Exploring Cognitive Complaints in Schizophrenia: The Subjective Scale to Investigate Cognition in Schizophrenia

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While it has become commonplace to test the various components of memory in schizophrenia with paper-and-pencil or in-lab tasks, very little data exist on the subjective complaints of patients regarding their memory. Few instruments have been designed to collect systematically the complaints of patients with schizophrenia. We present a work in progress on the Subjective Scale to Investigate Cognition in Schizophrenia (SSTICS), a 21-item, Likert-type scale that is simple and easy to use. It allows a quantitative approach to the subjective and cognitive dimensions of schizophrenia. Stip constructed the scale based on a questionnaire covering several cognitive domains: memory (working memory, explicit long-term memory), attention (divided, distractibility, alertness, sustained), language, and praxia. We evaluated the psychometric properties of the SSTICS in a population of 114 French-speaking patients in Montreal. Patients were recruited in the community and assessed with the Structured Clinical Interview for DSM-III-R (SCID), the Positive and Negative Syndrome Scale (PANSS), and the Extrapyramidal Symptoms Rating Scale (ESRS). Cognition was measured using the Rey Auditory Verbal Learning Test (RAVLT) (long-term memory), Controlled Oral Word Association Test (verbal fluency), and Trails A and B. Preliminary analyses showed very good internal consistency for the global score (alpha = 0.88), and alphas varying from 0.57 to 0.72 for the subscales. Stability over time was very good. The principal components analysis accounted for a multiple structure. Correlations between subjective scores and objective cognitive assessment were significant for several domains. Validation of the SSTICS needs to be completed through further exploration of the factorial structure and testing of the English version.

MULTIPLE COGNITIVE DEFICITS are associated with schizophrenia, but those proven to be associated with long-term outcome fall primarily within the areas of memory, attention, and executive functions. Most patients remain in the fifth percentile below normal in neuropsychological function.[1,2]

Research into the memory deficits of schizophrenic patients[3-6] suggests that impairment levels in this area may be higher than those observed in other neurocognitive spheres.[7] Moreover, various studies have reported that memory functions are a good predictor of short- and long-term outcome in certain areas of functioning, including skills acquisition, problem solving, and community living.[8,9]

Memory is generally perceived as a set of relatively independent systems. The various memory systems are split up into different components. Sensorial memory, short-term memory, and long-term memory are considered distinct entities primarily on the basis of the different nature of the activities that depend on each of these systems. Long-term memory corresponds to a set of components that allow the acquisition of new information and the recovery of previously learned information, be it episodic, semantic, or procedural. The episodic system is described as a system that allows the retention of personal experiences related to a particular spatio-temporal context. The semantic system, for its part, corresponds to all acquired knowledge of the world. Lastly, the procedural system allows the retention of learned connections between stimuli and responses necessary for adaptation to the environment. Episodic memory has traditionally been measured through explicit recall, which refers to the voluntary recall of previously presented information. Explicit recall is usually measured by means of free-recall, cued-recall, and recognition tasks. While it has become commonplace to test the various components of memory in schizophrenia with paper-and-pencil or in-lab tasks, very little data exist on the subjective complaints of patients regarding their memory. Do they themselves perceive any difficulty remembering or memorizing lists of common articles in everyday life? Do they have trouble remembering? Are they conscious of their lapses?

Attention, also, has been demonstrated to be impaired in schizophrenia at an early age.[10] Like

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memory, attention is a diverse and complex concept. It can be divided into four distinct components: alertness (the capacity to detect a stimulus), sustained attention (the capacity to focus attention over a long time period), selective attention (the ability to focus on relevant information while ignoring distracting stimuli), and divided attention (the capacity to divide attentional resources between several simultaneous messages). Here, too, little is known about the subjective perception of schizophrenic patients with respect to difficulties in this area. Finally, executive function deficits have been documented in patients with schizophrenia.[11]

Very few instruments have been designed to collect systematically the complaints of patients with schizophrenia.[12-18] Huber and Gross[19] proposed the term "basic symptoms" to designate the earliest symptoms of schizophrenia on which the rest of the symptomatology develops, especially the positive one. According to these authors, while basic symptoms evade behavioral observation, they can be discerned through an analysis of what patients feel. The idea of basic symptoms has been at the root of the development of several evaluation scales, the best known of which include the 98-item Bonn Scale[20] and Sullwold's 98-item Frankfurt Scale (FCQ).[12] This concept has been investigated by a number of researchers. Liddle and Barnes, for example, examined basic symptoms by means of the subjective items of the Scale of Assessment of Negative Symptoms (SANS).[15] They concluded that the SANS did not fully serve the purpose and, consequently, proposed a scale to evaluate how patients subjectively experience the deficits characteristic of schizophrenia. Studies have recently been published on the Subjective Deficit Syndrome Scale (SDSS),[21] the Subjective Experience of Negative Symptoms (SENS) scale,[22], and the Frankfurt Complaint Scale[23-25] and Bonn Scale questionnaires.[26-28] On these subjective scales, the severity estimate or the global score attributed to each item depends on whether the experience reported by the patient belongs within the sphere of normal experiences, and whether it could eventually disrupt normal activities or elicit distress. The relatively satisfactory rate of inter-rater agreement in this regard suggests that most patients are capable of giving an account of their subjective experience of deficits. Generally speaking, each item is highly prevalent, thereby confirming Huber's hypothesis regarding the ability of schizophrenic patients to become conscious of and report their subjective symptoms. For example, where Liddle's scale is concerned, a study by Yon and Loas[29] confirmed the results obtained by Liddle and Barnes with respect to distractibility (52%). To our knowledge, no instrument existed specifically designed to evaluate the subjective cognitive complaints of patients with schizophrenia. It seemed appropriate, therefore, to create an instrument specific to schizophrenia, which would be validated with a population of schizophrenic patients.

Consequently, we set out to create a scale to measure the subjective complaints of patients, bearing in mind the cognitive deficits in schizophrenia that have been objectively measured in the past. The present article describes how the Subjective Scale to Investigate Cognition in Schizophrenia (SSTICS) was constructed, the rationale behind it, and its validation with a population of 114 patients diagnosed with a schizophrenia-spectrum disorder and treated neuropsychologically and clinically for at least 1 year.

EXPLORATORY CONSTRUCT

Despite the distance that exists between a construct based on objective data and one derived from a subjective data set, we developed a questionnaire to explore the subjective appreciation of patients for areas that objective psychometric or cognitive data have attested to be impaired in schizophrenia. The aim was to make the instrument as simple and natural as possible for patients to use. The questions formulated focused on four cognitive areas: memory, attention, executive functions, and praxia. Two components of memory were investigated through 11 questions: working memory (questions 1 and 2) and explicit memory (questions 3 through 11). Explicit memory included episodic memory (questions 3 through 9) and semantic memory (questions 10 and 11). Attention was explored by means of five questions dealing with distractibility (question 12), alertness (question 13), selective attention (question 14), divided attention (question 15), and sustained attention (question 16). The executive functions covered included planning (question 17), organization (question 18), and flexibility (question 19). Language was evaluated with one question (questions

20), as was praxia (question 21). In all, the questionnaire comprised 21 items.

The list of questions is included in the Appendix.

METHOD

Pre-test of Experimental Version

The questionnaire was first administered to a restricted sample for the purpose of correcting the wording of the questions, obtaining comments from both patients and investigators, and harmonizing the modalities of administration and the instructions. The original list comprised 23 questions. The population consisted of 40 patients who met the DSM-IV[30] criteria for schizophrenia or schizoaffective disorder. Mean age of the patients was 33.8 ± 11.7 years, and time elapsed since onset was 10.5 ± 9.7 years. Mean aggregate score on the PANSS[31] clinical scales was 56. As a result of this exercise, a number of changes were made to clarify and simplify certain questions. Two items were deleted from the original list as they were overlooked by most of the patients, who felt that they did not apply to them: One examined their ability to remember hockey game scores and the other their ability to remember an everyday grocery list. Truth be told, patients were not avid sports fans, and they were not as interested in sports results as the normal population. Moreover, as a large number of patients live in supervised facilities, very few do their own grocery shopping. Accordingly, in the end, the questionnaire was reduced to 21 items. It should also be mentioned that the pre-test served to train the interviewers.

Administration Procedure

The instructions were first explained to the patients during a structured interview in which the investigator asked each of the 21 Likert-type questions in a simple manner:

> "On the sheet before you is a series of questions on memory and concentration problems that you may have experienced while going about your everyday activities. We would like you to estimate how often you have noted such problems recently. In other words, if you find that a given description corresponds to a complaint or problem that you may have, then you should answer the question by indicating the frequency with which it occurs. Use the scale below to this end. Circle the number that best corresponds to your experience" (4–very often; 3–often; 2–sometimes; 1–rarely; 0–never)."

The approximate time to completion was 6 minutes on average. The questionnaire was administered at the patient's home, the outpatient clinic, or a community resource. The examiner had to verify whether the participant knew how to read and had to remain on site to answer any eventual questions, provide explanations, or go through the entire questionnaire with the participant, if needed. The examiner could give examples, especially for questions 13, 14, 15, and 19.

Experimental Version

The final version of the questionnaire was then administered to 114 patients. The approximate time of completion and the administration settings were the same as for the pre-test (6 minutes on average). However, two outlier patients needed more than 20 minutes. Interviewers were trained beforehand in order to standardize their understanding and administration of the questions. In order to ascertain whether the questionnaire was administered in a standard fashion, inter-rater agreement between the two research assistants previously trained on the PANSS was measured with a sample of 11 participants. Analyses yielded the following results: for positive symptoms, $r = .811$ ($P = .01$); for negative symptoms, $r = -.889$ ($P = .85$); and for general psychopathology, $r = .85$ ($P = .85$).

Pilot Study on a Normal Population

Two practice trials were conducted with a population of healthy volunteers (N = 56) to test the questionnaire and how it was administered. This population had a mean age of 46 years and was highly educated (university studies). The SSTICS global score was 13.12 (SD = 6.2).[32]

Characteristics of the Population

The study's population consisted of a convenience sample of 114 community-treated patients in Montreal who met the DSM-IV diagnostic criteria for schizophrenia, schizophreniform disorder, or schizoaffective disorder. Diagnoses were verified by an outside evaluator by means of the SCID[33] at the time of the first encounter with the patients. Participants were recruited from various types of mental health resources: three psychiatric outpatient clinics, residential facilities, and an occupational center. Mean age of the patients was 41 years (SD = 15.5) and their mean years of schooling, 11 (SD = 2.77). Sixty-four participants held a college or university diploma and 39 completed 10 or fewer years of schooling. Data were missing for one participant. Most of the participants were single (n = 91); the others were either widowed/separated (n = 14) or married/living together (n = 7). The status of one participant was unknown. Most participants (n = 91; 80%) were not gainfully employed, and only six reported annual income above CAN$12,000.

Mean time elapsed since onset of illness was 15.59 years (SD = 108 months) and mean number of previous hospital stays was 6.6 (SD = 6.65) for a mean time of hospitalization of 1 year and 4 months (SD = 29.27 months). Twenty-five participants were hospitalized in the past year, five on tow or three separate occasions for a mean of 35 days. All were treated with antipsychotic drugs.

Psychopathological symptoms were rated with the PANSS, motor signs with the ESRS,[34] and depression with the Calgary Depression Scale (CDS).[35] Mean aggregate scores on the clinical scales were as follows: 53.5 (SD = 6.30) for the PANSS, 1.79 (SD = 2.82) for the CDS, and 5.80 for the ESRS. Mean scores on the PANSS subscales were as follows: 12.58 for positive symptoms, 13.53 for negative symptoms, and 25.44 for general psychopathology.

Neuropsychological Assessment

The neuropsychological battery consisted of a series of standardized tests with published normal control data that have shown a wide range of test scores in subjects with schizophrenia. All these tests were used in a Canadian study on cognition in schizophrenia.[36] In this study, the verbal fluency was measured with the Controlled Oral Word Association Test[37] (pho-

nological and semantic); long-term memory was assessed with the Rey Auditory Verbal Learning Test (RAVLT),[38] and dependent variables were the total number of words learned over the five trials and after a delay; Attention was assessed using Trail Making Test A and B[39] and letter and symbol cancellation.[40] A trained neurologist assistant administered the tests.

RESULTS

Means and standard deviations for all subjective and objective variables at both times are given in Table 1. The SSTICS global score was 25.94 (SD = 9.72).

Reliability

Internal consistency. The scale's reliability was measured by examining its internal consistency through Cronbach's alpha coefficients.[41] The scale's consistency proved good (alpha = 0.858) over the 113 patients. The alphas obtained were as follows: for overall memory, 0.768 (0.65 at T2); for short-term memory, 0.55 (0.55 at T2); for long-term memory, 0.58 (0.57 at T2); for attention, 0.613 (0.65 at T2); and for executive functions and praxia, 0.67 (0.67 at T2).

Test-retest reliability (correlation). Its stability over time (test-retest) was assessed with a sample of 78 patients examined by the same rater at a mean interval of 11 days (range, 2 to 22 days).Test-retest showed that stability over time for the global score was good. Spearman's correlation coefficient [42] for the two global scores: $r = 0.82$ ($P < .01$).

Construct Validity

Validity of internal structure. We performed an item analysis and a factor analysis. The extraction method used was principal component analysis. The decision-making criterion for factor extraction was an eigenvalue[43] above 1, provided that the total variance explained exceeded 50%. Based on these criteria, principal component analysis identified six factors that accounted for 57.5% of the

Table 1. Results of Cognitive Assessment

	Subjective Scoring			Objective Scoring	
	Mean	SD		Mean	SD
Total	25.94	9.72			
1	1.79	1.28			
2	1.74	1.27			
3	1.60	1.34			
4	.73	1.21			
5	.83	1.13			
6	.52	.83			
7	1.52	1.23			
8	1.09	1.27			
9	.50	.93			
10	1.23	1.26			
11	1.90	1.32			
12	1.92	1.21			
13	1.23	1.11			
14	1.23	1.17			
15	1.50	1.35			
16	1.64	1.20			
17	.94	1.21			
18	1.00	1.23			
19	1.43	1.09			
20	1.34	1.2			
21	.26	.84			
			Verbal fluency L*	25.24	9.63
			Verbal fluency C†	34.64	8.85
			Trail Making A	48.67	24.55
			Trail Making B	138.02	124.10
			RAVLT	38.6	(11.45)

*Letter.

†Category.

Abbreviation: RAVLT, Rey auditory verbal learning test.

Table 2. Principal Component Analysis: Total Variance Explained

	Extraction Sums of Squared Loadings			
Component	Total	% of Variance	Cumulative %	Rotation Total
1	5,829	27.8	27.8	3,610
2	1,723	8.2	36.0	2,238
3	1,420	6.8	42.7	1,648
4	1,311	6.2	49.0	3,360
5	1,212	5.8	54.7	1,812
6	1,082	5.2	59.9	2,854
7				
8				
9				
10				
11				
12				
13				
14				
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16				
17				
18				
19				
20				
21				

total variance (Table 2). Factor 1 had a value of 5.82 and explained 27.8% of the variance; factor 2 had a value of 1.72 and explained 8.2% of the variance.

In this study of cognitive subjectivity, we first used factor analysis for exploratory purposes to see through rotation whether latent variables would emerge and eventually lead to a model different from the one put forth regarding the cognitive construct by domain. Principal component analysis (rotation method: Oblimin[44] with Kaiser normalization[45]) yielded a six-factor solution. This allowed us to arrive at a model by selecting the variable most highly loaded with respect to the various factors (Table 3).

Convergent validity was precluded by the fact that no other test measuring subjective experience was administered simultaneously. However, we did analyze the correlation between the SSTICS and objective measures. The SSTICS global score was significantly correlated with the explicit memory measure ($r = -.244$, $P = .0009$), as was the SSTICS global memory score with the objective explicit memory score ($r = -.241$, $P = .10$). A significant correlation emerged also between the SSTICS long-term memory score and the objective score ($r = -193$, $P = .04$). The same was observed between the SSTICS attention score and the objective explicit memory score ($r = -193$, $P = .042$).

We examined whether a correlation existed with the PANSS global, general, positive, and negative scores. In addition we examined the cognitive PANSS factor considered by some to be a potential cognitive factor,[46] as well as with the ESRS global score and depression. We also examined whether a correlation existed with insight, an item contained in the PANSS. The SSTICS total score proved

Table 3. Subjective Cognitive Domains of Complaints

Subjective Factors	Items	Subjective Domains
Factor 1	16, 17, 18, 19	Sustained executive function
Factor 2	7, 9, 10, 11	Memory of information
Factor 3	1, 3, 15, 20	Consciousness of effort
Factor 4	2, 4, 5, 21	Daily life
Factor 5	8, 12, 14	Distractibility
Factor 6	13	Alertness

correlated with the PANSS negative ($r = .228$; $P = .015$) and general scores ($r = .260$; $P = .005$). The SSTICS total score was also correlated with insight ($r = -.181$; $P = .055$), as was the SSTICS explicit semantic memory score ($r = -.242$; $P = .011$). Depression was correlated only with the SSTICS Executive Function ($r = .208$; $P = .027$). The only correlation between the SSTICS and the EPS was on item 21 regarding difficulty getting dressed or eating ($r = .281$; $P = .003$). The only correlation between the PANSS cognitive factor and the SSTICS was on item 4, that is, remembering the names of your medications ($r = .309$; $P = .001$).

Back Translation

The questionnaire was back-translated into English. See Appendix.

DISCUSSION

We consider that this study is still a work in progress. Nevertheless, to our knowledge, this was the first time a subjective scale of cognition in schizophrenia was used to record and quantify patient complaints in this regard. This scale was based on an a priori construct related to objective empirical data and the existence of acknowledged cognitive functions, such as memory, attention, executive functions, and language. Most of the items deal with the various components of memory. The SSTICS could constitute a scale to evaluate the cognitive complaints of patients with a schizophrenia-spectrum disorder. The SSTICS seems easy to administer and takes approximately 6 minutes to complete. The scale's reliability was shown to be acceptable. We also demonstrated that its stability over time was good. Meanwhile, we suggest that it is premature to draw conclusions as to its validity and reliability at this point. The correlation between the SSTICS and the objective memory performances of patients was not surprising as the instrument is in large part a subjective scale for measuring memory. The SSTICS was able to show a higher score in a schizophrenia population than in a normal population.

Other studies have shown that it is possible to measure the subjectivity of patients with schizophrenia in areas other than cognition, such as quality of life,[47] service satisfaction,[48] perception of medication,[49-51] and symptoms.[12,15,52-57] Where the perception of cognitive problems is concerned, the patients in this study responded well to the scale, and the factorial construct derived from the results (rather than from the initial theoretical construct) reflected their perception. So can we trust patients with schizophrenia when they report having or not having memory difficulties? This is a question that may not be specific to schizophrenia.[58] Those in whom such difficulties are objective do not pose much of a problem, given that an investigation can be undertaken to confirm the situation and determine the causes with a view to reassuring and treating the patients (depression, benzodiazepine abuse). However, it is puzzling when patients complain about their memory but their situation cannot be corroborated objectively. It is interesting to note that in a study comparing memory self-evaluation and an objective measure, seniors (N = 5,444) who initially had a normal or higher cognitive score and who complained about their memory presented with the worst deterioration 2 years later.[58]

As shown by the distribution of subjective domains based on factor saturation, there is a difference between the distribution of the items as factors in the initial model and in the neo-construct grouping the items according to a different distribution. This could mean a number of things; First, that the construct is not sound. Indeed, the difference could stem from the fact that when we go from an objective construct (based on a line of questioning derived from cognitive neuropsychology models) to a set of subjective responses, we somehow change the construct. In other words, the shift from objectivity to subjectivity is at play here. The difference could also mean that the items selected were ill suited to measure what we wished to measure with respect to the initial construct. Finally, the difference could also involve the fact that the items selected refer contemporaneously to several overlapping dimensions. In this case, there would be too much overlapping. Whatever the reason, the global score alone is reliable here. If we wish to understand or grasp the subjectivity of schizophrenia patients and their mode of thought and representation (including schizophrenic metacognition), how we take the factors into account appears to be in itself a critical factor. This is why we also present here a solution based on six fac-

tors: sustained executive function, memory, consciousness of effort, daily life, distractibility, and alertness.

Ongoing studies involving a larger number of subjects will allow us to run a confirmatory factor analysis based on the subjective model. What we sought first was to identify the optimal number of common factors by evaluating the pertinence of factor analysis models with a growing number of factors. Then, combining the indications suggested by the loading profiles with our clinical and neuropsychological knowledge of cognition, we arrived at a simplified model. It will be possible to refine this model thanks to the use of powerful computer software specialized in confirmatory analysis in other studies under way. Originally, factor analysis was a technique used for exploratory purposes to discern traces of latent variables. Given that the model yielded by this solution differed from the one that we had postulated, we entertained the idea of testing the latter by carrying out a confirmatory analysis. However, this approach remains questionable at this point in time, as it amalgamates one field (modelization) with another (hypothesis testing). When the aim of a study is to construct a model with an acceptable degree of simplicity and readability, it is best to focus on indices of optimality. It is now possible to arrive at a new model by selecting the variables heavily loaded on the different factors.

Another point worth noting is the connection between insight and perception of a problem.[59-61] The PANSS judgement item is defined as "impaired awareness or understanding of one's own psychiatric condition and life situation." This is evidenced by failure to recognize past or present psychiatric illness or symptoms, denial of need for psychiatric hospitalization or treatment, decision characterized by poor anticipation of consequences, and unrealistic short-term and long-range planning. Our study yielded a negative correlation between severity on the PANSS insight score and the SSTICS score. The more a patient lacks insight, the less he perceives cognitive difficulties. This is both the cornerstone of what we are saying here and its major limitation, as we can well imagine that the more a patient is affected in terms of psychotic symptoms, the less his insight is intact and the less his subjective perception of a cognitive deficit is present. Our largest difficulty is being able to evaluate and consider a patient's complaint when it is hidden by his lack of insight. Our instrument seems to us limited in this regard and this is an obstacle that is intrinsic to psychotic disorders. This is why we recommend measuring insight at the same time as we use the SSTICS.

This study has other limitations. We did not use a second subjective scale for the purpose of external validity. Nor did we administer the questionnaire to populations other than the one composed of patients meeting the diagnostic criteria for schizophrenia, schizoaffective disorder, or schizophreniform disorder. For example, several investigations have shown that the FCQ has no diagnostic specificity.[24] Looking beyond the preliminary results obtained on our scale in this study, there are a number of areas that were not covered and that would be interesting to explore, such as the specificity of each item and the relationship between subjective cognitive symptoms and social adaptation.[62] Also, the scale used in this study was in French. The English back-translation included at the end of the article is currently being validated.

Conclusion

When a patient with schizophrenia undergoes a psychopathological and cognitive evaluation by means of measurement scales, the clinician's judgement is generally considered to be objective. The patient's judgement, instead, is considered subjective. By escaping the influence of the psychopathology reported by the patient, objective methods are deemed to be more reliable and valid. Nevertheless, subjective symptoms (which are often recurring) can play an important role in the residual deficits observed in schizophrenia patients. If we can confirm that the SSTICS is a simple, quick, and reliable instrument for evaluating the subjective dimension of cognitive difficulties in schizophrenia, this first exploratory study would have been helpful. Such a scale could be used with schizophrenia patients to better identify their complaints. Given the strong correlation between the results of this scale and objective data concerning memory and (to a lesser degree) attention, it would seem that the subjective complaints of patients correspond to their actual cognitive deficits. The study of the psychometric properties of the SSTICS must be completed evaluating its

sensitivity to change. It could then eventually be used in psychopharmacological trials and nonpharmacological therapeutic trials to measure the effects of various treatments on the perception that patients have of their cognitive functioning. The systematic evaluation of subjective experience independently from its impact on schizophrenia patients' behavior is neglected in most structured interviews and symptoms rating scales. However, subjective complaints might be a predictor of outcome functioning, medication compliance, and psychotic worsening and better reflect patient well-being than do behavioral assessment. We suggest that subjective cognitive deficits are prevalent in schizophrenia, that they can be reliably assessed, and that they constitute a clinically important dimension of the disorder.

Appendix

1. Have you noticed any difficulty remembering things?

4–very often
3–often
2–sometimes
1–rarely
0–never

2. Do you have difficulty remembering information that is freshly received *and that must be used immediately*, such as a telephone number, an address, a room number, a bus route number or a doctor's name?

3. Do you have difficulty memorizing things, such as a grocery list or a list of names?

4. Do you have difficulty remembering the names of your medications?

5. Do you ever forget things, such as a date with a friend or a doctor's appointment?

6. Do you forget to take your medication?

7. Do you have difficulty remembering information that you read in the newspapers or hear on TV?

8. Do you have difficulty doing household chores or repairs? For example, do you ever forget how to cook things or what ingredients go into a recipe?

9. Do you have difficulty remembering how to get to the hospital or the outpatient clinic or even to your own place?

10. Do you have difficulty remembering the names of well-known people, such as the Prime Minister of Canada?

11. Do you have difficulty remembering national capitals, important dates in history, names of countries on other continents, or major scientific discoveries?

12. Are you absent-minded or up in the clouds? For example, you lose your train of thought in a conversation because you are distracted or you have a hard time focusing on what you are reading?

13. Do you have difficulty being on the alert or reacting to unexpected situations? For example, a fire alarm or a car that rushes by suddenly as you are crossing the street.

14. Do you have difficulty making out what's important when you are presented with different bits of information simultaneously? For example, the name of your medication or your next doctor's appointment while two people are talking about music nearby.

15. Are you unable to do two things at once? For example, memorize an address while making coffee, or count the money in your wallet while the pharmacist explains your medication to you.

16. Do you have trouble focusing your attention on the same thing for more than 20 minutes? For example, at a conference or a book reading or during a lesson in a classroom.

17. Do you have difficulty planning out your activities as easily as you used to? For example, charting an itinerary for getting someplace, making a budget for the month, preparing meals, or making time for laundry.

18. Do you have difficulty coordinating your movements and actions of everyday life as easily as you used to? For example, using the telephone, doing some shopping, running errands, preparing meals, doing housework, doing laundry, using transportation, doing home repairs.

19. Do you have difficulty changing your movements, decisions or ways of doing things if you are asked to do so *and you agree*? For example, you agree to do so but it is hard because it is no longer the same.

20. Do you have difficulty finding your words, forming sentences, understanding the meaning of words, pronouncing words, or naming objects?

21. Do you have difficulty getting dressed or eating? For example, handling buttons, zippers, work tools, scissors, a fork, a key in a lock.

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