

Supportive Conversational Strategies for Persons with Aphasia and their Significant Others

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Abstract

Introduction: The spectrum of useful and not-so-useful supportive conversational strategies (SCSs) employed by significant others (SOs) of person with aphasia (PWA) is wide and variable. The SCS might be influenced by many factors such as perceptions, attitudes, and awareness about the handicap. Modeling and training of SCS might help in modifying perceptions, attitudes, use, and its practices that hinder progress of PWA. Knowledge and understanding of these factors among SOs and PWA will enhance rehabilitation strategies. The objective of the study is to develop SCS-based questionnaire and to examine the type of SCS used by SOs of PWA in the daily communication situation to support and stimulate PWA as a home-based practice program. **Methods:** The study design was qualitative descriptive trail, involving semi-structured interview of SOs of PWA. Questionnaire was developed and validated. Responses of 33 SOs were obtained and analyzed on this questionnaire. The mean age of PWA was 52.6 years; 85.5% of SOs were a cohabiting partner. **Results:** Responses to the questionnaire regarding the structure and content showed the agreement levels ranged from 90% (Md. 4.5) to 98% (Md. 5.0). The correlation coefficients varied from 0.57 to 0.94. The overall reliability was high ($r = 0.90$, $P < 0.001$). SCS based on verbal or nonverbal mode is exclusively used by SOs for comparing reading and writing mode. The later modes are not utilized by approximately 60% SO. Poor SCS use might hinder expected functional communication. **Conclusion:** Investigation related to SCS would help to plan tailor-made family-oriented home training program and to understand its efficacy in aphasia.

Keywords: Person with aphasia, significant others, supportive conversational strategies

INTRODUCTION

Supportive communication strategies (SCS) are to help person with aphasia (PWA) during exchange of accurate information in respectful manner. The experiences of using SCS vary considerably among the family members of PWA. Some PWA tries hard to make them understood by different modes, whereas many refuse to use other communicative means other than spoken words. PWA and their significant others (SOs) do not always use SCS and communication aid devices in everyday life due to its low acceptance in comparison to verbal mode. The perceived unnaturalness of nonverbal communication strategies, devices, and the fear about its interference during the restoration of their language may be responsible for such behaviors. Several studies have emphasized the importance of the attitude of the speech-language pathologist (SLP) and SOs pertaining to the use of SCS, which could strongly influence the readiness of PWA.^[1,2] Many researchers have advocated to begin with and continue to use total communication strategies

and group of strategies (e.g., writing, identifying keywords, gesturing, visuographic supports, and prosodic emphasis) to supplement verbal communication and support auditory comprehension.^[1,3]

Apart from recommendation, it is crucial to evaluate the outcome of SCS-based intervention by video recording everyday conversations. It will help in exploring and analyzing changes in conversation facilitators (such as multimodal input to PWA) and conversation barriers (such as use of question by conversation partners).^[1] The SOs seem hesitant to use some strategies due to barriers connected to the strategy or communication aid device itself (e.g., being difficult to use), their own attitudes (e.g., a partner who wanted the PWA to practice talking), lack of motivation of the PWA, insufficient

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practice, and lack of awareness to facilitate communicative competence or behavior (e.g., introducing fixed choice questions versus “yes/no” questions, phrasing “yes/no” questions in a logical sequence, and observing the PWA to assess comprehension).

It is important to observe the role of modeling and training of communication strategies to modify and reduce the effect of poor attitude of SOs on PWA improvements. These strategies incorporate spontaneous nonverbal as well as verbal strategies and low-tech as well as high-tech devices.^[4] It has been suggested that certain communication strategies are more easily adopted than others. The more a strategy (such as gestures) is practical in daily conversations, the more it is accommodated. On the other hand, new strategies (i.e., graphic cues, drawing, and reading material) that have never been used before demand considerable motivation and training.

Benefits of these modeling and training have been studied on interaction-focused training during intervention. Its outcomes were measured via blinded assessment of filmed natural interaction obtained at baseline, intervention, and follow-up. It showed an enhancement in use of the target communicative strategies.^[5] A large proportion of PWA uses gestures as a communication strategy. Gestures are communications done through facial expressions, hand signals, eye gazing, and body postures to convey information to the speaking partner.^[6]

The communication strategies during home-based practices for rehabilitation of PWA are influenced by the attitudes of SOs along with the type and severity of aphasia. However, the use of communication strategies through single modality may not get generalized in natural situations due to its limited success in producing an integrated multimodal semantic representation.^[7] Conversation therapies as a part of home practice with PWA and their conversation partners need to be analyzed for feedback and outcomes. However, the evidence base for change in everyday interaction remains limited.^[1] These analyses are required to know the attitudes and views of the SOs toward the use and significance of different communication strategies to induce and support comprehension and expression of their aphasic partners. It will help estimate the prognosis, plan individual-specific strategy, and understand evidence-based changes in everyday interaction through SCS.

As per our semi-structured interview, more than 60% SOs have denied the need for facilitation of reading, writing, drawing, and creative arts other than verbal and gesture. This finding reveals the unawareness of SOs about the significance of facilitation of other modalities for language stimulation. Hence, this questionnaire can be included as a baseline and follow-up assessment.

The purpose of the present study is to develop supportive communication strategies (SCSs)-based questionnaire and to examine the type of SCS used by SOs of PWA in the daily communication situation to support and stimulate PWA in a home-based practice program.

METHODS

A study-specific questionnaire containing 43 items was given to 33 SOs (26 males, 7 females) of PWA after obtaining informed consent. Mean age of PWA was 52.6 years (range 27–73 years) and 85.5% of the participants were a cohabiting partner to a PWA. Qualitative descriptive study design, involving semi-structured interview of SOs of PWA, was used.

Development of questionnaire

Procedure of development of questionnaire based on semi-structured interview could be represented in these three phases.

Phase 1: Ensuring interview question align with research aim

Items included in the interview questions were based on responses of SOs, i.e., experiential learning model, where learning occurs with repetition, practice, and incorporation of specific feedback from experienced persons.^[8] This model consists of four steps: (a) concrete experience (a new experience of situation is encountered or a reinterpretation of existing experience); (b) reflective observation (of the new experience. Of particular importance are any inconsistencies between experience and understanding); (c) abstract conceptualization (reflection gives rise to a new idea or a modification of an existing abstract concept); and (d) active experimentation (the learner applies them to the world around them to see what results).

Phase 2: Constructing an inquiry-based conversation (semi-structured interview)

Standardized open-ended interview: The exact wording and sequence of questions were determined in advance. All interviewees were asked the same basic questions in the same order. Questions are worded in a completely open-ended format. Efforts were made to make the questionnaire shorter without compromising the quality information to enhance their use for decision-making purposes.

Respondents answer the same questions, thus increasing comparability of response toward each item. Data were collected for each subject on the topics addressed in the interview. This phase facilitates organization and analysis of the data.

In this phase, little flexibility in relating the interview to particular individuals and circumstances, standardized wording of questions may constrain and limit naturalness and relevance of questions and answer.

Phase 3: Receiving feedback on interview protocol

Ninety questions were obtained through a number of stimulating as well as negative statements gathered during the planned semi-structured interview to explore views of SOs about SCS as a home-based practice. These questions were submitted to a panel of five judges, including a neurologist and SLPs. Each of them arranged questions under five domains with negative- and positive-pole questions in a random

sequence. This order of questions gave a composition of the most negative and positive home practice strategies together. When there was marked disagreement, i.e., 0.01–0.20 (none to slight agreement) among the judges about the inclusion of the items, those items were discarded, and finally, 43 items were selected for the questionnaire.

Then, validity and reliability of questionnaire were assessed.

Validity of questionnaire

During interview, questions were asked with a clear concept of what information was required, i.e., “questions were based on home practice techniques to understand the usage of modalities during SCS.” It was done with the help of written outline to ensure that significant information is elicited (content validity). Content validity of questionnaire was assessed in two phases by judges on the basis of ten assertion points related to questionnaire on 5-point Likert’s scale.

To assess the content validity of the questionnaire, ten assertion points were considered as follows: (1) covers most meaningful supportive communication strategies (SCS), (2) statements are clear, (3) permits the establishment of a common language among SO of PWA, (4) can distinguish SO according to SCS used by them, (5) statements are very long, (6) is complex, (7) time-consuming questionnaire that affects evaluation sessions, (8) sequencing of negative- and positive-polar questions in random order to avoid any guess, (9) can be introduced in clinical practice, and (10) can produce useful data for prognosis, management, and decision-making.

Reliability of questionnaire

Reliability or the consistency of response was evaluated by restating a question in slightly different form at a later time (25–30 days) in the interview. To avoid inter-interviewer views and perceptual discrepancies, only one interviewer, i.e., SLP, has taken all interviews.

Statistically, reliability of self-reported SCS questionnaire across five domains (e.g., auditory comprehension, spoken, reading, writing, and other) was assessed through a test–retest procedure. It is the most common form of surveys for reliability test of the questionnaire.

Participants

Inclusion criteria

1. SOs of PWA ($n = 33$) with (a) experience of caring PWA for at least 3 months on a regular basis (pre- and post-stroke), (b) 18 years or older, (c) understand and use Hindi or English in both written and verbal mode
2. A PWA ($n = 33$) having (a) aphasia due to stroke, (b) 18 years or older, (c) at least 3 months poststroke onset, (d) all types and degrees of severity of aphasia, (e) only left hemisphere lesion, (f) should be awake and communicable (give eye contact, try to communicate, and have an ability to express him/herself beyond a pain reaction).

Exclusion criteria

1. SO of PWA ($n = 33$) (a) having significant hearing or vision problems and (b) diagnosed dementia or any other known significant cognitive impairment
2. PWA ($n = 33$) (a) diagnosed dementia or any other known significant cognitive impairment, (b) having significant hearing or vision problems, and (c) known alcohol or drug abuse.

Material

Questionnaire containing 43 items were developed in both Hindi and English to assess all aspects of communication and language-related burden under the following subheadings; comprehension (13 items), spoken language (9 items), reading (9 items), writing (8 items), and other (4 items) [Appendix 1]. A pilot study was done to assess the ease of administration of questionnaire, i.e., whether the terms and phrases used in the questionnaire are comprehensive to SO of PWA or not?

Procedure

Thirty-three SOs of PWA were interrogated through semi-structured interview about demographic data, clinical history, and use of different SCS by them.

The questionnaire was provided to SOs to respond in terms of “yes” or “no” for each item. They have been instructed and informed descriptively regarding this task. This close-ended questionnaire was used as a projective device, mostly in a scenario where verbal output is considered as the most preferred mode in comparison to another low-accepted mode. Responses of SOs helped in getting their expressed reaction to statements, a sample of their opinion. On the basis of these obtained responses, one may infer or estimate SOs attitude what they really believe, which is usually difficult in open-ended questions. As an optional, SO’s remarks section was also provided for their descriptive response or feedback toward questionnaire and their own opinion.

RESULTS AND DISCUSSION

The structure and contents of the questionnaire about SCS were rated and analyzed by experts in two phases, i.e., in first phase 90 questions and in second phase 43 questions. In the first phase, 47 questions were eliminated on the basis of inclusion of meaningful supportive strategies, clarity, length, and complexity of statements. The questionnaire was limited to 43 items targeted on the major dimensions of supportive and effective communication strategies. Inclusion of limited and selected items helped in reducing extensive and exhaustive nature of questionnaire. It also made it easier to understand the influence of SCS on treatment outcome [Table 1].

The construction of the second phase questionnaire was based on the experts’ evaluations. Responses to the second phase questionnaire regarding the structure and content showed the agreement levels ranged from 90% (Md. 4.5) to 98% (Md. 5.0).

Table 1: Expert opinion in two phases about the validity of a questionnaire obtained on ten points

Serial number	Assertion	Phase 1			Phase 2		
		Percentage	Md	Q1-Q3	Percentage	Md	Q1-Q3
1	Covers most meaningful SCS	82	5.0	4.0-5.0	94	5.0	5.0-5.0
2	Statements are clear	80	4.0	4.0-5.0	96	5.0	5.0-5.0
3	Permits the establishment of a common language among SOs of PWA	92	5.0	4.0-5.0	96	5.0	5.0-5.0
4	Can distinguish SO and their communication input pattern/SCS	92	5.0	4.0-5.0	94	5.0	4.0-4.0
5	Is very long	48	2.0	2.0-2.5	44	2.0	2.0-2.0
6	Is complex	42	2.0	2.0-2.0	36	2.0	2.0-2.0
7	Time-consuming questionnaire that affect evaluation sessions	90	4.5	4.0-5.0	90	4.5	4.0-5.0
8	Observe polar questions in random order to minimize guess and repetition in same response	94	5.0	4.0-5.0	92	5.0	4.0-5.0
9	Can be introduced in clinical practice	92	5.0	4.0-5.0	94	5.0	4.25-5.0
10	Can produce useful data for prognosis, management, and decision-making	90	5.0	4.0-5.0	98	5.0	5.0-5.0

SCS: Supportive communication strategies; SOs: Significant others; PWA: Person with aphasia; Md: Median

The lowest percentage (90%) (Md. 4.5) was related to the time-consuming aspect of questionnaire.

Test-retest reliability

Test-retest reliability was calculated using intraclass correlation coefficients with 95% confidence interval on the scores of the participants who completed the questionnaire twice. The correlation coefficients varied across the sections ranging from 0.57 to 0.94. The overall reliability was high ($r = 0.90$, $P < 0.001$) [Table 2].

All the strategies used by SOs of PWA were assessed on questionnaire related to each language domain, i.e., auditory comprehension, verbal expression, reading, writing, and others [Table 3].

Auditory comprehension

During conversation, 74.28% SOs used to maintain the slow rate of speech and face-to-face communication with emphasis on keywords, whereas 17.14% accepted that they did not consider these factors. 71.42% SOs avoided talking with PWA in distracting and noisy situation, whereas 54.28% and 62.85% tried to maintain usage of simple sentences and gesture respectively to make them comprehend. On the other hand, as a communication barrier, 34.28% and 37.14% SOs tended to hinder the communication through frequent changing the topics and involving many people during the conversation.

Spoken language

In terms of communication facilitation, 82.85% SOs always gave the opportunity to their relative to indulge in communication, whereas 34.28% SOs have admitted that they did not encourage them to participate in communication due to their limitations. On the other hand, 80% of caregivers tended to guess the communication intent of PWA, while 57.14% SOs used only those questions which can be answered in "yes" or "no." 51.42% SOs provided keywords to their PWA to help them in selecting appropriate word among given options rather than giving appropriate time to respond. In contrast, 34.28%

SOs have admitted that they used to discontinue conversation if PWA did not understand.

In terms of mode of communication, e.g., verbal, facial gesture, body gesture, and other nonverbal mode, 77.14% SOs have insisted on verbal mode and 82.85% emphasized on the direct face-to-face communication. Some PWA even asked their partner to speak on their behalf, which may disastrously result in complete withdrawal of PWA from the discussion. In this condition, both partners should be advised to avoid such behavior.^[3]

Reading

As per responses, 20% PWA were illiterate. SCS to facilitate reading skills were not implemented by SOs in their home practice. 54.28% SOs did not read aloud to make their relative with aphasia understand. 60% SOs only gave emphasis on showing newspaper headline and related picture to make PWA understand well about the related topic. 60% SOs had conceded that they did not provide any reading material to their relatives.

In terms of usage of reading content to enhance reading skills, 51.42% SOs tried to provide meaningful content, 42.85% provided anything such as nursery poem or alphabets, 42.85% used content in which PWA is interested, whereas 34.28% gave only those reading material which had large graphemes size.

Writing

Only 42.85% SOs have tried to stimulate writing abilities of PWA through facilitating pre-writing skills, e.g., to draw a straight line, simple shapes, whereas 34.28% facilitated writing through providing initial phonemic or graphemic cues. On the other side, 45.71% SOs did not direct the pattern to start writing rather they primarily focus on the dictation of simple word or phrase. Many SOs (40%) had focused on the functional writing, i.e., highly familiar nominal on the basis of memory or oral cues. In contrast, 34.28% and 37.14% SOs use picture or verbal description, respectively, instead of providing any option or cues through verbal or written mode.

Table 2: The test–retest reliability using interclass correlation coefficients with 95% confidence interval from the reliability survey

Serial number	Domains	ICC	95% CI
Comprehension			
1	Do you maintain clear, slightly slower rate of speech than usual and emphasize on the keywords in the sentence?	0.87	0.81-0.91
2	Do you always insist on face to face communication with attention of your relatives/family?	0.80	0.71-0.87
3	Do you mostly avoid talking with your relative/family in a busy, noisy and distracting environment?	0.67	0.54-0.76
4	Do you concentrate on a single theme/subject at a time with usage of simple sentences during communication?	0.60	0.46-0.71
5	Do you write down the keywords of related conversation to make/help/assist them to follow the topic easily?	0.68	0.56-0.77
6	Do you talk normally to your relatives/family without considering the rate and clarity of speech/information?	0.63	0.43-0.77
7	Do you use visual cues mostly during conversation to make them (relatives/family) understand better?	0.68	0.56-0.77
8	Do you use simple gestures during conversation?	0.93	0.89-0.96
9	Do you change topics rapidly during conversation?	0.68	0.51-0.81
10	Do many people take part/involve in conversation at the same time?	0.65	0.53-0.75
Spoken			
1	Do you provide opportunities to your relative/friend to involve in conversation?	0.63	0.50-0.73
2	Do you usually choose/phrase questions in a manner that can only be answered in “yes” or “no”?	0.74	0.59-0.85
3	Do you mostly provide alternatives of keywords to your relative/friend to make them easy to choose among those choices e.g., what do you want “rice”, or “roti”?	0.71	0.54-0.83
4	Do you give ample amount of time to your relatives/family member to communicate and then help in selecting words during conversation, if required?	0.59	0.38-0.74
5	Do you always try to guess the communicative intent of your relative/friend?	0.92	0.86-0.96
6	Do you use other ways (e.g., gestures, facial expressions and body language) also to facilitate communication?	0.84	0.73-0.91
7	Do you reveal it (that you don't understand what he/she is saying) to your relative/friend and try to find out alternative way to help you understand what your relative/friend is saying?	0.69	0.51-0.81
8	Do you adopt a direct way of communication always?	0.75	0.59-0.85
9	Do you always insist for only verbal communication to your relatives/family members?	0.93	0.89-0.96
10	Do you avoid their (your relatives/family member) involvement in most of the conversations due to their inability to speak?	0.85	0.75-0.91
11	Do you provide them (your relatives/family member) all the required stuff as per their need on time so that they won't be required to speak?	0.87	0.81-0.91
12	Do you quit conversation, if not understanding their (your relatives/family member) conversation?	0.58	0.36-0.74
13	Do their (your relatives/family member) proximity not essential during conversation?	0.64	0.45-0.77
Reading			
1	Do you read aloud so that they (your relative/family) can understand?	0.67	0.54-0.76
2	Do you provide them reading material with their (your relative/family) interest oriented contents instead of children-oriented?	0.65	0.52-0.74
3	Do you try to make them read and understand the headlines of newspaper by showing associated/related pictures?	0.79	0.71-0.85
4	Do you often use books, magazines that are printed in big letters?	0.68	0.57-0.77
5	Do you always use meaningful and useful material to increase reading potential of your family member?	0.73	0.63-0.81
6	Do you avoid providing any reading material to him/her, due to their (family member) inability to read?	0.77	0.63-0.86
7	He/she do not know to read (illiterate)	0.94	0.85-0.97
8	Do you give anything to them (relatives/family member) to read, e.g., children's poem, alphabet	0.65	0.45-0.78
9	Due to their (relatives/family member) inability to read, do you avoid reading aloud in front of them or to make them try to speak?	0.61	0.42-0.75
Writing			
1	During writing, do you dictate only words to them (relatives/family member) without any guidance of hands movement and its coordination?	0.73	0.57-0.84

Contd...

Table 2: The test-retest reliability using interclass correlation coefficients with 95% confidence interval from the reliability survey

Serial number	Domains	ICC	95% CI
Writing			
2	Do you provide them (relatives/family member) only easy words and shapes, e.g., cups, pens, alphabet, straight line to copy?	0.76	0.63-0.85
3	Do you try to make them (relatives/family member) write to dictation of simple words/sentences?	0.72	0.56-0.82
4	Do you avoid giving options (written/verbal) to assist/help them (relatives/family member) in completing their spoken/written sentences?	0.63	0.44-0.77
5	Do you make them to write the name of objects/materials (which they need or want to speak) from memory?	0.79	0.65-0.87
6	Do you ask them to name objects/materials (of daily use) "what is this"? and then ask them to "write its name"?	0.59	0.39-0.74
7	Do you help them in writing by providing cues (written/spoken) of initial letter when they start?	0.57	0.37-0.72
8	Do you avoid making them describe pictures of newspaper and magazines by writing because they are unable to write?	0.58	0.40-0.72
Others			
1	Do you ask them (your relative/family) to create imaginary images?	0.78	0.65-0.87
2	Do you ask them to use clear and simple gestures (if one side is paralyzed then do you ask to use only one hand)?	0.77	0.64-0.86
3	Do you use only those gestures/signals which primarily reflect the same action/content (such as "pen" point for writing)?	0.85	0.76-0.91
4	Do you use facial gestures mostly to convey messages and to make them understand and help them to express their feelings/emotions through face?	0.79	0.65-0.87

ICC: Interclass correlation coefficient; CI: Confidence interval

In this study group, majority of population, i.e., 80% were literate. To analyze the responses of participants on reading and writing sections, intention-to-treat analysis was used to avoid any bias, i.e., the inclusion of 20% illiterate PWA.

Other mode of communication

The majority of SOs did not prefer another mode of communication, i.e., pictographic, line drawing, and nondepictive gesture other than verbal and written mode. 60% SOs used emotions and feelings through facial expressions to make PWA understand with ease. 48.57% used comprehensive or simple gesture whereas 51.42% accepted that they used gestures for the objects those refer the same activity or object (i.e., iconic gestures). To enhance SCS, conversation partners should be trained to use alternative strategies rather than focusing only on verbal communication strategies.^[6,9] Overall, it could be observed that many SOs failed to use positive SCS instead of negative attitudes and practices, i.e., (a) not using simpler sentences and gestures (45%), (b) asking only yes-no questions instead of giving opportunity to generate longer verbal narrative (57.14%), (c) not reading aloud to PWA (45.72%), (d) not providing reading material (60%), (e) not encouraging written practice and expression (57.15%), and (f) not using simple gestures (51.43%). During assessment, compensatory strategies practiced by the family member must be asked to identify and modify negative strategies.

SCS-oriented questionnaire might not show what actually occurs to the natural conversational situation, but it would precisely describe helpful and unhelpful strategies.^[10] However,

it might be possible to get discrepancies between SOs strategies in natural and clinical situation due to self-assessment-based questionnaire. There are wide subjective variations among untrained SOs which refer them as a "good" and "poor" conversation partners. The "good" partners adapt their interaction styles according to the needs of their communication partner and even introduce nonverbal communication methods if needed or begin to use them if the aphasic person uses them. On the other hand, the "poor" conversation partners do not get adapted to these patterns.^[11]

It has also been observed that encouragement for the use of SCS across all language domains is helpful. When PWA increases his or her use of nonverbal communication methods, the communication partners also increase implementation of strategies to support the conversation and vice versa.^[12,13]

Communication partners often use different strategies to support communication while being unaware of their positive or negative nature. Such self-assessment questionnaire might be helpful in analyzing the actual interaction strategies of SO with their aphasic partners. Although it might contain some biased response due to its subjective nature, well-defined and clinically relevant outcome measures will have to be incorporated to understand the efficacy of SCS used by SO in different types of aphasia.

It has been advocated to provide an individualized intervention to PWA through interaction-focused training.^[5] A recent study revealed a significant reduction in the number of conversation barriers during group analysis although no significant increase in conversation facilitators.^[1] It reflects that both the situations

Table 3: Responses (affirmative and negative) of significant others about usage of supportive conversational strategies with person with aphasia

Supportive strategies by SO	Affirmative (%)	Negative (%)
Auditory comprehension		
Slow speech, face-to-face communication, emphasis on keywords	74.28	25.72
Avoiding noisy situation	71.42	25.72
Simple sentences, gesture	54.28	45.72
Not changing topics rapidly	65.72	34.28
Not involving many people in conversation	62.86	37.14
Verbal expression		
Giving ample time to PWA	82.85	17.75
Trying to guess communicative intent of PWA	80	20
Asking yes/no type of questions	57.14	42.86
Not abandoning the conversation	65.72	34.28
Encouraging gesture	80	20
Reading		
Reading aloud	54.28	45.72
Associating pictures with headlines	63	37
Providing reading material	40	60
Writing		
Encouraging writing skills	42.85	57.15
Dictating simple words, phrases	45.71	54.29
Giving phonemic/graphemic cues	34.28	65.72
Written object naming from memory	40	60
Verbal picture naming and written naming	40	60
Others		
Facial expression for emotions, feelings	60	40
Using simple, nonspecific gestures	48.57	51.43
Using object-specific gestures	51.42	48.53

SO: Significant other; PWA: Person with aphasia

either reduction in the number of conversational barriers or significant increase in conversation facilitators led to support the PWA in their functional communication. The insight obtained from such studies will help in developing patient- and family-oriented communication strategies for all language domains (reading, writing, verbal, comprehension, gestures, and others) as a home training program during intervention accompanied by assessment of SCS by SOs.

Outcome of the study and its clinical implications

Apart from verbal and gesture mode, other modality-oriented strategies are less popular among SOs. They might not really know how they feel about a use of different modalities during

home practice or they have never been exposed to the ideas of using these strategies. Until confronted with real situations, they might be unable to accurately predict their reaction or behavior. Thus, this questionnaire would be beneficial to understand the role of modality-specific SCS while language-communication stimulation and training.

Irrespective of impairment or communication-based therapy approaches, inclusion of different modality-specific SCS in the home and clinical practices is beneficial to PWA. We should try to tackle the questions about cross-model transfer of competence and its role in improvement and generalization across the modalities.

CONCLUSION

This questionnaire could be used by SLPs to investigate communication strategies and plan tailor-made compensatory mechanism for communication. It is helpful in conversation analysis, i.e., how people construct conversations, maintain turns and sequences during the conversation, repair and shift the topics; and use of both language and nonverbal behavior.

Since the questionnaire incorporates total communication strategies and resources, it would help in multimodality communication training mainly for partners of PWA with moderate-to-severe aphasia.

Limitations and future directions

Responses of the SOs, i.e., spouse, family members, and other caretakers on questionnaire, were not categorized and analyzed separately on the basis of SO relation with PWA. All kinds of SOs responses were analyzed together.

In future, the impact of incorporation of SCS in a home practice could be monitored to understand the extent of changes in communication burden of SO and functional communication of PWA.

A comparative study could also be conducted to assess the differences in reduction of communication burden of SOs using multimodality SCS with their control group.

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Conflicts of interest

There are no conflicts of interest.

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APPENDIX

Appendix 1

Comprehension

1. Do you maintain clear, slightly slower rate of speech than usual and emphasize on the keywords in the sentence?
2. Do you always insist on face-to-face communication with attention of your relatives/family?
3. Do you mostly avoid talking with your relative/family in a busy, noisy, and distracting environment?
4. Do you concentrate on a single theme/subject at a time with usage of simple sentences during communication?
5. Do you write down the keywords of related conversation to make/help/assist them to follow the topic easily?
6. Do you talk normally to your relatives/family without considering the rate and clarity of speech/information?
7. Do you use visual cues mostly during conversation to make them (relatives/family) understand better?
8. Do you use simple gestures during conversation?
9. Do you change topics rapidly during conversation?
10. Do many people take part/involve in conversation at the same time?

Spoken

1. Do you provide opportunities to your relative/friend to involve in the conversation?
2. Do you usually choose/phrase questions in a manner that can only be answered in "yes" or "no"?
3. Do you mostly provide alternatives of keywords to your relative/friend to make them easy to choose among those? For example, what do you want "rice" or "roti"?
4. Do you give ample amount of time to your relatives/family member to communicate and then help in selecting words during conversation, if required?
5. Do you always try to guess the communicative intent of your relative/friend?
6. Do you use other ways (e.g., gestures, facial expressions, and body language) also to facilitate communication?
7. Do you reveal it (that you don't understand what he/she is saying) to your relative/friend and try to find out alternative way to help you understand what your relative/friend is saying?
8. Do you adopt a direct way of communication always?
9. Do you always insist for only verbal communication to your relatives/family member?
10. Do you avoid their (your relatives/family member) involvement in most of the conversations due to their inability to speak?
11. Do you provide them (your relatives/family member) all the required stuff as per their need on time so that they won't be required to speak?
12. Do you quit conversation, if not understanding their (your relatives/family member) conversation?
13. Do their (your relatives/family member) proximity not essential during conversation?

Reading

1. Do you read aloud so that they (your relative/family) can understand?
2. Do you provide them reading material with their (your relative/family) interest-oriented contents instead of children-oriented?
3. Do you try to make them read and understand the headlines of newspaper by showing associated/related pictures?
4. Do you often use books, magazines that are printed in big letters?
5. Do you always use meaningful and useful material to increase reading potential of your family member?
6. Do you avoid providing any reading material to him/her, due to their (family member) inability to read?
7. He/she does not know to read (illiterate).
8. Do you give anything to them (relatives/family member) to read, e.g., children's poem, alphabet.
9. Due to their (relatives/family member) inability to read, do you avoid reading aloud in front of them or to make them try to speak?

Writing

1. During writing, do you dictate only words to them (relatives/family member) without any guidance of hand movement and its coordination?
2. Do you provide them (relatives/family member) only easy words and shapes, e.g., cups, pens, alphabet, straight line to copy?
3. Do you try to make them (relatives/family member) write to dictation of simple words/sentences?
4. Do you avoid giving options (written/verbal) to assist/help them (relatives/family) in completing their spoken/written sentences?
5. Do you make them write the name of objects/materials (which they need or want to speak) from memory?
6. Do you ask them to name objects/materials (of daily use) "what is this?" and then ask them to write its name?
7. Do you help them in writing by providing cues (written/spoken) of initial letter when they start?
8. Do you avoid making them describe pictures of newspaper and magazines by writing because they are unable to write?

Others

1. Do you ask them (your relative/family) to create imaginary images?
2. Do you ask them to use clear and simple gestures (if one side is paralyzed then do you ask to use only one hand)?
3. Do you use only those gestures/signals which primarily reflect the same action/content (such as "pen" point for writing)?
4. Do you use facial gestures mostly to convey messages and to make them understand and help them to express their feelings/emotions through face?

Your views/comments about usage of supportive conversation strategies.