



HCHS/SOL Six Item Cognitive Screener - (SIB) QxQ

10/31/2023

1 Introduction

The six-item screener, derived from the Folstein Mini-Mental Status Examination, is a short measure of global mental status. It includes 3 recall and 3 time-orientation questions. These questions can be administered at any time, including during a recruitment call, a clinic assessment, an ancillary study visit, a home visit, or during the annual follow-up interview.

The six-item screener is administered when staff suspect that a participant may be experiencing cognitive difficulties. Responses are cataloged in the SIB form in CDART, which permits multiple occurrences. An algorithm provides a classification designed to help staff decide whether a designated informant or consent by proxy are required. Please note that when necessary the algorithmic classification can be overridden by staff in consultation with their supervisor. In addition, the algorithmic classification represents cognition at one moment in time. If the participant's cognition improves or deteriorates at a later point in time, the six-item screener can be readministered and a new algorithmic classification can be obtained. For additional details, refer to HCHS/SOL protocol Manuals 2 (Field Center Procedures) and 3 (Retention and Follow-up Procedures) for factors that trigger the use of the six-item screener, the use of transition statements, and for actions taken by staff based on the six-item screener results.

2 Procedures

The setting and interviewer behavior may affect the results. During administration of the six-item screener there should be no extraneous background noise or interruptions. Instructions and questions should be presented at a measured pace. If a participant is hard of hearing, speaking in a lower pitch is often more effective than trying to speak more loudly. When administration of the six-item screener is unduly influenced by extraneous factors, the test is discontinued and the reason is noted in Question 1a. If administration of the six-item screener is interrupted and incomplete, the interviewer can re-administer at a later time or consult their supervisor to determine if it is acceptable to proceed with an incomplete six-item screener.

It is important for the interviewer's attitude to be friendly, non-threatening, reassuring and supportive. If the interviewer senses frustration or other negative reaction on the part of the interviewee, staff should provide positive reinforcement (e.g., "you're doing fine").

Do not indicate whether specific responses are correct or incorrect. Participants are often curious as to how well they did. The interviewer can reassure a participant who asks that they did as well as others who have taken this test. Participants who express concern about missing an item or two on the six-item screener may be reassured that "you're doing fine" or that "many people can have difficulty at times with some of the questions."

3 Administration of the Six-item Screener

Only trained and certified staff administer the six-item screener. Following the introductory script in the form header the interviewer proceeds with the instructions.

Script: *"Before we continue, I would like to ask you some questions that will help us to decide the best way to conduct this HCHS/SOL interview/visit. Specifically, I will ask you to use your memory. I am going to name three objects. Please wait until I say all three words, then repeat them. Remember what they are because I am going to ask you to name them again in a few minutes. Please repeat these words for me: BLUE – PEAR – SOFA."*

Say these words distinctly, **at the rate of ~1 second per word**. The participant may repeat the words in any order. At the end of the presentation say, "Tell me the three words again" and score according to the response to this request. Do not repeat the words for the participant until after all three words have been presented.

Q1 Mark whether the participant attempted the task. If necessary, repeat the list of words up to three times.

If the participant attempts the task, mark Item 1 as Yes (1) and record the result of the attempt in Q2.

If the task is not attempted, mark Item 1 as No (0), record in Q1a the reason for the task not being attempted, and proceed to Question 9.

Q2. Mark whether the participant repeated the words correctly.

If the participant begins to repeat a word after each word is read (instead of waiting until the interviewer has said all three words), stop, and say: "Let's try it again. This time wait until I have said all three words, and then say them back to me."

If the participant is unable to repeat all three words back correctly, the words may be repeated up to 3 times. For example, if on the first attempt the participant repeats back, "Blue", "Pear", "Party", the interviewer would say, "let's try that again" and would say the words again. If the participant again cannot say the words back correctly, the interviewer would again say, "let's try it one more time" and would say the words again.

As another example, if the participant repeats back, "Blue, Sofa" and says, "what did you say was the third word?" the interviewer would repeat back all three words.

If the participant fails to repeat all three words correctly after three attempts, this portion of the test is discontinued. In this case, mark Item 2 as No (0) . If Item 2 is recorded as No, questions 6-8 should not be asked and instead recorded as Not Attempted/Refusal.

Q3-5 Next, ask the orientation questions and records the appropriate response. Without the aid of a calendar or watch, the participant is asked to name the year, the month, and the day of the week.

Q3. Script: *"Now, without looking at a calendar or watch: What year is this?"*

Q4. Script: *" [Now,] without looking at a calendar or watch: What month is this?"*

Q5. Script: *" [Now,] without looking at a calendar or watch: What is the day of the week?"*

If the participant gives the date when asked for the day, say: "Good, and what day of the week is it?"

Record the appropriate response next to each item. Do not offer extra help or provide any feedback as to whether a response is correct or incorrect.

Do not wait for a response longer than ~15 seconds, before prompting for a response by repeating the question. After the question is repeated wait ~10 seconds for a response before moving on to the next item. The lack of a response after a reasonable period is marked as "Not Attempted / Refusal."

- Q6-8 Then ask the participant to recall the three words presented earlier. If the participant did not complete this task correctly earlier, this section does not need to be completed; in this case, proceed to Question 9.

Script: *"Now, what were those three words I asked you to remember?"*

The words may be repeated in any order. Record the appropriate response next to each item. Recalled words are considered correct whether stated in Spanish or English, regardless of the language in which the original words were provided.

Q6. Record correct if "Blue" was recalled.

Q7. Record correct if "Pear" was recalled.

Q8. Record correct if "Sofa" was recalled.

Allow reasonable time for recall. If a participant is too quick to give up, pause, and encourage him/her to at least make an attempt. Please note that no hints are allowed.

4 Recording the Responses

All responses to Questions 3 – 8 on the six-item screener are recorded as Correct, Incorrect, or Not Attempted/Refusal. An incorrect response includes a response of "I don't know" or "I can't remember." A self-corrected response is recorded as "Correct." When no response is received after a reasonable amount of time, select "Not Attempted/Refusal."

Please note that the algorithmic classification depends on a response being entered for Questions 3-8. Leaving a question blank may cause the algorithm to report "Missing Data" which means there is insufficient information to make an accurate classification.

5 Scoring the Six-item Screener

The numeric score thresholds used in HCHS/SOL to identify impaired memory and disorientation to time are based on validation studies of the six-item cognitive screener reported in the literature, and for consistency with other population-based studies that use this instrument.

The six-item screener is administered as a form and scored in CDART. Instead of numeric scores, CDART indicates whether the participant's performance on the screener suggests an impairment in cognitive functioning (Alternate/Proxy Indicated) or no impairment (Alternate/Proxy Not Indicated). If the algorithmic diagnosis indicates "Missing Data" then there is insufficient information. In that situation, attempt to obtain and enter data that is missing from Questions 3 – 8. If that is not possible, consult a supervisor. If the algorithmic diagnosis indicates "Consult a Supervisor" due to

hearing loss or some other response provided in Question 1a, consult a supervisor to determine whether a designated informant and/or consent by proxy are required.

6 Acting on the Information Identified with the Six-item Screener

6.1 Annual Follow-up Interviews

During an AFU interview, if a six-item screener is scored as 'Alternate/Proxy Indicated' future annual follow-up interviews should be conducted with an alternate respondent. If the six-item screener score is reported as 'Alternate/Proxy Not Indicated' the interviewer is to proceed interviewing the participant (instead of an alternate), unless other barriers are present that make an interview challenging or uninformative. For further details refer to Manual 3 (Retention and Follow-up Procedures).

6.2 Recruitment for Visit 3

During V3 recruitment and assessment, if a six-item screener is scored as 'Alternate/Proxy Indicated' a proxy participant should be identified to accompany the HCHS/SOL cohort member to the clinic visit. Refer to Section 4 of Manual 2 (Field Center Procedures) for the qualifications of a proxy participant. If the six-item screener score is reported as 'Alternate/Proxy Not Indicated' the interviewer proceeds according to the standard protocol unless there is evidence that the participant will find the exam or its interviews to be challenging.

7 Closing out the Interview

Thank the participant. Participants may express concerns about their cognitive functioning and ask about the need for further evaluation. The interviewer may reassure the participant that these questions are just a research test and do not make a clinical diagnosis, so more detailed information about performance is not available. The interviewer may also note that if the participant is concerned about memory and thinking this should be discussed with their healthcare provider. Each HCHS/SOL field center has available the names of physicians in the local area for participants who do not have a primary care provider.