

The Dementia Assessment Sheet for Community-based Integrated Care System (DASC-21)

1. Introduction

The detection of dementia within the community through comprehensive assessment and the diffusion of information among professionals across various disciplines is crucial to the provision of integrated care and to allow people with dementia, and their caregivers, to continue living serenely in the community that is familiar to them.

The Dementia Assessment Sheet for the Community-based Integrated Care System (DASC), described below, was developed to achieve this goal.

Dementia refers to impairment in the ability of a person to function in daily life caused by a kind of brain disease that impairs cognitive functions. Bearing in mind that dementia is defined by a combination of 3 elements: “brain disease,” “impairment in cognitive functions,” and “impairment in the ability of a person to function in daily life,” a full picture of dementia can be described through various “physical symptoms,” “behavioral and psychological symptoms,” and “social difficulties.” A comprehensive assessment of dementia is defined as an evaluation of all these symptoms and difficulties.

However, the detection and diagnosis of dementia first require an assessment of “impairment in cognitive functions” and “impairment in the ability of a person to function in daily life.” The DASC-21 is a list of 21 questions about the impairments in cognitive functions and functioning in daily life that are commonly observed in people with dementia. The DASC-21 has the following characteristics.

Table 1. Characteristics of the DASC-21

- The DASC-21 is an assessment sheet composed of two introductory items (referred to as items A and B) followed by 21 assessment items.
- The DASC-21 allows a comprehensive assessment of both cognitive functions and functioning in daily life.
- The DASC-21 includes 6 items on IADL (Instrumental Activities of Daily Living) and thus allows the identification of impairments in functioning in daily life caused by a mild level of dementia.
- The DASC-21 uses a 4-point scale to cover the full spectrum of impairments.
- Questions are specific and can be answered through observation.
- The DASC-21 is fast and easy to use.
- The assessment method is simple.
- Simple training gives access to basic knowledge of dementia and to the basic skills required to comprehensively assess dementia.
- Results from the assessment can be used to capture an overall clinical picture and thus give an indication of which service would be required.

2. Instructions to read before using the DASC-21

(1) General instructions

- 1) The DASC-21 was created as an informant rating scale to allow trained professionals to assess the changes in behavior associated with impairments in functioning in daily life and in cognitive functions. In principle, this assessment is conducted by asking questions about a person's daily life to family members and/or to caregivers who have personal knowledge of the situation.
- 2) If the person being assessed is living alone and there is no caregiver or family member able to answer, the evaluator can provide answers to the items by asking questions directly to the person¹. The evaluator can also assess the person's condition by asking complementary questions, observing the situation and relying on his/her personal judgment. (Noting the points mentioned in each answer.)
- 3) When the respondent is a family member or a caregiver, his/her answers can in principle be used without further examination. However, if the reality is obviously different from the respondent's answer, the evaluator may rely on his/ her own professional judgment to select the right answer.
- 4) In the case of "Can he/she [...]" questions when the family member or caregiver has not directly observed this situation, the question can be rephrased as "Do you think that he/she could [...]" The same technique can be used when the questions are asked directly to the person due to the absence of a family member or caregiver.
- 5) The 21 questions are answered using a scale ranging from 1 to 4 (i.e. a 4-point scale).
- 6) Approximately speaking, a score of 1 or 2 is considered as normal, while a score of 3 to 4 is used to describe impairments. The anchor point is thus between 2 and 3.
- 7) Introductory questions A and B are included to facilitate the use of the DASC-21 by making the respondent self-aware of whether or not the person being assessed is forgetting things. Results from these introductory questions are not taken into consideration in the scoring of the DASC-21.

¹ In this case, the question obviously has to be rephrased. For example, if the introductory question A is asked directly to the person being assessed, it should be rephrased: "Do you have the impression that you forget a lot of things?"

	Introductory questions (no points)	Instructions
A	Do you have the impression that he/she forgets a lot of things?	Introductory question. The goal is to check if the family member/caregiver thinks that the person being assessed forgets a lot of things. The answer indicates the level of seriousness of the condition. If the person is living alone (without family or a caregiver), the question can be asked directly.
B	Compared to last year, do you have the impression that he/she forgets more things?	Introductory question. The goal is to check if the family member/caregiver thinks that the person being assessed forgets more things than a year ago. The answer indicates the level of seriousness of the condition. If the person is living alone (without family or a caregiver), the question can be asked directly.

(2) Specific instructions for each item of the DASC-21

	Questions	Instructions
1	Does he/she forget where he/she puts things such as his/her wallet or keys?	This is a question about memory function (impairment in recent memory). The answer indicates how frequently the person forgets where he/she puts things (a wallet, keys, a bankbook...) and how frequently he/she has to look for them. If the person is living alone (without family or a caregiver), the answer to this question can be obtained by asking where some things are. For example, the evaluator may ask: "Where is your medication notebook?" Moreover, if the person starts saying that he/she loses a lot of things, or that someone is often taking things or stealing from him/her, this can be understood as an indicator that the person often forgets where he/she puts things.
2	Does he/she forget a conversation that happened 5 minutes ago?	This is a question about memory function (impairment in recent memory). The answer gives an idea of how frequently the person forgets a conversation that has just occurred. The topic of the conversation could be, for example, the date of an appointment (at the hospital, the day care service center, or when his/her grandchild is coming...) or the reason why someone is calling on the phone.

		<p>If the person is living alone (without family or a caregiver), the answer to this question can be obtained through a test on short-term memory loss (ask the person to recall the name of the evaluator or repeat three words after hearing all of them, such as in the MMSE). Moreover, the answer to this question may be easily deduced in the case of a person repeating over and over the same questions or telling the same stories during the assessment.</p>
3	Does he/she forget his/her own birth date?	<p>This is a question about memory function (impairment in remote memory). A person suffering from impairment in recent memory may have a hard time remembering precisely his/her own age. However, a person forgetting even his/her own birth date suggests a high risk of impairment in remote memory.</p> <p>If the person is living alone (without family or a caregiver), the birth date can be asked directly. Impairment in remote memory suggests a moderate or serious level of dementia.</p>
4	Does he/she forget what day and month it is?	<p>This is a question about the person's faculty of orientation (time disorientation).</p> <p>If the person is living alone (without family or a caregiver), the date can be asked directly. If the answer is wrong by one or two days, then it is unlikely that the person forgets the day and month frequently. However, if the date given by the person is not even close to the real date, then it is likely that the person forgets the day and month frequently.</p>
5	Does he/she forget where he/she is?	<p>This is a question about the person's faculty of orientation (space disorientation).</p> <p>If the person is living alone (without family or a caregiver), the current location or address can be asked directly. Space disorientation suggests a moderate or serious level of dementia.</p>

6	Does he/she forget how to get back home?	<p>This is a question about defective route finding. A positive answer may indicate a change in behavior due to impairment in visuospatial functions. The goal is to check if the person gets lost, if the person is sometimes unable to get home after going away from the house, and/or if the person gets lost even in a very familiar environment when he/she is out. The answer indicates the frequency of which these events may occur. If the person never leaves the house (for example, due to severe physical impairment), then “getting lost” will not occur. In this case, the evaluator should write this information in the remarks column and select the answer “every time.”</p> <p>If the person is living alone (without family or a caregiver), the evaluator should ask the question directly and use his/her own judgment to select the right answer.</p> <p>Note: defective route finding can also be observed at a relatively mild level of Alzheimer-type dementia.</p>
7	When the supply of electricity, gas or water ceases, can he/she deal appropriately with the problem?	<p>This is a question about the ability to solve problems. The goal is to check if the person is able, or would be able, to take appropriate measures to solve a problem in daily life. The person’s ability to solve problems can be estimated by asking examples from daily life that worry the family or the caregiver.</p> <p>If the person is living alone (without family or a caregiver), complementary questions about various situations can be asked directly. For example, “What would you do if there were a power out?” or “What would you do if you lost your credit card?” “Appropriately” being a subjective term, the evaluator may face some difficulties in deciding the answer. For example, the person may answer “I would check with my family” or “My landlord always takes care of these problems”. In this case, even though the problem appears to be solved, the evaluator should assess the situation based on what the person would do if family members or the landlord were not around.</p>

8	Can he/she make plans for the day?	<p>This is a question about the ability to solve problems. The goal is to check if the person is able to take action towards a specific goal in an independent, effective, and planned manner. The answer gives an idea of the person's ability to take this type of action. Examples of actions include getting prepared for an appointment at the hospital and getting there on time, or taking out the trash on the right day of the week. Watching television every day at the same time is not considered as "taking action in a planned manner."</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking questions on specific daily activities such as those mentioned above.</p>
9	Can he/she select his/her own clothes appropriately according to the season or the situation?	<p>This is a question about common sense and the capacity for judgment.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can check directly if the person is wearing appropriate clothes for the day and also ask if the person selected the clothes by himself/herself. For example, if the person is wearing a sweater, the assessor may ask questions such as: "Are you wearing a sweater because it is cold today?" or "Did you pick this sweater by yourself because you were cold?"</p> <p>Incapacity to take these basic logical decisions suggests a moderate or serious level of dementia.</p>
10	Can he/she buy things by himself/herself?	<p>This question is about IADL (Instrumental Activities of Daily Living) outside the home (shopping). This question is not about capacity to go to the store but only the capacity to buy necessary things in an appropriate quantity. This question focuses on the person's ability to buy something for a specific goal and is thus different from question 11. If the person frequently buys the same product by mistake or frequently fails to buy a specific product, then the answer "Can't most of the time" should be selected.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can ask specific questions about daily life situations such as "How do you buy your groceries?"</p>

11	Can he/she use the bus, the train or a car by himself/herself?	<p>This is a question about IADL outside the home (using transportation). The goal is to check if the person is able to use a means of transportation independently when necessary, regardless of whether the person actually uses it or not. If the person tries but frequently fails to use a means of transportation, then the answer “can’t most of the time” should be selected.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking questions about situations in daily life.</p>
12	Can he/she pay the rent and bills, withdraw money or make a deposit by himself/herself?	<p>This is also a question about IADL outside the home (money management). The goal is to check if the person is able to withdraw money and make a deposit at the bank or at an ATM, and pay bills by himself/herself. This question is closely related to question 7.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can decide the answer by asking specific questions about situations in daily life such as: “Do you manage your money all by yourself?” or “Do you make deposits by yourself?”</p>
13	Can he/she make phone calls?	<p>This is a question about IADL inside the home (phone calls). The goal is to check if the person is able to make phone calls to a specific person. If the person answers: “I just have to press speed dial 1 to reach my daughter and speed dial 2 to call my son”, then the answer should be “yes, without difficulty” or “can most of the time.”</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking specific questions such as: “Do you call your family on the phone?”</p>
14	Can he/she prepare food by himself/herself?	<p>This is a question about IADL inside the home (meal preparation). The goal is to check if the person is able prepare food and manage to eat it to maintain their health, regardless of whether he/she cooks or buys cooked or prepared food.</p> <p>If the person is living alone (without family or a caregiver) and the evaluator has doubts about the person’s capacity to have 3 appropriate meals per day, the answer should be “can’t most of the time” or</p>

		<p>“not at all.” The evaluator should also select one of these two answers if the person seems to have seriously imbalanced eating habits or if the fridge is almost empty or contains mostly rotten food. The person’s capacity to prepare food can also be assessed by asking concrete questions about situations in daily life.</p>
15	Can he/she take the correct quantity of medication at the right time of day?	<p>This is a question about IADL inside the home (self-management of medication).</p> <p>Generally speaking, it is not unusual to forget to take medication from time to time. In fact, people who never forget to take their medication are the exception. Medication that should be taken during the afternoon or before going to bed is especially at risk of being forgotten. If the person forgets to take his/her afternoon medication for half of the week but correctly takes his/her “important medication” in the morning and before going to bed and has, for example, a good control over his/her blood pressure or blood sugar level, then the answer should be “can most of the time.” On the other hand, if the person forgets to take his/her medication for more than half of the time regardless of the type of medication (morning, afternoon, evening, before bed medication), or forgets to take medication that is crucial to maintain his/her health, or if the person is unable to take the correct dosage of a prescribed medication, then the answer should be “can’t most of the time” or “not at all.”</p> <p>If the person is living alone (without family or a caregiver), the evaluator can check directly if the person is taking his/her medication. The evaluator can also check the medication notebook and see if the medication prescriptions are irregular over a short period. This would suggest that the person is lacking control and has difficulties in managing his/her medication.</p>
16	Can he/she take a bath by himself/herself?	<p>This is a question about physical ADL (Activities of Daily Living) (bathing). The goal is to check if the person is able to perform all the actions necessary to take a bath and maintain good hygiene. If the person needs help due to impaired physical function, the answer “needs partial assistance” or “needs full assistance” should be selected and the parts of the body suffering from the impairment</p>

		<p>should be indicated in the remarks column. If the person is unable to take a bath independently despite not suffering from this type of impairment, then he/she is likely to have a moderate or serious level of dementia.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking questions about situations in daily life that involve taking a bath and by direct observation of the person's appearance.</p>
17	Can he/she change clothes by himself/herself?	<p>This is a question about physical ADL (putting on and taking off clothes). The goal is to check if the person is able to put on clothes that have already been selected. Thus, this question is different from question 9, which focuses on the selection process. If the person needs help due to physical impairment, the parts of the body suffering from this impairment should be indicated in the remarks column and the answer "needs partial assistance" or "needs full assistance" should be selected. If the person is unable to change clothes despite not suffering from this type of impairment, then he/she is likely to have a moderate or serious level of dementia.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking specific questions about situations in daily life that involve dressing and by direct observation of the person's appearance.</p>
18	Can he/she use the toilet by himself/herself?	<p>This is a question about physical ADL (using the bathroom). The goal is to check if the person is able to perform all the actions necessary to use the toilet. If the person needs help due to physical impairment, the parts of the body suffering from this impairment should be indicated in the remarks column and the answer "needs partial assistance" or "needs full assistance" should be selected. If the person is unable to use the toilet despite not suffering from this type of impairment (for example, in the case of incontinence), then he/she is likely to have a moderate or serious level of dementia.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking specific questions about situations in daily life that involve using the toilet and by direct</p>

		observations of the person's appearance and that of his/her house (smell of urine, etc.).
19	Can he/she take care of his/her own appearance?	<p>This is a question about physical ADL (grooming). Taking care of appearance includes cutting nails, brushing hair, shaving, washing the face, brushing teeth, etc. If the person needs a little help then the answer should be "needs partial assistance" and if the person is unable to perform these tasks even partially then the answer should be "needs full assistance."</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking questions directly and by observing the appearance of the house and of the person to see if he/she is able to maintain good hygiene.</p>
20	Can he/she eat on his/her own?	<p>This is a question about physical ADL (eating). The goal is to check if the person is able to independently eat a meal that has already been prepared. If the person needs a little help then the answer should be "needs partial assistance" and if the person is unable to perform this task even partially then the answer should be "needs full assistance." If the person needs help due to physical impairment, then the answer "needs partial assistance" or "needs full assistance" should be selected regardless of whether or not he/she has dementia. In this case, the part of the body suffering from the impairment and its seriousness should be indicated in the remarks column.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking questions directly and by observing the person's lifestyle in general.</p>

21	Can he/she move around the house by himself/herself?	<p>This is a question about physical ADL (mobility). The goal is to evaluate the person's capacity to move on his/her own inside the home, for example to go to the toilet or to go the bathroom. A person able to move around by using a cane, a walker, or a wheel-chair should be considered as fully functional and the type of assisting device should be indicated in the remarks column. However, if the person needs supervision to move around the house, then the answer "needs supervision or instructions" should be selected. If the person is unable to perform these tasks without help then the answer "needs partial assistance" or "needs full assistance" should be selected.</p> <p>If the person is living alone (without family or a caregiver), the evaluator can work out the answer by asking questions directly and by observing the person's lifestyle in general.</p>
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3. Assessment method of DASC-21

(1) Assessment of dementia based on the total score

A total score of 31 or above on the DASC-21 indicates a "risk of dementia".

(2) Assessment of the level of dementia based on the profile of impairments in cognitive functions and functioning in daily life

- 1) A total score of 31 or above on the DASC-21 indicates a "risk of dementia".
- 2) A total score of 31 above and scores of 2 or below on all the items on remote memory, space orientation, social common sense and physical ADL indicate a "risk of low level dementia".
- 3) A total score of 31 above and a score of 3 or above on at least one (but not all) of the items on remote memory, space orientation, social common sense and physical ADL indicate a "risk of medium level dementia".
- 4) A total score of 31 above and scores of 3 or above on all the items on remote memory, space orientation, social common sense and physical ADL indicate a "risk of serious level dementia".

The Dementia Assessment Sheet for Community-based Integrated Care System – 21 items (DASC-21)

Name of the person being assessed:		Date of birth (day/month/year): (_____ years of age)				Male / Female	Living alone / Living with someone	
Name of the respondent (if different from above): (Relationship: _____)					Name of the evaluator: (Affiliation and profession: _____)			
		1 point	2 points	3 points	4 points	Topic		Remarks
A	Do you have the impression that he/she forgets a lot of things?	a. No	b. Yes, a little	c. Yes	d. Yes, a lot	Introductory questions (no points)		
B	Compared to last year, do you have the impression that he/she forgets more things?	a. No	b. Yes, a little	c. Yes	d. All the time			
1	Does he/she forget where he/she puts things such as his/her wallet or keys?	a. Never	b. Sometimes	c. Frequently	d. Always	Memory	Recent memory	
2	Does he/she forget a conversation that happened 5 minutes ago?	a. Never	b. Sometimes	c. Frequently	d. Always		Remote memory	
3	Does he/she forget his/her own birth date?	a. Never	b. Sometimes	c. Frequently	d. Always			
4	Does he/she forget what day and month it is?	a. Never	b. Sometimes	c. Frequently	d. Always	Orientation	Time	
5	Does he/she forget where he/she is?	a. Never	b. Sometimes	c. Frequently	d. Always		Space	
6	Does he/she forget how to get back home?	a. Never	b. Sometimes	c. Frequently	d. Always		Route finding	
7	When the supply of electricity, gas or water ceases, can he/she deal appropriately with the issue?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all	Solving issues/ Common sense	Solving issues	
8	Can he/she make plans for the day?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all			
9	Can he/she select his/her own clothes appropriately according to the season or the situation?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all		Social common sense	
10	Can he/she buy things by himself/herself?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all	IADL outside the home	Shopping	
11	Can he/she use the bus, the train or a car by himself/herself?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all		Transportation	
12	Can he/she pay the rent and bills, withdraw money or make a deposit by himself/herself?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all		Money management	
13	Can he/she make phone calls?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all	IADL inside the home	Phone calls	
14	Can he/she prepare food by himself/herself?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all		Preparing food	
15	Can he/she take the correct quantity of medication at the right time of the day?	a. Yes, without difficulty	b. Can most of the time	c. Can't most of the time	d. Not at all		Medication	
16	Can he/she take a bath by himself/herself?	a. Yes, without difficulty	b. Needs supervision or instructions	c. Needs partial assistance	d. Needs full assistance	Physical ADL (1)	Bathing	
17	Can he/she change clothes by himself/herself?	a. Yes, without difficulty	b. Needs supervision or instructions	c. Needs partial assistance	d. Needs full assistance		Dressing	
18	Can he/she use the toilet by himself/herself?	a. Yes, without difficulty	b. Needs supervision or instructions	c. Needs partial assistance	d. Needs full assistance		Using the toilet	
19	Can he/she take care of his/her own appearance?	a. Yes, without difficulty	b. Needs supervision or instructions	c. Needs partial assistance	d. Needs full assistance	Physical ADL (2)	Grooming	
20	Can he/she eat on his/her own?	a. Yes, without difficulty	b. Needs supervision or instructions	c. Needs partial assistance	d. Needs full assistance		Eating	
21	Can he/she move around the house by himself/herself?	a. Yes, without difficulty	b. Needs supervision or instructions	c. Needs partial assistance	d. Needs full assistance		Mobility	
Total score: _____ / 84 points								

Date (day/month/year):