

Myanmar language version of the Revised Hasegawa's Dementia Scale

Yu Mon Saw^{1,2}, Thet Mon Than^{1,3}, Ei Mon Win^{1,4}, Su Myat Cho¹, Moe Khaing^{1,3},
Nyi Nyi Latt^{1,5}, Zaw Zaw Aung^{1,4}, Nwe Oo^{1,6}, Hnin Nwe Ni Aye^{1,7}, Tetsuyoshi Kariya¹,
Eiko Yamamoto¹, and Nobuyuki Hamajima¹

¹Department of Healthcare Administration, Nagoya University Graduate School of Medicine, Nagoya, Japan

²Nagoya University Asian Satellite Campuses Institute, Nagoya, Japan

³Department of Medical Services, Ministry of Health and Sports, Nay Pyi Taw,
The Republic of the Union of Myanmar

⁴Department of Public Health, Ministry of Health and Sports, Nay Pyi Taw,
The Republic of the Union of Myanmar

⁵Aung Myin Myint Mo Hospital, Gyobingauk, The Republic of the Union of Myanmar

⁶Department of Food and Drug Administration, Ministry of Health and Sports, Nay Pyi Taw,
The Republic of the Union of Myanmar

⁷Mandalay Regional Public Health Department, Ministry of Health and Sports, Nay Pyi Taw,
The Republic of the Union of Myanmar

ABSTRACT

Reduced cognitive function among the elderly is an important issue not only in developed countries, but also in developing countries. As a test to measure cognitive function, the Revised Hasegawa's Dementia Scale (HDS-R) has been used in Asian countries including Japan, Korea, and China. Since there was no HDS-R version in Myanmar language, a questionnaire and manual for the HDS-R were developed. The translation from English to Myanmar language was done by two Myanmar researchers. Back-translation was conducted to confirm the accuracy of the translation by two other Myanmar researchers. Back-translated English was compared to the original by two Japanese researchers, and inconsistencies were discussed by all six researchers to reach consensus. Five Myanmar researchers independently read the questionnaire and manual to verify the expressions are familiar in Myanmar language. The modified points were as follows. 1) The date order in Question 2 is day/month/year. 2) The words to be memorized in Questions 4 and 7 are padauk tree, cat, and bullock cart for the first set, and tamarind tree, dog, and car for the second set. 3) The objects to be memorized in Question 8 are shown with pictures, not actual objects. 4) Like the Lao version, we introduced two new rules; a clear time definition for no reply (10 seconds), and repeating questions twice for those with hearing problems. The revised version of the HDS-R has been prepared to be an applicable standard questionnaire for use on assessment of cognitive function in suspected dementia cases in Myanmar, both in the clinical and public healthcare setting.

Keywords: Revised Hasegawa's Dementia Scale, studies cognitive function, Myanmar

This is an Open Access article distributed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view the details of this license, please visit (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Received: December 13, 2017; accepted: April 4, 2018

Corresponding Author: Yu Mon Saw, PhD

Department of Healthcare Administration, Nagoya University Graduate School of Medicine, 65 Tsurumai-cho, Showa-ku, Nagoya, 466-8560, Japan

E-mail: sawyumon@med.nagoya-u.ac.jp

INTRODUCTION

Dementia has become recognized as one of the most urgent global health problems due to the unprecedented growth rate of an aging population, which ranked as the seventh leading cause of death in 2015.^{1,2)} Globally, more than 47 million people are struggling with dementia, and 10 million new dementia cases are reported per year.²⁾ The number of people living with dementia is anticipated to increase to 82 million in 2030, and 152 million in 2050.²⁾ Dementia causes physical, psychological, social, and economic burdens for individuals, as well as for communities and societies.

Dementia has grown to be a health threat for worldwide. Nearly 60% of those with dementia live in low- and middle-income countries, and this figure is estimated to rise to 71% by 2050.¹⁾ Asia, the most populous continent in the world, also dared to address dementia, along with its rapidly aging population.³⁾

Currently, various cognitive assessment tools are available worldwide. In Asia alone, 28 cognitive assessment tools are available in seven Asian languages.⁴⁾ Among them, the Revised Hasegawa's Dementia Scale (HDS-R), Mini-Mental State Examination (MMSE), Montreal Cognitive Assessment, and the Clock Drawing Test are relatively common tools for measuring cognitive function in Asian countries, while the MMSE is the most common tool used in the United States.⁵⁾

Hasegawa's Dementia Scale, developed in 1974 by Kazuo Hasegawa, is widely using among the Asian population. In 1991, it was revised and renamed as the Revised Hasegawa's Dementia Scale (HDS-R).⁶⁾ Even though the original HDS-R was in Japanese, the English version of the HDS-R was published in 1994, without describing the detailed process of how the English version was developed.⁷⁾ Some studies using the HDS-R among Korean^{8,9)} and Chinese^{10,11)} samples have been published, but little information about these language versions of the HDS-R was mentioned in these papers. The total score of the HDS-R is 30 points, while a score of 20 points and below indicates the presence of dementia.

This article reports the process to develop a Myanmar language version of the HDS-R, based on the experience developing the Lao language version of the HDS-R.¹²⁾ Taking into account the cultural background of Myanmar and the nature of Myanmar language, this version was carefully developed for Myanmar people to easily understand the questions of the HDS-R. In Myanmar, those aged 60 years or older has been increasing to 5.8% in the Census 2014, and the illiterate people was 8.0% according to Human Development Report 2013. There were no tools to measure cognitive function for Myanmar people including illiterate persons. This Myanmar language version of the HDS-R aimed to be applicable for the assessment of cognitive function, not only by doctors and nurses in a clinical setting, but also by healthcare providers in a public healthcare setting.

MATERIALS AND METHODS

Revision before translation to Myanmar language

The English version of the HDS-R and its manual were adopted from the paper by Imai and Hasegawa (Appendix 1).⁷⁾ This version is compatible to the original Japanese version, but several expressions were modified to fit the language characteristics of English when we made the Lao version. Furthermore, the following points were modified to fit the culture of Myanmar before translation to Myanmar language (Appendix 2).

Translation, back-translation, and comparison with the original

One Myanmar bilingual researcher with experiences of clinical doctor work at hospital and administrative jobs translated the revised English version to Myanmar language. The appropriateness of the expressions was examined by another bilingual Myanmar researcher, who had similarly experiences of clinical doctor work at hospital and administrative jobs. After agreement between the two Myanmar researchers, the version was back-translated into English by another two Myanmar researchers, which was then compared with the source version in English by three Japanese researchers.

Inconsistencies in translation between the original and back-translated versions were discussed among the six researchers to reach consensus on the Myanmar version. We read through the questionnaires and manual to evaluate double-barreled questions and appropriate language usage.

Confirmation

Instead of a pilot study, the draft of the Myanmar version of the HDS-R questionnaire and manual was distributed to two Myanmar doctors. They read them without any instructions, and interviewed another three Myanmar doctors. Through these mock interviews using the Myanmar version of the HDS-R, the interviewers and interviewees were asked to record the instances of misunderstanding by the interviewees due to erroneous, unnecessary, or redundant instructions described in the draft manual, as well as any difficulty experienced in using the draft questionnaire. Based on the recorded comments, all the researchers participated in the discussion session to closely re-examine the questionnaire and manual to make revisions based on consensus.

Ethical issues

The questionnaire was not used to measure the actual cognitive function of study participants. Linguistic problems were discussed among the researchers, and no information was collected by the participating researchers through application of the Myanmar version of the HDS-R. Accordingly, the activity was not submitted to an ethics committee.

RESULTS

Back-translation of HDS-R questions

We replaced some words during the translation process to those that are more familiar to Myanmar people. The replaced words and question numbers are as follows. In Question 4, we replaced “frangipani” and “tuk-tuk” with “padauk tree” and “bullock cart.” Both terms have deep ties among Myanmar people. “padauk tree” is the national flower of Myanmar, which blooms seasonally. In Question 7, the word “plant” was translated as “tree” in the back-translation process due to similar usage in Myanmar language. In Question 8, the five objects to memorize were translated to five pictures/images during the back-translation process due to Myanmar language usage.

Back-translation of HDS-R manual

Our goal was to ensure more accurate and easier understanding by Myanmar patients, consistent with the nature of Myanmar language. A long expression in the manual for Question 3, “Is this a hospital, clinic, health center, office, or your house?” was replaced with five short sentences, “Is this a hospital? Is this a clinic? Is this a health center? Is this an office? Is this your home?” Furthermore, the explanation for Question 4 in the manual, “But, if this process ends up in failure, remove the word(s) in Question 7,” was replaced with “If the respondent

still cannot repeat, it is not necessary to ask the words in Question 7” to make it clearer for Myanmar people to understand.

To make the explanation for Question 5 in the manual clearer, “In the second question, do not repeat the correct answer from the first question, such as ‘subtraction of 7 from 93’ after 10 seconds” was replaced with “When the respondent cannot subtract correctly for the first question, it is prohibited to ask the second question, ‘What will be the answer if 7 is subtracted from 93?’” Moreover, the explanation in the manual for Question 6, “at intervals of one second” was replaced with “at a rate of one per second” to make it more precise for Myanmar patients.

In addition, changes were made to the manual for Question 7; “plant” was replaced with “tree,” “frangipani” with “padauk tree,” “tuk-tuk” with “bullock cart,” and “Do not convey two or more hints at a time” with “Two or more words should not be provided,” to adapt these to the Myanmar culture and language. In the manual for Question 8, “take them back” was replaced with “those pictures need to be kept” in the Myanmar version, and “discontinue the question if the examinees cannot recall another name of vegetables after 10 seconds” was changed to “it is not necessary to continue to ask if the respondent cannot say the next vegetable item 10 seconds after he/she answered the first item” in the manual for Question 9. The final English version and corresponding Myanmar version are shown in Appendices 2 and 3, respectively.

Confirmation

In the process of the confirmation, no additional revisions were made.

DISCUSSION

This article reported the translation process and development of the Myanmar version the HDS-R questionnaire and manual. In this development process, we used forward translation and back-translation, a standard procedure for converting the original version into different language versions.^{13,14)} Both translations were carried out by Myanmar medical doctors with clinical experiences, and supervised by senior Myanmar medical doctors. The translated version was revised again to make it easier for Myanmar people to understand by adding some phrases and detailed explanations. The whole process to develop the Myanmar version was conducted in cooperation with Japanese researchers who had previous experience in developing the Lao version of the HDS-R.¹²⁾ Myanmar researchers carefully chose words and Myanmar language usage to make the measure more appropriate and understandable, in line with Myanmar customs.

In the Myanmar version of the HDS-R questionnaire, we replaced some words with those that are more common and familiar to Myanmar people. We replaced “frangipani” with “padauk tree,” and “tuk-tuk” with “bullock cart.” The “padauk tree” is the national flower of Myanmar, which blooms seasonally. Myanmar people connect the padauk flower blossoms with the Myanmar New Year/New Year Water Festival. Similarly, bullock cart has been used since ancient times and has been the main mode of transportation in the rural areas of Myanmar. In addition, “plant” was translated as “tree” in the back-translation process due to similar usage in Myanmar language. In Question 8, the five objects to memorize were translated as five pictures/images during the back-translation process, consistent with Myanmar language use.

The manual explanations for Questions 3 to 7 were revised to make them more accurate and easier for Myanmar people to understand, in line with the nature of Myanmar language. For example, in the manual, Question 5 states, “In the second question, do not repeat the correct answer of the first question, such as ‘subtraction of 7 from 93’ after 10 seconds,” which was back-translated as “When the respondent cannot subtract correctly for the first question, it is

prohibited to ask the second question, ‘What will be the answer if 7 is subtracted from 93?’” to be clearer to Myanmar people. Moreover, the manual explanation for Question 6, “at intervals of one second” was back-translated as “at a rate of one per second.”

This Myanmar version of the HDS-R can be more appropriate than the MMSE for patients who are illiterate. Low literacy rates continue to exist among the elderly in many Asian countries.¹⁵⁾ The Lao version of the HDS-R pointed out that because one question in the MMSE assessment tool asked patients to follow written instructions, the HDS-R was more suitable than the MMSE for patients who are illiterate.¹²⁾

The Myanmar version of the HSD-R could be used as an effective dementia screening tool, not only by psychiatrists, but also by non-specialist healthcare providers in Myanmar, where the mental health workforce is very limited (0.6 per 100,000 population).¹⁶⁾ This limited workforce makes it very difficult to carry out dementia assessment in the community, especially in rural healthcare setting where only basic health staff (midwives, lady health visitors, public health supervisors, and health assistants) are present.¹⁶⁻¹⁸⁾ This Myanmar version of the HDS-R can be applied in clinical settings, as well as in public healthcare settings.

The limitations are as follows. Since the Myanmar version has not actually been used, there may be unexpected misunderstanding of the manual. Its validity has not been examined among the elderly in Myanmar, but this is not within the scope of translation, but rather, a common issue of the HDS-R. Since the education level, especially for calculation, could influence the score, careful interpretation should be made. This is also a common challenge of the HDS-R, not specific to the Myanmar version. The comparison of HDS-R scores among different countries remains to be examined in future research.

CONCLUSION

To the best of our knowledge, this Myanmar language version of the HDS-R is the very first translated work for dementia assessment in Myanmar language.¹⁹⁾ Currently, the MMSE is the most commonly used dementia assessment tool in Myanmar. However, there is no formally translated version of the MMSE. Medical doctors have to verbally translate the tool into Myanmar language for each and every patient during their consultations. This Myanmar version of the HDS-R was developed using an established process. It will reduce the language barrier for both patients and healthcare providers, and will decrease the workload of busy healthcare providers.

ACKNOWLEDGEMENTS

This study was supported partly by a Grant-in-Aid from Japan Agency for Medical Research and Development (16jk0310002h0001), and a Grant-in-Aid from National Center for Geriatrics and Gerontology, Japan (2617JmB13b).

COMPETING INTERESTS

The authors have declared that no competing interests exist.

REFERENCES

- 1) World Health Organization. Introduction. In: *Consultation on the development of the Global Dementia Observatory*. pp. 6, 2017, World Health Organization, Geneva.
- 2) World Health Organization. Fact sheets- Dementia. Available at <http://www.who.int/mediacentre/factsheets/fs362/en/> Accessed on November 2, 2017.
- 3) Aggarwal NT, Tripathi M, Dodge HH, Alladi S, Anstey KJ. Trends in Alzheimer's disease and dementia in the Asian-Pacific region. *Int J Alzheimers Dis*, 2012; 2012: 171327.
- 4) Rosli R, Tan MP, Gray WK, Subramanian P, Chin AV. Cognitive assessment tools in Asia: a systematic review. *Int Psychogeriatr*, 2016; 28: 189–210.
- 5) Malloy PF, Cummings JL, Coffey CE, Duffy J, Fink M, Lauterbach EC, *et al.* Cognitive screening instruments in neuropsychiatry: a report of the Committee on Research of the American Neuropsychiatric Association. *J Neuropsychiatry Clin Neurosci*, 1997; 9: 189–197.
- 6) Kato S, Simogaki H, Onodera A, Ueda H, Oikawa K, Ikeda K, *et al.* Preparation of revised Hasegawa's Dementia Scale (HDS-R). *Jpn J Geriatr Psychiatr*, 1991; 2: 1339–1347. (in Japanese)
- 7) Imai Y, Hasegawa K. The revised Hasegawa's Dementia Scale (HDS-R) — evaluation of its usefulness as a screening test for dementia. *J Hong Kong Coll Psychiatr*, 1994; 4, SP2: 20–24.
- 8) Jeong JW, Kim KW, Lee DY, Lee SB, Park JH, Choi EA, *et al.* A normative study of the revised Hasegawa Dementia Scale: comparison of demographic influences between the revised Hasegawa Dementia Scale and the Mini-Mental Status Examination. *Dement Geriatr Cogn Disord*, 2007; 24: 288–293.
- 9) Kim KW, Lee DY, Jhoo JH, Youn JC, Suh YJ, Jun YH, *et al.* Diagnostic accuracy of Mini-mental State Examination and revised Hasegawa Dementia Scale for Alzheimer's disease. *Dement Geriatr Cogn Disord*, 2005; 19: 324–330.
- 10) Tsai N, Gao ZX. Validity of Hasegawa's Dementia Scale for screening dementia among aged Chinese. *Int Psychogeriatr*, 1989; 1: 145–152.
- 11) Wang L, Li X, Song J, Jiang T, Wu X, Zhou S. Comparisons of cognitive function and serum S-100B level between diabetic and non-diabetic patients after the implantation of carotid artery stent (CAS). *Neurosci Lett*, 2014; 570: 58–62.
- 12) Kounnavong S, Soundavong K, Xayavong S, Vongprasert N, Bounsavath P, Houatthongkham S, *et al.* Lao language version of the revised Hasegawa's Dementia Scale. *Nagoya J Med Sci*, 2017; 79: 241–249.
- 13) Ida S, Murata K, Nakadachi D, Ishihara Y, Imataka K, Uchida A, *et al.* Development of a Japanese version of the SARC-F for diabetic patients: an examination of reliability and validity. *Aging Clin Exp Res*, 2017; 29: 935–942.
- 14) Oshiro K, Nagaoka S, Shimizu E. Development of validation of the Japanese version of cognitive flexibility scale. *BMC Res Notes*, 2016; 9: 275.
- 15) Liebig PS, Rajan SI. An aging India: perspectives, prospects, and policies. *J Aging Soc Policy*, 2003; 15: 1–9.
- 16) World Health Organization. Mental Health Atlas Myanmar Country Profile 2014. Geneva. Available at: http://www.who.int/mental_health/evidence/atlas/profiles-2014/mmr.pdf Accessed on December 1, 2017.
- 17) Latt NN, Myat Cho S, Htun NMM, Saw YM, Myint MNH, Aoki F, *et al.* Healthcare in Myanmar. *Nagoya J Med Sci*, 2016; 78: 123–134.
- 18) Saw YM, Win KL, Shiao LW, Thandar MM, Amiya RM, Shibamura A, *et al.* Taking stock of Myanmar's progress toward the health-related Millennium Development Goals: current roadblocks, paths ahead. *Int J Equity Health*, 2013; 12:78.
- 19) Rosli R, Tan MP, Gray WK, Subramanian P, Chin AV. Cognitive assessment tools in Asia: a systematic review. *Int Psychogeriatr*, 2016; 28: 189–210.

Myanmar version of HDS-R

Appendix 1. Hasegawa's Dementia Scale - Revised (HDS-R)

Question	Answer	Score
1. "How old are you?" (+/- 2 yrs.)		0 1
2. Year, month, date, day? 1 point each	Year Month Date Day	0 1 0 1 0 1 0 1
3. What is this place? Correct answer in 5 sec.: 2 points Correct choice between "hospital? office?"		0 2 0 1
4. Repeat 3 words. 1 point each. (To use only one version per test) Version A: "a) cherry blossom b) cat c) trum" Version B: "a) plum blossom b) dog, c) car"	a) b) c)	0 1 0 1 0 1
5. 100-7=? If correct, 1 point. If not: skip to item #6. -7 again=? If correct, 1 point.	93 86	0 1 0 1
6. Repeat 6-8-2 backwards. If not: skip to item #7. Repeat 3-5-2-9 backwards.		0 1 0 1
7. Recall 3 words. For each words. 2 points for spontaneous recall. 1 point for correct after category cue	a) b) c)	0 1 2 0 1 2 0 1 2
8. Show five unrelated common objects, then take them back and ask for recall. 1 point each.		0 1 2 3 4 5
9. Name all vegetables that come to mind. No time limit. May remind once. Terminate when there is no further answer after a 10 sec. interval. For each vegetable name after the 5 th one: 1 point		
1. _____ 2. _____ 3. _____ 4. _____ 5. _____		0 1 2
6. _____ 7. _____ 8. _____ 9. _____ 10. _____		3 4 5
Total score		/30

The revised Hasegawa's Dementia Scale (HDS-R) --- evaluation of its usefulness as a screening test for dementia. *J Hong Kong Coll Psychiatr* 1994; 4: 20-24.)

The HDS-R as depicted in Appendix 1 was administered by a psychometrically trained examinee. A description of each question by the HDS-R is as follows:

Question 1 [Age]:

Give one point to the answer made correctly or within a deviation of two years.

Question 2 [Orientation in time]:

The examiner may ask about the year, month, day and the day of the week either at the same time or slowly one by one. Give one point to each correct answer.

Question 3 [Orientation in place]:

Give two points to a spontaneous correct answer. It is judged to be correct if the subject substantially understand where he/she is, although he/she cannot exactly say the name and address of the hospital, the office or his/her house where he/she is now. If a correct answer cannot be gotten, ask the subject five seconds later: "Is this a hospital, or office or your house?" Give one point to a correct answer.

Question 4 [Repeating 3 words]:

Pronounce the three words slowly one by one. After that, ask the subject to repeat them. Give one point to each correctly repeated word.

If a word cannot be correctly repeated, teach at least three times what it is and ask the subject to memorize it. But, if this process ends up with a failure, delete the word delayed recall in Question 7.

Question 5 [Serial subtractions of 7s]:

The first question is "subtract 7 from 100". If the answer is correct, give one point to it and proceed to the second question. If the answer is incorrect, discontinue this question and proceed to next question 6. In second question, do not repeat the correct answer made by the subject to the first question, such as "subtract 7 from 93". If the answer is correct, give one point to it.

Question 6 [Digits backward]:

First, pronounce 3 digits, 6-8-2, slowly at intervals of one second. After that, ask the subject to repeat them backward. If the subject can do this correctly, give one point to the success and proceed to the next. If this ends up with a failure, discontinue this question and proceed to the next Question 7. Second, pronounce 4 digits, 3-5-2-9, in the same manner as above. After that, ask the subject to repeat them backward. If the subject can do this correctly, give one point to the success.

Question 7 [Recalling of 3 words]:

Recall 3 words in Question 4. Give two points to each spontaneous answer. If the subject cannot well recall words, give him/her such hints as "a plant" for cherry blossom, "an animal" for cat and "a

vehicle” for tram after a short interval time. Do not convey two or more hints at a time; instead, convey them one by one confirming the subject’s response. For example, if the subject cannot remember both “cherry blossom” and “tram”, say to him/her, “one was a plant, wasn’t it?” If he/she can correctly recall “cherry blossom”, give one point to the success. Shortly after, convey a hint to him/her saying, “the other was a vehicle, wasn’t it?” If he/she can correctly reproduce “tram”, give one point to the success.

Question 8 [Recalling 5 objects]:

Five objects must be ready for use. They are optional, but must be unrelated common objects as in a combination of a watch, a key, a cigarette, a pen, and a coin. Put the five objects on the table one by one, calling their names, then take them back and ask for recall. Give one point to each correct answer, regardless of the order recall.

Question 9 [Generating vegetables]:

Enter in the given space the names of the vegetables the subject calls and avoid double entries. Since this question is intended to observe generating fluency, discontinue the question if the name of the first or subsequent vegetable is not called for 10 seconds. Give 0 point to 0-5 vegetable (s), and for each vegetable after the 5th one, give to 1 point each.

Appendix 2. Hasegawa's Dementia Scale - Revised (HDS-R): Questionnaire Sheet

Question	Answer	Score
1. "How old are you?"	_____	0 1
2. "What day is today?"	Sun/Mon/Tue/Wed/Thu/Fri/Sat	0 1
"What is the day, today?"	_____	0 1
"What is the month, today?"	_____	0 1
"What is the year, today?"	_____	0 1
3. "What is this place?"	_____	2
"Is this a hospital? Clinic? Health center? Office? Your house?"		0 1
4. "Please, repeat following three words."		
Pronounce three words of A or B.	a) _____	0 1
A: a) padauk tree, b) cat, c) bullock cart	b) _____	0 1
B: a) tamarind tree, b) dog, c) car	c) _____	0 1
"I will ask you the three words later. So, please memorize the three words."		
5. "What is the answer of subtraction of 7 from 100?"	_____	0 1
"What is the answer of subtraction of 7 from the value?"	_____	0 1
6. "Please, repeat the numbers backwards. For example, 3-2-1 for 1-2-3."		
"Please, repeat 6-8-2 backwards." (If failed, go to Question 7.)	_____	0 1
"Please, repeat 3-5-2-9 backwards."	_____	0 1
7. "Please, recall the 3 words you memorized before."		
"One was a plant, wasn't it?"	a) _____	0 1 2
"Another was an animal, wasn't it?"	b) _____	0 1 2
"The last was a vehicle, wasn't it?"	c) _____	0 1 2
8. "I will show you 5 objects, then take them back. Please, say what it is."		0 1 2
a)_____ b)_____ c)_____ d)_____ e)_____		3 4 5
9. "Please, name 10 vegetables that come to mind."		
a)_____ b)_____ c)_____ d)_____ e)_____		0 1 2
f)_____ g)_____ h)_____ i)_____ j)_____		3 4 5
Total score		/30

Manual of Myanmar version HDS-R

General rules

1. When examinee cannot respond the question within 10 seconds, move to the next question.
2. When examinee has ear problems, questions can be repeated twice in a clear slow pronunciation.

Question 1 [Age]

Give one point to the answer within a deviation of 2 years from the true age.

Question 2 [Orientation in time]

The examiner may ask the date or day, month, and year one by one. Give one point to each correct answer.

Question 3 [Orientation in place]

Give two points to a spontaneous correct answer. It is judged to be correct if the examinee substantially understand where he/she is. There is no need to answer the exact name of and address of hospital, clinic, health center, office, or his/her house. If a correct answer cannot be gotten, ask the examinee 10 seconds later: "Is this a hospital, clinic, health center, office, or your house?" Give one point to a correct answer.

Question 4 [Repeating 3 words]

Pronounce the three words slowly. Then, ask the examinee to repeat them. Give one point to each correctly repeated word.

If the words cannot be correctly repeated, pronounce the words at maximum three times, and ask the examinee to memorize it. But, if this process ends up with a failure, remove the word(s) in Question 7.

Question 5 [Serial subtractions of 7s]

If the answer of the first question is correct, give one point, and proceed to the second question. If the first answer is incorrect, discontinue this question, and proceed to Question 6. In the second question, do not repeat the correct answer of the first question, such as "subtraction of 7 from 93". If the answer is correct, give one point to it.

Question 6 [Digits backward]

After demonstration of the example, pronounce 3 digits, 6-8-2, slowly at intervals of one second. Then, ask the subject to repeat them backward. If the examinee can do this correctly, give one point, and proceed to the next 4 digits backward repeat. If this ends up with a failure, discontinue this question, and proceed to Question 7. Second, pronounce 4 digits, 3-5-2-9, in the same manner as above. After that, ask the subject to repeat them backward. If the subject can do this correctly, give one point to the success.

Question 7 [Recalling of 3 words]

Recalling 3 words in Question 4. Give two points to each spontaneous answer. If the examinee cannot well recall words, give the examinee a hint as “plant”, “an animal”, and “a vehicle” after 10 seconds. Do not convey two or more hints at a time; instead, convey them one by one confirming the examinee’s response. For example, if the examinee cannot remember both “padauk tree” and “bullock cart”, say to him/her, “one was a plant, wasn’t it?” If he/she can correctly recall “padauk tree”, give one point to the success. Shortly after, convey a hint to examinee saying, “the other was a vehicle, wasn’t it?” If he/she can correctly reproduce “bullock cart”, give one point to the success.

Question 8 [Recalling 5 objects]

The pictures of five objects on one sheet are used. They are optional, but must be unrelated common objects as in a combination of a watch, a key, a cigarette, a ballpoint pen, and money. Show the five objects calling their names, and take them back. Then ask for recall. Give one point to each correct answer, regardless of the order recall.

Question 9 [Generating vegetables]

List the names of the vegetables the examinee recalls. Do not count duplicated answers, but continue to ask until 10 different vegetables are stated. Since this question is intended to observe generating fluency, discontinue the question if the examinees cannot recall another name of vegetables for 10 seconds. Give 0 point to 0-5 name(s), then give one point to each for each name after the 5th one. For example, 8 names are 3 points.

Appendix 3. 'Hasegawa' Dementia Scale (HDS-R) ဆန်းစစ်လွှာ

မေးခွန်း	အဖြေ	ရမှတ်		
၁) အသက်ဘယ်လောက်ရှိပါပြီလဲ?	_____	၀	၁	
၂) ဒီနေ့ ဘာနေပါလဲ? (တနင်္လာ/အင်္ဂါ/ဗုဒ္ဓဟူး/ကြာသပတေး/သောကြာ/စနေ/တနင်္ဂနွေ)	_____	၀	၁	
ဒီနေ့ ဘယ်နှရက်နေပါလဲ?	_____	၀	၁	
ဒီလ ဘာလ ပါလဲ ?	_____	၀	၁	
ဒီနှစ် ဘယ်နှခုနှစ်ပါလဲ?	_____	၀	၁	
၃) အခု သင်ရောက်နေတဲ့ နေရာက ဘယ်နေရာပါလဲ?	_____		J	
ဆေးရုံလား?/ ဆေးခန်းလား?/ကျန်းမာရေးဌာနလား?/ရုံးဌာနလား?/သင့်အိမ်လား?	_____	၀	၁	
၄) ကျေးဇူးပြု၍ အခုပြောမယ့်စကားလုံးတွေကို နောက်က လိုက်ဆိုပေးပါ။ ("က" သို့မဟုတ် "ခ" မှ စကားလုံးသုံးလုံးကို မေးမြန်းသူမှ ရွတ်ဆိုရန် ဖြစ်ပါသည်။)				
(က) (ကက) ပိတောက်ပင်၊ (ခခ) ကြောင်၊ (ဂဂ) နွားလှည်း	(ကက) _____	၀	၁	
(ခ) (ကက) မန်ကျည်းပင်၊ (ခခ) ခွေး၊ (ဂဂ) ကား	(ခခ) _____	၀	၁	
	(ဂဂ) _____	၀	၁	
အခု ရွတ်ဆိုပြခဲ့တဲ့ စကားလုံးတွေကို ခဏနေ ပြန်ပြီးမေးမြန်းမှာ ဖြစ်တဲ့အတွက် ကျေးဇူးပြုပြီး မှတ်သားထားပေးပါ။				
၅) "၁၀၀" ထဲမှ "၇" ကို နုတ်လျှင် ဘယ်လောက်ရပါသလဲ?	_____	၀	၁	
"__" ထဲမှ "၇" ကို နုတ်လျှင် ဘယ်လောက်ရပါသလဲ?	_____	၀	၁	
၆) ကျေးဇူးပြု၍ အခု ရွတ်ဆိုပြမယ့် ဂဏန်း သုံးလုံးကို နောက်ပြန် လိုက်ဆိုပေးပါ။ ဥပမာ ၁-၂-၃ ဟု ရွတ်ဆိုပြလျှင် သင်က ၃-၂-၁ ဟု ပြန်လည် ရွတ်ဆိုပေးရန် ဖြစ်ပါတယ်။ ကျေးဇူးပြု၍ '၆-၈-၂' ကို နောက်ပြန် ဆိုပါ။	_____	၀	၁	
(မဖြေဆိုနိုင်ပါက မေးခွန်း '၇' သို့ ကျော်၍ မေးမြန်းရန် ဖြစ်ပါသည်။)				
ကျေးဇူးပြု၍ '၃-၅-၂-၉' ကို နောက်ပြန် ဆိုပါ။	_____	၀	၁	
၇) အခု မေးခွန်းနံပါတ် '၄' မှာ မေးမြန်းခဲ့တဲ့ စကားလုံး သုံးလုံးကို ပြန်မေးပါမယ်။ ကျေးဇူးပြု၍ ပြန်စဉ်းစားပြီး ဖြေဆိုပေးပါ။				
တစ်ခုက အပင်နော်၊ ဟုတ်ပါလား? ဘာအပင်ပါလဲ? (ကက) _____		၀	၁	J
နောက်တစ်ခုက တိရိစ္ဆာန်တစ်ကောင်နော်? (ခခ) _____		၀	၁	J
ဘာအကောင်ပါလဲ?				
နောက်ဆုံးတစ်ခုက စီးတဲ့ယာဉ်နော်၊ ဘာယာဉ်လဲ မှတ်မိလား? (ဂဂ) _____		၀	၁	J
၈) အခု ပစ္စည်း ငါးမျိုးရဲ့ ပုံလေးတွေ ပြပါမယ်။ ပြီးရင် ပြန်သိမ်းပါမယ်။		၀	၁	J
ကျေးဇူးပြု၍ ဘာပုံတွေလဲ ပြန်ပြောပြပေးပါ။		၃	၄	၅
(က) _____ (ခ) _____ (ဂ) _____ (ဃ) _____ (င) _____				
၉) ကျေးဇူးပြု၍ သင့်စိတ်ထဲရောက်လာတဲ့ အသီးအရွက် (၁၀)မျိုးရဲ့ အမည်များ ပြောပြပေးပါ။				
(က) _____ (ခ) _____ (ဂ) _____ (ဃ) _____ (င) _____		၀	၁	J
(စ) _____ (ဆ) _____ (ဇ) _____ (ဈ) _____ (ည) _____		၃	၄	၅
စုစုပေါင်းရမှတ်		/၃၀		

မြန်မာဘာသာပြန် HDS-R ဆန်းစစ်လွှာ လက်စွဲ

ယေဘုယျ လိုက်နာရန် အချက်များ

- ၁။ ဖြေဆိုသူက မေးခွန်းကို ၁၀ စက္ကန့်အတွင်း ဖြေဆိုနိုင်ခြင်း မရှိပါက မေးခွန်းနောက်တစ်ခု မေးရန် ဖြစ်ပါသည်။
- ၂။ ဖြေဆိုသူ၌ နားအကြားအာရုံဆိုင်ရာ ပြဿနာရှိပါက မေးခွန်းများအား နှစ်ကြိမ်တိုင် ကြည်လင်သော အသံဖြင့် ဖြည်းညင်းစွာ ဖတ်ပြနိုင်ပါသည်။

မေးခွန်း ၁ (အသက်)

အသက်အမှန်နှင့် ၂ နှစ်အကွာ အထိ မှန်ကန်အောင် ဖြေဆိုနိုင်ပါက တစ်မှတ် ပေးရန် ဖြစ်ပါသည်။

မေးခွန်း ၂ (အချိန် ခန့်မှန်းသိရှိနိုင်မှု)

မေးမြန်းသူက ရက်စွဲ သို့မဟုတ် နေ့ရက်၊ လ နှင့် ခုနှစ် တို့ကို တစ်ခုချင်း မေးမြန်းနိုင်ပါသည်။ အဖြေမှန် တစ်ခုလျှင် တစ်မှတ် ပေးရန် ဖြစ်ပါသည်။

မေးခွန်း ၃ (နေရာ ခန့်မှန်းသိရှိနိုင်မှု)

အဖြေမှန်ကို အလိုအလျောက်ဖြေဆိုနိုင်ပါက ၂ မှတ် ပေးရန် ဖြစ်ပါသည်။ ဖြေဆိုသူက သူ/သူမ ရောက်ရှိ နေသည့် နေရာကို အနီးစပ်ဆုံး ဖြေဆိုနိုင်ပါက အဖြေမှန်အဖြစ် မှတ်ယူရန် ဖြစ်ပါသည်။ ဆေးရုံ၊ ဆေးခန်း၊ ကျန်းမာရေးဌာန၊ ရုံးဌာန၊ သို့မဟုတ် သူ/သူမ ၏ နေအိမ် တို့အား လိပ်စာနှင့် အတိအကျ ဖြေဆိုနိုင်ရန် မလိုအပ်ပါ။ ၁၀ မိနစ်ကြာသည့်တိုင်အောင် အဖြေမှန်ကို ဖြေဆိုနိုင်ခြင်း မရှိပါက “ဆေးရုံလား?/ ဆေးခန်းလား?/ ကျန်းမာရေး ဌာနလား?/ရုံးဌာနလား?/သင့်အိမ်လား?” ဟု မေးမြန်းရန် ဖြစ်ပါသည်။ အဖြေမှန်ပါက တစ်မှတ်ပေးရန် ဖြစ်ပါ သည်။

မေးခွန်း ၄ (စကားလုံး သုံးလုံး လိုက်ဆိုပြစေခြင်း)

စကားလုံး သုံးလုံးကို ဖြည်းဖြည်း ရွတ်ဆိုပြပါ။ ထို့နောက် ဖြေဆိုသူအား နောက်မှ လိုက်ဆိုရန် ပြောပါ။ မှန်ကန်စွာ လိုက်ဆိုနိုင်သည့် စကားလုံး တစ်လုံးအတွက် တစ်မှတ်ပေးရန် ဖြစ်ပါသည်။

စကားလုံးများကို မှန်ကန်စွာ လိုက်ဆိုနိုင်ခြင်း မရှိပါက အများဆုံး သုံးကြိမ်တိုင် ထပ်မံ ရွတ်ဆိုပြ၍ ဖြေဆိုသူ အား မှတ်သားထားရန် ပြောပါ။ သို့ရာတွင် ဖြေဆိုနိုင်မှု မရှိပါက မေးခွန်း (၇)မှ စကားလုံးများကို ဆက်လက် မေးမြန်းရန် မလိုတော့ပါ။

မေးခွန်း ၅ (‘၇’ ဂဏန်းအား အစဉ်လိုက် နုတ်စေခြင်း)

ပထမမေးခွန်းကို မှန်ကန်စွာ ဖြေဆိုနိုင်ပါက တစ်မှတ်ပေးရန် ဖြစ်ပြီး ဒုတိယမေးခွန်းကို ဆက်လက် မေးမြန်း ရန် ဖြစ်ပါသည်။ ပထမမေးခွန်းကို မှန်ကန်စွာ ဖြေဆိုနိုင်ခြင်း မရှိပါက ဤမေးခွန်းအား မေးမြန်းရန် မလိုတော့ဘဲ မေးခွန်း (၆)ကို ဆက်လက်မေးမြန်းရန် ဖြစ်ပါသည်။ ဒုတိယမေးခွန်းမေးမြန်းရာတွင် ပထမမေးခွန်း၏ အဖြေမှန် ဖြစ်သည့် ‘၉၃’ ကို အသုံးပြု၍ မေးမြန်းခြင်း မပြုရပါ။ ။ (ဥပမာ - “ ‘၉၃’ ထဲမှ ‘၇’ ကို နုတ်လျှင် ဘယ်လောက် ရပါလဲ” ဟု မေးမြန်းခြင်း။) အဖြေမှန်ကန်ပါက တစ်မှတ်ပေးရန် ဖြစ်ပါသည်။

မေးခွန်း ၆ (ဂဏန်းနောက်ပြန်ရွတ်ဆိုခြင်း)

ဥပမာအား ရှင်းလင်းပြပြီးနောက် ဂဏန်းသုံးလုံး(၆-၈-၂)ကို တစ်စက္ကန့်စီ ခြား၍ ဖြည်းဖြည်း ရွတ်ဆိုပြပါ။ ထို့နောက်၊ ဖြေဆိုသူအား နောက်ပြန်လိုက်ဆိုရန် ပြောပါ။ ဖြေဆိုသူက မှန်ကန်စွာ ဆောင်ရွက်နိုင်ပါက တစ်မှတ်ပေး၍ နောက်မေးခွန်းကို ဆက်လက်မေးမြန်းရန် ဖြစ်ပါသည်။ မှန်ကန်စွာ ဖြေဆိုနိုင်မှု မရှိပါက ဤမေးခွန်းကို ဆက်လက် မေးမြန်းရန် မလိုဘဲ မေးခွန်း(၇)ကို ဆက်လက်မေးမြန်းရန် ဖြစ်ပါသည်။

ဒုတိယအဆင့်အနေဖြင့် ဂဏန်းလေးလုံး (၃-၅-၂-၉) ကို အထက်ပါအတိုင်း ဖြည်းဖြည်းရွတ်ဆိုပြပါ။ ထို့နောက် ဖြေဆိုသူအား ၎င်းဂဏန်းလေးလုံးကို နောက်ပြန်ရွတ်ဆိုပြရန် ပြောပါ။ ဖြေဆိုသူက မှန်ကန်စွာ ဆောင်ရွက်နိုင်ပါက တစ်မှတ်ပေးပါ။

မေးခွန်း ၇ (စကားလုံး သုံးလုံးကို ပြန်လည်ရွတ်ဆိုခြင်း)

မေးခွန်း (၄) မှ စကားလုံး သုံးလုံးကို ပြန်လည်မေးမြန်းပါ။ အလိုအလျောက်ဖြေဆိုနိုင်ပါက ၂ မှတ်ပေးရန် ဖြစ်ပါသည်။ ဖြေဆိုသူက ကောင်းစွာ မှတ်မိခြင်း မရှိပါက ၁၀ စက္ကန့်စောင့်၍ “အပင်”၊ “တိရိစ္ဆာန်”နှင့် “ယာဉ်” စသဖြင့် အရိပ်အမြွက် ပြောပြပါ။ ။ အရိပ်အမြွက်ပေးသည့်အခါ တစ်ကြိမ်လျှင် စကားလုံး နှစ်လုံး သို့မဟုတ် ပို၍ ပြောပြခြင်း မပြုရပါ။ ၎င်းအစား ဖြေဆိုသူ ၏ တုံ့ပြန်မှုကို စောင့်ဆိုင်း၍ စကားလုံးများကို တစ်ခုချင်း ပြောပြရပါမည်။ ဥပမာ- ဖြေဆိုသူက “ပိတောက်ပင်”နှင့် “နွားလှည်း” နှစ်မျိုးလုံးကို မမှတ်မိပါက သူ/သူမအား “တစ်ခုက အပင်နော်၊ ဟုတ်ပါလား?” ဟု ပြောပေးရန် ဖြစ်ပါသည်။ သူ/သူမက “ပိတောက်ပင်”ကို မှန်ကန်စွာ မှတ်မိပါက တစ်မှတ်ပေးရန် ဖြစ်ပါသည်။ ခဏတာစောင့်ဆိုင်းပြီးနောက် ဖြေဆိုသူအား “အခြားတစ်ခုက စီးတဲ့ယာဉ်နော်၊ ဟုတ်ပါလား?” ဟု မေးမြန်းရန် ဖြစ်ပါသည်။ သူ/သူမက “နွားလှည်း” ဟု မှန်ကန်စွာ ဖြေဆိုနိုင်ပါ က တစ်မှတ်ပေးရန် ဖြစ်ပါသည်။

မေးခွန်း ၈ (ပစ္စည်း ငါးမျိုးအား ပြန်လည်မေးမြန်းခြင်း)

ပစ္စည်း ငါးမျိုး၏ ရုပ်ပုံများပါဝင်သော စာရွက်ကို အသုံးပြုရပါမည်။ အဆိုပါပစ္စည်းများအား နှစ်သက်ရာ ရွေးချယ်နိုင်သော်လည်း ပစ္စည်းများသည် နာရီ၊ သော့၊ စီးကရက်၊ ဘောပင် နှင့် ပိုက်ဆံ ကဲ့သို့သော တစ်ခုနှင့် တစ်ခု ဆက်စပ်မှု မရှိသည့် အသုံးများသော ပစ္စည်းများ ဖြစ်ရပါမည်။ ပစ္စည်း ငါးမျိုး၏ ရုပ်ပုံများကို အမည်များခေါ်၍ ပြသ ပြီး ပြန်လည်သိမ်းဆည်းပြီးနောက် ဖြေဆိုသူအား ပြန်လည်ရွတ်ဆိုစေရပါမည်။ ပစ္စည်းများကို အစဉ်လိုက် မှတ်မိရန် မလိုဘဲ အဖြေမှန် တစ်ခုဖြေဆိုနိုင်လျှင် တစ်မှတ်ပေးရန် ဖြစ်ပါသည်။

မေးခွန်း ၉ (အသီးအရွက်များ မေးမြန်းခြင်း)

ဖြေဆိုသူက ရွတ်ဆိုပြသော အသီးအရွက်အမည်များကို လိုက်၍ မှတ်သားထားရန် ဖြစ်ပါသည်။ အဖြေ ထပ်နေပါက ရေတွက်ရန် မလိုပါ။ သို့သော်လည်း မတူညီသော အသီးအရွက် ၁၀ မျိုး ရသည်အထိ ဆက်လက် မေးမြန်း ရပါမည်။ ဤမေးခွန်းသည် သွက်လက်စွာ ပြောဆိုနိုင်မှုကို ဆန်းစစ်ခြင်း ဖြစ်သဖြင့် ၁၀ စက္ကန့် ကြာပြီးသည်အထိ အခြား အသီးအရွက် တစ်မျိုး၏ အမည်ကို မပြောပြနိုင်ပါက မေးခွန်းအား ဆက်လက်မေးမြန်းရန် မလိုအပ်ပါ။ အသီးအရွက် ငါးမျိုး အထိသာ ဖြေဆိုနိုင်ပါ က အမှတ် “၀” ပေးပါ။ ခြောက်မျိုးနှင့် အထက် ဖြေဆိုနိုင်ပါက အဖြေတစ်ခုလျှင် တစ်မှတ်ပေးရန် ဖြစ်ပါသည်။ ဥပမာ- အမည် ရှစ်မျိုးအတွက် ၃ မှတ်ပေးရန် ဖြစ်ပါသည်။