m addicted, or used to be addicted to opioids
7. I understand the harm opioids can cause
8. I have heard about the opioid crisis in the news
9. I know someone who has been hurt by opioid pain killers
10. I have only taken opioid pills briefly to help recover from an injury or medical procedure

Affect Disorder Section

The affect disorder section contains four separate sets of questions—the Washington Group (WG) on Disability Statistics’ (WG) anxiety and depression questions (drawn from the WG’s Extended Set on Functioning²⁴), the Patient Health Questionnaire-8 (PHQ, a depression screening set, originally developed for a clinical setting), the Generalized Anxiety Disorder Scale (GAD, an anxiety screening set, also originally developed for a clinical setting), and the Kessler 6 (K6, a psychological distress screening set that until the recent redesign was on NHIS’ core set of questions). All respondents received the WG and K6 sets, whereas half the cognitive interviewing sample received the PHQ with the other half receiving the GAD. The decision to split the sample in this was due to both burden considerations and concerns about asking too many conceptually-similar questions on the questionnaire. In an effort to alleviate this last concern even further, the K6 set was administered near the end of the questionnaire and not sequentially following either the PHQ or the GAD. (However, for the purposes of clarity in this report, the question-by-question analysis of the K6 directly follows that of the GAD.)

- ANX_1 How often do you feel worried, nervous, or anxious?**
- 1. Daily**
 - 2. Weekly**
 - 3. Monthly**
 - 4. A few times a year**
 - 5. Never**

This question is part of the WG’s Extended Set on Functioning. (A similar question designed for proxy response is included on the WG’s Child Functioning Set.²⁵) This item (as well as its companion items ANX_2 and ANX_3) have been extensively evaluated, and the current evaluation confirms previous findings.²⁶ This question was only administered to the 17 respondents in the third round of testing.

Respondents all understood the question asking about the frequency of their feelings of nervousness or anxiety. As noted in previous analysis of this item, respondents considered a variety of specific feelings when answering this question, most of which (such as intense feelings of worry, normal feelings of anxiety that they perceive as common to everyone, feelings that negatively affect their ability to function, and diagnosed anxiety) are in scope. However, as seen in previous evaluations, a couple respondents did understand nervousness and anxiousness as a positive feeling that prodded them into action. For instance, one respondent who answered “Monthly” explained that he was thinking about coming up to deadlines at work, and how knowing these deadlines were approaching made him nervous, which in turn “forced” him to get work done.

- ANX_2 Do you take prescription medication for these feelings?**
- 1. Yes**
 - 2. No**

²⁴ See page 9 in http://www.washingtongroup-disability.com/wp-content/uploads/2016/01/WG_Extended_Question_Set_on_Functioning.pdf.

²⁵ See questionnaires and translations for different age groups at <https://data.unicef.org/resources/module-child-functioning/>.

²⁶ Massey et al 2014. Please note that the item analyzed in this report is a proxy report version of the question; Massey et al 2015, page 44-47; Scanlon 2017, pages 84-86

ANX_2 was only administered to the 13 respondents who answered something other than “Never” to ANX_1 in the usability round of testing. These respondents all understood the question to be asking about whether or not they took prescribed medicine for their feelings of anxiety. These findings match the previous evaluation of this question.²⁷

- ANX_3** **Thinking about the last time you felt worried, nervous, or anxious, how would you describe the level of these feelings?**
- 1. A little**
 - 2. A lot**
 - 3. Somewhere in between a little and a lot**

The same 13 respondents who received ANX_2 went on to receive ANX_3. This question was not probed extensively and no findings are available. This question has been evaluated previously, and those findings are available on Q-Bank.²⁸

- DEP_1** **How often do you feel depressed?**
- 1. Daily**
 - 2. Weekly**
 - 3. Monthly**
 - 4. A few times a year**
 - 5. Never**

- DEP_2** **Do you take prescription medication for depression?**
- 1. Yes**
 - 2. No**

- DEP_3** **Thinking about the last time you felt depressed, how depressed did you feel?**
- 1. A little**
 - 2. A lot**
 - 3. Somewhere in between a little and a lot**

The depression series (DEP_1 as well as its companion questions DEP_2 and DEP_3) are part of the Washington Group on Disability Statistics Extended Set on Functioning, just like the anxiety questions above. They have been evaluated extensively, and were not probed systematically during this evaluation. Previous findings are available on Q-Bank.²⁹

²⁷ Scanlon 2017, page 86.

²⁸ Scanlon 2017, page 87.

²⁹ Miller and Scanlon 2014, pages 25-29; Massey et al 2014. Please note that the item analyzed in this report is a proxy report version of the question; Massey et al 2015, pages 48-50.

PHQ **Over the last 2 weeks, how often have you been bothered by any of the following problems?**

- A. Little interest or pleasure in doing things**
 - B. Feeling down, depressed, or hopeless**
 - C. Trouble falling or staying asleep, or sleeping too much**
 - D. Feeling tired or having little energy**
 - E. Poor appetite or overeating**
 - F. Feeling bad about yourself — or that you are a failure or have let yourself or your family down**
 - G. Trouble concentrating on things, such as reading the newspaper or watching television**
 - H. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual**
-
- 1. Not at all**
 - 2. Several days**
 - 3. More than half the days**
 - 4. Nearly every day**

The Patient Health Questionnaire-8 (PHQ) is an eight-item scale designed to screen for depression and measure depression severity in American adults. It is a slightly shorter version of the PHQ-9, which itself was derived from a longer diagnostic questionnaire (the Primary Care Evaluation of Mental Disorders, or PRIME-MD).³⁰ While originally designed as a diagnostic tool for use in a clinical settings, some work has been done to validate its use on general population surveys.³¹ NCHS has not previously conducted a cognitive evaluation of this set of questions, and outside of a set of evaluations (exploring the utility of the PHQ-9 specifically) in the United Kingdom, it does not appear as though the scale has been subjected to rigorous cognitive testing.³²

Half of the cognitive sample received the PHQ (while the other half received the GAD, an anxiety scale described below). After the eight PHQ questions were administered, respondents (except those who answered “Not at all” to all eight of the items) received a question about how the problems they expressed during the scale questions made affected their lives.

Respondents expressed difficulty answering this set of questions, and not only noted confusion over what they were specifically being asked, but also struggled to map their responses onto the four answer categories.

(A) Little interest or pleasure in doing things

Respondents considered a variety of activities when considering this item, including being social with friends, going to a senior center, shopping, watching TV and movies, and playing outside. While all of these activities appear to be in scope, respondents understood this question in two very different ways;

³⁰ The PHQ-8 includes all the questions on the PHQ-9 except for the last item on the scale, “Thoughts that you would be better off dead or hurting yourself in some way (Not at all, Several days, More than half the days, Nearly every day),” see Kroenke, Spitzer, and Williams 2001.

³¹ Kroenke et al 2009. Please note that this work was conducted using the Behavioral Risk Factor Surveillance Survey (BRFSS), and the questions were adapted to match other BRFSS items. Notably, the answer categories were dropped in favor of asking respondents the “number of days” they experienced each feeling; the data was then back-coded into the original PHQ answer categories for analysis.

³² Malpass et al 2016; Robinson et al 2017

some respondents understood the question to be asking about their level of interest, whereas other respondents understood the question to be instead asking about their ability to do things they liked to do:

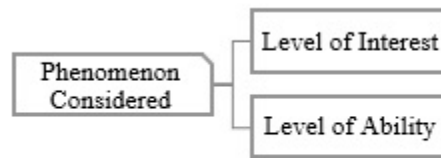


Figure 6: Patterns of Interpretation for the "... interest...in doing things" PHQ item

Respondents using the first pattern, which follows the question text, considered how often they lost interest in doing things they typically enjoyed. For instance, one respondent who answered “Nearly every day” explained that he was thinking about going to the community senior center and noted that he never really wants to go. He often forces himself to go, but he does not feel excited about doing that or anything.

Respondents who used the second pattern of interpretation did not consider their level of interest, but rather how often they were able to do things that interested them—in turn producing response errors. For example, one respondent who described himself as a “shopaholic” explained that he consistently lent money to family members, leaving himself with very little money to spend on shopping. He answered “Several days” explained that often when he wants to go shopping, he does not have the money to do so and instead ends up sitting at home and feeling “depressed.” Likewise, another respondent considered whether or not she had the money to go watch movies. She said she typically does not, and therefore answered “More than half the days.” In both of these cases, follow-up probing revealed that they were almost always interested in doing these activities (shopping and movie-watching, respectively); therefore, cases like these are instances of response error (as the correct answers appear to be “Not at all”).

(B) Feeling down, depressed, or hopeless

Respondents understood that, in general, this item was asking them about feelings of sadness and depression. However, there was not a clear interpretation about the level of sadness or depression that this question was asking about. Many respondents appeared to limit their interpretation to severe sadness, depression and feelings of hopelessness. For instance, one respondent who answered “Nearly every day” explained that she has lost six family members over the past five years and dealt with almost constant grief.

A few respondents, however, did not limit their interpretations to severe sadness or depression, and instead focused on the first part of the question text— “feeling down.” These respondents noted that everyone “felt down” occasionally and reasoned that because the question specifically asked about that, they should include the full range of sadness from mild to severe. For example, one respondent who answered “Several days” explained that he was thinking about the two to three days over the past two weeks that he felt sad or down. He went on to explain that “It’s normal to have [these feelings] everyone once in a while” and upon further probing confirmed that he was not thinking about severe depression or hopelessness, but just “feeling low” for a few hours.

(C) Trouble falling or staying asleep, or sleeping too much

In general, respondents comprehended this question as asking generally about their sleep habits and confined their interpretations to either lack of (trouble falling or staying asleep) or too much sleep. For

example, one respondent who answered “Several days” said that she was thinking about the weekends when she has no real reason to get out of bed: “The [senior center] doesn’t open until the afternoon, so I just stay in bed...I don’t get out of the house until around 3pm on the weekends.” This respondent understood the question to be asking how often she got too much sleep and determined that “Several days” was the best answer category to indicate the two weekend days.

A few respondents noted the apparent double-barreled nature of this item and expressed confusion or asked that the question be re-read. However, no respondents noted any difficulty in judging their response to the item—indicating that the dual-concept character of this question (asking about two separate sleep-related concepts) is not a problem.

One important aspect of the response to this question deals with the cause of the sleep issues respondents reported here. The PHQ is a depression screening tool; however, many of the respondents who answered “Several days” and more frequently explained that the cause of their sleep issues was due to a physical or external condition (and not related to depression or sadness). Among the respondents, issues such as ulcerative colitis, being on dialysis, working odd hours, and having a new kitten (who jumped on the respondent’s head during the night so that he would play) emerged. Additionally, one respondent noted that her sleep issues were related to “restless thoughts” (which, while related to affect, are typically more associated with anxiety than depression). Depending on the method used to calculate a PHQ score,³³ these non-depressive related sleep problems may result in an artificially high score and potentially false positive results.

(D) Feeling tired or having little energy

Respondents universally understood this item to be asking about how often they felt tired during the day or did not have enough energy to complete tasks. A number of respondents explained that this was a continuation of the previous item (about sleeping habits) and explained their answers by tying the two together. For example, one respondent who answered “More than half the days” to both items noted that in this question, he was thinking about a “low-level feeling of tiredness most days due to my sleeping issues.”

Similar to what was noted above with the sleeping item, many of the respondents who expressed that they experienced some exhaustion explained that it was related to physical conditions or external causes—again like chronic conditions or working late—that are not related to depression on their face. This could lead to an overestimation of depression when using the PHQ as a screening tool.

(E) Poor appetite or overeating

Respondents understood this item in a slightly different way than they did PROBE2_A above (where they focused broadly on whether or not they had a “good diet” and eating habits. Here, most respondents specifically considered whether they overate or lacked motivation to eat. One respondent who focused on the former, and who answered “Several days” explained that when he stays up late and snacks, he often does not feel like eating the next day. On the other hand, another respondent who answered “Nearly every day” noted “I overeat all the time!” However, this respondent explicitly tied her overeating to her weight—in effect says that because she was overweight, she *must* overeat: “If I can stand to lose weight, I’m assuming that I eat more than I need to eat.” When probed specifically about instances of overeating,

³³ Kroenke et al 2009. One method uses key indicators and would be less susceptible to potential false positives because of non-depressive sleep problems; however, the other method uses summing and a cut-off point (in this case a score of 10), which could more readily lead to false positives.

she noted that sometimes when she tries to diet, she'll go a few days eating very little and then "...eat everything" the next day.

As seen above in the sleep and exhaustion questions, most respondents counted any poor appetite or overeating—regardless of why they were doing it. So, for instance, the respondent above who snacked when he stayed up late (and then had a poor appetite the next day) did so because he worked late and not because of depression or any other affective condition. However, one respondent explicitly did not count overeating that he believed had nothing to do with depression. This respondent, who answered "Not at all" explained that he does in fact overeat, but not because of any health or affect issue:

A lot people who overeat do it because of one of the things that you've mentioned before [in the first 4 items of the PHQ scale]. But I overeat because I'm greedy, not because of depression or anything like that.

By interpreting the question to be specifically asking about overeating due to depression or affect, this respondent does in fact avoid the potential false positive issue mentioned above.

(F) Feeling bad about yourself — or that you are a failure or have let yourself or your family down

Respondents understood this item to be asking them how often they felt disappointed in themselves. However, the impetus of this disappointment ranged widely across the sample. On the lower end, one respondent who answered "Several days" explained that she was thinking about when she watches the news, she feels disappointed in herself that she does not do more to help her community and fix what she perceives as social ills. On the other end of the severity scale, another respondent who answered "Not at all" said that she was thinking about "...being hopeless, disappointing, or a failure."

(G) Trouble concentrating on things, such as reading the newspaper or watching television

Respondents universally understood this item to be asking about their ability to concentrate and how often they were distracted. For example, one respondent who answered "Not at all" explained her answer saying "My work is rather mindless and it's never an issue there. And I have no problem watching TV." Another respondent focused on the newspaper example and explained his "Several days" answer by noting that most of the time he can read through the paper in one go, but other times he gets "bored and just am not able to concentrate" and gives up.

(H) Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual

Some respondents had difficulty understanding this question, with a few asking for it to be repeated and expressing that they did not know or did not understand. For example, one respondent's immediate reaction to this question was to ask the interviewer, "What do you mean?" After re-reading the question this respondent said, "Not at all," deciding that the question was asking about her ability to physically move around and says that she "was neither too fast or slow."

Other respondents appeared to understand the question as asking about restless or lethargic movement. For instance, one person (who answered "Several days") explained that he was thinking about "almost ADHD behavior." Others thought about extended bouts of fidgeting or restlessness that affected their ability to do tasks. One respondent who also answered "Several days" explained that he was thinking about:

...being bored at fidgety during my three-hour group therapy meetings...I'll start moving around and twirling my chair and things like that to keep myself awake. I just feel restless.

Similarly, another respondent who answered “several days” said that she was thinking about not being physically fidgety, but rather about “restless thoughts” and the fact she is not able to focus on tasks and bounces from task to another without ever fully “being there” or mentally present. Other respondents thought about the lethargic end, such as one respondent (also answering “Several days”) who was thinking that “...lack of sleep affects the way I speak. Sometimes somebody might ask me to repeat again. I don't know if it's their hearing or my mumbling.”

Response Categories

Across all eight of the PHQ items, a number of respondents expressed difficulty mapping their responses to the answer categories provided. This was most apparent for people who wanted to express that something happened occasionally—more than absolutely never, but not enough to warrant “several” times. This confusion appears to stem from the fact that respondents believe “several” to be more frequent than implied by the scale responses. For instance, one respondent when answering the first item (who eventually answered “Several days”) specified that he believed that the answer category equaled “40 to 50% of the time” and that “More than half” equated to “almost every day.” Likewise, another respondent (who ended up answering “Not at all” for the first item) explained that he felt uninterested “once or twice” in the last two weeks, but that to him, “several” indicated “more than occasionally. This respondent expressed that if there was an answer category between “Not at all” and “Several days,” he would have used that.

This inconsistency occurred across PHQ items. For instance, in the second item asking about “feeling down, depressed, or hopeless” one respondent who used the “Several days” answer category explained that he was thinking about “two to three days over the past two weeks;” while another respondent understood “Several” to mean just “one or two days...but I don't think I can choose ‘none at all.’” Likewise, in the fourth item (about “feeling tired or having little energy”) one respondent explained that she though “Several” indicated “four or five days,” whereas another thought it meant “one or maybe two.”

- PHQIMP** **Altogether, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?**
- 1. Not at all difficult**
 - 2. Somewhat difficult**
 - 3. Very difficult**
 - 4. Extremely difficult**

The respondents who answered “Some days” or more frequently to at least one of the PHQ8 items went on to receive PHQIMP. This question is a standard item that is appended to the end of the PHQ-8 (or originally, the PHQ-9) in order to capture symptom-related difficulty.³⁴

³⁴ Kronke et al 2001.

Interpretation of the Construct

Respondents largely understood this question to be asking about the impact of the issues raised in the previous set of eight questions on their ability to function. However, they largely limited the scope of what they were considering to work or inter-personal interactions—things that they needed to do to get through life. They did not typically consider social or “fun” activities. For instance, one respondent explained his “Not at all difficult” answer by saying that his feelings of restlessness, fatigue, and inability to concentrate did not prevent him from accomplishing what he needed to get done in life. However, previously (in PHQ_A), this respondent explained that he often was too tired or restless to enjoy things he liked to do such as watch movies and bowl.

To this respondent and others this item was asking specifically about his ability to function (and not his ability to enjoy life). They therefore interpreted the question to be asking, “...did these problems stop you from working or getting along with people?” For instance, one respondent who answered “Some days” or “Nearly every day” to six of the PHQ-8 items answered this question “Not at all difficult” and noted that since she was retired, she did not have any real responsibilities for her difficulties to negatively impact (even though she certainly *felt* their impact day-to-day). Another respondent answered “Somewhat difficult” and explained that his sleep issues sometimes made it difficult for him to get through what he needed to accomplish at work.

Judgement of Response

Across all the respondents who received this question in the cognitive interviews used either the “Very difficult” or “Extremely difficult” answer categories; rather, all respondents answered either “Not at all difficult” or “Somewhat difficult.” Given the purposive sample used for the cognitive evaluation, it is possible that this is just an artifact of the particular group of people recruited for this project. However, upon analysis of the narratives, it appears as though some respondents may be used patterns of judgement that artificially lowered the maximum amount of impact they were willing to report. Specifically, these respondents normalized how they perceived the impact of the difficulties asked about in the PHQ set by either comparing their current situation to previous experiences or to a worse-case scenario.

In the first instance, respondents considered their lived experiences and placed their current situation somewhere along a scale of “worst I have experienced” to “best I have experienced.” In all the cases where this pattern emerged in the cognitive interviews, respondents judged that their current situation was better than, or equal to, what they had dealt with in the past. For example, one respondent who answered “Not at all difficult” explained that the sleep and appetite issues she dealt with (“More than half the days” and “Several days” respectively) were no worse than what she has always dealt with. She reasoned that although her experience may not be the norm for people her age, it was what she was used to so they did not have a large impact on her life: “I can still get work done and deal with people.”

A few other respondents judged their own situation against that of their peers or others who are going through similar things. For instance, one woman who answered “Somewhat difficult” explained that the emotional issues she was currently dealing with were probably typical for someone in her situation. She had lost six family members over the previous few years and was dealing with the resulting depression (and answered “Nearly every day” to the first two PHQ items and “Several days” to the third and fourth). However, when probed on why she used the relatively low rating of “Somewhat difficult” in this question, the respondent said “It’s normal to feel depressed due to loss. I’d be crazy to not be depressed. It’s just part of the grieving process that I need to get through.”

PROBE33 Which of the following statements, if any, describe your feelings of being sad or depressed?

Please select all that apply.

1. Sometimes the feelings can be so intense that I cannot get out of bed.
2. The feelings sometimes interfere with my life, and I wish that I did not have them.
3. I get over the feelings quickly.
4. Feeling that way is normal, and everyone feels that way sometimes.
5. I have been told by a medical professional that I have depression.

PROBE33 was administered to the same respondents who received PHQIMP. This probe was designed to capture the specific patterns of interpretation respondents used when answering the PHQ-8. This question was based on a similar structured probe used on the 2010 National Health Interview Survey in an effort to evaluate the Washington Group on Disability Statistics' Extended Set on Function.³⁵ The wording of the answer categories was based on the extensive cognitive evaluation work that went into the design of that set.³⁶ (The third answer category was not included in the 2010 NHIS test, and was added based on the findings of more recent cognitive interviews.)

Respondents understood that the probe asked about how they conceptualized the related feelings and problems asked about in the PHQ set. While most respondents had no issue mapping their response to at least one of the answer categories, two respondents expressed that they did not have any feelings of sadness or depression and were unsure how to answer. Both respondents were among those who answered some of the PHQ items thinking about external or physical causes (as opposed to anything relating to affect)—in other words, because of “false positives” on the PHQ, they skipped into PROBE33 and were therefore expressed confusion.

GAD Over the last 2 weeks, how often have you been bothered by any of the following problems?

- A. Feeling nervous, anxious or on edge
 - B. Not being able to stop or control worrying
 - C. Worrying too much about different things
 - D. Trouble relaxing
 - E. Being so restless that it is hard to sit still
 - F. Becoming easily annoyed or irritable
 - G. Feeling afraid as if something awful might happen
-
1. Not at all
 2. Several days
 3. More than half the days
 4. Nearly every day

³⁵ Loeb 2016, pages 115-118.

³⁶ Miller 2016.

The GAD-7, or Generalized Anxiety Disorder Scale, was originally developed for use in clinical settings to serve as a short assessment of Generalized Anxiety Disorder (GAD).³⁷ Like the PHQ scale above, there has been very little examination of the construct validity of the scale in a general population setting.³⁸ Little attention has been given to the individual items on the scale, though IRT analysis indicates that some of the items function better for individuals with high levels of anxiety (and correspondingly worse for respondents with low levels).³⁹ Furthermore, the individual items have not previously been qualitatively evaluated through cognitive interviewing. Like what was presented above with the PHQ-8, the analysis of the GAD-7 cognitive interviews reveal that respondents did not always limit their interpretations to internal issues, and instead considered a wide range of constructs when considering each of the problems in the scale.

(A) Feeling nervous, anxious or on edge

While a few respondents understood this question to be specifically asking about bouts of anxiety, most instead conceptualized it as asking about the results of daily events or about normal feelings. For example, one respondent who answered “Several days” explained that he was thinking about watching his son’s wrestling matches and feeling anxious because he does not want him to lose. Others thought about starting a new job or working at a low-paying job and being worried about their ability to pay bills. One respondent who also answered “Several days” explained that she was thinking about how watching the news made her feel (this interview took place during a period of increasingly heated rhetoric between the American and North Korean governments).

One respondent, who also answered “Several days” explained that thought that was part of the normal human condition to be nervous occasionally: “We are just human—sometimes we are not confident. It’s normal!”

(B) Not being able to stop or control worrying

Respondents did not appear to perceive much of a difference between GAD_A (asking about being “nervous, anxious, or on edge”) and GAD_B, which is reflected in the fact that respondents’ answers between the two did not differ greatly. Table 3 shows how the sub-sample of the respondents who received the GAD-7 questions answered these two questions (responses to GAD_A are in the columns; responses to GAD_B are in the rows):

Table 3: Proportion of Respondents’ Responses to both GAD_A and GAD_B

	Not at all	Several days	More than half	Nearly every day	DK/NA
Not at all	0.17	0.14	--	--	--
Several days	0.10	0.24	--	--	--
More than half	--	0.03	--	0.03	--
Nearly every day	--	--	--	--	--
Don’t Know/Missing	0.03	0.03	--	--	0.21

³⁷ Spitzer et al 2006

³⁸ Lowè et al 2008 used factor analysis to psychometrically validate the scale in a German general population using in-person interviewing on a representative household sample; Schalet et al 2014 conducted item response theory (IRT) confirmatory factor analysis on a series of general population, non-probability internet panel samples in the United States.

³⁹ Jordan, Shedden-Mora, and Lowè 2017.

For example, the respondent who explained her “Several days” in the first question by speaking about the anxiety she got from watching the news, also answered “Several days” to this item and again mentioned the news and said that she was thinking about “...apprehension. Like what shoe’s going to drop today? What shooting is going to happen today?”

A few respondents explained that they understood worry to be a common, normal feeling. In some cases, this interpretation led to confusion as respondents understood this series of questions to be asking about detrimental feelings and emotions, but since they did not consider their feelings of worrying to be bad, they were not sure how to answer. For instance, one respondent decided that she could not answer using the scale answer categories and instead responded “Don’t know.” When asked to explain, she said:

I don’t know how to answer that. You can’t never stop worrying. I’m always worrying about something. It’s hard not to worry...All of us worry about something, like health, or do we got enough money? Are we gonna eat this week...I don’t know? I worry every day, every other day. I don’t know.

Additionally, a couple of respondents interpreted “worrying” as a positive force (similar to the interpretation that emerged in the Washington Group anxiety question, ANX_1, explained above). For instance, one respondent answered “Several days” but characterized his worrying as productive and largely positive: “It’s good to worry about things, because then you get them done.” As an example, he noted that he got his taxes done early because he worried about missing the deadline and having to pay a penalty.

(C) Worrying too much about different things

Respondents again appeared to not perceive much of a difference between GAD_B and this item, GAD_C. 80% of the respondents who received these questions across the three rounds of cognitive interviews answered the question the same way, and nearly everyone used the exact same interpretations across both questions.

(D) Trouble relaxing

Respondents understood this question to be asking about their relaxation habits. However, the source of any problems relaxing was not consistent across respondents—while some respondents were thinking about their ability to relax their mind and let go of nervous energy, most respondents appeared to consider their capacity for relaxation, or whether or not they had the time or resources to relax:

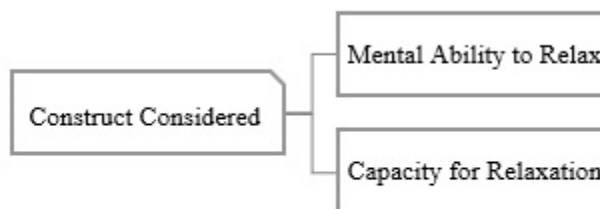


Figure 7: Patterns of Interpretation for the "Trouble relaxing" GAD Item

The respondents who considered whether or not (and how much) ability they had to relax focused on the external stimuli that either agitated them or made them nervous to begin with. For example, one respondent (who had previously indicated during the K6 items that he was restless or fidgety “some of the time”, but answered “Not at all” to this item) explained that whenever he felt the need, he was able to calm himself down by listening to music or venting to friends and family, and that in general “relaxing is not a problem for me.” Another respondent, who answered “More than half the days,” explained that she was thinking about his partner, who has a lot of energy that “rubs off” on the respondent. He feels like he is constantly being pushed to be active and does not feel like he is able to let go and relax.

Most respondents however did not think about their mental ability to relax, but instead focused on whether or not they had the capacity to find time (or relatedly, resources) to relax. In doing so, they focused on how busy they were, and whether or not they had the money to either do relaxing things or work a schedule that allowed them to relax. For example, one respondent who answered “Several days” explained that he does not feel like he has enough time in the day to get what he needs done, and that this comes to a head about once a week. He says that between work, family, and his personal business, there are days that he just cannot find time to relax.

(E) Being so restless that it is hard to sit still

Respondents all understood this question to be asking how often they felt like they were unable to sit and be still. In contrast to what was seen above in GAD_D, respondents all considered their ability to sit still, and did not focus on whether they had time to sit.

(F) Becoming easily annoyed or irritable

Respondents understood this question to be asking about the frequency they get annoyed or irritated, and most focused on how often other people irritate them. Respondents thought about irritants such as loud music being played by neighbors, to roommates purchasing incorrect parts at hardware stores to generally “calling people out on their B.S.” A few respondents answered “Not at all” and explained that they actively worked on not being irritated by others. One respondent, for instance, explained her “Not at all” answer by saying, “That [being irritated] doesn’t help anything.”

(G) Feeling afraid as if something awful might happen

Only three respondents out of the 29 who received this question answered something other than “Not at all.” This item was not probed extensively, and no specific cognitive findings are available.

Response Categories

The same issues that emerged across the PHQ answer categories were observed with the GAD answer categories—specifically that respondents that experienced problems infrequently (but not more than never) were unsure about whether or not the “Several days” category was appropriate. Please see the analysis of the GAD items above for a more complete explanation.

- GADIMP** **Altogether, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?**
- 1. Not at all difficult**
 - 2. Somewhat difficult**
 - 3. Very difficult**
 - 4. Extremely difficult**

Like PHQIMP above, the respondents who answered “Some days” or more frequently to at least one of the GAD-7 items went on to receive GADIMP. This question is a standard item that is appended to the end of the GAD7 in order to capture symptom-related difficulty.⁴⁰

The same interpretations that emerged for PHQIMP were used by respondents who received GADIMP. Please see PHQIMP above for a detailed analysis.

- PROBE34** **Which of the following statements, if any, describe your feelings of being nervous or anxious?**

Please select all that apply.

- 1. Sometimes the feelings can be so intense that my chest hurts and I have trouble breathing.**
- 2. These are positive feelings that help me to accomplish goals and be productive.**
- 3. The feelings sometimes interfere with my life, and I wish that I did not have them.**
- 4. Feeling that way is normal, and everyone feels that way sometimes**
- 5. I have been told by a medical professional that I have anxiety.**

The respondents who received GADIMP in the second and third round of testing went on to received PROBE34. This close-ended probe is based on a similar one used on the RANDS2 questionnaire.⁴¹ Versions of this probe have been used across field tests that evaluated the WG’s Extended Set on Functioning, and emerged out of the analysis of cognitive interviews conducted for the Washington Group, the Budapest Initiative, and the United Nation’s Economic and Social Commission for Asia and the Pacific (UNESCAP).⁴² The first use of a variant of this probe in a fielded survey was the multi-country evaluation of the Extended Set, conducted in Cambodia, Kazakhstan, the Maldives, Mongolia, the Philippines, and Sri Lanka.⁴³

Respondents understood the question to be asking about how they understood their feelings of nervousness and anxiety, and they were able to map their responses to the answer categories. During the second round of testing and “other” option was read, but no respondents used it, indicating that the answer categories provided covered the full range of experiences.

⁴⁰ Spitzer et al 2006.

⁴¹ Scanlon 2017, pages 74-75 and page 87. Please note that the version of this probe used in RANDS2 did not include the fourth answer category presented in PROBE34, “Feeling that way is normal, and everyone feels that way sometimes.”

⁴² See <http://www.washingtongroup-disability.com/washington-group-question-sets/extended-set-of-disability-questions/>

⁴³ UNESCAP 2010a

K6 **During the past 30 days, how often did you feel...**

- ACISAD.** **So sad that nothing could cheer you up?**
- ACINERV.** **Nervous?**
- ACIRSTLS.** **Restless or fidgety?**
- ACIHPLS.** **Hopeless?**
- ACIEFFRT.** **That everything was an effort?**
- ACIWTHLS.** **Worthless?**

- 1.** **All of the time**
- 2.** **Most of the time**
- 3.** **Some of the time**
- 4.** **A little of the time**
- 5.** **None of the time**

The Kessler 6, or K6, question set is designed to screen for severe psychological distress.⁴⁴ Prior to the cognitive interviews conducted for RANSD1 and RANSD2, the set had been extensively psychometrically evaluated, but never cognitively. The report for the previous RANSD cognitive interviewing evaluation effort includes an extensive question-by-question analysis of the K6. The findings from this project align with this previous work.

While the previous report should be consulted for a detailed question-by-question analysis, they are presented here briefly:

- **ACISAD**⁴⁵
Respondents all understood ACISAD to be asking about whether or not they had felt sad in the past month, however the intensity of this feeling differed across the sample. Some respondents noted that they were considering extreme sadness or depression, whereas other respondents based their answer on more mundane bouts of feeling sad or “low.” For instance, one respondent used the latter interpretation when answering “A little of the time,” and explained that he was thinking about having an occasional “down day.”
- **ACINERV**⁴⁶
Respondents overwhelming thought about nervousness as acute moments or instances of worry; respondents used terms like “jittery” and “butterflies” to describe the feeling. For example, one person who responded “A little” noted that, “[Being nervous] is only natural. Sometimes I get butterflies in my stomach before I go out and do something...[It’s] good nervous energy to keep you on your toes and be aware of your surroundings.” Likewise, another respondent who answered “A little” and explained that “I’m not a nervous person, but I’m sometimes put into bad situations that make me nervous” and noted that he was thinking about being around friends who smoke marijuana around him even though he is on probation and could get in trouble for failing a drug test.

No respondents in this sample interpreted the question as asking about whether or not they had diagnosed anxiety; however, this interpretation has emerged when the question was evaluated in the past.

⁴⁴ Kessler et al 2003.

⁴⁵ Scanlon 2017, pages 69-71

⁴⁶ Scanlon 2017, pages 72-73

- **ACIRSTLS**⁴⁷

Respondents all understood this question as either feeling or having too much energy or being unable to “come down.” Some respondents focused on mental restlessness, like being unable to sleep because their mind would not “turn off” or not being able to stop thinking about a certain event or issue. Other respondents considered physical manifestations of restlessness, such as fidgeting or a feeling of physical exhaustion.

- **ACIHPLS**⁴⁸

Most respondents appeared to understand ACIHPLS as Kessler et al (2003) intended—an intense feeling that the circumstances they find themselves in will not get better. For instance, one respondent who answered “A little of the time” explained that she thought of “hopeless” as “nothing’s going right, and everything is going to be bad.” In a similar vein, a respondent who answered “None of the time” said that she thought the question was asking how frequently she thought there was no hope for her future, and she said that it was never the case.

However, at least one respondent interpreted the question in an opposite way—thinking that the question was asking about how often he felt optimistic. He explained his “Most of the time” by saying, “You mean thinking, ‘is life going to get better?’ That’s how I understand that [question], feeling that it is going to get better; if you have hope.” After re-reading the question, the respondent did not change his answer or interpretation, indicating that he did not just mis-hear the question text.

- **ACIEFFRT**⁴⁹

As with the previous evaluation of this question, analysis of these cognitive interviews found that respondents interpreted ACIEFFRT in one of two ways: one in-scope where respondents thought about “effort” as a negative characteristic, and one out-of-scope where respondents thought about “effort” as something positive:

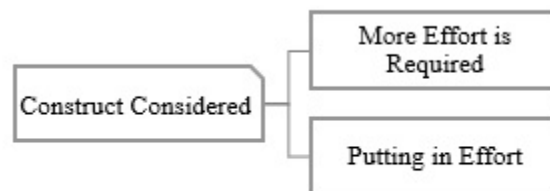


Figure 8: Patterns of Interpretation of K6 Effort Item, ACIEFFRT

Respondents who used the in-scope interpretation understood the question to be asking about how frequently they felt like they had to put in more effort than usual to accomplish things in their lives, which is what Kessler et al (2003) suggest the item should be measuring. Some respondents who used this interpretation thought about mental reasons why they had to put in more effort, while others focused more on physical impediments. For example, one respondent answered “All of the time” and explained that she had to force herself to get out of bed every day, as she was feeling old and was grieving family members that she had recently lost. Likewise, another respondent answered “Some of the time” and noted that she was:

⁴⁷ Scanlon 2017, pages 75-77

⁴⁸ Scanlon 2017, pages 78-80

⁴⁹ Scanlon 2017, pages 80-82

...thinking about, 'what in my life do I consider to be an effort?'
Cleaning the house is an effort—when you get older, you don't feel like
doing any cleaning.

So, this respondent was considering how often she feels like she has to put in the extra effort to clean her house now that she is older, as compared to when she was younger. She was thinking about both the mental effort/motivation to clean, as well as her physical stamina needed to clean the house. Overall, respondents who used this first interpretation

Other respondents however, used an alternative interpretation, and understood the question to be asking how frequently they felt like they put in effort, which they understood as a positive characteristic. For instance, one gentleman who answered "Some of the time" explained that he did his best and understood effort to be "using the power that God gave you to do certain things." When probed further, he reiterated that he thought that effort was a good thing. Similarly, another respondent who answered "All of the time" explained her answer by saying that he puts forth his best effort every day: "Like, every day is the best that I can put into it." Respondents who use this alternative interpretation all used either the "All of the time" or "Most of the time" or "Some of the time" answer categories; because they are not answering based on psychological distress, these answers may artificially inflate respondents' K6 scores. PROBES 31 and 32, detailed below, are designed to tease out how much of an issue this could be across a representative sample.

- **ACIWTHLS**⁵⁰

All respondents understood ACIWTHLS to be asking about their self-worth, and how frequently they felt like they had little to none. Respondents appeared to set a very high "bar" for feelings of negative self-worth to count as worthlessness—only five respondents across all three rounds answered anything other than "None of the time."

PROBE29 Which of the following statements, if any, describe your feelings of being sad or depressed?

Please select all that apply.

1. Sometimes the feelings can be so intense that I cannot get out of bed
2. The feelings sometimes interfere with my life, and I wish that I did not have them
3. I get over the feelings quickly
4. Feeling that way is normal, and everyone feels that way sometimes
5. I have been told by a medical professional that I have depression

PROBE29 was administered directly following ACISAD to all respondents who answered "All," "Most," "Some," or "A little of the time." It is the same wording as PROBE33, detailed above. The replicated probes were designed and included in order to make direct comparisons of the constructs the PHQ and K6 capture

⁵⁰ Scanlon 2017, page 83

PROBE30 Which of the following statements, if any, describe your feelings of being nervous or anxious?

Please select all that apply.

1. Sometimes the feelings can be so intense that my chest hurts and I have trouble breathing.
2. These are positive feelings that help me to accomplish goals and be productive.
3. The feelings sometimes interfere with my life, and I wish that I did not have them.
4. Feeling that way is normal, and everyone feels that way sometimes.
5. I have been told by a medical professional that I have anxiety.

PROBE30 was administered directly following ACINERV to all respondents who answered “All,” “Most,” “Some,” or “A little of the time” It is the same wording as PROBE34, detailed above. The replicated probes were designed and included in order to make head-to-head comparisons of the constructs the GAD and K6 capture

PROBE31 Would you consider everything being an effort a good thing or a bad thing?

1. Good thing
2. Bad thing
3. Neither good nor bad

PROBE32 How concerned are you about feeling as if everything is an effort?

1. Very concerned
2. Somewhat concerned
3. A little concerned
4. Not at all concerned

PROBE31 was administered directly following ACIEFFRT to all respondents, whereas PROBE32 was administered to respondents who answered “All,” “Most,” “Some,” or “A little of the time” to ACIEFFRT. These probes were included on RANDS2 as well and were previously evaluated for that questionnaire.⁵¹ They were designed to determine the extent of the out-of-scope, “positive” interpretation of ACIEFFRT. Respondents were able to map their responses to the two questions’ answer categories without difficulty.

Pain Section

National Health Interview Survey respondents are currently asked about the frequency and resulting limitations of their pain in the past three months (PAIN_2). However, previous years of the NHIS have included survey supplemental content on chronic pain that uses a six-month reference period (CHPAIN6M), and there is some methodological question about whether these two approaches capture

⁵¹ Scanlon 2017, page 82.

the same types of pain. Following the 2019 redesign of the NHIS, the decision was made to maintain the 3-month time reference period, though various methodological work continued to examine how comparable these approaches are. In an effort to contribute to this work, both versions of the pain questions were included on RANDS 3, with half of the cognitive sample receiving the three-month series and the other half receiving the six-month series. Regardless of the reference period they were presented with, all respondents who answered more than “Never” to the pain frequency question (PAIN_2 or CHPAIN6M) went on to receive the same intensity (PAIN_4) and probe (PROBE17) items.

PAIN_2 In the PAST 3 MONTHS, how often did you have pain?

- 1. Never**
- 2. Some days**
- 3. Most days**
- 4. Every day**

CHPAIN6M In the PAST 6 MONTHS, how often did you have pain?

- 1. Never**
- 2. Some days**
- 3. Most days**
- 4. Every day**

Half of the respondents in the cognitive interviewing sample received PAIN_2, while the other half received CHPAIN6M. Versions of these items have been tested in the past as well.⁵²

Interpretation of the Construct

Respondents across both versions of the question understood it to be asking about the frequency of their pain. However, there was some variation in the causes and severities they were considering.

Respondents considered a variety of causes of pain, including surgeries, injuries and accidents, chronic conditions, old age, and the simple “wear and tear” of everyday life. Stemming from these causes, respondents thought about a range of severities—with some respondents (particularly ones who were thinking about long-term pain due to injuries, surgeries, or chronic conditions) limiting their interpretation to only severe pain. For instance, one respondent who received the 3-month version answered “Never” and explained that he was only thinking about pain that “makes me stop.” He said that about six months in the past he hurt his back at work and felt pain so severe that he had to “sit down and recover for a few minutes.” He went on to say that “I’m not counting pain from like when I bang my foot on something, because that doesn’t make me stop what I’m doing.” Likewise, a respondent who received the 6-month version of the question and answered “Some days” explained that she was thinking about back pain she got from walking a lot on a vacation about six months in the past. She noted that this was severe pain, and she experienced it on-and-off throughout her two-week vacation. She said that she has not had pain since then, but upon further probing noted that while she sometimes felt sore and had muscle pain after working out at the gym, she did not believe that counted for the purposes of this question.

Other respondents (typically those thinking about pain from old age, work, and other aspects of everyday life) included not only severe pain but also low-level aches. For instance, one respondent who received the 3-month question answered “Everyday” and noted that he was thinking about the ache he gets from walking by the end of the day (he noted that he has a flat arch in his foot), but that the pain was not great

⁵² UNESCAP 2010b, pages 26-29. Question 9.3; Miller et al 2013, pages 14-20; Massey, Dunston, and Salvaggio 2015, page 7.

and all he really needs is new shoes. Similarly, a respondent who received the 6-month question answered “Some days” and said that she was thinking about “nothing major...just little aches and pains that you get. I take Tylenol and they go away.”

While the causes and severities varied across the sample, all the patterns emerged in both versions of the question—indicating that the same set of constructs are captured regardless of the reference period. Given the purposive sample used to recruit for the cognitive interviews, the distribution of these patterns is meaningless across the two versions; however, the analysis of the interviews shows for instance that both the 3-month and 6-month wording prompted respondents to think about pain resulting from both chronic conditions and one-time injuries.

Reference Period

While the reference period did not appear to have an impact on the response schema used by respondents when answering the pain frequency question, it did appear to function as intended. For instance, one respondent mentioned above who had a work accident about six months prior to the interview answered the 3-month question excluding this incident because it was outside the reference period. No errors related to respondents considering events outside the reference period emerged in any of the cognitive interviews.

PAINLMT3 Over the PAST 3 MONTHS, how often did pain limit your life or work activities?

- 1. Never**
- 2. Some days**
- 3. Most days**
- 4. Every day**

PAINLMT6 Over the PAST 6 MONTHS, how often did pain limit your life or work activities?

- 1. Never**
- 2. Some days**
- 3. Most days**
- 4. Every day**

The 51 respondents who answered “Some days,” “Most days,” or “Every day” to the pain frequency question (PAIN_2 or CHPAIN6M depending on which version they were assigned) went on to receive the pain limitation question (PAINLMT3 or PAINLMT6 for the 3- and 6-month conditions, respectively). This question has been tested in various forms in the past.⁵³

Interpretation of the Construct

Most respondents understood this question to be asking about whether or not the pain they thought about in the previous frequency question limited their ability to do important things, such as exercising, doing housework and errands, sleeping, and being social. Some variation emerged in the overall interpretation of this question, with a few respondents instead focusing more on whether they were in pain or

⁵³ UNESCAP 2010b, pages 26-29. Note that the question here (9.10) asks “does your pain limit your ability to carry out daily activities?”; Massey, Dunston, and Salvaggio 2015, pages 12-15. Note that two versions were tested here: the version presented in this report, and an alternative that added “including household chores, leisure, and social activities” to the end of the question for added context.

inconvenienced and less on whether they were strictly limited by their pain. The response schema is illustrated below:

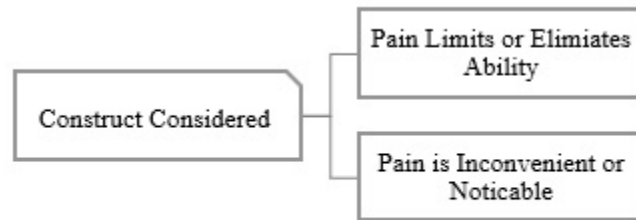


Figure 9: Patterns of Interpretation for the Limitation due to Pain Items

Most respondents used the top pattern of interpretation from this schema and focused on whether their pain strictly limited their ability to do things, and if so, how much they were limited. Most of these respondents focused on how the pain physically limited their ability to get things done. For instance, one respondent who received the 3-month version of the question and answered “Some days” explained that pain only rarely stopped him from doing things. He said that was only the case when his pain was “off the charts” but that normally, even if he was in pain, “there’s still a need to sustain and maintain” his life, so pushes through the pain. Likewise, another respondent who received the 3-month question and answered “Never” said that he was always able to function when he feels pain: “I’m still able to do the things I need...I can ignore it [the pain] if needed.” This interpretation was common in the 6-month question as well. One 6-month respondent who answered “Every day” noted that his pain is so bad that he can’t bend over to do things like put on his clothes or shoes, and that it causes him to have a very difficult time walking. Not all respondents focused on the physical limitations their pain caused, with a few also considering the mental aspects of pain. For instance, one respondent who was administered the 6-month item and has frequent chest pain noted that “It drives me crazy; it’s extremely frustrating and distracting...It’s like sitting in front of a construction crew and trying to write a paper.”

On the other hand, there were some respondents who did not interpret the question by focusing on whether or not they were limited, but instead focused on how often they felt or noticed their pain—in effect, answering the same question as the previous one on pain frequency. For instance, one respondent who received the 3-month question and answered “Every day” explained that she had “nagging pain” in her leg almost constantly. When later probed on whether or not this nagging pain stopped her from doing things, she said no—the original injury was limiting (she had a leg amputated), but the pain itself did not prevent her from doing things. Similarly, a respondent who got the 6-month question answered “Some days” and noted that there are days that he does not feel like getting out of bed in the morning because of his knee pain. When asked if it ever actually kept him in bed, he said no—it was from a very old injury and some days he was more aware of it than others. In the same vein, another respondent who received the 3-month question noted that he had received a gunshot wound about 20 years ago and noted that he had a dull ache some days from that old wound and arthritis. He answered “Some days,” but noted that he “just keeps moving.”

Mapping Response to Answer Category

A couple of respondents expressed difficulty mapping their responses to the answer categories. Both of these cases involved the respondents feeling like the responses did not accurately represent the true frequency of which pain limited their life. One respondent who eventually choose the “Some days” category explained that in reality it was “rarely.” However, he felt like “Never” was not accurate either, and so decide that “Some days” was the best fit since it was the most infrequent category. (This is a

similar point that a number of respondents raised about the PHQ and GAD answer categories, explained above in the analysis of those two scales.)

Another respondent felt like there needed to be a category between “Some” and “Most” days. He said, “the answer that I want—every other day—is not there.” This respondent eventually decided that none of the categories represented the frequency of which pain limited his life and thus refused to provide an answer.

Reference Period

Respondents carried their interpretation of pain forward from the pain frequency questions—in short, they largely thought about the same pain as they did in the previous question. No errors related to the reference period were observed in the pain frequency question, and as a result no errors emerged in this question either.

- PAIN_4 Thinking about the last time you had pain, how much pain did you have?**
- 1. A little**
 - 2. A lot**
 - 3. Somewhere in between a little and a lot**

The same respondents who received the pain limitation item went on to receive the pain intensity question, PAIN_4. All respondents, regardless of whether they were assigned to the 3-month or 6-month condition received the same version of the pain intensity question as the reference period for this item is “the last time you had pain.”

This question has been in various forms in the past,⁵⁴ and the current analysis supports previous findings: respondents understand the three-point scale as a continuum and tend to judge their answers by comparing their current pain to the extremes of their personal experience—the worse pain they have experienced and the feeling of being pain free.

⁵⁴ UNESCAP 2010b, pages 26-29. Question 9.5a; Miller et al 2013, pages 14-20

PROBE17 Which of the following statements, if any, describe your pain in the PAST [3 or 6] MONTHS?

Please select all that apply.

1. It is constantly present
2. Sometimes I'm in a lot of pain and sometimes it's not so bad
3. Sometimes it's unbearable and excruciating
4. When I get my mind on other things, I'm not aware of the pain
5. It is occasional and does not last
6. Medication can take my pain away completely
7. My pain is because of my current or past work
8. My pain is because of exercise
9. My pain was caused by a recent injury or infection
10. My pain is minor and infrequent
11. Other, please specify [Cognitive Interviews Only]

PROBE17 was administered to the respondents who received PAIN_4 in the final round of testing. This probe was designed to better understand the types of pain that the frequency, intensity, and impact questions capture, and specifically allow for a point of comparison across the sub-samples that received the different reference periods. The answer categories emerged not only from the analysis of the interviews presented here, but also other projects that have focused on pain, injury, and pain management.

Respondents who received this question understood it to be asking to describe the pain they had experienced over the reference period (either 3 or 6 months, depending on the frequency and limitation questions they received), and were able to map their responses to the categories provided. An "other" category was provided during testing and was used by only one respondent, who used it to say, "Usually when my lower back feels strained, it feels like my nerves are strained too." Upon further probing, this respondent (who also answered "Sometimes I'm in a lot of pain and sometimes it's not so bad") explained that he was trying to better describe his periodic pain in a more specific way.

Smoking Section

SMKEV Have you smoked at least 100 cigarettes in your entire life?

1. Yes
2. No

SMKEV was administered to all respondents across all three rounds of cognitive interviewing. This question has been tested extensively in the past, and the analysis of these interviews are in line with previous findings.⁵⁵

⁵⁵ DeMaio et al 1991, page 1; Canfield et al 2003, page 11; Kudela et al 2005, page 35; Willson 2012, page 10; Scanlon 2017, pages 42-43; Massey et al 2018, pages 19-20

Respondents used two basic patterns of interpretation when answering this question—some respondents used a heuristic pathway and based their answer on their self-identity as either a smoker or non-smoker, while others attempted to calculate whether or not they had smoked 100 cigarettes in their lives.

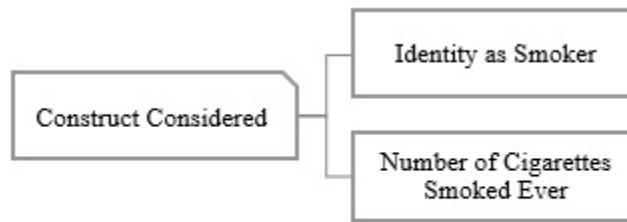


Figure 10: Patterns of Interpretation used in SMKEV

Respondents were actually answering one of two questions based on their interpretation: “Are you a smoker?” or “Have you smoked at least 100 cigarettes ever?” In the first pattern, respondents did not even attempt to quantify their cigarette count, and instead simply considered whether they saw themselves as a smoker. For instance, one respondent who answered “Yes” explained her answer by saying, “I assume so, yes. I smoke every day.” Similarly, another respondent who answered “yes” simply noted that he had been smoking since he was 13 years old (and is now in his 40s). These respondents see themselves as smokers, and do not spend any effort trying to calculate a total number since they assume it must be higher than the cutoff given in the question. Likewise, respondents who answered “No” using this pattern based their answer on the fact that they did not identify as smokers. One respondent, for instance, explained his “No” answer by saying that he was strongly anti-drug and alcohol and felt it was important to portray that identity to the world.

As might be expected from a heuristic approach, it is possible that by basing an answer to a question like this on identity instead of a count might produce a response error. For example, one woman who answered “No” explained that she had previous smoked—and on average a pack a week. However, her husband had told her that she “is not a smoker, since I didn’t always smoke every day.” She also noted that when she quit smoking, she did not need any help (i.e. nicotine gum), which to her was more evidence that she was not a “smoker.” A cigarette pack holds 20 cigarettes, so as long as she held this one-pack-a-week habit for five weeks or more, she would have met the 100-cigarette threshold. Further probing revealed that this was the case, indicated that her “No” answer was a false negative.

Other respondents used the second pattern of interpretation, and instead attempted to calculate whether or not they met the 100-cigarette threshold. In general, respondents who answered “Yes” tended to do some sort of frequency X time calculation (i.e. they smoked a pack a day for 20 years), whereas respondents who answered “No” counted specific times that they had smoked. For instance, one respondent who answered “Yes” noted that she started smoking in her teens and smoked about five menthol lights a day until she got pregnant in her 20s—a number that she reasoned was well over 100. On the other hand, another respondent who answered “no” explained that had smoked less than once a week in his late teens, and only after he had drinks with some friends. He could not think of 100 times when this occurred, and therefore answered “No.”

SMKNOW Do you now smoke cigarettes every day, some days, or not at all?

1. Every day
2. Some days
3. Not at all

Respondents who answered “Yes” to SMKEV received SMKNOW. This question was not probed extensively, and no cognitive findings are available. However, versions of this question have been evaluated in the past, and those findings are available on Q-Bank.⁵⁶

ECIGEV

Version 1

The next question is about electronic cigarettes or e-cigarettes. E-cigarettes and other electronic vaping products include electronic hookahs (e-hookahs), vape pens, e-cigars, and others. These products are battery-powered and usually contain nicotine and flavors such as fruit, mint, or candy.

Have you ever used an e-cigarette or other electronic vaping product, even one time, in your entire life?

- 1 Yes
- 2 No

Version 2

Have you ever used an e-cigarette or other electronic vaping product, even one time, in your entire life?

- 1 Yes
- 2 No

Previous testing of this question has shown that respondents largely understand that the question is asking them about whether they have ever used an e-cigarette.⁵⁷ These prior evaluations, however, have indicated that respondents both generally understand the term “e-cigarette” to include in-scope devices and that they find the long introductory text to be superfluous, burdensome, and occasionally confusing. The RANDS questionnaire was designed in order to further examine whether or not the intro text was necessary. Half the cognitive interviewing sample received Version 1 of the question (which includes the introductory text), and the other half received Version 2 (which included no introductory text).

The results of this test have been presented elsewhere⁵⁸, and a detailed paper exploring both the qualitative and accompanying web survey findings is forthcoming (a link and citation to this paper will be added to the electronic version of this report when they are available). In brief, respondents all understood the question to be asking about their use of e-cigarettes, and respondents who did not receive the intro text did not express any confusion over the term. When probed, the term that most respondents used for e-cigarettes was “vapes,” and called the act of using the e-cigarettes “vaping.” (Since all interviews were conducted in the Washington, DC metropolitan area, it is possible that there is regional variation in the vernacular term that this evaluation could not uncover.)

⁵⁶ Canfield et al 2003, page 12; Willson 2012, page 11; Scanlon 2017, pages 44-45; Massey et al 2018, page 20.

⁵⁷ Willson 2014, page 11; Massey et al 2018, pages 20-21.

⁵⁸ Creamer 2018; Creamer et al 2019.

PROBE16 What counts as an e-cigarette?

Please select all that apply.

1. A vape with cannabis, THC, or CBD oil
2. A vape with nicotine or other flavored oil
3. A hookah-pen or e-hookah
4. An e-vaporizer
5. A tobacco cigarette or cigar
6. A marijuana cigarette

All respondents, regardless of which version of ECIGEV they received, went on to receive PROBE16, which all understood to be asking about their definition of e-cigarettes. Originally, PROBE16 was structured as a “comprehension” probe (i.e. asking, “When answering the previous question, which of the following did you count as an e-cigarette.”). However, after the first round of interviews, NCHS decided to change the format of the probe to a definition probe in order to make the question more meaningful for respondents who have never used e-cigarettes.

Besides this change in format, based on the analysis of the first round’s interviews, some edits were made to the answer categories. First, the category “A vape” was split into the first two answer categories seen above in order to allow respondents to distinguish between tobacco and non-tobacco uses of e-cigarettes. Second, the two answer categories “A hookah-pen” and “An e-hookah” were combined into one. Finally, the categories “A tobacco cigarette” and “A tobacco cigar” were combined into one.

Following these edits, the version shown above was administered to all respondents in the second and third round of cognitive interviews, and no other changes were deemed necessary.

Physical Activity Section

MODNO How often do you do light or moderate leisure time physical activities for at least 10 minutes that cause only light sweating or a slight to moderate increase in breathing or heart rate?

[Open Response]

1. Never
2. Per day
3. Per week
4. Per month
5. Per year
6. Unable to do this type of activity

MODLNGNO About how long do you do these light or moderate leisure-time physical activities each time?

[Open Response]

1. Minutes
2. Hours

PROBE20 Which of the following types of physical activity, if any, did you include when you answered the previous question?

Please select all that apply.

1. Running or jogging
2. Hiking
3. Walking as part of your job
4. Walking outside of work
5. Yardwork or cleaning your home
6. Working out with exercise equipment
7. Lifting weights
8. Cycling, swimming, or other aerobic exercises
9. Yoga or stretching
10. Playing a sport, please specify which sport
11. Other, please specify

VIGNO How often do you do vigorous leisure-time physical activities for at least 10 minutes that cause heavy sweating or large increases in breathing or heart rate?

[Open Response]

1. Never
2. Per day
3. Per week
4. Per month
5. Per year
6. Unable to do this type of activity

VIGLNGNO About how long do you do these vigorous leisure-time physical activities each time?

[Open Response]

1. Minutes
2. Hours

PROBE21 Which of the following types of physical activity, if any, did you include when you answered the previous question?

Please select all that apply.

1. Running or jogging
2. Hiking
3. Walking as part of your job

4. Walking outside of work
5. Yardwork or cleaning your home
6. Working out with exercise equipment
7. Lifting weights
8. Cycling, swimming, or other aerobic exercises
9. Yoga or stretching
10. Playing a sport, please specify which sport
11. Other, please specify

STRNGNO How often do you do leisure time physical activities specifically designed to strengthen your muscles such as lifting weights or doing calisthenics?

Include all such activities even if you have mentioned them before.

[Open Response]

1. Never
2. Per day
3. Per week
4. Per month
5. Per year
6. Unable to do this type of activity

PROBE22 In the last week, did you do any of the following things for 20 or more minutes at once?

Please select all that apply.

1. Running or jogging
2. Hiking
3. Walking as part of your job
4. Walking outside of work
5. Yardwork or cleaning your home
6. Working out with exercise equipment
7. Lifting weights
8. Cycling, swimming, or other aerobic exercises
9. Yoga or stretching
10. Playing a sport, please specify which sport
11. Other, please specify

The items in the physical activity section have been evaluated in detail in the past and were not extensively probed during this project. However, when time allowed in the cognitive interviews, these questions were probed, and the analysis of these resulting narratives confirm previous findings.⁵⁹

In short, because respondents do not know that other questions regarding physical activity are forthcoming (i.e. they do not know they will be asked about vigorous activity following being asked about moderate activity), there is quite a bit of conceptual overlap between the MODNO, VIGNO, and

⁵⁹ Scanlon 2017, pages 47-52.

STRNGNO series of questions. In order to better understand this overlap, an identical probe was administered following both MODNO and VIGNO (PROBE20 and PROBE21, respectively).

In addition to the probes for the MODNO and VIGNO series, a third probe (PROBE22, with an identical set of response categories as the other two physical activity probes) was administered after STRNGNO. In contrast to the other two probes, the purpose of this extra item was to collect information regarding the types of physical activity the respondents engaged in, regardless of their classification of “moderate” and “vigorous” exercise. Additionally, as this probe was administered to all respondents regardless of their responses to MODNO and VIGNO, this probe also allows researchers to examine false negative response error and the potential sources of underestimates.

During cognitive testing, an “Other, please specify” option was included for all three physical activity probes. While no responses emerged from this category that could not be re-coded into one of the other 10, NCHS decided to keep the “Other” category in the final web instrument as a way to begin the methodological study of mixing closed and open-ended probes.

Injury Section

A series of eight questions pertaining to injuries were included on the RANDS questionnaire. Although these questions were probed during the cognitive interviews, the analysis of these findings was incorporated into a larger project evaluating the measurement of person injury. As such, no results will be presented here; the report for the overall injury measurement project is available on CDC’s Q-Bank.⁶⁰

INJURY1 **The first question is about repetitive strain injuries. By this, we mean injuries caused by repeating the same movement over an extended period. Examples include carpal tunnel syndrome, tennis elbow, or tendonitis. DURING THE PAST 3 MONTHS, did you have any injuries due to repetitive strain?**

1. **Yes**
2. **No**

INJURY2 **[Not including any of the repetitive strain injuries you just mentioned,] DURING THE PAST 3 MONTHS, did you have an accident or an injury where any part of your body was hurt?**

1. **Yes**
2. **No**

INJURY3 **Were any of these injuries serious enough to limit your usual activities for at least 24 hours after the injury occurred?**

1. **Yes**
2. **No**

⁶⁰ Jamoom and Massey 2019.

INJURY4 Were any of these injuries serious enough that you missed at least one day of work or school?

1. Yes
2. No

INJURY5 *Not counting repetitive strain injuries*, please think about all of the accidents or events that caused an injury **IN THE PAST 3 MONTHS**, and that caused you to miss at least one day of work or school, or that made it difficult for you to do things that you usually do for one day or more.

DURING THE PAST 3 MONTHS, how many times did these accidents or injury events occur?

1. [Open Response]

INJURY6 **DURING THE PAST 3 MONTHS**, [did this injury/any of these injuries] occur while you were:

- A. Working at a job or business?
 - B. At school, taking classes, or doing schoolwork?
 - C. Playing sports or exercising, including walking, biking, or running for exercise? (Please also include recreational sports such as skating, skiing, tennis, golf, bowling, or fishing).
 - D. Doing household activities, such as housework, cooking, home maintenance, or yardwork?
 - E. Doing leisure activities, such as hobbies, volunteer work, socializing, watching TV, or relaxing?
 - F. Walking to get some place outside your home
1. Yes
 2. No

INJURY12 The next questions are about two ways that you might have been injured. Remember that we are just talking about [the injury/any of the injuries] that caused you to miss at least one day of work or school, or that made it difficult for you to do things that you usually do for one day or more.

DURING THE PAST 3 MONTHS, [was this injury/were any of these injuries] a result of a fall or falling?

1. Yes
2. No

INJURY13 **DURING THE PAST 3 MONTHS**, [was this injury/were any of these injuries] a result of a collision involving a motor vehicle?

1. Yes
2. No

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Appendix A: Final RANDS 3 Questionnaire.

(Horizontal lines indicate screen breaks)

[SHOW IF P_GROUP=1]

A_PHSTAT.

Would you say your health in general is excellent, very good, good, fair, or poor?

RESPONSE OPTIONS:

1. Excellent
 2. Very good
 3. Good
 4. Fair
 5. Poor
-

[SHOW IF P_GROUP=2]

B_PHSTAT.

Would you say your health in general is very good, good, fair, bad, or very bad?

RESPONSE OPTIONS:

1. Very good
 2. Good
 3. Fair
 4. Bad
 5. Very bad
-

PROBE1.

When you answered the previous question about your health, what did you think of?

Please select all that apply.

RESPONSE OPTIONS:

- A. Your diet and nutrition
-

- B. Your exercise habits
 - C. Your smoking or drinking habits
 - D. Your health problems or conditions
 - E. Your *lack of* health problems or conditions
 - F. The amount of pain that you have
 - G. Your ability to do daily activities without assistance
 - H. The amount of sleep you get
 - I. Your mental or emotional health
-

PROBE2.

Please rate your agreement with the following statements:

GRID ITEMS:

- A. I have a healthy diet
- B. I get enough exercise
- C. I drink more alcohol than I should
- D. I smoke more than I should
- E. I'm satisfied with my sleep
- F. I don't have any major health problems or medical conditions
- G. I frequently experience pain
- H. I'm able to perform my daily activities independently
- I. My thoughts or emotions sometimes cause me problems

RESPONSE OPTIONS:

- 1. Strongly Agree
 - 2. Somewhat Agree
 - 3. Somewhat Disagree
 - 4. Strongly Disagree
-

RX12M_A.

At any time in the PAST 12 MONTHS, did you take prescription medication?

RESPONSE OPTIONS:

- 1. Yes
 - 2. No
-

[DISPLAY]

INTRO_MED.

The next series of questions will ask you about certain medical conditions.

HYPEV.

Have you ever been told by a doctor or other health professional that you had hypertension, also called high blood pressure?

RESPONSE OPTIONS:

1. Yes
 2. No
-

PROBE9.

How did you define hypertension?

RESPONSE OPTIONS:

1. A feeling when you are stressed or overwhelmed
 2. A medical condition when a medical professional tells you that you have chronic high blood pressure
 3. A medical condition when a medical professional tells you that you have had one or two high blood pressure readings
-

[SHOW IF HYPEV=1]

HYPDIF_A.

Were you told on two or more different visits that you had hypertension, also called high blood pressure?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF HYPDIF_A =1]

HYPYR.

During the past 12 months, have you had hypertension, also called high blood pressure?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF HYPEV=1]

HYPMED2.

Are you now taking any medicine prescribed by a doctor for your high blood pressure?

RESPONSE OPTIONS:

1. Yes
 2. No
-

CHLEV.

Have you ever been told by a doctor or other health professional that you had high cholesterol?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF CHLEV=1]

CHLYR.

During the past 12 months, have you had high cholesterol?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF CHLEV=1]

CHLMDNW2.

Are you now taking any medication prescribed by a doctor to help lower your cholesterol?

RESPONSE OPTIONS:

1. Yes
 2. No
-

AASMEV.

Have you ever been told by a doctor or other health professional that you had asthma?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF AASMEV=1]

AASSTILL.

Do you still have asthma?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF AASMEV=1]

AASSMYR.

During the past 12 months have you had an episode of asthma, or an asthma attack?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF AASMEV=1]

AASSMERYR.

During the past 12 months have you had to visit an emergency room or urgent care center because of asthma?

RESPONSE OPTIONS:

1. Yes
 2. No
-

PREDIB_A.

Has a doctor or other health professional ever told you that you had prediabetes or borderline diabetes?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF S_GENDER=2]

GESDIB_A.

Has a doctor or other health professional ever told you that you had *gestational diabetes*, a type of diabetes that occurs only during pregnancy?

Gestational diabetes is diabetes that you did not have prior to being pregnant and goes away after you are pregnant. Pregnant women are usually screened for gestational diabetes during the 24th to 28th week of pregnancy.

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF S_GENDER=1 OR 2]

DIBEV_A.

[SHOW IF S_GENDER=2) AND (PREDIB_A = 1) AND (GESDIB_A = 1)] Not including prediabetes or gestational diabetes, has a doctor or other health professional ever told you that you had diabetes?

[SHOW IF (S_GENDER=2) AND (PREDIB_A = 1) AND (GESDIB_A = 2, 98)] Not including prediabetes, has a doctor or other health professional ever told you that you had diabetes?

[SHOW IF (S_GENDER=2) AND (PREDIB_A = 2, 98) AND (GESDIB_A = 1)] Not including gestational diabetes, has a doctor or other health professional ever told you that you had diabetes?

[SHOW IF (S_GENDER=2) AND (PREDIB_A = 2, 98) AND (GESDIB_A = 2, 98)] Has a doctor or other health professional ever told you that you had diabetes?

[SHOW IF (S_GENDER=1) AND (PREDIB_A = 1)] Not including prediabetes, has a doctor or other health professional ever told you that you had diabetes?

[SHOW IF (S_GENDER=1) AND (PREDIB_A = 2, 98)] Has a doctor or other health professional ever told you that you had diabetes?

RESPONSE OPTIONS:

1. Yes
2. No

[SHOW IF DIBEV_A=1]

DIBAGE_A.

[SHOW IF (S_GENDER=2) AND (PREDIB_A = 1) AND (GESDIB_A = 1)] How old were you when a doctor or other health professional first told you that you had diabetes, not including prediabetes or gestational diabetes?

[SHOW IF (S_GENDER=2) AND (PREDIB_A = 1) AND (GESDIB_A = 2, 98)] How old were you when a doctor or other health professional first told you that you had diabetes, not including prediabetes?

[SHOW IF (S_GENDER=2) AND (PREDIB_A = 2, 98) AND (GESDIB_A = 1)] How old were you when a doctor or other health professional first told you that you had diabetes, not including gestational diabetes?

[SHOW IF (S_GENDER=2) AND (PREDIB_A = 2, 98) AND (GESDIB_A = 2, 98)] How old were you when a doctor or other health professional first told you that you had diabetes?

[SHOW IF (S_GENDER=1) AND (PREDIB_A = 1)] How old were you when a doctor or other health professional first told you that you had diabetes, not including prediabetes?

[SHOW IF (S_GENDER=1) AND (PREDIB_A = 2, 98)] How old were you when a doctor or other health professional first told you that you had diabetes?

[SPACE]

Enter 1 if age was 1 or younger.

[NUMBER BOX, RANGE 1-120] Age at which diagnosed

[SHOW IF (DIBEV_A=1) OR (PREDIB_A=1)]

DIBPILL_A.

Are you now taking diabetic pills to lower your blood sugar? These are sometimes called oral agents or oral hypoglycemic agents.

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF (DIBEV_A=1) OR (PREDIB_A=1)]

DIBINS_A.

Insulin can be taken by shot or pump. Are you now taking insulin?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF (DIBEV_A=1)]

DIBTYPE_A.

According to your doctor or other health professional, what type of diabetes do you have? Is it type 1, type 2, or some other type? If you don't remember or weren't told, that's OK.

RESPONSE OPTIONS:

1. Type 1
 2. Type 2
 3. Other type of diabetes
 77. Don't know
-

NEWLUNG.

Have you ever been told by a doctor or other health professional that you have Chronic Obstructive Pulmonary Disease, COPD, emphysema, or chronic bronchitis?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF NEWLUNG=1]

[MP]

PROBE13.

Which condition were you told you had?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. COPD
 2. Emphysema
 3. Chronic Bronchitis
 4. Bronchitis
 5. Something else, please specify: [TEXTBOX]
-

[SHOW IF NEWLUNG=1]

[SP]

PROBE14.

Thinking about the most recent time you had symptoms of Chronic Obstructive Pulmonary Disease, COPD, emphysema, or chronic bronchitis, how long did the symptoms last?

RESPONSE OPTIONS:

1. Less than one week
 2. One week to less than one month
 3. One month to less than three months
 4. Three or more months
-

[P_OPIOIDEXP=1]

[DISPLAY]

OPIOID1_INTRO.

These next questions are about the use of prescription pain relievers called opioids. When answering these questions, please do not include over-the-counter pain relievers such as aspirin, Tylenol, Advil, or Aleve.

[RECORD AND COMPUTE TIME ON SCREEN]

[SP]

OPIOID1.

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.

RESPONSE OPTIONS:

1. Yes
 2. No
-

[P_OPIOIDEXP=1 AND P_IMAGEEXP=1]

[RECORD AND COMPUTE TIME ON SCREEN]

[MP; DISPLAY 9 ITEMS IN 3 X 3 GRID ACROSS 4 SCREENS; AT THE END OF EACH SCREEN ADD A SP "NONE OF THESE" AT THE END OF THE PAGE]

[DISPLAY IMAGES FROM PDF; PLEASE SHRINK IMAGES BY 30%; HAVE THE IMAGE BE CLICKABLE FOR INDICATING RESPONSE]

[PLEASE HIDE ITEM TEXT – ONLY IMAGE SHOULD APPEAR]

OPIOID2.

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.

[SPACE]

In the past 12 months, which, if any, of these pain relievers have you used?

RESPONSES:

1. Vicodin
2. Lortab
3. Norco
4. Zohydro ER
5. Hydrocodone (generic)
6. OxyContin
7. Percocet
8. Percodan
9. Roxicodone
10. Oxycodone (generic)
11. Ultram
12. Ultram ER
13. Ultracet
14. Tramadol (generic)
15. Extended-release tramadol (generic)
16. Tylenol with codeine 3 or 4 (NOT over-the-counter Tylenol)
17. Codeine pills (generic)
18. Avinza
19. Kadian
20. MS Contin
21. Morphine (generic)
22. Extended-release morphine (generic)
23. Duragesic
24. Fentora
25. Fentanyl (generic)
26. Suboxone
27. Buprenorphine (generic)
28. Buprenorphine plus naloxone (generic)
29. Opana
30. Opana ER
31. Oxymorphone (generic)
32. Extended-release oxymorphone (generic)
33. Demerol
34. Dilaudid or hydromorphone

35. Exalgo or extended-release hydromorphone
 36. Methadone
-

[P_OPIOIDEXP=1 AND P_IMAGEEXP=2]

[MP; DISPLAY 9 ITEMS ACROSS 4 SCREENS; AT THE END OF EACH SCREEN ADD A SP
"NONE OF THESE" AT THE END OF THE PAGE]

[RECORD AND COMPUTE TIME ON SCREEN]

OPIOID2_MOD.

In the past 12 months, which, if any, of these pain relievers have you used?

RESPONSES:

1. Vicodin
2. Lortab
3. Norco
4. Zohydro ER
5. Hydrocodone (generic)
6. OxyContin
7. Percocet
8. Percodan
9. Roxicodone
10. Oxycodone (generic)
11. Ultram
12. Ultram ER
13. Ultracet
14. Tramadol (generic)
15. Extended-release tramadol (generic)
16. Tylenol with codeine 3 or 4 (NOT over-the-counter Tylenol)
17. Codeine pills (generic)
18. Avinza
19. Kadian
20. MS Contin
21. Morphine (generic)
22. Extended-release morphine (generic)
23. Duragesic
24. Fentora
25. Fentanyl (generic)
26. Suboxone
27. Buprenorphine (generic)
28. Buprenorphine plus naloxone (generic)
29. Opana
30. Opana ER
31. Oxymorphone (generic)
32. Extended-release oxymorphone (generic)

33. Demerol
 34. Dilaudid or hydromorphone
 35. Exalgo or extended-release hydromorphone
 36. Methadone
-

[P_OPIOIDEXP=2]

[DISPLAY]

OPIOID2_INTRO.

These next questions are about any use of prescription pain relievers. Please do not include “over-the-counter” pain relievers such as aspirin, Tylenol, Advil, or Aleve.

[P_OPIOIDEXP=2 AND P_IMAGEEXP=1]

[RECORD AND COMPUTE TIME ON SCREEN]

[MP; DISPLAY 9 ITEMS IN 3 X 3 GRID ACROSS 4 SCREENS; AT THE END OF EACH SCREEN ADD A SP “NONE OF THESE” AT THE END OF THE PAGE]

[DISPLAY IMAGES FROM PDF; PLEASE SHRINK IMAGES BY 30%; HAVE THE IMAGE BE CLICKABLE FOR INDICATING RESPONSE]

[PLEASE HIDE ITEM TEXT – ONLY IMAGE SHOULD APPEAR]

OPIOID2_2.

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.

[SPACE]

In the past 12 months, which, if any, of these pain relievers have you used?

RESPONSES:

1. Vicodin
2. Lortab
3. Norco
4. Zohydro ER
5. Hydrocodone (generic)
6. OxyContin
7. Percocet
8. Percodan
9. Roxicodone

10. Oxycodone (generic)
 11. Ultram
 12. Ultram ER
 13. Ultracet
 14. Tramadol (generic)
 15. Extended-release tramadol (generic)
 16. Tylenol with codeine 3 or 4 (NOT over-the-counter Tylenol)
 17. Codeine pills (generic)
 18. Avinza
 19. Kadian
 20. MS Contin
 21. Morphine (generic)
 22. Extended-release morphine (generic)
 23. Duragesic
 24. Fentora
 25. Fentanyl (generic)
 26. Suboxone
 27. Buprenorphine (generic)
 28. Buprenorphine plus naloxone (generic)
 29. Opana
 30. Opana ER
 31. Oxymorphone (generic)
 32. Extended-release oxymorphone (generic)
 33. Demerol
 34. Dilaudid or hydromorphone
 35. Exalgo or extended-release hydromorphone
 36. Methadone
-

[P_OPIOIDEXP=2 AND P_IMAGEEXP=2]

[RECORD AND COMPUTE TIME ON SCREEN]

[MP; DISPLAY 9 ITEMS ACROSS 4 SCREENS; AT THE END OF EACH SCREEN ADD A SP
"NONE OF THESE" AT THE END OF THE PAGE]

OPIOID2_MOD_2.

In the past 12 months, which, if any, of these pain relievers have you used?

RESPONSES:

1. Vicodin
2. Lortab
3. Norco
4. Zohydro ER
5. Hydrocodone (generic)
6. OxyContin
7. Percocet

8. Percodan
 9. Roxicodone
 10. Oxycodone (generic)
 11. Ultram
 12. Ultram ER
 13. Ultracet
 14. Tramadol (generic)
 15. Extended-release tramadol (generic)
 16. Tylenol with codeine 3 or 4 (NOT over-the-counter Tylenol)
 17. Codeine pills (generic)
 18. Avinza
 19. Kadian
 20. MS Contin
 21. Morphine (generic)
 22. Extended-release morphine (generic)
 23. Duragesic
 24. Fentora
 25. Fentanyl (generic)
 26. Suboxone
 27. Buprenorphine (generic)
 28. Buprenorphine plus naloxone (generic)
 29. Opana
 30. Opana ER
 31. Oxymorphone (generic)
 32. Extended-release oxymorphone (generic)
 33. Demerol
 34. Dilaudid or hydromorphone
 35. Exalgo or extended-release hydromorphone
 36. Methadone
-

[P_OPIOIDEXP=2]

[RECORD AND COMPUTE TIME ON SCREEN]

[SP]

OPIOID1_2.

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.

RESPONSE OPTIONS:

1. Yes
 2. No
-

PROGRAMMING: CREATE DOV_OPIOID

IF **ONLY ONE ITEM SELECTED** IN (OPIOID2A=1-OPIOIDJJ=1) OR (OPIOID2_MODA=1-OPIOID2_MODJJ=1) OR (OPIOID2_2A=1- OPIOID2_2JJ=1) OR (OPIOID2_MOD_2A=1-OPIOID2_MOD_2JJ=1) **DOV_OPIOID=1** “One Item selected in NSDUH series”

Only One medication selected in OPIOID2, OPIOID2_MOD, OPIOID2_2, OPIOID2_MOD_2 questions, assign DOV_OPIOID=1 value

IF **MULTIPLE ITEMS SELECTED** IN (OPIOID2A=1-OPIOIDJJ=1) OR (OPIOID2_MODA=1-OPIOID2_MODJJ=1) OR (OPIOID2_2A=1- OPIOID2_2JJ=1) OR (OPIOID2_MOD_2A=1-OPIOID2_MOD_2JJ=1) **DOV_OPIOID=2** “Multiple Items selected in NSDUH series”

More than one medication selected in OPIOID2, OPIOID2_MOD, OPIOID2_2, OPIOID2_MOD_2 questions, assign DOV_OPIOID=2 value

IF **NONE SELECTED** IN ((OPIOID2A=2-OPIOIDJJ=2) OR (OPIOID2_MODA=2-OPIOID2_MODJJ=2) OR (OPIOID2_2A=2- OPIOID2_2JJ=2) OR (OPIOID2_MOD_2A=1-OPIOID2_MOD_2JJ=1)) AND (OPIOID1=1 OR OPIOID1_2=1) **DOV_OPIOID=3** “NO medications selected in NSDUH question, but said YES to HIS question”

NO medications selected in OPIOID2, OPIOID2_MOD, OPIOID2_2, OPIOID2_MOD_2 questions, BUT Respondent says YES in OPIOID1 OR OPIOID1_2, assign DOV_OPIOID=3 value

IF MISSING DOV_OPIOID, DOV_OPIOID=4 “NO Opioids reported being used in the past 12 months”
If none of the first 3 conditions are met, assign DOV_OPIOID=4 value and skip OPIOID3 through OPIOID6.

[SHOW IF (OPIOID1=1 OR OPIOID1_2=1) OR ((OPIOID2A=1 THROUGH OPIOID2JJ=1) OR (OPIOID2_MODA=1 THROUGH OPIOID2_MODJJ=1) OR (OPIOID2_2A=1 THROUGH OPIOID2_2JJ=1) OR (OPIOID2_MOD_2A=1 THROUGH OPIOID2_MOD_2JJ))]

[RECORD AND COMPUTE TIME ON SCREEN]

[SP]

OPIOID3.

[IF DOV_OPIOID=1] You said you took [INSERT THE ONE ITEM SELECTED IN OPIOID2, OPIOID2_MOD, OPIOID2_2, OR OPIOID2_MOD_2] in the past 12 months.

[SPACE]

[IF DOV_OPIOID=1] Are you currently taking this medication?

[IF DOV_OPIOID=2] You said you took the following medications in the past 12 months:

[SPACE]

[INSERT, IN BULLET LIST, THE ITEMS SELECTED IN OPIOID2, OPIOID2_MOD, OPIOID2_2, OR OPIOID2_MOD_2; SEE A_PHQImp FOR EXAMPLE OF BULLET LIST OF INSERTED TEXT]

[SPACE]

[IF DOV_OPIOID=2] Are you currently taking any of these medications?

[IF DOV_OPIOID=3] You said you took an opioid pain reliever in the past 12 months.

[SPACE]

[IF DOV_OPIOID=3] Are you currently taking any opioid pain relievers?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF OPIOID3=1]

[RECORD AND COMPUTE TIME ON SCREEN]

[SP]

OPIOID4.

[IF DOV_OPIOID=1] About how long have you been taking this medication?

[IF DOV_OPIOID=2] About how long have you been taking these medications?

[IF DOV_OPIOID=3] About how long have you been taking opioid pain relievers?

RESPONSE OPTIONS:

1. Less than a week
 2. 1 to 4 weeks
 3. 1 to 6 months
 4. 6 months to a year
 5. 1 to 5 years
 6. 5 years or more
-

[SHOW IF OPIOID3=2, 98]

[RECORD AND COMPUTE TIME ON SCREEN]

[SP]

OPIOID5.

[IF DOV_OPIOID=1] About how long were you taking this medication?

[IF DOV_OPIOID=2] About how long were you taking these medications?

[IF DOV_OPIOID=3] About how long were you taking opioid pain relievers?

RESPONSE OPTIONS:

1. Less than a week
 2. 1 to 4 weeks
 3. 1 to 6 months
 4. 6 months to a year
 5. 1 to 5 years
 6. 5 years or more
-

[SHOW IF (OPIOID1=1 OR OPIOID1_2=1) OR ((OPIOID2A=1 THROUGH OPIOID2JJ=1) OR (OPIOID2_MODA=1 THROUGH OPIOID2_MODJJ=1) OR (OPIOID2_2A=1 THROUGH OPIOID2_2JJ=1) OR (OPIOID2_MOD_2A=1 THROUGH OPIOID2_MOD_2JJ)]

[RECORD AND COMPUTE TIME ON SCREEN]

[MP]

OPIOID6.

[IF DOV_OPIOID=1] What were the reasons you took this medication the last time?

[IF DOV_OPIOID=2] What were the reasons you took these medications the last time?

[IF DOV_OPIOID=3] What were the reasons you took opioid pain relievers the last time?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. To relieve physical pain
 2. To relax or relieve tension
 3. To increase or decrease the effect(s) of some other drug
 4. To feel good or get high
 5. To help with my sleep
 6. To help me with my feelings or emotions
 7. Because I am “hooked” or I have to have them
 8. For a suicide attempt or suicidal thoughts
 9. Because of peer pressure, friends, or trying to feel cool
-

[RECORD AND COMPUTE TIME ON SCREEN]

[MP]

PROBE18.

Please select the statements, if any, that apply to you:

RESPONSE OPTIONS, RANDOMIZE:

- A. I'm not sure what an opioid is
 - B. I have never taken an opioid pain killer in my life
 - C. I don't like to take pills; I'm not a pill person
 - D. I have pain that requires me to take opioid pain killers
 - E. I use opioid pain relievers responsibly
 - F. I'm addicted, or used to be addicted to opioids
 - G. I understand the harm opioids can cause
 - H. I have heard about the opioid crisis in the news
 - I. I know someone who has been hurt by opioid pain killers
 - J. I have only taken opioid pills briefly to help recover from an injury or medical procedure
-

[SP]

ANX_1.

How often do you feel worried, nervous, or anxious?

RESPONSE OPTIONS:

- 1. Daily
 - 2. Weekly
 - 3. Monthly
 - 4. A few times a year
 - 5. Never
-

[SP]

ANX_2.

Do you take prescription medication for these feelings?

RESPONSE OPTIONS:

- 1. Yes
-

2. No

[SHOW IF (ANX_1=1,2,3,4) OR ((ANX_1=5) AND (ANX_2=1))]

[SP]

ANX_3.

Thinking about the last time you felt worried, nervous, or anxious, how would you describe the level of these feelings?

RESPONSE OPTIONS:

1. A little
 2. A lot
 3. Somewhere in between a little and a lot
-

[SP]

DEP_1.

How often do you feel depressed?

RESPONSE OPTIONS:

1. Daily
 2. Weekly
 3. Monthly
 4. A few times a year
 5. Never
-

[SP]

DEP_2.

Do you take prescription medication for depression?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF (DEP_1=1,2,3,4) OR ((DEP_1=5) AND (DEP_2=1))]

[SP]

DEP_3.

Thinking about the last time you felt depressed, how depressed did you feel?

RESPONSE OPTIONS:

1. A little
2. A lot
3. Somewhere in between a little and a lot

[SHOW IF P_GROUP=1]

[GRID, SP; 4,4]

A_PHQ.

Over the last 2 weeks, how often have you been bothered by any of the following problems?

GRID ITEMS:

- A. Little interest or pleasure in doing things
- B. Feeling down, depressed, or hopeless
- C. Trouble falling or staying asleep, or sleeping too much
- D. Feeling tired or having little energy
- E. Poor appetite or overeating
- F. Feeling bad about yourself — or that you are a failure or have let yourself or your family down
- G. Trouble concentrating on things, such as reading the newspaper or watching television
- H. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual

RESPONSE OPTIONS:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

[SHOW IF A_PHQA=2,3,4 OR A_PHQB=2,3,4 OR A_PHQC=2,3,4 OR A_PHQD=2,3,4 OR A_PHQE=2,3,4 OR A_PHQF=2,3,4 OR A_PHQG=2,3,4 OR A_PHQH=2,3,4]

[SP]

A_PHQImp.

Over the past 2 weeks, you've been bothered by:

- [SHOW IF A_PHQ_A=2,3,4] Little interest or pleasure in doing things
- [SHOW IF A_PHQ_B=2,3,4] Feeling down, depressed, or hopeless
- [SHOW IF A_PHQ_C=2,3,4] Trouble falling or staying asleep, or sleeping too much
- [SHOW IF A_PHQ_D=2,3,4] Feeling tired or having little energy
- [SHOW IF A_PHQ_E=2,3,4] Poor appetite or overeating
- [SHOW IF A_PHQ_F=2,3,4] Feeling bad about yourself — or that you are a failure or have let yourself or your family down
- [SHOW IF A_PHQ_G=2,3,4] Trouble concentrating on things, such as reading the newspaper or watching television
- [SHOW IF A_PHQ_H=2,3,4] Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual

[SPACE]

Altogether, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

RESPONSE OPTIONS:

1. Not at all difficult
2. Somewhat difficult
3. Very difficult
4. Extremely difficult

[SHOW IF A_PHQA=2,3,4 OR A_PHQB=2,3,4 OR A_PHQC=2,3,4 OR A_PHQD=2,3,4 OR A_PHQE=2,3,4 OR A_PHQF=2,3,4 OR A_PHQG=2,3,4 OR A_PHQH=2,3,4]

[MP]

A_PROBE33.

Which of the following statements, if any, describe your feelings of being sad or depressed?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. Sometimes the feelings can be so intense that I cannot get out of bed.
2. The feelings sometimes interfere with my life, and I wish that I did not have them.
3. I get over the feelings quickly.
4. Feeling that way is normal, and everyone feels that way sometimes.
5. I have been told by a medical professional that I have depression.

[SHOW IF P_GROUP=B]

[GRID, SP; 4,3]

B_GAD.

Over the last 2 weeks, how often have you been bothered by the following problems?

GRID ITEMS:

- A. Feeling nervous, anxious or on edge
- B. Not being able to stop or control worrying
- C. Worrying too much about different things
- D. Trouble relaxing
- E. Being so restless that it is hard to sit still
- F. Becoming easily annoyed or irritable
- G. Feeling afraid as if something awful might happen

RESPONSE OPTIONS:

- 1. Not at all
 - 2. Several days
 - 3. More than half the days
 - 4. Nearly every day
-

[SHOW IF B_GADA=2,3,4 OR B_GADB=2,3,4 OR B_GADC=2,3,4 OR B_GADD=2,3,4 OR B_GADE=2,3,4 OR B_GADF=2,3,4 OR B_GADG=2,3,4]

[SP]

B_GADImp.

Over the past 2 weeks, you've been bothered by:

- [SHOW IF B_GAD_A=2,3,4]Feeling nervous, anxious or on edge
- [SHOW IF B_GAD_B=2,3,4]Not being able to stop or control worrying
- [SHOW IF B_GAD_C=2,3,4]Worrying too much about different things
- [SHOW IF B_GAD_D=2,3,4]Trouble relaxing
- [SHOW IF B_GAD_E=2,3,4]Being so restless that it is hard to sit still
- [SHOW IF B_GAD_F=2,3,4]Becoming easily annoyed or irritable
- [SHOW IF B_GAD_G=2,3,4]Feeling afraid as if something awful might happen

[SPACE]

Altogether, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

RESPONSE OPTIONS:

1. Not at all difficult
 2. Somewhat difficult
 3. Very difficult
 4. Extremely difficult
-

[SHOW IF B_GADA=2,3,4 OR B_GADB=2,3,4 OR B_GADC=2,3,4 OR B_GADD=2,3,4 OR B_GADE=2,3,4 OR B_GADF=2,3,4 OR B_GADG=2,3,4]

[MP]

B_PROBE34.

Which of the following statements, if any, describe your feelings of being nervous or anxious?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. Sometimes the feelings can be so intense that my chest hurts and I have trouble breathing.
 2. These are positive feelings that help me to accomplish goals and be productive.
 3. The feelings sometimes interfere with my life, and I wish that I did not have them.
 4. Feeling that way is normal, and everyone feels that way sometimes
 5. I have been told by a medical professional that I have anxiety.
-
-

[SHOW IF P_GROUP=1]

[SP]

A_CHPAIN6M.

In the PAST 6 MONTHS, how often did you have pain?

RESPONSE OPTIONS:

1. Never
 2. Some days
 3. Most days
-

4. Every day
-

[SHOW IF A_CHPAIN6M =2,3,4]

[SP]

A_PAINLMT6.

Over the PAST 6 MONTHS, how often did pain limit your life or work activities?

RESPONSE OPTIONS:

1. Never
 2. Some days
 3. Most days
 4. Every day
-

[SHOW IF P_GROUP=2]

[SP]

B_PAIN_2.

In the PAST 3 MONTHS, how often did you have pain?

RESPONSE OPTIONS:

1. Never
 2. Some days
 3. Most days
 4. Every day
-

[SHOW IF B_PAIN_2=2,3,4]

[SP]

B_PAINLMT3.

Over the PAST 3 MONTHS, how often did pain limit your life or work activities?

RESPONSE OPTIONS:

1. Never
 2. Some days
 3. Most days
 4. Every day
-

[SHOW IF (A_CHPAIN6M =2,3,4) OR (B_PAIN_2=2,3,4)]

[SP]

PAIN_4.

Thinking about the last time you had pain, how much pain did you have?

RESPONSE OPTIONS:

1. A little
 2. A lot
 3. Somewhere in between a little and a lot
-

[SHOW IF (A_CHPAIN6M =2,3,4) OR (B_PAIN_2=2,3,4)]

[MP]

PROBE17.

Which of the following statements, if any, describe your pain in the PAST [IF P_GROUP=1, INSERT 6; IF P_GROUP=2, INSERT 3] MONTHS?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. It is constantly present
 2. Sometimes I'm in a lot of pain and sometimes it's not so bad
 3. Sometimes it's unbearable and excruciating
 4. When I get my mind on other things, I'm not aware of the pain
 5. It is occasional and does not last
 6. Medication can take my pain away completely
 7. My pain is because of my current or past work
 8. My pain is because of exercise
 9. My pain was caused by a recent injury or infection
 10. My pain is minor and infrequent
-

[DISPLAY]

SMK_INTRO.

These next questions are about cigarette smoking.

[SP]

SMKEV.

Have you smoked at least 100 cigarettes in your entire life?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF SMKEV=1]

[SP]

SMKNOW.

Do you now smoke cigarettes every day, some days, or not at all?

RESPONSE OPTIONS:

1. Every day
 2. Some days
 3. Not at all
-

[SHOW IF P_GROUP=1]

[SP]

A_ECIGEV_A.

The next question is about electronic cigarettes or e-cigarettes. E-cigarettes and other electronic vaping products include electronic hookahs (e-hookahs), vape pens, e-cigars, and others. These products are battery-powered and usually contain nicotine and flavors such as fruit, mint, or candy.

[SPACE]

Have you ever used an e-cigarette or other electronic vaping product, even one time, in your entire life?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF P_GROUP=2]

[SP]

B_ECIGEV_A.

Have you ever used an e-cigarette or other electronic vaping product, even one time, in your entire life ?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[MP]

PROBE19.

What counts as an e-cigarette?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. A vape with cannabis, THC, or CBD oil
 2. A vape with nicotine or other flavored oil
 3. A hookah-pen or e-hookah
 4. An e-vaporizer
-

5. A tobacco cigarette or cigar
 6. A marijuana cigarette
-

[DISPLAY]

ACTV_INTRO.

The next questions are about physical activities (exercise, sports, physically active hobbies...) that you may do in your leisure time. The first questions ask about light or moderate physical activities, then there will be questions about vigorous physical activities.

[NUMBOX, DROPDOWN, FOR DROPDOWN HAVE “Per week” AS DEFAULT DISPLAYED]

[PROMPT IF NUMBERBOX HAS VALUE BUT DROPDOWN LIST IS EMPTY]

MODNO.

How often do you do light or moderate leisure time physical activities for at least 10 minutes that cause only light sweating or a slight to moderate increase in breathing or heart rate?

per day/week/month

[NUMBER BOX, RANGE 0-995, 998] Number of times [DROPDOWN LIST]

DROPDOWN LIST RESPONSE OPTIONS:

1. Never
 2. Per day
 3. Per week
 4. Per month
 5. Per year
 6. Unable to do this type of activity
-

[SHOW IF MODNO_DROPDOWN=2,3,4,5 AND (MODNO_NUMBOX>0 AND MODNO_NUMBOX NE '998')]

[NUMBOX, DROPDOWN, FOR DROPDOWN HAVE “Minutes” AS DEFAULT DISPLAYED]

[PROMPT IF NUMBERBOX HAS VALUE BUT DROPDOWN LIST IS EMPTY]

MODLNGNO.

About how long do you do these light or moderate leisure-time physical activities each time?

Minutes/Hours

[NUMBER BOX, RANGE 1-90, 998] Number of [DROPDOWN LIST]

DROPDOWN LIST RESPONSE OPTIONS:

1. Minutes
 2. Hours
-

[SHOW IF MODNO_DROPDOWN=2,3,4,5 AND (MODNO_NUMBOX>0 AND MODNO_NUMBOX NE '998') AND P_PROBEEXP=1]

[RECORD AND COMPUTE TIME ON SCREEN]

[MP]

PROBE20_1.

Which of the following types of physical activity, if any, did you include when you answered the previous question?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

- A. Running or jogging
 - B. Hiking
 - C. Walking as part of your job
 - D. Walking outside of work
 - E. Yardwork or cleaning your home
 - F. Working out with exercise equipment
 - G. Lifting weights
 - H. Cycling, swimming, or other aerobic exercises
 - I. Yoga or stretching
 - J. Playing a sport, please specify which sport: [TEXTBOX]
 - K. Other, please specify: [TEXTBOX]
-

[SHOW IF MODNO_DROPDOWN=2,3,4,5 AND (MODNO_NUMBOX>0 AND MODNO_NUMBOX NE '998') AND P_PROBEEXP=2]

[RECORD AND COMPUTE TIME ON SCREEN]

[GRID, SP]

PROBE20_2.

Which of the following types of physical activity, if any, did you include when you answered the previous question?

GRID ITEMS:

- A. Running or jogging
- B. Hiking
- C. Walking as part of your job
- D. Walking outside of work
- E. Yardwork or cleaning your home
- F. Working out with exercise equipment
- G. Lifting weights
- H. Cycling, swimming, or other aerobic exercises
- I. Yoga or stretching
- J. Playing a sport, please specify which sport: [TEXTBOX]
- K. Other, please specify: [TEXTBOX]

RESPONSE OPTIONS:

- 1. Yes
 - 2. No
-

[NUMBOX, DROPDOWN, FOR DROPDOWN HAVE “Per week” AS DEFAULT DISPLAYED]

[PROMPT IF NUMBERBOX HAS VALUE BUT DROPDOWN LIST IS EMPTY]

VIGNO.

How often do you do vigorous leisure-time physical activities for at least 10 minutes that cause heavy sweating or large increases in breathing or heart rate?

per day/week/month

[NUMBER BOX, RANGE 0-99, 998] Number of times [DROPDOWN LIST]

DROPDOWN LIST RESPONSE OPTIONS:

- 1. Never
- 2. Per day
- 3. Per week

4. Per month
 5. Per year
 6. Unable to do this type of activity
-

[SHOW IF VIGNO_DROPDOWN=2,3,4,5 AND (VIGNO_NUMBOX>0 AND VIGNO_NUMBOX NE '998')]

[NUMBOX, DROPDOWN, FOR DROPDOWN HAVE "Minutes" AS DEFAULT DISPLAYED]

[PROMPT IF NUMBERBOX HAS VALUE BUT DROPDOWN LIST IS EMPTY]

VIGLNGNO.

About how long do you do these vigorous leisure-time physical activities each time?

Minutes/Hours

[NUMBER BOX, RANGE 1-90, 998] Number of [DROPDOWN LIST]

DROPDOWN LIST RESPONSE OPTIONS:

1. Minutes
 2. Hours
-

[SHOW IF VIGNO_DROPDOWN=2,3,4,5 AND (VIGNO_NUMBOX>0 AND VIGNO_NUMBOX NE '998') AND P_PROBEEXP=1]

[RECORD AND COMPUTE TIME ON SCREEN]

[MP]

PROBE21_1.

Which of the following types of physical activity, if any, did you include when you answered the previous question?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. Running or jogging
 2. Hiking
 3. Walking as part of your job
-

4. Walking outside of work
 5. Yardwork or cleaning your home
 6. Working out with exercise equipment
 7. Lifting weights
 8. Cycling, swimming, or other aerobic exercises
 9. Yoga or stretching
 10. Playing a sport, please specify which sport: [TEXTBOX]
 11. Other, please specify: [TEXTBOX]
-

[SHOW IF VIGNO_DROPDOWN=2,3,4,5 AND (VIGNO_NUMBOX>0 AND VIGNO_NUMBOX NE '998') AND P_PROBEEXP=2]

[RECORD AND COMPUTE TIME ON SCREEN]

[GRID, SP]

PROBE21_2.

Which of the following types of physical activity, if any, did you include when you answered the previous question?

GRID ITEMS:

- A. Running or jogging
- B. Hiking
- C. Walking as part of your job
- D. Walking outside of work
- E. Yardwork or cleaning your home
- F. Working out with exercise equipment
- G. Lifting weights
- H. Cycling, swimming, or other aerobic exercises
- I. Yoga or stretching
- J. Playing a sport, please specify which sport: [TEXTBOX]
- K. Other, please specify: [TEXTBOX]

RESPONSE OPTIONS:

1. Yes
 2. No
-

[NUMBOX, DROPDOWN, FOR DROPDOWN HAVE "Per week" AS DEFAULT DISPLAYED]

[PROMPT IF NUMBERBOX HAS VALUE BUT DROPDOWN LIST IS EMPTY]

STRNGNO.

How often do you do leisure time physical activities specifically designed to strengthen your muscles such as lifting weights or doing calisthenics?

[SPACE]

Include all such activities even if you have mentioned them before.

per day/week/month

[NUMBER BOX, RANGE 0-995, 998] Number of times [DROPDOWN LIST]

DROPDOWN LIST RESPONSE OPTIONS:

1. Never
 2. Per day
 3. Per week
 4. Per month
 5. Per year
 6. Unable to do this type of activity
-

[P_PROBEEXP=1]

[RECORD AND COMPUTE TIME ON SCREEN]

[MP]

PROBE22_1.

In the last week, did you do any of the following things for 20 or more minutes at once?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. Running or jogging
2. Hiking
3. Walking as part of your job
4. Walking outside of work
5. Yardwork or cleaning your home
6. Working out with exercise equipment
7. Lifting weights
8. Cycling, swimming, or other aerobic exercises
9. Yoga or stretching
10. Playing a sport, please specify which sport: [TEXTBOX]
11. Other, please specify: [TEXTBOX]

[P_PROBEEXP=2]

[RECORD AND COMPUTE TIME ON SCREEN]

[GRID, SP]

PROBE22_2.

In the last week, did you do any of the following things for 20 or more minutes at once?

GRID ITEMS:

- A. Running or jogging
- B. Hiking
- C. Walking as part of your job
- D. Walking outside of work
- E. Yardwork or cleaning your home
- F. Working out with exercise equipment
- G. Lifting weights
- H. Cycling, swimming, or other aerobic exercises
- I. Yoga or stretching
- J. Playing a sport, please specify which sport: [TEXTBOX]
- K. Other, please specify: [TEXTBOX]

RESPONSE OPTIONS:

- 1. Yes
 - 2. No
-

[SP]

ACISAD.

During the past 30 days, how often did you feel so sad that nothing could cheer you up?

RESPONSE OPTIONS:

- 1. All of the time
 - 2. Most of the time
 - 3. Some of the time
 - 4. A little of the time
 - 5. None of the time
-

[SHOW IF ACISAD=1,2,3,4]

[MP]

PROBE29.

Which of the following statements, if any, describe your feelings of being sad or depressed?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. Sometimes the feelings can be so intense that I cannot get out of bed
 2. The feelings sometimes interfere with my life, and I wish that I did not have them
 3. I get over the feelings quickly
 4. Feeling that way is normal, and everyone feels that way sometimes
 5. I have been told by a medical professional that I have depression
-

[SP]

ACINERV.

During the past 30 days, how often did you feel nervous?

RESPONSE OPTIONS:

1. All of the time
 2. Most of the time
 3. Some of the time
 4. A little of the time
 5. None of the time
-

[SHOW IF ACINERV=1,2,3,4]

[MP]

PROBE30.

Which of the following statements, if any, describe your feelings of being nervous or anxious?

[SPACE]

Please select all that apply.

RESPONSE OPTIONS:

1. Sometimes the feelings can be so intense that my chest hurts and I have trouble breathing.
 2. These are positive feelings that help me to accomplish goals and be productive.
 3. The feelings sometimes interfere with my life, and I wish that I did not have them.
 4. Feeling that way is normal, and everyone feels that way sometimes.
 5. I have been told by a medical professional that I have anxiety.
-

[GRID, SP]

ACIRSTLS.

During the past 30 days, how often did you feel...

GRID ITEMS:

- A. Restless or fidgety
- B. Hopeless
- C. That everything was an effort

RESPONSE OPTIONS:

1. All of the time
 2. Most of the time
 3. Some of the time
 4. A little of the time
 5. None of the time
-

[SP]

PROBE31.

Would you consider everything being an effort a good thing or a bad thing?

RESPONSE OPTIONS:

1. Good thing
 2. Bad thing
 3. Neither good nor bad
-

[SHOW IF ACIRSTLS_C = 1,2,3,4]

[SP]

PROBE32.

How concerned are you about feeling as if everything is an effort?

RESPONSE OPTIONS:

1. Very concerned
 2. Somewhat concerned
 3. A little concerned
 4. Not at all concerned
-

[SP]

ACIWTHLS.

During the past 30 days, how often did you feel worthless?

RESPONSE OPTIONS:

1. All of the time
 2. Most of the time
 3. Some of the time
 4. A little of the time
 5. None of the time
-

[DISPLAY]

INJ_INTRO.

The next set of questions asks about injuries. People can be injured accidentally, or on purpose. They may hurt themselves or others may cause them to be hurt.

[SP]

INJURY1.

The first question is about repetitive strain injuries. By this, we mean injuries caused by repeating the same movement over an extended period. Examples include carpal tunnel syndrome, tennis elbow, or tendonitis. DURING THE PAST 3 MONTHS, did you have any injuries due to repetitive strain?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SP]

INJURY2.

[IF INJURY1=1, INSERT *Not including any of the repetitive strain injuries you just mentioned,*] DURING THE PAST 3 MONTHS, did you have an accident or an injury where any part of your body was hurt?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF INJURY2=1]

[SP]

INJURY3.

Were any of these injuries serious enough to limit your usual activities for at least 24 hours after the injury occurred?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF INJURY2=1]

[SP]

INJURY4.

Were any of these injuries serious enough that you missed at least one day of work or school?

RESPONSE OPTIONS:

1. Yes
 2. No
-

[SHOW IF INJURY3=1 OR INJURY4=1]

[DISPLAY]

NUMTIMES_INTRO.

[IF INJURY1=1, INSERT *Not counting repetitive strain injuries*, please; IF INJURY1=2,98, INSERT Please] think about all of the accidents or events that caused an injury IN THE PAST 3 MONTHS, and that caused you to miss at least one day of work or school, or that made it difficult for you to do things that you usually do for one day or more.

[SHOW IF INJURY3=1 OR INJURY4=1]

[NUMBOX]

INJURY5.

DURING THE PAST 3 MONTHS, how many times did these accidents or injury events occur?

Number of times:

[NUMBER BOX, RANGE 0-995, 998]

[SHOW IF INJURY3=1 OR INJURY4=1]

[GRID, SP; 3,3]

INJURY6.

DURING THE PAST 3 MONTHS, did [IF INJURY5=1,998 INSERT this injury; IF INJURY5=2-995, INSERT any of these injuries] occur while you were:

GRID ITEMS:

- A. working at a job or business?
- B. at school, taking classes, or doing schoolwork?
- C. playing sports or exercising, including walking, biking, or running for exercise? (Please also include recreational sports such as skating, skiing, tennis, golf, bowling, or fishing).
- D. doing household activities, such as housework, cooking, home maintenance, or yardwork?
- E. doing leisure activities, such as hobbies, volunteer work, socializing, watching TV, or relaxing?
- F. walking to get some place outside your home?

RESPONSE OPTIONS:

- 1. Yes
 - 2. No
-

[SHOW IF INJURY3=1 OR INJURY4=1]

[DISPLAY]

CAUSE_INTRO.

The next questions are about two ways that you might have been injured. Remember that we are just talking about [IF INJURY5=1, 998 INSERT the injury; IF INJURY5=2-995, INSERT any of the injuries] that caused you to miss at least one day of work or school, or that made it difficult for you to do things that you usually do for one day or more.

[SHOW IF INJURY3=1 OR INJURY4=1]

[SP]

INJURY12.

DURING THE PAST 3 MONTHS, [IF INJURY5=1, 998 INSERT was this injury; IF INJURY5=2-995, INSERT were any of these injuries] a result of a fall or falling?

RESPONSE OPTIONS:

- 1. Yes
 - 2. No
-

[SHOW IF INJURY3=1 OR INJURY4=1]

[SP]

INJURY13.

DURING THE PAST 3 MONTHS, [IF INJURY5=1, 998 INSERT was this injury; IF INJURY5=2-995, INSERT were any of these injuries] a result of a collision involving a motor vehicle?

RESPONSE OPTIONS:

1. Yes
2. No