# Indian Scale of Communicative Effectiveness (ISCE) for Aphasia: Evaluation of Acceptability, Reliability, and Validity

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## **Abstract**

Introduction: Due to communication disorder, Persons with Aphasia (PWA) might face issues in their ability to express themselves, which will impact their communicative effectiveness. The quality-of-life questionnaires do not measure communicative effectiveness. Hence, there is a dearth in the literature assessing the communicative effectiveness in persons with aphasia in the Indian context. As this tool is a helpful way to measure therapy outcomes, there is a need to develop it in the Indian context.

**Aim:** The study aimed to develop and content validate the tool of Communicative Effectiveness for persons with aphasia.

**Method:** The study was conducted in two phases. The researcher reviewed different quality-of-life questionnaires pertaining to persons with aphasia and pooled the questions. The tool was developed in Hindi and English. In phase 2, the questionnaire was validated by three speechlanguage pathologists. The Content Validity Index (CVI) was calculated based on the relevancy parameter.

Statistical Analysis: Cronbach's alpha was used to assess internal consistency.

**Results:** The average I-CVI score was 1, it was considered acceptable with an excellent content validity index. The alpha value obtained was 0.89 for questions, which indicated good and acceptable internal consistency.

Conclusion: These results emphasize the need for targeted interventions and support services tailored to address substance abuse issues within the MS patient population, recognizing the complexities of these coexisting conditions and the potential impact on the overall well-being of individuals with MS. The developed tool can be used as a valid and reliable tool to assess the quality-of-life measure in persons with aphasia and caregivers. The tool can be used as an effective measure in assessing the therapy outcomes in persons with aphasia. The tool comprised different communicative situations where persons with aphasia would face difficulties in their day-to-day needs.

**Keywords:** Communicative effectiveness • Aphasia • Quality of life

## Introduction

Writing, verbal language, comprehension of texts, and understanding are all hampered by the multimodal disorder aphasia when a person struggles to communicate or comprehend speech and has a language impairment, irrespective of whether they have difficulties with reading and writing, they are said to have aphasia. [1].

Various assessment protocols are available to identify types of aphasia and their impact on quality of life of persons with aphasia. Rehabilitation goals and tailored interventions can be planned with the use of the formal assessment's findings and observations [2]. Formal tests frequently used in clinical set-ups are the Mississippi Aphasia Screening Test (MAST) Aphasia Language Performance Scale (ALPS); The Boston Diagnostic Aphasia Examination (BDAE) Frenchay Aphasia Screening Test (FAST) Western Aphasia Battery (WAB) and diagnostics tests such as Minnesota Test for Differential Diagnosis of Aphasia (MTDDA) [3-8].

Determining the quality-of-life outcomes for individuals with aphasia is crucial in addition to diagnosing them PWA. Significant participation restrictions brought on by aphasia can have a negative impact on social interactions and relationships. Due to physical limits and restricted communication abilities, one of the main restrictions on social life is the inability to participate in leisure activities like seeing friends and family, going to events, and going on picnics with family, etc. The social life of people with aphasia is severely constrained, resulting in fewer diverse social networks. The social life of an individual with aphasia is strongly correlated with the severity of the condition, age, emotional well-being. and ability to communicate, among other variables. Available functional communication measures are examples- Communicative Abilities in Daily Living-CADL, Functional Communication Profile-FCP American Speech and Hearing Association Functional Assessment of Communication Skills for Adults ASHA FACS can be included during the intervention. The Stroke Aphasia Quality of Life (SAQOL) measures the quality of life in persons with stroke aphasia. Paul (2004) designed a tool for aphasia called the ASHA Quality of Communication Life Scale (ASHA QCL) for assessing perceptions of individuals with aphasia. ASHA QOL assesses domains that might be affected in persons with aphasia. The questionnaire was designed to measure the burden on caregivers of persons with aphasia in the Indian context [9-12].

To quantify the effects of aphasia beyond verbal limitations and identify the QoL categories that are compromised in PWAs, several measures have been developed. 11 aphasia who were at recovering stage and 11 stable persons with aphasia were included in the study, and the Communicative Effectiveness Index (CETI) was administered. Results indicated that the CETI had acceptable inter-rater and test-retest accuracy as well as internal consistency. According to the pattern of correlations with other measures, it was valid as a measure of functional communication [13,14].

The socio-economic patterns vary in India based on the location, family type and other aspects which impact the quality of life in persons with aphasia. Through an informal interview, twelve individuals who have aphasia and 23 carers were given the scale. Domain scores and an overall score were produced after responses were evaluated on a five-point rating scale, with five representing no assistance needed and one representing all aid required. Due to poor communication and movement skills, the findings of this survey showed that the family, language, mood,

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and social role domains were substantially compromised. Due to their limited involvement in social events with their family, people with aphasia have a poor quality of life. (e.g., unable to participate in family gatherings), language difficulties (e.g., word-finding difficulties, lack of verbal communication), mood disturbances (e.g., being distinct from friends and family and lacking confidence), less societal involvement (e.g., less social events, fewer interactions with friends and other people, and a lack of hobbies), personal care (e.g., the most self-help techniques demand help or assistance) and inability to get a job or return to employment Hence, an assessment of these measures is required pertaining to the Indian context [15].

Communicative confidence is defined as "a feeling about one's power to participate in a communication situation, one's sense about one's own skills and ability to express oneself and to understand the communications of others". A tool for measuring communicative confidence was designed. It is one of the measures that assess the beliefs of the person about his/her abilities to understand and express in different communicative situations. The Communicative Confidence Rating Scale for Aphasia (CCSRA) is a visual-analog scale where the participant's responses are assessed from 0-100. After a comparative study between ASHA QCL and CCRSA, the result showed a considerable improvement from pre-treatment to post-treatment on the CCRSA, in contrast, it did not significantly change on the ASHA QCL. Including quality of life measures in the aphasia intervention will help to assess the client's perspective about aphasia, the therapeutic intervention, and the impact of his/her problems on daily communication needs. As communicative confidence and communicative effectiveness are used interchangeably, we would prefer to use the term communicative effectiveness in this study [16-18].

## Need of the study

Communication abilities and the effectiveness of using those abilities impact the functional outcomes of individuals with aphasia prone to social isolation due to language impairment. A strong relationship exists between communicative effectiveness and self-efficacy, personal autonomy, and a person's decision-making ability. Due to communication disorder, PWA might face issues in their ability to express themselves, which will impact his/her communicative effectiveness [19].

The quality-of-life questionnaires do not measure communicative effectiveness. Hence, there is a dearth in the literature assessing the communicative effectiveness in persons with aphasia in the Indian context. As this tool is a helpful way to measure therapy outcomes, there is a need to develop it in the Indian context.

The study was conducted with the following objectives-

- To develop a scale of communicative effectiveness for persons with aphasia.
- To content validate the tool by three Speech-Language Pathologists practicing with persons with aphasia.

#### Method

The study was conducted in the following phases:

Phase 1- Development of the Indian scale of communicative effectiveness.

Phase 2- Content validation of the tool.

#### Procedure

**Development of the tool of communicative effectiveness:** During the initial phase of development of the tool, the researcher reviewed different quality-of-life questionnaire tools. The communicative confidence rating scale, the American speech and Hearing Association Functional

Assessment of Communicative Skills for Adults (ASHA FACS) the ASHA quality of communication life scale stroke specific quality of life questionnaire and Stroke and Aphasia Quality of life questionnaire are the tool studied. The communicative situations were selected based on the reviews of other quality-of-life questionnaires [12, 20-23].

The tool was developed in Hindi and English language. The tool was designed in two forms, one for Persons with Aphasia and another for their caregivers and respective clinicians. The questionnaire was designed with simplified vocabulary for persons with aphasia and their caregivers. The questionnaire consisted of 18 questions, including the common situations that persons with aphasia have to face in their day-to-day environment.

The questionnaire was divided into three categories- Comprehension, Expression, and Other. The comprehension domain would include the ability to comprehend the conversation/communicative context. Questions include were how effective are persons with aphasia in following day-to-day conversations? The ability to express oneself would be included in the expression domain. Questions included were 'How effective are persons with aphasia in initiating a conversation?' The other domain would include the person's ability to execute his daily living activities in a communicative context. Example- How effective are persons with aphasia in returning to their daily conversational tasks? Appropriate examples were provided during administration.

The questionnaire was also given to persons with aphasia, where the questions were modified accordingly. For example, in the comprehension domain question included, was 'How effective are you in following day-to-day conversations?' In the expression domain, how effective are you in speaking in new situations? The response choices would be based on a three-point categorical rating scale where persons with aphasia and their caregiver would mark 0-Not effective, 1-Somewhat Effective, and 2-Very Effective. Few questions would be specific to individuals' needs and might differ for others; for those questions, the participants would be instructed to mark not applicable in the questionnaire designed, and no scoring would be provided for the question. The total scores should be obtained.

Phase 2- Content validation of the tool: The tool was validated by three Speech-Language pathologists practicing with persons with aphasia. Speech-language pathologists would be practicing in rehabilitation centers, institutional setups, and hospital setups and working with persons with aphasia daily. They must have professional working proficiency in Hindi and/or English. Based on proficiency, the relevant language-specific tool will be given for validation. Relevancy, simplicity, and ambiguity would be the criteria for validation. The relevancy parameter would be assessed to check the applicability of questions to persons with aphasia. The simplicity parameter estimates how easily persons with aphasia can understand the questions portrayed. The ambiguity aspect would be judged to rule out the possibility of any other interpretation of the questions included for persons with aphasia.

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#### Statistical analysis

The data obtained were statistically analyzed using SPSS software Version 26. To assess the internal consistency, Cronbach's alpha was obtained.

### Results

The present study aimed at developing a scale of communicative effectiveness for persons with aphasia. Further, the content validity of the tool was determined. The Indian Scale of Communicative Effectiveness was developed in Hindi and English. The tool consisted of three domains-Comprehension, Expression, and Other with a total of 18 questions. The three domains each had 6, 10, and 2 questions, respectively. The impact of aphasia on individual domains was assessed using the developed tool. The responses were obtained on a three-point rating scale (0-Not

effective, 1-Somewhat Effective, 2-Very Effective). The tool was validated by three Speech-Language Pathologists practicing in the clinic, hospital set-ups, and rehabilitating persons with aphasia in their set-up. The following results were obtained after assessing the content validity.

#### Content Validation Index (CVI) of the tool

The content validation index was calculated based on the relevance parameter. Three speech-language pathologists validated the relevance parameter based on a 4-point rating scale (1-Not Relevant, 2-Somewhat Relevant, 3-Quite Relevant, 4 (Highly Relevant). When the validator provided a score of 3 and 4, the relevance rating was considered as 1 as shown in the Score section of table 1. The three experts/ validators agreed for all 18 questions and gave 3 or 4 ratings; hence score was given as 1 for all the questions (I-CVI =agreed item/ number of experts; Example-3 experts agreed for 1st question- 3/3) I-CVI for all 18 questions was obtained as represented in table 1. As the average I-CVI score was 1, it was considered acceptable with an excellent content validity index.

Table 1. Content validation index scores of individual validators for the relevance parameter C1- Validator 1; C2- Validator 2; C3- Validator 3.

		_					Experts	1.00
Q No.	C1	Score	C2	Score	C3	Score	Agree	I-CVI
1	4	1	4	1	4	1	3	1
2	4	1	4	1	4	1	3	1
3	4	1	4	1	4	1	3	1
4	4	1	4	1	4	1	3	1
5	4	1	4	1	3	1	3	1
6	4	1	3	1	4	1	3	1
7	4	1	4	1	4	1	3	1
8	4	1	4	1	4	1	3	1
9	4	1	4	1	4	1	3	1
10	4	1	4	1	4	1	3	1
11	4	1	4	1	4	1	3	1
12	4	1	4	1	4	1	3	1
13	4	1	4	1	4	1	3	1
14	4	1	3	1	4	1	3	1
15	4	1	4	1	4	1	3	1
16	4	1	4	1	4	1	3	1
17	4	1	4	1	4	1	3	1
18	4	1	4	1	4	1	3	1

Along with relevancy, the validators had to rate on ambiguity (1-Doubtful, 2-Item needs some revision, 3-no doubt but needs minor revision, 4-Meaning is clear) and simplicity (1-not simple, 2-Needs Revision, 3-Simple

but need minor revision, 4-Very Simple) parameters. The validators had to rate the English version, as shown in table 2, for the Hindi version, as represented in table 3.

Table 2. Content validators' rating on ambiguity & simplicity parameters for the English version tool C1- Validator 1; C2- Validator 2; C3- Validator 3.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	C1	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4
Ambiguitu	C2	4	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3
Ambiguity	C3	4	4	4	4	4	3	4	4	4	4	4	4	4	3	4	4	4	4
	C1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

Simplicity	C2	4	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	
Simplicity	C3	4	4	4	4	4	3	4	4	4	4	4	4	4	3	4	4	4	4	l

Table 3. Content validators' rating on ambiguity and simplicity parameters for the Hindi version of the tool.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	C1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Ambiguity	C2	4	4	3	4	4	2	2	3	2	4	4	4	4	4	4	3	4	4
	C3	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4
	C1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Simplicity	C2	4	4	2	4	3	2	1	3	1	4	4	4	4	4	4	3	4	4
	C3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

C1- Validator 1; C2- Validator 2; C3- Validator 3

The questions were modified according to the validator's responses. The following changes were adapted in the tool:

- Relevant examples for the questions were added in English and Hindi versions wherever required.
- Few questions from the Hindi version of the tool were further simplified for better understanding.

## Measuring the internal consistency

The internal consistency/reliability of the items in the questionnaire was assessed using Cronbach's alpha test. The alpha value obtained was 0.89 for questions, which indicated good and acceptable internal consistency. Hence, the results specify that there is significant high test-retest reliability (Table 4).

Table 4. Item-wise analysis of questions using Cronbach's alpha.

Questions	Mean	SD
1	1.5	0.624
2	1.6	0.494
3	1.08	0.743
4	1.78	0.415
5	1.27	0.71
6	1.68	0.537
7	1.07	0.482
8	1.38	0.739
9	0.7	0.72
10	1.1	0.752
11	1.45	0.534
12	0.92	0.696
13	1.17	0.557
14	0.9	0.681
15	0.9	0.656
16	0.73	0.66
17	1.58	0.561
18	0.83	0.693

## **Discussion**

Communicative Effectiveness is one of the domains not assessed by the available quality of measures. The present study aimed to develop a quality-of-life tool pertaining to communicative effectiveness, titled the Indian Scale of Communicative Effectiveness. The study was carried out in three phases. The tool was intended to develop in two languages. It

was divided into three domains: Comprehension, Expression, and other domain. The second purpose was to validate the content of the tool. The results of this objective reveal that the questions of the tool have excellent content validity, as found from I-CVI. Further appropriate modifications were made to the tool based on the validator's feedback. The results of the internal reliability of the tool revealed a good internal consistency among the scores obtained across the questions.

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We found that approximately 8% of MS patients abuse drugs, While Noorbala and his colleagues findings demonstrated that 4.6% of Iranian individuals used Opium and its derivatives, which means that substance abuse among MS patients is twice as much as the normal population. Also according to Noorbala *et al.* 1.9% of Iranians use Alcoholic beverages, while our findings showed that 15% of MS patients drink alcohol which is higher compared to the healthy population. However, Bombardier *et al.* study demonstrated that 14% of the MS patients were screened positive for possible alcohol abuse or dependence which is similar to our findings. Beier *et al.* reported that 40% of individuals who were diagnosed with MS met or exceeded the cutoff for excessive alcohol use in the East Coast United States [10-12].

While our findings are in line with Bombardier *et al.* who also reported 7.4% misuse of illicit drugs among MS patients, they are different from Beier *et al.* findings who reported 4% drug [24].

Abuse among MS patients The Indian Scale of Communicative Effectiveness (ISCE) can be used as a valid and reliable tool to assess the quality-of-life measure in persons with aphasia and caregivers. The tool assessed various communicative situations that persons with aphasia face in their day-to-day lives. The tool developed can be helpful in assessing the generalization of skills (in various day-to-day communicative situations) acquired during therapy. Limited research is available in the Indian context pertaining to communicative effectiveness measures. This tool can be a valid assessment of the quality of life for Indian socioeconomic and cultural backgrounds. It can be a valid assessment of the quality of life for Indian socioeconomic and cultural backgrounds. The study can be validated on persons with aphasia, and a correlation can be obtained between persons with aphasia and caregivers.

## Conclusion

In light of the concerted efforts undertaken in recent years to enhance awareness regarding the adverse consequences of smoking and the

imperative nature of cessation, the outcomes have demonstrated limited effectiveness. Thus, there arises a need for contemplation on viable alternatives encompassing innovative and creative strategies to facilitate the cessation of cigarette use. Regarding alcohol consumption, it becomes imperative to expound upon its detrimental effects. In the domain of opioids and other illicit drugs, a prerequisite for successful intervention involves the dissemination of necessary education to dispel misquided cultural beliefs and deep-seated misconceptions.

# **Appendix**

English Version of the 'Indian Scale of Communicative Effectiveness (ISCE)' for Caregiver & Clinician (Version 1).

#### Instructions

Please tick the appropriate score among 0, 1, and 2, which you feel is most appropriate.

(0-Not Effective; 1-Somewhat Effective; 2- Very Effective)

Score '0' indicates the person with aphasia can understand/express 0% of the time.

Score '1' indicates the person with aphasia can understand/express 50% of the time.

Score '2' indicates the person with aphasia can understand/express 100% of the time.

If the particular question is not applicable, please mark Not Applicable (NA).

Name-

Age/Sex-

Relation with person with aphasia-

Questions	0	1	2	NA
How effective are persons with aphasia in following day-to-day conversations?				
How effective are persons with aphasia in following instructions and commands?				
Example- Follow instructions of taking timely medicines.				
How effective are persons with aphasia in understanding the content of the reading material?				
Examples- Newspapers, typed messages, books, etc				
How effective are persons with aphasia in following content on television?				
Example- He/she reacts by laughing while watching TV/ video, etc				
How effective are persons with aphasia in following a multi-speaker/ group conversation?				
Examples- Public gatherings, social events				
How effective are persons with aphasia in following the tone of voice?				
Example- Recognize when you are angry/sad, etc				
How effective are persons with aphasia in expressing themselves in				
· Hindi or				
· English				
How effective are persons with aphasia at using gestures/AAC board for expressing themselves?				
Examples- Expressing his/her needs (Hunger, thirst, etc) using correct gestures.				

# References

- McNeil, Malcolm R., and Sheila R. Pratt. "Defining aphasia: Some theoretical and clinical implications of operating from a formal definition." *Aphasiology* 15.10-11 (2001): 901-911.
- 2. Goodglass, Harold, et al. "The "tip-of-the-tongue" phenomenon in aphasia." *Cortex* 12.2 (1976): 145-153.
- Nakase-Thompson Risa., et al. "Brief assessment of severe language impairments: Initial validation of the Mississippi aphasia screening test." *Brain Inj* 19.9 (2005): 685-691.
- Keenan Joseph S., and Esther G. Brassell. Aphasia language performance scales. Murfreesboro TN Pinnacle Press 1975.
- Goodglass H., E. Kaplan, and B. Barresi. "Boston Diagnostic Aphasia Examination-(BDAE-3) San Antonio." TX Psychol Corp (2000).
- Enderby Pamela M., et al. "The Frenchay Aphasia Screening Test: a short, simple test for aphasia appropriate for nonspecialists." *Int Rehabil Med* 8.4 (1986): 166-170.
- Shewan Cynthia M., and Andrew Kertesz. "Reliability and validity characteristics of the Western Aphasia Battery (WAB)." J. Speech Hear Disord 45.3 (1980): 308-324.
- Schuell Hildred, and Joyce W. Sefer. Minnesota test for differential diagnosis of aphasia. Minneap Univ Minn Press 1965
- Holland Audrey L. CADL communicative abilities in daily living: A test of functional communication for aphasic adults. *Univ Park Press* (1980).
- Sarno Martha Taylor. "The functional communication profile." Man Dir Inst Rehabil Med (1969).
- Frattali Carol et al. "Functional assessment of communication skills for adult." (1995).
- Hilari, Katerina, et al. "Stroke and aphasia quality of life scale-39 (SAQOL-39) evaluation of acceptability, reliability, and validity." Stroke 34.8 (2003): 1944-1950.
- 13. Lomas Jonathan et al. "The communicative effectiveness index: Development and psychometric evaluation of a

- functional communication measure for adult aphasia." *J Speech Hear Disord*. 54.1 (1989): 113-124.
- Ravi, Sunil Kumar, et al. "Psychosocial Perspectives of Persons with Aphasia." Handb Res Psychosoc Perspect Hum Commun Disord IGI Glob (2018): 12-26.
- Babbitt, Edna M., et al. "Psychometric properties of the communication confidence rating scale for aphasia (CCRSA): Phase 2." Aphasiology 25.6-7 (2011): 727-735.
- Babbitt Edna M., and Leora R. Cherney. "Communication confidence in persons with aphasia." Top Stroke Rehabil 17.3 (2010): 214-223.
- Worrall Linda, and Audrey Holland. "Quality of life in aphasia." *Aphasiology* 17.4 (2003): 329-332.
- Dorze Guylaine Le, and Christine Brassard. "A description of the consequences of aphasia on aphasic persons and their relatives and friends, based on the WHO model of chronic diseases." Aphasiology 9.3 (1995): 239-255.
- Cherney Leora R., Janet P. Patterson, and Anastasia M. Raymer. "Intensity of aphasia therapy: Evidence and efficacy." Curr Neurol Neurosci Rep 11. (2011): 560-569.
- 20. Frattali Carol, et al. "Functional assessment of communication skills for adult." (1995).
- 21. Paul Diane R., et al. Quality of communication life scale: Man Am Speech Lang Hear Assoc 2004.
- Williams Linda S., et al. "Development of a stroke-specific quality of life scale." Stroke 30.7 (1999): 1362-1369.
- Yusoff Muhamad Saiful Bahri. "ABC of content validation and content validity index calculation." Educ Med J 11.2 (2019): 49-54.
- Polit Denise F., Cheryl Tatano Beck, and Steven V. Owen. "Is the CVI an acceptable indicator of content validity? Appraisal and recommendations." Res Nurs Health 30.4 (2007): 459-467.

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