

# Cognitive Evaluation of the Complementary Health Approaches Supplement for the 2022 National Health Interview Survey

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## Introduction

This report documents the findings from a cognitive interviewing study by the National Center for Health Statistics' (NCHS) Collaborating Center for Questionnaire Design and Evaluation Research (CCQDER) of the questions appearing on the Complementary Health Approaches (CHA) Supplement for the 2022 National Health Interview Survey (NHIS). The NHIS is a nationally representative survey that tracks the health of the population of the United States.<sup>1</sup> The CHA was developed by the National Center for Complementary and Integrative Health (NCCIH), National Institutes of Health (NIH), and includes nine questions pertaining to the use of various alternative health practitioners and wellness modalities, including chiropractic care, acupuncture, massage, naturopathic care, music therapy, art therapy, guided imagery and progressive relaxation, various forms of meditation, and yoga. Each question acts as a screener for a set of follow-up questions related to the reasons for use of the complementary and alternative health modalities, such as pain, wellness, and restoration of health. A fourth item on the use of breathing exercises or meditation is included in the follow-up question set for yoga.

The next section documents the methods, sample characteristics, questionnaire structure, interviewing procedures, and analytical approach. The third section of the report provides overall findings that emerged from the cognitive interviews. The fourth and final section of the report presents detailed question-by-question analysis, including descriptions of the main patterns of interpretation, response strategies, potential sources or instances of response error, and the modality-specific impact of the revisions to the questionnaire.

## Methodology

As a qualitative method, cognitive interviewing provides in-depth insights into the patterns of interpretation, recall, judgment, and response that respondents undertake when encountering survey items. Using data from cognitive interviewing, this study aimed to document how respondents interpreted the questions on the CHA supplement, to assess response processes based on those interpretations, to draw conclusions based on these findings about the performance of and the constructs captured by the supplement, and to assess the efficacy of the revisions made mid-interviewing. Particular attention was paid to non-users' interpretations of complementary and alternative medicinal approaches to examine the extent of shared understandings of survey items for 'Yes' and 'No' responses.

### *Sample composition and recruitment*

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<sup>1</sup> Information on the NHIS may be found at [https://www.cdc.gov/nchs/nhis/about\\_nhis.htm](https://www.cdc.gov/nchs/nhis/about_nhis.htm).

Recruitment began the week of December 1, 2020. The CCQDER Operations team scheduled 45 interviews, and 40 interviews were conducted in English virtually on the Zoom video conferencing platform between December 3, 2020, and February 3, 2021. Recruitment was carried out through posting advertisements in the “Jobs” section of Craigslist and through word of mouth. CCQDER posted in four cities’ “Jobs” pages with five advertisements per city. The four cities were Baltimore, MD, Richmond, VA, Washington, DC, and Annapolis, MD.

Sampling was purposive, with selection based on access to and use of complementary health approaches within the last year. Previous evaluations of questions relating to complementary and alternative medicine (CAM) approaches had found that respondents with a “CAM identity,” that is, those who both used CAM approaches and strongly identified with the perceived effects of these approaches on their lives, interpreted and responded to questions differently than respondents without that identity; additionally, respondents who strongly identified as non-users (with an anti-“CAM identity”) strove to represent themselves as non-users, with consequent effects on question response, including false negative responses.<sup>2</sup> Thus, in order to examine the performance of questions across the population, half of the respondents were recruited because they self-identified as having used complementary health approaches within the last 12 months, and the other half were recruited because they self-identified as not having used any modality in the same time period. Finally, demographic diversity was a recruitment goal. Participants from this study represent a broad range of racial, ethnic, and gender identities, ages, socio-economic classes, and levels of education achieved. Table 1 presents the demographic information of respondents. The sample had slightly more respondents who identified as women than identified as men and was close to evenly split between respondents identifying as black or white. It was evenly balanced across income classifications, and the sample was mostly young (less than 65) and non-Hispanic. Finally, the sample skewed toward higher educational attainment.

**Table 1: Sample Composition, n = 40**

	<b>Number</b>	<b>Percent</b>
<b>Gender</b>		
Women	23	57.5%
Men	16	40.0%
Refused	1	2.5%
<b>Ethnicity</b>		
Hispanic	3	7.5%
Non-Hispanic	37	92.5%
<b>Race</b>		
Black	18	45.0%
White	21	52.5%

<sup>2</sup> Willson, S. (2006). *Cognitive Interviewing Evaluation of the 2007 Complementary and Alternative Medicine Module for the National Health Interview Survey*. Hyattsville, MD: National Center for Health Statistics. Available at [https://wwwn.cdc.gov/qbank/report/Willson\\_NCHS\\_2006CAMRound1Report.pdf](https://wwwn.cdc.gov/qbank/report/Willson_NCHS_2006CAMRound1Report.pdf).

Asian	1	2.5%
<b>Age (in years)</b>		
18-29	9	22.5%
30-49	18	45.0%
50-64	10	25.0%
65 and older	3	7.5%
<b>Educational Attainment</b>		
High school diploma or less	8	20.0%
Some college	6	15.0%
2- or 4-Year degree	14	35.0%
Graduate degree	12	30.0%
<b>Income</b>		
\$0-19,999	9	22.5%
\$20,000-44,999	10	25.0%
\$45,000-79,999	11	27.5%
\$80,000 or More	10	25.0%

*Survey instrument*

The CHA supplement is structured around nine complementary and alternative health-oriented modalities, with main questions asking about the use of each in the prior 12 months (See Table 2). If a respondent answered ‘Yes’ to any of these questions, they received a follow-up three-question set, identical for each modality on the supplement, inquiring about the reasons for using the specified practice. The only exception to this was the yoga question set, in which respondents were asked about the use of breathing exercises in yoga prior to the other follow-up questions. The follow-up question set initially asked about three reasons for the use of a CHA: to treat or manage pain, for general wellness, and/or to restore the respondent’s overall health. The questions were not mutually exclusive, and respondents answered them sequentially.

**Table 2: Modality Topic and Ordering**

<b>Item Number</b>	<b>Topic</b>
1	Chiropractic care
2	Acupuncture
3	Massage
4	Naturopathy
5	Music therapy
6	Art therapy
7	Guided imagery or progressive relaxation
8	Meditation
9	Yoga
<b>Follow-Up Set</b>	
Yoga (a.)	Breathing exercises

Yoga (b.) and all other modalities (a.)	...to treat or manage pain?
Yoga (c.) and all other modalities (b.)	...for general wellness?
Yoga (d.) and all other modalities (c.)	...to restore your overall health?

Two-thirds of the way through interviewing, the questionnaire was revised to address interim findings. Revisions included adding definitions to several questions, clarifying the location of yoga practice, reordering survey items (specifically reversing the order of items 7 and 8), and significant changes to the follow-up question set, discussed in more detail below.

### *Data collection and analysis*

Interviews were one hour long and were conducted by trained interviewers from CCQDER. Due to the social distancing requirements of the COVID-19 pandemic, all interviews were conducted via the Zoom video conferencing platform. Respondents completed informed consent and confidentiality forms prior to the interview and were remunerated \$40 after interview completion. The interviews began with interviewers administering the survey questionnaire as designed and outlined in Appendix 1, in Round 1, and Appendix 2, in Round 2, by reading the questions aloud and, with as little intervention as possible, gathering respondents' answers. This was followed by retrospective probing of the instrument aimed at understanding why respondents offered the answers they did through understanding their personal narratives and social contexts (Willson and Miller, 2014).<sup>3</sup>

Analysis proceeded in a four-stage process based on the constant comparative method first articulated by Glaser and Strauss (1967)<sup>4</sup> and adapted to cognitive interviewing by Miller and co-authors (2014)<sup>5</sup> using Q-Notes, an online software application designed for managing data from cognitive interviewing.<sup>6</sup> In the first stage of analysis, interviews were summarized into notes that conveyed the interpretations respondents gave of key concepts (in the context of the supplement, these included acupuncture, music therapy, meditation, and yoga, among others) based on the narratives and experiences respondents shared as part of verbal probing. Additionally, these notes included descriptions of any response errors or other difficulties respondents faced when encountering the questions. Interviewers added their own notation of emergent findings to the notes when appropriate.

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<sup>3</sup> Willson, S., & Miller, K. (2014). Data Collection. In K. Miller, S. Willson, V. Chepp, & J.-L. Padilla (Eds.), *Cognitive interviewing methodology* (pp. 15-33). Hoboken, NJ: John Wiley & Sons.

<sup>4</sup> Glaser, B. and Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Hawthorne, NY: Aldine de Gruyter.

<sup>5</sup> Miller, K., Willson, S., Chepp, V., & Padilla, J.-L. (Eds.). (2014). *Cognitive Interviewing Methodology*. Hoboken, NJ: John Wiley & Sons.

<sup>6</sup> Q-Notes can be accessed at <https://wwwndev.cdc.gov/qnotes/>.

In the second stage, comparisons were inductively drawn across the dataset on a question-by-question basis, taking into account the revisions to the questionnaire partway through interviewing. For example, to evaluate the question of yoga, analysts examined the collective notes across all Version 1 interviews for the yoga question separately from the notes across all Version 2 interviews for the same question. This process had the aim of identifying patterns of 1) consistent (or inconsistent) respondent definitions of modalities, 2) associations respondents had with those modalities, and 3) respondent conceptions of the purpose of individual modalities. Additionally, in this stage, analysts sought to identify any patterns of response error associated with specific modalities and question versions. In the third stage, comparisons were made across supplement versions to determine if questions captured the same phenomena in each version and to assess patterns of question performance. In other words, did the revisions substantially change how respondents understood what constituted specific modalities, associations respondents made with those modalities, or respondent understandings of modality purpose? Finally, in the fourth stage, analysts drew comparisons across the supplement to identify larger conceptual themes relevant to understanding how respondents answer questions about CHA, including, for example, assessing respondents' conscious and unconscious categorizations of modalities as physically or mentally beneficial or as geared to fixing or maintaining aspects of their health.

An overview of the key findings from the study is presented next, followed by a detailed question-by-question analysis of all items.

## **Key Findings**

The key finding in this study is that respondent experience and modality characteristics frame question interpretation. Across the range of questions examined, we found that the range of interpretive patterns varied by 1) respondent experience with and knowledge of the modality and 2) the purpose of the modality and the extent to which a modality was perceived to be physically or mentally beneficial. By "interpretive patterns," we are referring to the extent to which respondents' conceptions of and associations with the nature of and purpose of the modalities align or do not align. Below, we discuss these in more detail when we specifically refer to one or more aspects of the interpretive patterns.

### *Respondent experience and knowledge*

Some approaches, including naturopathy, music therapy, and art therapy, were simply not well known or extensively used by respondents. Other modalities, including meditation and guided imagery and progressive relaxation, were widely known in a general sense, but the specific practices that respondents associated with these modalities varied widely. Finally, the more popular modalities were commonly understood across all respondents, including chiropractic care, acupuncture, massage, and yoga. Consistency in respondent conceptions of and associations with the modalities was driven by respondents' general familiarity with the modality and their use of it.

The modalities evaluated on the CHA supplement broadly clustered into two groups. The first included modalities with low levels of general awareness. Complementary and alternative

medicinal approaches are, by their very nature, not consistently included in mainstream Western medicinal practices. Some modalities, such as naturopathy, music therapy, and art therapy, are thought to be of extremely low prevalence nationally in the United States.<sup>7</sup> Respondents' understanding, or rather their lack of understanding, of these modalities was consistent. In retrospective probing, respondents offered a wide range of definitions for what those modalities might entail when prompted. However, these definitions were nearly always based on guessing strategies related to key words in the question itself rather than recognition of those modalities based on experience or cultural knowledge. Only in the limited instances where respondents had accessed the modality outside the reference period or knew someone who had used the practice were respondents able to clearly identify the modality.

The second group included several CHA that had consistent conceptions of the practices that constitute the modality across both users and non-users, founded in generally high cultural and personal awareness of the modality. Chiropractic care, acupuncture, massage, and yoga were generally well-understood with one or two consistent conceptions of the modalities prevalent among respondents. For these approaches, consistency was aided by experiences with the modalities outside the reference period; these experiences increased the salience of the modality for respondents. Many respondents had seen a chiropractor, visited a practitioner of acupuncture, had a massage, or done yoga prior to the past 12 months. The latter two modalities were particularly vulnerable to the effects of the COVID-19 pandemic, with the closures of massage therapy locations and yoga studios due to social distancing restrictions and with individual wariness of practices involving touch. These closures may have led to abnormally low levels of self-reported use during our interviewing process that may not be present when the supplement is fielded as part of the 2022 NHIS.

Two modalities, meditation and guided imagery, did not easily fit into either of these clusters. Meditation was associated with high general awareness but only moderate consistency in respondent conceptions of the modality. In other words, nearly all respondents were able to define or describe meditation, but respondent definitions only sometimes overlapped. Moreover, this middling consistency did not differ across self-identified users and non-users of meditation. Respondents who answered 'Yes' sometimes offered in-scope responses that aligned with the practices inquired about in the question, but sometimes based their responses on things they did "meditatively," like playing video games, exercising, or reading. Respondents who answered 'No' similarly identified a wide range of practices with meditation, although non-users also reported that they did not meditate because of skepticism of meditation's efficacy. This latter response appears to relate to the anti-"CAM identity" pattern of interpretation previously identified in evaluation of questions on herbal supplements, in which respondents strove to

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<sup>7</sup> The Institute for Natural Medicine reported roughly 6,000 "licensed naturopathic doctors practicing in the U.S." in 2018, compared to the latest physician census of over 985,000 medical doctors. The American Music Therapy Association lists 1,830 music therapists (certified and uncertified) on its website in 2021, and the American Association of Art Therapists reported around 5,000 members in 2015, compared to more than 192,000 psychologists practicing nationally. See, respectively, <https://www.prnewswire.com/news-releases/naturopathic-medicine-is-growing-in-us-medical-centers-of-excellence-300601605.html>; <https://www.fsmb.org/physician-census/>; <https://www.musictherapy.org/about/find/>; <https://www.bls.gov/careeroutlook/2015/youre-a-what/art-therapist.htm>; <https://www.bls.gov/ooh/life-physical-and-social-science/psychologists.htm>.

identify themselves as non-users.<sup>8</sup> However, though in previous evaluation this led to response error – deliberate underreporting of herbal supplement use, including changing answers, so as to not be identified as a “CAM” person – here, respondents identified their skepticism or bias as the reason for not engaging in meditation. Lastly, the inconsistency in descriptions offered did not meaningfully lessen as a result of the revision to the question and the change in questionnaire order. Perhaps because of the ubiquity of references to meditation in everyday life, questions about this modality may be prone to eliciting a wide range of conceptions from both admitted practitioners and non-practitioners.<sup>9</sup>

Finally, guided imagery or progressive relaxation was a modality with moderate general awareness but divergent levels of consistency in descriptions offered among users and non-users. Users of this modality generally cohered around a set of in-scope practices that constituted the modality, although these frequently overlapped with the practices they associated with meditation. However, the range of conceptions offered by non-users was very broad and reflective of general lack of awareness of the approach. In contrast to the meditation question, however, this divergence changed when definitions of the practices were included in the revised question and the order of the questionnaire was adjusted. The revised question appeared to elicit more consistent conceptions of the modality across users and non-users, and, consequently, better distinguished between the two groups.

*Modality characteristics and purpose*

Respondents varied in their understandings of modalities. Some modalities were experienced as primarily addressing physical issues, while others were seen as beneficial to mental-emotional health. Additionally, some respondents used specific modalities to fix or treat issues, while others used the same modalities to maintain their health status. These associations affected how respondents answered the follow-up questions about the purpose of modality use (see Table 3). This has important implications for question design: follow-up questions were asked in an identical manner across modality to increase standardization, but because respondents understood the questions in the context of a specific modality, the questions performed differently across modalities. These implications are limited in the context of the yoga question, for which the follow-up question set differed from that of the other items.

**Table 3: Follow-Up Question Text and Revisions**

	<b>Version 1</b>	<b>Version 2</b>
(a.) <sup>10</sup>	...to treat or manage pain?	...to treat or manage physical pain?
(b.)	...for general wellness?	...to restore your overall health?

<sup>8</sup> Willson, S. (n. 2).

<sup>9</sup> On the broad range of folk associations with meditation, see Kabat-Zinn, J. (2021). Meditation is not what you think. *Mindfulness*, 12(3), 784-787.

<sup>10</sup> For the question set following the yoga question, the first follow-up question was a question on breathing exercises specific to yoga. The other three follow-up questions were asked in the same order and manner as in questions on other modalities.

(c.)	...to restore your overall health?	...to prevent health problems or maintain overall health?
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Findings indicated the following three themes. First, the initial version of the question on ‘pain’ captured physical, mental, and/or emotional pain, depending on modality. When respondents answered the question on ‘pain’ in the context of modalities that they conceived of as involving touch or physical manipulation of the body, such as chiropractic care, acupuncture, massage, and yoga, they uniformly answered relying on their assessment of whether the purpose of the modality was primarily for the treatment or management of physical pain. This tendency was so pervasive that respondents did not even appear to consider the idea of mental or emotional pain as relevant to the question. These modalities were also both generally familiar to respondents and tended to elicit consistent descriptions from them.

Modalities less related to the manipulation of the body, however, such as guided imagery or progressive relaxation and meditation, elicited contradictory responses to the ‘pain’ question. Those respondents who answered ‘Yes’ thought the question asked about the treatment or management of mental or emotional pain, while those who answered ‘No’ thought the question asked about the treatment or management of physical pain. Because the question was intended to capture respondent use of modalities to treat or manage physical pain, answers based on the treatment or management of mental or emotional pain were out-of-scope. The question was revised to specify ‘physical pain,’ and after this revision, references to mental or emotional pain were absent.

Second, in the first version of the follow-up question set, the questions on ‘general wellness’ and restoring ‘overall health’ frequently elicited overlapping conceptions. Across the supplement, respondents had consistent definitions of and associations with ‘general wellness,’ referring to the connection between mind and body and to the regular maintenance of health, including diet, nutrition, and regular exercise. However, when encountering the question on restoring ‘overall health,’ respondents focused on one of two concepts: either the concept of restoration or the concept of ‘overall health.’ This focus was influenced by respondents’ perception of the purpose of the modality. When respondents used a modality to fix a specific issue, they understood this question as about restoration. For instance, respondents described using a chiropractor to address back pain from a car accident, massage to relieve tension, or meditation to deal with challenging life situations. These respondents differentiated between the question on ‘general wellness’ and the question on restoring ‘overall health.’ For them, ‘general wellness’ related to health maintenance or the mind-body connection, and restoration involved fixing a problem.

However, when respondents to the first version of the follow-up question set reported using a modality for maintenance of their level of health, they focused on the phrase ‘overall health,’ and, in doing so, considered their mental and physical health, diet and exercise, and other activities related to health maintenance. For example, respondents described visiting a chiropractor for “regular upkeep,” getting a massage for “pain management improving blood flow and stress,” and meditating to help “concentrate” and work on “anger management.” These interpretations nearly perfectly overlapped with those elicited by the question on ‘general



wellness.’ Consequently, distinguishing between these questions frequently appeared difficult for these respondents, who thought that “health and wellness are the same.”<sup>11</sup>

To address this overlap, the question on ‘general wellness’ was revised to focus on preventing ‘health problems’ or maintaining ‘overall health.’ Previous evaluation of questions relating to CAM modalities has found that people’s health identities are composed of a “health focus” and a “locus of control.”<sup>12</sup> A person’s “health focus” can either be on maintaining their health, in which “the goal is to be as healthy as possible,” although perfect health is viewed as an inaccessible ideal type, or it can be on the prevention or treatment of specific problems, in which being “healthy” is, deterministically, the same as being “not sick.” For these people, the focus is on health problems, not health as an abstract concept. An individual’s “locus of control” lies on a spectrum from passive, where the person follows others’ recommendations for addressing their health, to active, where individuals look for their own information to inform health decisions. The revised question was designed to capture respondents who had either health focus to maximize its reach. Because the “locus of control” did not arise in the responses to the first version of the follow-up question set, revisions to the questions did not address this dimension of health identities.

Additionally, the order of the follow-up questions was adjusted to counter potential order-induced overlap. Having already been prompted to consider whether they used a CHA to support their ‘general wellness,’ it seemed logical that respondents might continue thinking of ‘general wellness’ when answering about restoring their ‘overall health,’ and, in doing so, skip over the word ‘restore.’ Thus, the new follow-up question set asked first about pain, then restoration, and finally about ‘health problems’ or maintenance of ‘overall health.’

The new question on preventing ‘health problems’ or maintaining ‘overall health’ performed as expected: it captured some respondents who described specific health problems they sought to avoid, some respondents who discussed maintaining an overall level of “healthiness,” and some respondents who indicated that they used a modality to do both. Respondents shared these understandings of the question across modalities. As in the case of the prior ‘general wellness’ question, respondents discussed the mind-body connection, but this time, they also focused on the phrase ‘overall health.’ This presented some issues.

The revision to the follow-up question set order did not consistently have the intended effect of focusing respondents on the word ‘restore.’ Instead, respondents still appeared to interpret this question through the filter of specific modalities. Thus, when respondents were asked this question in the context of chiropractic care, respondents understood the question through their association of chiropractic care with treating specific health problems and brought up the chiropractor’s restorative effect on posture and the mitigation of pain. In the context of meditation, however, respondents relied on their association of meditation with maintenance of

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<sup>11</sup> One reason for this overlap may have been the use of retrospective probing by most interviewers. Respondents who were users of multiple modalities would have received the same set of follow-up questions for each modality and been probed on the reasons for their response each time. The repeated questioning about ‘general wellness’ and ‘overall health’ may have led some respondents to conflate the two.

<sup>12</sup> Willson, S. (n. 3).

their level of health and considered meditation’s impact on their mental state, physical well-being, and ‘overall health.’ This differential interpretation was reinforced by the repetition of the phrase ‘overall health’ in these two questions. While only a small number of respondents screened into the follow-up set, it did appear that the respondent foci associated with this question – that of restoring and that of ‘overall health’ – are not functions of questionnaire order but intrinsic to the question wording in relation to a particular modality.

Finally, the revisions reduced overlap between the questions on ‘pain’ and preventing ‘health problems’ or maintaining ‘overall health.’ However, overlap remained between the question on ‘pain’ and the question on restoration of ‘overall health.’ This is attributed to respondents’ understandings of different modalities. For example, respondents still considered their physical pain when answering the question about restoration in the context of “physical” modalities, such as chiropractic care, acupuncture, and massage therapy. However, the addition of the word ‘physical’ eliminated instances in which respondents understood the question to be about mental or emotional pain; consequently, no overlap was detected between the ‘pain’ question and the ‘prevent health problems’ question.

Overall, the performance of the follow-up questions indicates that standardized question wording and administration may not yield standardization in the question response process and the constructs captured. In the context of the CHA supplement, despite repetition of the identical follow-up question set across modalities, respondents interpreted the questions differently depending on the context. In this case, the context of each question set was the specific CHA or modality. The findings from this analysis may be transferable to the design of other survey instruments that ask an identical battery of follow-up questions in specific domains.

### **Question-by-Question Analysis**

This section presents a detailed review of the findings for each modality, as well as a review of the follow-up questions. Where appropriate, the modality-specific impact of the revisions is discussed.

#### **Chiropractor**

- 1) During the past 12 months, have you seen or talked to a chiropractor about your own health?

	Round 1	Round 2
Yes	4	2
No	24	10

This question was not changed between rounds, as chiropractic care was one of the more recognized modalities of those tested. Respondents were generally aware that chiropractic care is “good for your back” and that it involves getting one’s back “cracked.” One respondent said that chiropractors “help to align your bones, I guess, by popping them back into place, I guess? [They] Help improve posture.” This association between chiropractic care and “cracking your back” was consistent across ‘Yes’ and ‘No’ respondents and across rounds. One reason for this

consistency is the prevalence of respondent experience with chiropractic care. Of respondents who answered ‘No,’ twelve had seen a chiropractor before, although not within the past 12 months. Respondents used these past experiences to inform their understanding of chiropractic care when answering the question, as in the case of this respondent, who had not seen a chiropractor since 2016:

“I’ve only seen a chiropractor once in my life...he grabbed me and folded my body and just squeezed it, and my back, I felt pop-pop-pop-pop-pop going all the way up and down my spine, and when he released me I just, what the heck? And I had no more pain for a considerable amount of time.”

Nevertheless, although there were no false positive responses, the term ‘chiropractor’ may not be universally or consistently understood, particularly among those with little knowledge or no experience with chiropractic care. Among respondents who answered ‘No,’ retrospective probing revealed that respondents were thinking of visits to primary care physicians, mental healthcare professionals, podiatrists, and massage therapists in their definition of chiropractors. For example, one respondent considered a podiatrist because both practitioners work with the skeleton: “[A chiropractor is] just going to check out bones and things like that, you know movement, or if I had an injury or something like that...So that [a podiatrist] is a chiropractor, right?” Ultimately, this respondent correctly answered no to this question, but their lack of familiarity suggests that others with similar confusion might choose to answer ‘yes’.

### *Follow-up questions*

Follow-up questions were administered when a respondent answered ‘Yes’ to the main question. The follow-up questions differed by round of interviewing and are discussed separately below. Because few respondents received the follow-up questions, theoretical saturation could not be achieved; however, the data do point to certain patterns.

<b>Round 1</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage pain?	4	0
b. for general wellness?	3	1
c. to restore your overall health?	4	0

Respondents understood question (a.) to refer to physical pain in a specific area or areas of the body. Chiropractic care was particularly thought appropriate for back, neck, and hip pain. No respondents understood ‘pain’ to mean non-physical pain.

In answering question (b.), respondents offered a range of understandings of ‘general wellness.’ The main construct identified was that of routine maintenance of physical, mental, and/or emotional health. One respondent, for instance, wanted to “make it [a] habit” to visit a chiropractor “because it would be a good thing to do,” although she did not carry this out due to the impact of the COVID-19 pandemic. Others linked ‘general wellness’ with “overall care” and their primary care provider or the management of pain as part of their “overall wellness.” These associations overlapped with the constructs identified in probing item response to (a.) and (c.)

Respondents who answered question (c.) understood this question as asking about one of two concepts: ‘restoring’ or ‘overall health.’ Those who focused on the word ‘restore’ sought out chiropractic care to fix a specific issue, as in the case of one respondent whose back pain impaired his ability to sleep. By contrast, those who focused on ‘overall health’ generally understood the question as similar to question (b.), discussing the importance of “regular upkeep” and the connection between mental and physical health. The constructs identified in probing this question thus overlapped with those identified in questions (a.) and (b.).

<b>Round 2</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage physical pain?	2	0
b. to restore your overall health?	2	0
c. to prevent health problems or maintain overall health?	2	0

Because respondents understood ‘pain’ in the context of this domain to mean ‘physical pain,’ the addition of the word ‘physical’ to question (a.) had no impact. Respondents described visiting a chiropractor to treat “body pain” in the back, shoulders, and neck.

In answering question (b.), respondents focused on the word ‘restore’ and understood the question to be about the fixing of a specific issue. One respondent knew that chiropractors help ‘restore’ people’s health by examining the “hunched over” posture of those entering a chiropractor’s office and their standing up straight when exiting. The focus on ‘restoring’ overall health also led respondents to associate pain management with chiropractic care and to overlapping interpretations with question (a.).

Respondents identified question (c.) as asking about two separate constructs: ‘prevent[ing] health problems’ and ‘maintain[ing] overall health.’ While respondents tended to focus on one construct in answering the question, this did not lead to any instances of response error. Respondents easily identified either the prevention of a specific and recognizable set of ‘health problems’ or discussed the practice of regularized health maintenance. One respondent, for instance, said that she was “definitely maintaining. It’s maintenance like a car. You’re aligning the spine.”

### **Acupuncture**

2) During the past 12 months, did you see a practitioner of acupuncture?

	Round 1	Round 2
Yes	2	1
No	26	11

There were no instances of response error, and the wording was not changed in Round 2. Like chiropractic care, acupuncture was largely a recognized modality. Respondents generally conceived of acupuncture as a medical practice that utilizes “needles” to treat a variety of health concerns, including, but not limited to, physical pain in a specific area of the body, reproductive health, and “stress” (mental, emotional, and physical). One respondent said that in acupuncture, “they use little needles and they target different areas that the practitioner thinks is linked to

other problems you're having." This association was consistent across rounds and irrespective of how respondents answered the question. One reason for this was that ten respondents only answered 'No' because they had used acupuncture outside the reference period. An additional eight respondents either witnessed an acupuncture session or knew a family member or close friend who used acupuncture. Finally, other respondents who had never experienced acupuncture were generally familiar with it from representations in film and television. Respondents used these experiences or cultural references as the basis for their understanding of acupuncture in answering the question.

*Follow-up questions*

Follow-up questions were administered when a respondent answered 'Yes' to the main question. The follow-up questions differed by round of interviewing and are discussed separately below. Because few respondents received the follow-up questions, there is limited data for evaluating their performance or the impact of the revisions.

<b>Round 1</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage pain?	2	0
b. for general wellness?	0	2
c. to restore your overall health?	1	1

The first follow-up question (treat or manage pain) was understood as intended; that is, both respondents who received this question set understood question (a.) to be about physical pain, including one respondent who used acupuncture to relieve "this weird knot-situation in my lower back."

The second two follow-up questions (wellness and overall health) did not necessarily perform as distinct questions. Responses to question (b.) were based on a range of interpretations of 'general wellness.' One respondent answered 'No' because he used acupuncture for a specific condition:

"So when you said 'general health' I went specifically for pain management as opposed to, like, migraines, or, I don't know, bad eyesight or drug addiction or whatever...they weren't, like, putting [the needles] all over in me to cure whatever ails me. I assume that they were specific to the condition that I was trying to affect."

The use of the term 'general health' indicates that this respondent may have conflated questions (b.), on 'general wellness,' and (c.), on restoring 'overall health.' Another respondent, however, described 'general wellness' as "body maintenance...like you do an oil change on the car."

In answering question (c.), respondents primarily understood the question in terms of the concept of 'overall health,' and this question exhibited significant overlap with the other two follow-up questions. Both respondents based their response on their pain. As one said, "managing my pain was definitely something that I felt would contribute to my overall health." Another respondent indicated her confusion on how to answer questions (b.) and (c.): "I don't know, I just feel like

health and wellness are the same. If you're well, you're healthy, and if you're healthy, you're well."

<b>Round 2</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage physical pain?	1	0
b. to restore your overall health?	1	0
c. to prevent health problems or maintain overall health?	1	0

Conclusions about the performance of the follow-up questions and the impact of the revisions in Round 2 are limited by the small sample of respondents who screened into this question set. However, the data indicate continued overlap between questions. This respondent used acupuncture to treat back pain arising from a car accident and answered 'Yes' to questions (b.) and (c.) because, to her, pain management is a part of overall health, a concept identified in both questions.

### **Massage**

3) During the past 12 months, did you see a practitioner of massage?

	Round 1	Round 2
Yes	10	1
No	18	11

No instances of response error were observed in Round 1, and the wording of the main question was not changed in Round 2. As in the case of the previous two modalities, massage was generally familiar to respondents. As a result, there were consistent patterns of interpretation of this question across 'Yes' and 'No' respondents. This arose in part because many respondents had visited a practitioner of massage outside the reference period. Twelve of the 29 respondents who answered 'No' had previously had a massage at some point in the past, and an additional two knew someone close to them who had had a massage recently. These respondents used their past experiences or those of their close contacts to inform their answer to this item. The number of 'Yes' respondents may also have been artificially limited by restrictions due to the COVID-19 pandemic, either imposed or internal to the respondent. Several respondents referenced the perceived impact of COVID-19 on massage practitioners, who use touch as a necessary component of their work.

Respondents specifically understood 'massage' as a therapeutic modality associated with the musculoskeletal system that utilizes physical touch and pressure directly applied to the body by a practitioner. Practitioners considered included licensed massage therapists and (presumably unlicensed) masseurs/masseuses. One respondent described massage as follows: "They [the massage therapist] ask if you are having any particular pains...and then they put their hands on your body and press...and pull a part on the muscles." Respondents often used massage to treat injury or specific ailments.

However, one possible out-of-scope understanding was massage as a "luxury" item for pleasure. For instance, one respondent included a massage he received on a trip with his significant other

at a hotel. When massage was associated with pleasure, “indulgence,” or “luxury,” respondents also focused on the perceived cost of massage, either, as one respondent noted, the affordability of the location she accessed, or as others noted, “I can’t afford that. I can’t afford a massage, so that’s not an option.”

*Follow-up questions*

Follow-up questions were administered when a respondent answered ‘Yes’ to the main question. The follow-up questions differed by round of interviewing and are discussed separately below.

<b>Round 1</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage pain?	6	4
b. for general wellness?	6	4
c. to restore your overall health?	7	3

All respondents who screened into this question set interpreted ‘pain’ as referring to physical pain in a specific area or areas of the body in answering question (a.). Respondents associated massage with the treatment of back, neck, and shoulder pain, as well as general muscle tightness and tension. However, some respondents explained that the treatment or management of pain was only a secondary reason for them having a massage. For instance, one respondent explained her ‘No’ answer by saying

“well, I mean I had pain, but I didn’t really go there thinking that they were going to fix anything. You know, they probably asked, before you get started, ‘is there anywhere you’d like me to focus?’ and I could mention areas: lower back, you know, things that would bother me, but I never leave there expecting things to be fixed. I just kind of enjoy the experience.”

This respondent answered ‘no’ because the treatment of pain was incidental to massage, if it happened at all. Instead, massage was just for relaxation. This example demonstrates that the connection between pain and massage may not be simple or straightforward. Other respondents with similar experiences may arrive at different answers to the question.

Respondents who answered question (b.) understood ‘general wellness’ in a variety of ways, most prominently a holistic view of “health, overall happiness” that took the form of “regular maintenance.” One respondent explained his ‘No’ answer by saying that ‘general wellness’ is “almost like going to a periodic, it’s almost like going to a physical or a periodic checkup for my doctor.”

In answering question (c.), respondents focused on either the word ‘restore’ or the phrase ‘overall health.’ Those who understood the question as asking about ‘restoring’ differentiated between questions (b.) and (c.), in that they understood question (c.) as asking about treating a specific issue. One respondent, who went to a massage to treat neck and shoulder tension, explained that she “want[s] to restore it back to when I don’t have that stress in my body. I want [to] experience comfort.” However, most respondents understood the question to be asking about ‘overall health’ and expressed significant confusion when differentiating between questions (b.)

and (c.). One respondent, reflecting on questions (b.) and (c.), said “it only really has to be one [question], because depending on how you look at it they both, they similar, it’s just worded differently, that’s all.” Probing of these two questions indicated significant overlap in patterns of interpretation and that differentiating between them was burdensome to respondents.

<b>Round 2</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage physical pain?	1	0
b. to restore your overall health?	1	0
c. to prevent health problems or maintain overall health?	1	0

Conclusions about the performance of the follow-up questions and the impact of the revisions in Round 2 are limited by the small sample of respondents who screened into this question set. However, the respondent who answered these questions in Round 2 understood question (b.) as about the balance between mind and body, while she interpreted question (c.) as about maintaining a general level of health. The addition of the words ‘prevent’ and ‘maintain’ appeared to assist this respondent in differentiating between questions (b.) and (c.).

**Naturopathy**

**Round 1**

- 4) During the past 12 months, did you see a practitioner of naturopathy (nay-chur-AH-puh-thee)?

*Read if necessary:* Naturopathy is a medical system that has evolved from traditional practices and approaches in Europe during the 19<sup>th</sup> century. People visit naturopaths for primary care, overall well-being, and treatment of illnesses. Naturopathic practitioners use treatments such as dietary and lifestyle changes, stress reduction, and exercise.

Yes	2
No	26

**Round 2**

- 4) A naturopath is a licensed doctor who went to naturopathic medical school and uses both standard medical tests as well as massage, acupuncture, exercise, nutritional counseling, and natural therapies such as herbs. During the past 12 months, did you see a practitioner of naturopathy (nay-chur-AH-puh-thee)?

Yes	0
No	12

Unlike the previous three modalities, most respondents were unfamiliar with naturopathic care. Many respondents, when asked to expand on their answer, simply stated some version of “I do not know what that is.” Lack of knowledge of the underlying concept induced response strategies that ranged from an “educated guess” (“I think I could make an educated guess on what it would be...maybe somebody who offers some kind of holistic methods to follow kind of like a ‘guru’



in that area.”) to parsing the syllables of the word (“I mean, obviously it has something to do with nature, I’m assuming, but I’ve never heard of that.”).

To prevent this type of confusion, the optional definition in Round 1 was adjusted and incorporated into the question as a preamble in Round 2. However, it is not clear that the definition improved clarity in either version. When respondents heard either version of the definition, they focused on specific key words, including ‘dietary,’ ‘nutritional counseling,’ and ‘exercise’ as the basis for item response. Because of this, respondents, most of whom correctly answered ‘No,’ thought that naturopaths included a wide range of practitioners: nutritionists, practitioners of “holistic methods,” primary care physicians, dieticians, herbalists and practitioners of homeopathy, practitioners of reiki and other energy healers, and individuals involved in multi-level health and wellness marketing schemes. While lack of understanding generally did not result in response error, there was at least one instance in which the definition induced a false positive response. One respondent answered ‘Yes’ because she visited a practitioner who was “a trainer and also a nutritionist...kind of a life coach.” This practitioner worked with the respondent on planning for “diet, exercise, and encouragement,” terms present in the optional definition.

In addition to comprehension issues for respondents, the unfamiliar nature of the modality created difficulty for the interviewers as well. In a few interviews, both interviewers and respondents had trouble pronouncing ‘naturopathy,’ despite guidance provided to interviewers on pronunciation. Trouble with the word furthered the potential for confusion. One respondent investigated a comparison to a similar sounding medical condition, neuropathy,

“I’m thinking, actually when thinking about this condition, if I’m trying to break up the word, into its syllables, I think maybe it has something to do with nerves? I’m thinking the ‘neu’ that first syllable? ‘Neu-tropathy’ That first syllable, I’m thinking that that’s perhaps related to nerves.”

In this case, the interviewer correctly pronounced ‘naturopathy’ in administering the question but mispronounced the term when probing the respondent’s answer.

*Follow-up questions*

Follow-up questions were administered when a respondent answered ‘Yes’ to the main question.

<b>Round 1</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage pain?	0	2
b. for general wellness?	1	1
c. to restore your overall health?	1	1

Because both respondents who received the follow-up question set exhibited response error, the performance of the question set is difficult to evaluate in the context of naturopathy. However, the respondent who answered about her life coach associated ‘general wellness’ with the encouragement she received from this practitioner to set and follow goals beyond weight loss. In response to ‘restore your overall health,’ this respondent focused on the concept of ‘overall

health’ and discussed the mind-body connection: “I am considering not being depressed and being encouraged to do your weight loss and to do your nutritional health; that is overall health.” These patterns of interpretation were similar to those of other respondents in other domains when these follow-up questions were administered.

No respondents screened into the follow-up question set in Round 2. Thus, for this domain, the performance of the follow-up questions as well as the impact of the revisions could not be evaluated.

### **Music Therapy**

- 5) Music therapists are certified health care professionals who work in health care settings, senior centers, and treatment centers. During the past 12 months, did you see a music therapist?

*Read if necessary:* Treatment centers include mental health, eating disorders, drug and alcohol rehab, and other centers.

	Round 1	Round 2
Yes	1	0
No	27	12

Music therapy and music therapists were not well understood. Although most respondents articulated that music has therapeutic value (a generally positive impact on mental-emotional health and wellbeing), they were generally unfamiliar with the formal practice of music therapy as a healthcare modality. Respondents were unclear about the extent to which music therapy differed either from “talk-therapy” modalities, e.g. a one-on-one 50 minute session with a therapist wherein a session consists of active speaking, listening, and self-reflecting, or from self-guided listening to music for relaxation. The ‘read if necessary’ description provided little guidance in this regard. It clarified where music therapists work but did not define what a music therapist does during a typical session with a patient. Absent an adequate description, respondents utilized the key terms ‘music’ and ‘therapy’ (separately and combined) to formulate their own range of definitions for music therapy.

When considering music therapy, respondents included either the practice of listening to music (live or recorded) or actively singing or playing an instrument. However, no instances of response error were observed, as respondents tended to exclude self-led practices from their understanding of music therapy. One respondent, who answered ‘No,’ explained that she uses “music every day anyway...so that to me is therapy.” This response was typical of many respondents, who identified that listening to or making music was therapeutic – as another explained, making music helps him manage “bad days and good days and just in general” – but that this experience did not constitute seeing a music therapist. That respondents who regarded music as therapeutic did not demonstrate false positive responses (which might have been expected) may be due to the placement of the modality later in the series. In other words, it is possible that the previous modalities created a context effect whereby respondents understood that they were being asked about more formalized practices.

Only one respondent answered ‘Yes’ to this question. This respondent described a regular visit to his psychiatrist, after which, on his psychiatrist’s recommendation, he briefly sat in on a group music therapy session at the same center where his psychiatrist works.

“Well, this was a session where there were other people who were sitting there literally just trying to stay still and listen to music and trying to just literally just relax while the music was going on. And so that was the whole purpose of it, to try to let people come to a more still place...And it was all well and good, but it was kind of not really structured to me.”

This respondent had a clear conception of music therapy based on personal experience. While data from this one case is limited, the response demonstrates that those who have used music therapy understand the concept when asked about it.

*Follow-up questions*

Follow-up questions were administered when a respondent answered ‘Yes’ to the main question. Only one respondent filtered into these follow-up questions.

<b>Round 1</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage pain?	0	1
b. for general wellness?	0	1
c. to restore your overall health?	0	1

The respondent who answered this question set did not expand on his understanding of pain. However, this respondent answered ‘No’ to question (b.) because he only sat in on a music therapy session once. To include a practice in ‘general wellness,’ this respondent explained that one had to engage in it “day in and day out, and just because you do it one day...[it’s] like maintenance.” In answering question (c.), this respondent focused on the phrase ‘overall health,’ and, as with respondents in other domains, this focus led to overlapping interpretations with question (b.).

No respondents screened into the follow-up question set in Round 2. Thus, for this domain, the performance of the follow-up questions as well as the impact of the revisions could not be evaluated.

**Art Therapy**

- 6) Adult-Art therapists are health care professionals with a master’s level degree who work in health care settings, senior centers, and private practice. During the past 12 months, did you see an art therapist?

	Round 1	Round 2
Yes	0	0
No	28	12

This question functioned in a manner similar to the previous modality. In fact, significant overlap was observed in probing responses to both music and art therapy. For example, one respondent, when asked about their understanding of music therapy, explained that “you can just be sitting around listening to music. Also, you can be dancing...or you can be creating artwork.” Responses to this item frequently referred to the previous one, as in the case of one respondent who explained that “art therapy can be extremely expansive, same as music therapy, probably could be considered the same.”

Although most respondents included in this study thought that viewing and creating art has therapeutic value much like music (a generally positive impact on mental-emotional health and well-being), they were generally unfamiliar with the formal practice of art therapy as a healthcare modality, with the exception of a few respondents who had prior experience witnessing or engaging in an art therapy session outside the reference period. One of these used art therapy when “diagnosed with some anxiety problem...in the hospital.” This respondent drew “about [his] thoughts, like how good you relax, at a certain place, maybe draw a sea, a tree, a bird, those kinds of things.” Another respondent had “friends who are art therapists,” and others worked in settings alongside art therapists. These respondents used their own or their close contacts’ past experiences when interpreting and responding to the question.

Because art therapy was expected to be a lesser-known modality, a definition was incorporated into the question to help improve comprehension. However, as in the case of the question on music therapy, the wording of the main question clarifies where art therapy takes place, who practices art therapy and the details of their professional credentials, but not what an art therapist does during a typical art therapy session with a client.

Lacking any specific knowledge of art therapy, respondents constructed their own definitions. Some did this by combining ‘art’ and ‘music’ therapy (the topic of the previous question) when considering this question. Participants commonly referenced their previous response when considering their knowledge of art, therapy, art therapy and art therapists. As one put it,

“It seems similar to the music therapist to me, in a way. I feel like people could use that, that maybe were anxious, could find that that’s their way of releasing that anxiety or someone needing to express themselves through the artwork that they do.”

Other respondents were generally aware that art therapy is a therapeutic modality that centers on ‘art,’ but were unclear about the type of activities (painting, viewing printed images, visiting museums, etc.) and skill-levels included in ‘art therapy.’ Respondents commonly imagined that art therapy would elicit an overall relaxation/de-stress response for clients.

Two themes that consistently emerged from the data were associations of art therapy with the treatment of “autism” or other mental health conditions and with children. One respondent explained that she thought “art therapy and music therapy sometimes is used for kids with autism...and even adults. It helps them. It’s a way to bring them out their shell.” These patterns were unexpected because the question specifically references ‘Adult-Art therapists’ and sites in which adults are found, such as ‘senior centers’; thus, the question should exclude primarily

thinking of children. While these understandings did not lead to response error, they are indicative of a general lack of knowledge of adult art therapy.

### *Follow-up questions*

In both rounds, no respondents screened into the follow-up question series. Thus, the performance of the follow-up questions for this domain, as well as the impact of the revisions to the follow-up questions, could not be evaluated.

## **Guided Imagery or Progressive Relaxation**

### **Round 1**

7) During the past 12 months, did you use guided imagery or progressive relaxation?

Yes	9
No	18
Don't Know	1

### **Round 2**

8) Guided imagery uses visualization to relax. Progressive relaxation uses tensing and relaxing muscle groups. During the past 12 months did you use guided imagery or progressive relaxation?

Yes	1
No	11

Most respondents reported not using 'guided imagery' or 'progressive relaxation' in the past 12 months and were generally unaware of the specific details involved in one or both practices. As originally written and administered in Round 1, this question consequently posed two issues for respondents. First, it offered no guidance on the meanings of 'guided imagery' and 'progressive relaxation.' Because of this, respondents offered a broad range of interpretations of both practices, many of which were potentially out-of-scope or overlapped with other items, including item 8 (meditation). Second, respondents tended to focus on a key word, for instance 'guided.' This response behavior resulted in potentially out-of-scope responses.

In Round 2, two revisions were made to the questionnaire to attempt to reduce out-of-scope and false positive responses. First, brief definitions of 'guided imagery' and 'progressive relaxation' were added. Second, this item was asked *after* item 8 from round 1 (meditation), so that respondents were asked directly about meditation prior to being asked about 'guided imagery' and 'progressive relaxation.'

*Range of interpretations: Round 1*

Respondents who answered ‘Yes’ to this question had qualitatively different understandings of ‘guided imagery’ and ‘progressive relaxation’ than did those who answered ‘No.’ The ‘No’ respondents’ range of definitions was broader and included a wide variety of potentially out-of-scope responses, including, among others, a Rorschach test, a museum tour, treatment for “mental illness,” and hypnosis. Most commonly, respondents were simply unable to provide any definition of the practices. However, unfamiliarity had no negative effect on question response. Respondents with little-to-no understanding of the modality were able to answer the question as intended.

Respondents who answered ‘Yes,’ by contrast, demonstrated more familiarity and defined ‘guided imagery’ as focusing on an image or a sequence of images to calm or focus oneself and ‘progressive relaxation’ as involving monitoring one’s breath and focusing on different parts of the body. While some out-of-scope responses did appear, including drawing, doing crafts, doing yoga, or dancing, the modal definitions appeared within scope.

One possible out-of-scope association shared by ‘Yes’ respondents was the view that ‘guided imagery’ or ‘progressive relaxation’ were related to meditation or meditative practices. One respondent who answered ‘Yes’ said that

“I meditated just this morning. I say my prayers every morning, but if it feels like an especially stressful day, I meditate in the morning or evening. You focus on an image or sound, to calm yourself or focus on yourself. They take you through some breathing exercises, some visualization exercises.”

This respondent, like others, focused on the term ‘guided’ in the question and understood the question not as asking about ‘guided imagery’ but as asking about ‘guided meditation.’ Another respondent who answered ‘Yes’ also referenced a meditation application for his phone in his response as well as “guided meditation progressive relaxation videos on YouTube.” A third who answered ‘Yes’ said that she thought of

“guided meditation, so someone talking about, whether they’re actually providing imagery, like you’re at a beach, talking about you’re relaxing this part of your body, now you’re feeling this part of your body, and deliberately identifying different parts of the body to make a connection between them.”

These responses potentially overlapped with the following question, which directly asked respondents about their use of meditation practices. As a result, revisions were made to the question and its place in the survey.

### *Range of interpretations: Round 2*

The addition of definitions to the question preamble appeared to assist in limiting the range of interpretations respondents offered. Only one respondent answered ‘Yes,’ basing her answer on the use of a meditation application with “nature sounds, crickets, and waterfalls.” Other respondents, who answered ‘No,’ had used these practices in the past but correctly answered because their experience fell outside the reference period. Potentially as a result of the shift in

question order for round two, in which the question on meditation preceded the question on guided imagery and progressive relaxation, explicit references to meditation similarly declined in prominence.

*Follow-up questions*

Follow-up questions were administered when a respondent answered ‘Yes’ to the main question. The follow-up questions differed by round of interviewing and are discussed separately below.

<b>Round 1</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage pain?	1	8
b. for general wellness?	9	0
c. to restore your overall health?	8	1

While respondents generally understood question (a.) as asking about physical pain, they were uncertain of this interpretation. One respondent, who answered ‘No,’ said that

“in my life I’ve had so little instances of physical pain, and to me traditionally the word ‘pain’ conjures, immediately, physical pain. But to a lot of people pain might actually conjure emotional pain...depression or anguish or something external.”

Importantly, the respondent who answered ‘Yes’ understood the term ‘pain’ to refer to “mental pain, just to calm down.” This meant that the only ‘Yes’ response was out-of-scope, because the question was intended to capture treatment or management of physical pain.

Interpretations of the follow-up questions, rather than being consistent across all questions, were influenced by the nature of the modality. To question (b.), respondents offered a range of understandings of ‘general wellness.’ In the context of this domain, respondents thought it might refer to mental health and the effects of mental health on physical and emotional health. One respondent put it this way:

“If your mind is well, then your body is well, and vice versa...if you’re not able to take care of the issues going on with you neurologically or unconsciously, then that impacts your ability to do things that your body would be capable of.”

For this respondent, the use of guided imagery or progressive relaxation helped him find a mental balance. However, other respondents indicated that ‘general wellness’ related to a more nebulous concept of “well-being.” One explained that she “did think of that mental health as kind of a hindrance to my overall well-being.” Another thought of it as related to setting habits:

“If you regularly go to your work sessions on meditation, you can change your brain basically. And then you are better able to respond to situations that are stressful. You are better able to react, you are better able to regulate.”

When responding to question (c.), as in the case of other domains, respondents tended to vary depending on whether they conceived of the modality as fixing a health problem or maintaining

their level of health. Respondents who understood ‘guided imagery’ or ‘progressive relaxation’ as about fixing a health problem focused on the word ‘restore’ and answered the question by referencing the perceived success of the practices or addressing a specific issue. On the other hand, respondents who understood this modality as about maintenance answered this question by referencing their ‘overall’ mental or physical health. Many of these ‘overall health’ interpretations overlapped with interpretations of the preceding question on ‘general wellness’.

<b>Round 2</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage physical pain?	0	1
b. to restore your overall health?	0	1
c. to prevent health problems or maintain overall health?	0	1

Conclusions about the performance of the follow-up questions in Round 2 are limited by sample size. The sole respondent screened into the follow-up question series used a meditation application to engage in ‘guided imagery’ and ‘progressive relaxation’ practices but did not relate these practices to any of ‘physical pain,’ ‘health problems,’ or ‘overall health.’

## **Meditation**

### **Round 1**

- 8) Meditation includes Mindfulness, Mantra, and Spiritual meditation. During the past 12 months, did you use any of these types of meditation?

Yes	16
No	12

### **Round 2**

- 7) Meditation includes Mindfulness, Mantra, and Spiritual meditation. In meditation a person focuses, stills, or quiets the mind. During the past 12 months, did you use any of these three types of meditation?

Yes	2
No	10

This item received the highest proportion of ‘Yes’ responses among all the CAM practices asked about on the supplement. However, respondents had a broad range of associations with the main construct, ‘meditation,’ which suggests that false positive responses are possible. Respondents were not consistently familiar with ‘Mindfulness,’ ‘Mantra,’ or ‘Spiritual meditation,’ although respondents who had heard of one or more of these concepts had distinct understandings of each. In general, respondents answered this question by relying on their personal interpretation of ‘meditation,’ rather than whether they engaged in any of the three types of meditation enumerated in the question. This answer strategy increased the potential for out-of-scope responses. As a result, the question was revised between rounds to add a short definition of ‘meditation.’ Additionally, the order of this question and the previous, on ‘guided imagery or



progressive relaxation,’ was reversed, although this reversal was undertaken to reduce the incidence of responses to the previous question that referenced meditation, not to address out-of-scope response in the meditation question itself.

### *Range of interpretations: Round 1*

In Round 1, disparate understandings of ‘meditation’ predominated among both respondents who answered ‘No’ and those who answered ‘Yes.’ One respondent, who answered ‘No,’ thought that ‘meditation’ was a practice that allowed one to “connect with your inner being” and “clear your mind.” Another, who answered ‘Yes,’ associated ‘meditation’ with a guided experience, held virtually over Zoom, in a church group:

“We just ask everyone to turn the light off in the room and light a candle, and for the first 15 minutes we close our eyes and listen to meditation...and then we each go around just talking about what’s going on in our lives and then read a few prayers.”

Many respondents associated ‘meditation’ with a guided experience, including watching videos on YouTube, meditation applications, sleep assistance tapes, using a “master or a teacher,” and engaging in a led “tai chi” exercise course.

Some interpretations appeared potentially out-of-scope. One respondent, who answered ‘Yes,’ asserted that “for me, meditation is playing a video game. Meditation is exercising.” Another associated the act of reading with ‘meditation’: “Reading...it transports you into some other place or learning new information, so yeah, it’s meditation.”

In retrospective probing, understandings of ‘Mindfulness,’ ‘Mantra,’ and ‘Spiritual meditation’ cohered across both groups of respondents in Round 1. Respondents associated ‘Mindfulness’ with “focusing on your breath,” stopping to “think about things,” “analyzing your thoughts,” or “being present in the moment.” The predominant interpretation of ‘Mantra’ was a repeated word or phrase, sometimes in one’s head, sometimes aloud. Finally, respondents associated ‘Spiritual meditation’ with “religious prayers,” or, more generally, “focusing on something higher than yourself.” Again, nearly all respondents did not identify a particular category of ‘meditation’ that they engaged in without probing. Instead, respondents answered according to their own understandings of ‘meditation.’

### *Range of interpretations: Round 2*

In Round 2 the question was revised to clarify the definition of meditation; however, respondents continued to exhibit a wide range of understandings. As in Round 1, respondents answered according to their personal understandings of ‘meditation,’ not their use of the three specific practices. Several respondents who answered ‘No’ correctly identified that they had not engaged in ‘meditation’ within the past 12 months, but otherwise held similar associations as did those who engaged in meditation within the reference period. Respondents understood ‘meditation’ to include acknowledging one’s feelings, sitting quietly, sitting still and breathing, and as a practice that would “balance out the negative” in their lives. The revised question still elicited out-of-scope responses: one of the two respondents who answered ‘Yes’ had never heard of

‘Mindfulness,’ ‘Mantra,’ or ‘Spiritual meditation,’ and associated it with the general practice of “listening to music.” Those respondents who had heard of the three types of meditation identified had similar understandings of these practices as did respondents in Round 1. No impact was observed from the shift in question order between rounds, in which the question on meditation was moved to precede that on guided imagery and progressive relaxation.

*Follow-up questions*

Follow-up questions were administered when a respondent answered ‘Yes’ to the main question. The follow-up questions differed by round of interviewing and are discussed separately below.

<b>Round 1</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage pain?	6	10
b. for general wellness?	15	1
c. to restore your overall health?	13	3

Clear differences in interpretation emerged between respondents who answered ‘Yes’ and those who answered ‘No’ to question (a.). Those who answered ‘No’ uniformly understood the question as referring to “physical pain” and, because they had not used any meditation practice to treat or manage physical pain, answered accordingly. One respondent said that she uses ‘meditation’ “not to treat or manage pain, just for my mind” and referred to swelling in her knee and back pain. Another referred to “body pain” in his arms, legs, and neck. However, nearly all those who answered ‘Yes’ understood the question as including “emotional pain,” including one respondent who changed his answer from ‘No’ to ‘Yes’: “When you say pain, do you mean body pain, or what? Emotional pain, or what?” Another specified that she doesn’t “mean physical pain, but I mean emotional pain. Chanting, mantras, all of that stuff...that is always to manage anything emotional.” These systematic differences in question comprehension meant that the item elicited primarily in-scope responses for those who answered ‘No’ but primarily out-of-scope responses for those who answered ‘Yes.’ That is, those who answered ‘No’ answered the question as intended, about physical pain; those who answered ‘Yes’ answered the question not as intended, about mental or emotional pain.

When answering question (b.), respondents exhibited a variety of understandings of ‘general wellness.’ As was the case with other modalities asked about on the supplement, respondents referred to the connection between their mental and physical health. As one put it, “I think the mind can be very powerful in sort of lowering your blood pressure, relaxing you, and that helps to alleviate factors that may negatively impact your body and your health.” Others discussed the regulation of their emotions, managing stress, feeling generally contented, general maintenance, and building confidence. The one ‘No’ respondent understood ‘general wellness’ as relating to nutrition and diet. Some respondents, however, had difficulty distinguishing between this question and the next follow-up on restoring ‘overall health.’ “It’s the same – it’s the same thing,” said one respondent, who answered yes to both questions.

Respondents generally understood question (c.) to refer to two constructs: the act of restoring and the concept of ‘overall health.’ Those who focused on the word ‘restore’ discussed the use of meditation to “pick me back up,” “to get me back on track to my goals,” and to deal with

difficult or challenging situations. As one respondent said, albeit vaguely, “restore feels like it’s depleted, and I need to refill it.” Respondents who understood the item as asking about restoring also were able to differentiate between this item and the preceding one. One respondent, who answered ‘Yes’ to the preceding item on ‘general wellness’ but ‘No’ to the item on ‘restore your overall health,’ put the distinction this way:

“I’m gonna answer no because I’m thinking, when I hear that phrase ‘restore my overall health’ I tend to think of it as...something to specifically *fix* a condition, as opposed to – when I embraced meditation and mindfulness it was to basically kind of center myself...it was more of a kind of just calming myself, stress reduction, that sort of thing.”

By contrast, those who focused on the concept ‘overall health’ tended to view the item as similar to follow-up question (b.).

<b>Round 2</b>	<i>Yes</i>	<i>No</i>
a. to treat or manage physical pain?	1	1
b. to restore your overall health?	1	1
c. to prevent health problems or maintain overall health?	1	1

Conclusions about the performance of the follow-up questions are limited due to the small number of respondents who filtered into them, but the revisions to question (a.) did appear to direct respondents to think only about physical pain. The respondent who answered ‘No’ explained that his use of meditation – listening to music – was a “mind over matter... a mind thing,” while the respondent who answered ‘Yes’ explicitly referenced her “posture” and her back.

In answering question (b.), respondents considered two constructs: the act of restoring and the concept of ‘overall health.’ One respondent, who answered ‘Yes,’ thought of the impact of meditation on her mental state, and, as a second-order effect, on her physical health. The other respondent, who answered ‘No,’ focused on the word ‘restore’ and described “getting your health back to 100%. Well, 99%. Ain’t nothing perfect.” When asked whether meditation helped him get back to 99%, the respondent said, “I mean, it puts me back at, it puts my mind back level,” but not his body.

Finally, in answering question (c.), some evidence of overlap persisted between this item and the preceding question (b.). For instance, the respondent who answered ‘Yes’ focused on the effects of meditation on her mind and, secondarily, on her body, as she did in probing of her response to the preceding item. The respondent who answered ‘No’ did distinguish between the two, associating ‘prevent[ing] health problems’ with getting “health checks” and eating healthily.

## **Yoga**

### **Round 1**

- 9) During the past 12 months, did you practice Yoga?

Yes	10
No	18

## Round 2

9) During the past 12 months, did you practice Yoga as part of a class or on your own?

Yes	1
No	11

Most respondents had both heard of yoga and shared similar understandings of the modality. Additionally, respondents' descriptions of what they thought yoga entails broadly cohered among those who answered 'Yes' and those who answered 'No.' However, as originally written and administered in Round 1, respondents' judgment strategies in what to count as yoga practice differed. Inconsistencies in responses were observed with some respondents answering 'Yes' and some 'No' based on having practiced yoga as part of another type of exercise or fitness class or on their own and not as part of a class or with an instructor.

In Round 2, 'as part of a class or on your own' was added to the question to make it more clear to respondents what to consider as yoga practice. This change appeared to be effective; the inconsistency in responses seen in Round 1 was not observed in Round 2.

### *Consistent conceptions of yoga*

Most respondents, even those who answered 'No' and had not practiced yoga, seemed generally familiar with the concept of yoga. For example, in the words of one respondent,

“Right, well yoga I know, once again, kind of a layman’s knowledge, but there are yoga studios all over [place] where I live now [laughing] and I see people carrying their mats, so I know what they’re doing and I know sort of, like I said, generally what it involves.”

Both respondents answering 'Yes' and 'No' mentioned that yoga involves “stretching,” “postures,” “holding poses,” a focus on breathing, and is good for maintaining flexibility and balance, and the use of a yoga mat. Some respondents mentioned that yoga for them is mainly a form of physical exercise, while others discussed yoga as a form of exercise that connects the mind and the body. For example, one respondent described that yoga was good for them “physically and mentally” – and helpful for relaxation and lowering stress – e.g., “It keep your stress levels down.”

A few respondents who answered 'No' described yoga as a form of meditation. For example, one respondent said, “I think of yoga as sort of a meditation mindfulness stretching...” A second respondent explained that, “It’s similar to meditation, but this is more with posture, like an exercise. In a group.” However, this could be a possible order effect of the previous question in the first round of interviewing, which asked about meditation. Moreover, even when respondents conceived of yoga as a form of meditation, they generally mentioned physical stretching and/or yoga postures.

### *Inconsistency in judgment strategies*

Those who answered ‘Yes’ described yoga practice in the context of a class or with an instructor, at home guided by videos, a fitness app, a book, or completely self-guided. Respondents who described practicing yoga in a class or with an instructor had taken yoga classes at the gym, a yoga studio, or online. Another group of respondents answering ‘Yes’ described doing yoga stretches or postures on their own. One of these respondents initially learned poses from a relative outside the context of formal yoga instruction: “I didn’t know I was doing yoga before, but I was.” Now, she practices alone: “Nobody want to do it with me.” Another respondent explained that she does “pretty much every day a couple of poses just to stretch out [her] spine and it keeps the energy moving.” Finally, one respondent answering ‘Yes’ mentioned that she is taking a “boutique fitness class” that includes some yoga moves, “mostly in the stretching part,” that she knows from when she did “official” yoga classes at a yoga studio. This indicates that the question may pick up yoga practice in the context of other types of fitness classes or workouts.

Inconsistency in how respondents answered was observed among those describing self-guided yoga practice with some respondents answering ‘No’ because they do yoga on their own and not in the context of a class or video or with an instructor. For example, one said, “I have done yoga moves, but have not done any classes or followed a yoga video. It was just me and myself doing a sun salutation.” He explained further that he uses yoga moves as part of a warmup before a Crossfit class or as part of a cool down. Another respondent noted, “When I say ‘not really’ I mean I don’t necessarily have an instructor per se, but I do know some of the stretches to do and I just kind of do ‘em.” In a similar vein, another respondent answering ‘No’ explained that although he has done “stretching, yogic stretching” to him, “...it was stretching, so that was about relieving physical pain, I didn’t view it as me engaging with yoga proper” and that yoga is a more “serious practice.”

This inconsistency was observed in prior evaluation of questions on yoga for the 2012 NHIS. In cognitive testing in 2011, one of the questions in the yoga series asked ‘During the past 12 months, did you practice [exercise mentioned in YOG.1] for yourself?’.<sup>13</sup> Respondents found the phrase ‘for yourself’ confusing, with some understanding this to mean solo yoga practice outside of group classes and others including group practice because they practiced yoga with personal intention.<sup>14</sup> In the first version of the CHA supplement evaluated in this report, the question

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<sup>13</sup> In the 2011 cognitive question evaluation, YOG.1 read: ‘Have you EVER practiced any of the following? Please say yes or no to each.

- (1) Yoga
- (2) Tai Chi (TIE-CHEE)
- (3) Qi Gong (CHEE-KUNG)’

The 2012 NHIS questionnaire can be found here:

[https://nhis.ipums.org/nhis/resources/surveys\\_pdf/survey\\_form\\_ih2012\\_althlth.pdf](https://nhis.ipums.org/nhis/resources/surveys_pdf/survey_form_ih2012_althlth.pdf). The yoga question series is on pp. 116-7.

<sup>14</sup> Gray, C., & Chepp, V. (2011). *Cognitive Interviewing Evaluation of the Complementary and Alternative Medicine (CAM) Supplement for the National Health Interview Survey (NHIS)*. Hyattsville, MD: National Center for Health Statistics. Available at [https://wwwn.cdc.gov/qbank/report/Gray\\_NCHS\\_2010\\_CAMCognitiveInterview.pdf](https://wwwn.cdc.gov/qbank/report/Gray_NCHS_2010_CAMCognitiveInterview.pdf).

eliminated ‘for yourself,’ but this did not appear to reduce the issues identified in 2011, with respondents still struggling to consistently understand how to report group or solo yoga practice.

To address this, in Round 2, the phrase ‘as part of a class or on your own’ was added to the question. While limited by the relatively small number of cases in Round 2, we did not observe the types of inconsistencies seen in Round 1, which suggests that the change was effective. Further, the one respondent who answered ‘Yes’ did so without hesitation describing a yoga practice not in a class setting. When asked how she practices yoga, she said, “I go to YouTube and just play the videos there on my desktop or on my smartphone in my room.” None of the ‘No’ respondents described any type of self-guided yoga practice.

*Response error: identity-based overreporting of yoga practice*

One instance of response error was observed with a respondent answering ‘Yes’ but who then, upon probing, realized that she had not actually done yoga within the reference period. This respondent strongly identified with her yoga practice: “I LOVE YOGA. I be trying to do my handstands and all that, I love exercising. You know why? It keep your stress levels down, and I love me some yoga.” This respondent’s “CAM identity,” at least in relation to yoga, was so strong that she assumed she had done yoga in the past 12 months even when she had not. This is the inverse of Willson’s prior finding that having an anti-“CAM identity” led to systematically under-reporting behaviors to present oneself as a non-user.<sup>15</sup>

*Follow-up questions*

Follow-up questions were administered when a respondent answered ‘Yes’ to the main question. The follow-up questions differed by round of interviewing and are discussed separately below. The follow-up questions for yoga also included an item about breathing exercises or meditation as part of yoga that was not included in other modalities.

<b>Round 1</b>	<i>Yes</i>	<i>No</i>
a. Breathing exercises may involve actively controlling the way air is drawn in, or the rate or depth of breathing. Did you do breathing exercises or meditation as part of Yoga?	9	1
b. to treat or manage pain?	6	4
c. for general wellness?	8	2
d. to restore your overall health?	9	1

Question (a.) picked up two types of breathing in the context of yoga: specific breathing exercises or techniques or a focus on breath and breathing more generally as part of yoga, as discussed further below. Respondents were approximately evenly divided between these two

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<sup>15</sup> Willson, S. (n. 4). This behavior has also been identified in the social psychology literature. See Brenner, P.S. (2017). Towards a social psychology of survey methodology: An application of the approach and directions for the future. *Sociology Compass*, 11(7), e12491.

types. No respondents explicitly mentioned meditation, although one respondent mentioned chanting mantras as part of their yoga practice. Past evaluation of items related to breathing exercises and yoga practice indicated that respondents consistently understood breathing exercises to be “*always necessarily* a part of yoga.”<sup>16</sup>

One respondent who mentioned specific breathing exercises or techniques discussed using the breathing techniques in yoga that she had learned in therapy to manage anxiety. Another respondent, though she did not know it by name, described the practice of alternate nostril breathing, saying, “There’s the kind where you breathe in one nostril and out the other nostril.” Other ‘Yes’ responses were based on the idea of breathing being a focus while practicing yoga but not necessarily specific breathing exercises or involving formal instruction. For example, several respondents talked about breathing in and out, through nose or mouth, or controlled inhalation and exhalation during yoga. As one respondent explained, “Breathing [nods, raises eyebrows for emphasis], you have to focus on your breathing at some points. You’re supposed to always be focusing on it [shakes head] but anyway [pause] they’re talking to you through the class, ‘breathe in, breathe out’.”

To question (b.), those respondents who answered either ‘Yes’ or ‘No’ considered the treatment and management of physical pain in the context of yoga, as opposed to mental or emotional pain. Those who answered affirmatively described using yoga to alleviate a specific source of physical pain. For example, two respondents talked about yoga to address back pain – one uses it to “work a kink out” of her back and the other to heal back pain and tension stemming from her time as a gymnast. Other types of pain mentioned include foot pain and prenatal yoga to treat and manage pain during pregnancy. Respondents who answered ‘No’ described using yoga “for exercise,” to be “healthier,” and to “prevent pain,” as opposed to for the treatment or management of pain.

Respondents exhibited a range of understandings of ‘general wellness.’ Several respondents thought of ‘general wellness’ as relating to physical wellness. In the words of one respondent, “Yoga is more body wellness. I don’t necessarily do yoga for mind-wellness like mental wellness.” For a couple of other respondents, ‘general wellness’ evoked the connection between physical and mental health. A third association involved the use of yoga to maintain or treat an aspect of health, such as a respondent going back to her yoga practice when she feels a “pinch” in her back. In the words of one respondent, “It’s a maintenance thing.” One of the ‘No’ respondents also related ‘general wellness’ to the idea of maintaining health. Explaining her ‘No’ response, she explained it is because she does not do yoga regularly to maintain mental health but does it on days that are stressful to restore her overall health.

As with many of the previous modalities, substantial overlap was observed in the constructs picked up by (c.) and (d.). This was evidenced, in some cases, by the continuation of the themes in responses to question (c.) when discussing their answer to (d.). In other words, unlike some other modalities, yoga can be seen as beneficial physically, mentally, or both. For example, when discussing their response to question (c.), one respondent said, “I find it, if your blood starts

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<sup>16</sup> Gray, C., & Chepp, V. (n. 2).

circulating, you have more energy, you feel better, but also just me calming down, being at peace, letting go, just relaxing. It's overall very good for me mentally and physically." Her thoughts in response to (d.) were very much along the same lines: "It's good mentally and physically to do yoga because you're stretching out your muscles, I was reading it helps a lot with your spine, but mentally it's just good to be at one with yourself and that's what yoga does."

In other cases, respondents noted the overlap directly. For example, one said, "I felt like those two questions, again, are like the same thing. Yeah, I was doing it just to be healthier, just to be healthier." And another, mentioning yoga when she has a "pinch" in her back when responding to both (c.) and (d.) said, "Oh yeah...well just exactly that, the lower back—to keep it from pinching again...Yeah, both are important...I guess I do interpret them the same."

A few respondents who were able to distinguish between the two questions tended to home in on the term 'restore.' These respondents discussed their use of yoga to address a problem such as relieving stress on "stressful days" or loosening up after a long workday. In the words of one respondent,

"Restoring your wellness is coming back to a baseline, where you were at a point earlier that took you below your baseline, whether it's a mental crisis or maybe a state of mind where you're kind of not happy about things in life or the world or maybe you had a physical injury and you're rehabilitating from that."

<b>Round 2</b>	<i>Yes</i>	<i>No</i>
a. Breathing exercises may involve actively controlling the way air is drawn in, or the rate or depth of breathing. Did you do breathing exercises or meditation as part of Yoga?	1	0
b. to treat or manage physical pain?	1	0
c. to prevent health problems or maintain overall health?	1	0
d. to restore your overall health?	1	0

Conclusions about the performance of the follow-up questions in the context of yoga are limited, as only one respondent screened into these questions in Round 2.

As observed in Round 1, along with the other more "physical" modalities involving touch or manipulation of the body, (b.) elicited a response relating the use of yoga for the treatment of management of physical pain, specifically by helping to relax her "body and relax the muscles." Question (c.) performed as expected with the respondent focusing on the aspect of prevention in the question, noting that yoga helps you "prevent pain you didn't even know was there."

While revisions to questions (c.) and (d.) in Round 2 sought to reduce overlap between the follow-up questions tested in Round 1, there was some evidence that overlap persists between the two. This is likely due to the unique positioning of yoga as a modality that can benefit both mind and body. For example, question (d.) appeared to evoke a mind-body connection achieved through yoga.



“If your body feels good and your muscles are not so tense, then your mind, you feel more positive...If you're in pain you're not going to have that positive, I don't know how to say it, positive energy.”

However, this respondent also appeared to continue to consider the use of yoga to prevent pain and was unable to articulate the difference between questions (c.) and (d.) when probed.

## Appendix 1: Questionnaire Version 1

### COMPLEMENTARY HEALTH APPROACHES

Now I am going to ask you about some health services you may have used.

- 1) During the past 12 months, have you seen or talked to a chiropractor about your own health?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes DURING THE PAST 12 MONTHS, did you see a chiropractor...*

- 1a. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

- 1b. for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

- 1c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

- 2) DURING THE PAST 12 MONTHS, did you see a practitioner of acupuncture?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes DURING THE PAST 12 MONTHS, did you see a practitioner of acupuncture...*

2a. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

2b for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

2c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

3) DURING THE PAST 12 MONTHS, did you see a practitioner of massage?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you see a practitioner of massage...

3a. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

3b. for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

3c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

4) DURING THE PAST 12 MONTHS, did you see a practitioner of naturopathy (nay-chur-AH-puh-thee)?

*Read if necessary:* Naturopathy is a medical system that has evolved from traditional practices and approaches in Europe during the 19<sup>th</sup> century. People visit naturopaths for primary care, overall well-being, and treatment of illnesses. Naturopathic practitioners use treatments such as dietary and lifestyle changes, stress reduction, and exercise.

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you see a practitioner of naturopathy...

4a. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

4b. for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

4c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

- 5) Adult-Music therapists are certified health care professionals who work in health care settings, senior centers, and treatment centers. DURING THE PAST 12 MONTHS, did you see a music therapist?

*Read if necessary:* Treatment centers include mental health, eating disorders, drug and alcohol rehab, and other centers.

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you see a music therapist...

5a. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

5b. for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

5c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

- 6) Adult-Art therapists are health care professionals with a master's level degree who work in health care settings, senior centers, and private practice. DURING THE PAST 12 MONTHS, did you see an art therapist?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you see an art therapist...

6a. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

6b. for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

6c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

7) During the past 12 months did you use guided imagery or progressive relaxation?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you use guided imagery or progressive relaxation...

7a. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

7b. for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

7c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

8) Meditation includes Mindfulness, Mantra, and Spiritual meditation. During the past 12 months did you use any of these types of meditation?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you use any of these types of meditation...

8a. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

8b. for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

8c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

9. DURING THE PAST 12 MONTHS, did you practice Yoga?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes*

9a. Breathing exercises may involve actively controlling the way air is drawn in, or the rate or depth of breathing. Did you do breathing exercises or meditation as part of Yoga?

*[ORIGIN: breathing exercises were asked on the 2002, 2007, 2012, and 2017 surveys. All but 2017 were cognitively testing at NCHS.]*

YES  
NO  
REFUSED  
DON'T KNOW

DURING THE PAST 12 MONTHS, did you use yoga...

9b. to treat or manage pain?

YES  
NO  
REFUSED  
DON'T KNOW

9c for general wellness?

YES  
NO  
REFUSED  
DON'T KNOW

9d. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW



## Appendix 2: Questionnaire Version 2

### COMPLEMENTARY HEALTH APPROACHES

Now I am going to ask you about some health services you may have used.

- 1) During the past 12 months, have you seen or talked to a chiropractor about your own health?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes DURING THE PAST 12 MONTHS, did you see a chiropractor...*

- 1 a. to treat or manage physical pain?

YES  
NO  
REFUSED  
DON'T KNOW

- 1 b. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

- 1 c. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW

- 2) DURING THE PAST 12 MONTHS, did you see a practitioner of acupuncture?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes DURING THE PAST 12 MONTHS, did you see a practitioner of acupuncture...*

2 a. to treat or manage physical pain?

YES  
NO  
REFUSED  
DON'T KNOW

2 b. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

2 c. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW

3) DURING THE PAST 12 MONTHS, did you see a practitioner of massage?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you see a practitioner of massage...

3 a. to treat or manage physical pain?

YES  
NO  
REFUSED  
DON'T KNOW

3 b. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

3 c. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW

4) A naturopath is a licensed doctor who went to naturopathic medical school and uses both standard medical tests as well as massage, acupuncture, exercise, nutritional counseling and natural therapies such as herbs. DURING THE PAST 12 MONTHS, did you see a practitioner of naturopathy (nay-chur-AH-puh-thee)?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you see a practitioner of naturopathy...

4 a. to treat or manage physical pain?

YES  
NO  
REFUSED  
DON'T KNOW

4 b. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

4 c. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW

5) Music therapists are certified health care professionals who work in health care settings, senior centers, and treatment centers. DURING THE PAST 12 MONTHS, did you see a music therapist?

*Read if necessary:* Treatment centers include mental health, eating disorders, drug and alcohol rehab, and other centers.

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you see a music therapist...

5 a. to treat or manage physical pain?

YES  
NO  
REFUSED  
DON'T KNOW

5 b. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

5 c. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW

6) Art therapists are health care professionals with a master's level degree who work in health care settings, senior centers, and private practice. DURING THE PAST 12 MONTHS, did you see an art therapist?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you see an art therapist...

6 a. to treat or manage physical pain?

YES

NO  
REFUSED  
DON'T KNOW

6 b. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

6 c. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW

7) Meditation includes Mindfulness, Mantra, and Spiritual meditation. In meditation a person focuses, stills, or quiets the mind. During the past 12 months did you use any of these three types of meditation?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you use any of these types of meditation...

7 a. to treat or manage physical pain?

YES  
NO  
REFUSED  
DON'T KNOW

7 b. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

7 c. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW

- 8) Guided imagery uses visualization to relax. Progressive relaxation uses tensing and relaxing muscle groups. During the past 12 months did you use guided imagery or progressive relaxation?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes* DURING THE PAST 12 MONTHS, did you use guided imagery or progressive relaxation...

- 8 a. to treat or manage physical pain?

YES  
NO  
REFUSED  
DON'T KNOW

- 8 b. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

- 8 c. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW

- 9) DURING THE PAST 12 MONTHS, did you practice Yoga as part of a class or on your own?

YES  
NO  
REFUSED  
DON'T KNOW

*\*ask if yes*

9 a. Breathing exercises may involve actively controlling the way air is drawn in, or the rate or depth of breathing. Did you do breathing exercises or meditation as part of Yoga?

*[ORIGIN: breathing exercises were asked on the 2002, 2007, 2012, and 2017 surveys. All but 2017 were cognitively testing at NCHS.]*

YES  
NO  
REFUSED  
DON'T KNOW

DURING THE PAST 12 MONTHS, did you use yoga...

9 b. to treat or manage physical pain?

YES  
NO  
REFUSED  
DON'T KNOW

9 c. to restore your overall health?

YES  
NO  
REFUSED  
DON'T KNOW

9 d. To prevent health problems or maintain overall health?

YES  
NO  
REFUSED  
DON'T KNOW