An Adapted Indian Version of the Stutterers' Self-ratings of Reactions to Speech Situations: A Mixed Methods Study

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Abstract

Introduction: Attitude assessment is essential to solve the multidimensional puzzle of stuttering. The Stutterers' Self-Ratings of Reactions to Speech Situations (SSRSS) serves this purpose. In spite of its clinical applicability, limited literature is available on its development and validation. Further, while many limitations stemming from stuttering would be culture specific, the SSRSS is still being used in its original form in India. The present study aimed at modifying the SSRSS to be culturally appropriate and obtaining preliminary normative data on the Indian population. **Methods:** The study was carried out in three phases where the SSRSS was edited through two versions. In Phase I, 16 persons with stuttering (PWS) and 16 age- and gender-matched typical speakers responded to the original version. In Phase II, qualitative data on potential changes in the SSRSS were obtained from participants of Phase I and from two independent focus groups of three PWS and three speech language pathologists, and changes were made to the SSRSS. In Phase III, 15 typical speakers filled in the final version. **Results:** Quantitatively, significant differences between scores of typical speakers and PWS reaffirmed the robustness of the SSRSS, while analysis of qualitative data brought out several pertinent modifications. Mean scores obtained from the original and final versions were not significantly different, establishing the utility of the final version. **Conclusion:** The importance of periodic revision of the existing instruments was emphasized. Clinical implications yielded by the qualitative analysis were underlined. Adding to the data pool using the Indian version was suggested as a future direction.

Keywords: Attitudes, India, mixed methods, Stutterers' Self-Ratings of Reactions to Speech Situations, stuttering

Introduction

Stuttering is a common speech disorder in persons of all ages that can cause disturbances in the normal fluency and time patterning of speech.[1] Current evidence suggests that the disorder stems from inherited central nervous system abnormalities that disrupt fluent speech.[2] It is, however, related not only to the speech mechanism, but also to the psyche of the person with stuttering (PWS).[3] This in turn triggers avoidance, guilt, frustration, and more such reactions from the PWS.[4] Bloodstein[5] simplified this complex nature of stuttering by describing it in the form of physiological, overt, and introspective concomitants of stuttering. Since each of these needs to be explored, assessment of attitudes related to speech forms a large part of the assessment of stuttering.[6,7]

Several tools in the form of questionnaires, Likert-type scales, and checklists have been constructed for this purpose.[8-10] The SSRSS[7] is one such tool which exhaustively assesses self-perceptions of and attitudes toward stuttering. For forty speaking situations, respondents rate themselves on a 5-point scale along four parameters – avoidance, reaction, stuttering, and frequency of that situation. While avoidance, reaction, and stuttering subscales range from lower to higher levels of the trait being measured (e.g., 1 = I never try to avoid this situation), the frequency scale ranges from higher to lower frequency (1 = this is a situation I meet very often). Forty numerical values for each subscale can thus be obtained and averaged to give four subscale scores.

A freely available scale, the Stutterers' Self-Ratings of Reactions to Speech Situations (SSRSS), has been in clinical use for over 50 years.[11,12] However, in a detailed review of tools available for holistic assessment of stuttering, Franic and Bothe[13] reported that limited literature is available on the development and validation of the SSRSS. Although norm

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scores for persons with stuttering (PWS) exist,[14] the sample comprised only of adult male typical speakers, limiting validity of the study. It must also be noted that the statements that were applicable to the cohort tested by Shumak[14] may not be applicable to more recent cohorts and may need revision. Limitations stemming from stuttering would also be culture specific to a great extent,[15] and norms could therefore vary. Further, modifications might need to be made before using it crossculturally. In spite of this, the SSRSS is still being used in its original form in India.

While using it in its current form would compromise on its applicability, the SSRSS is nonetheless one of the most exhaustive assessment tools for exploring attitudes and reactions of PWS. Discarding it would mean losing out on a lot of valuable information. A possible solution to the above problems would be to modify the SSRSS to suit the present cohort and the Indian cultural scenario.

The need for periodic modification of the existing tools to suit different cohorts and cultures cannot be overemphasized. Carter *et al*.[16] stressed the need for such modifications for enhancing the effectiveness and validity of the therapy approach chosen. Filgueiraz *et al*.[17] reiterated that adequate assessment using a culture-specific tool allows precise conclusions to be drawn. They stated that, if there is a lack of standardized instruments suitable to a particular country or culture, the gap in literature needs to be filled by reviewing and modifying the existing standardized tools. While development of new tools is a possible option, construction and validation of a completely new tool is a complex and time-consuming process. Giusti and Befi-Lopes[18] therefore endorsed the use of new versions of instruments that already existed.

One of the aims of the present study, therefore, was to generate preliminary normative data using the SSRSS with the Indian population. The study also aimed at increasing the face validity and applicability of the SSRSS to the current cohort, making it culturally appropriate for use in India.

Methods

The study used a mixed methods approach, i.e., data was collected using quantitative and qualitative techniques to give the researcher a broader and more holistic perspective. Use of a mixed methods approach also increased face validity of the study since participants' responses to open-ended questions were analyzed to complement data obtained in the form of numerical values on the SSRSS. The study was carried out in three phases as follows:

Phase I

Sixteen PWS (mean age = 21.04 years; standard deviation (SD) = 5.30; 10 males and 6 females) and 16 age- and gender-matched typical speakers (mean age = 21.20 years; SD = 5.91) consented to participate in the study. Each group included three adolescents in keeping with the scope of the SSRSS.[13] Their responses to the original SSRSS (Version I) served as quantitative data. Their reactions or queries while filling the scale were also observed and noted, as qualitative data pertaining to Version I of the SSRSS.

Phase II

Version I was discussed at length in two focus groups of three speech language pathologists (SLPs) and three PWS, conducted using social media. The focus groups were conducted over a period of 1 week each for both the groups. Four open-ended questions were put forth for discussion, in the following order:

1. How useful do you think this tool is?
2. Which statements (if at all) according to you are inappropriate for the Indian scenario?
3. Anything else you would like to (a) delete, (b) add, and (c) change/modify?
4. How (if at all) would you like to reword the following?
   5. Short class recitation (ten words or less)
   8. Buying something from a store clerk
   23. Asking for a job.

Some of these received nonresponses despite being common situations. Hence, probably the wording matters. For example, we don't exactly "ask" for a job.

Based on qualitative and quantitative responses to Version I as well as suggestions obtained regarding item deletion from the focus groups, some statements from Version I were removed to give Version II. The mean scores after item deletion were considered the means of Version II and the two versions were compared.

Phase III

Since the means of Version II (after deleting some items) did not differ significantly from Version I, further suggestions of the focus groups regarding additions and modifications were incorporated into Version II, to give Version III of the SSRSS. This was piloted with 15 typical speakers (mean age = 22.40; SD = 4.01). Since the study was spread over a period of 3 years, typical speakers from Phase I were not retested as their responses might have changed from maturation and experience. However, typical speakers from Phase I and Phase III had the same age range (mean age = 22.4 years; SD = 4.01) and a similar proportion of adolescents and adults (2 adolescents and 13 adults).

Data was analysed using independent samples *t*-tests and two-way ANOVA. SSRSS scores of participants were compared between Versions I and II and between Versions I and III. Scores were also compared across adolescents and adults, as well as across males and females. Item analysis was done to study responses to individual items.

Results

Phase I

A significant difference was obtained between the mean scores of typical and PWS groups (avoidance: $t = 2.84$, $P = 0.008$; reaction: $t = 2.86$, $P = 0.008$; and stuttering: $t = 7.47$, $P < 0.001$).

Two-way ANOVA revealed no significant effect of age or gender. Table 1 displays means and SDs of the two groups.

Items that elicited maximum nonresponses and ratings of "5" on the frequency subscale ("rarely encountered") are displayed in Table 2. These also received reactions such as "I don't understand" (26, 28) or "This is not applicable to me" (13, 40) from participants in Phase I.

Items 17 (asking a secretary), 20 (committee meeting), 23 (asking for a job), and 38 (stamps at a post office) elicited nonresponses from more than four adolescents. Item 23, despite being applicable to all the adult participants, elicited four nonresponses from adults.

Items pertaining to the telephone (3, 11), talking to an audience (14, 19), or to people in authority (21) elicited high ratings from a majority of PWS.

Phase II

Both focus groups strongly felt that the SSRSS needed revision. Two of the three SLPs felt that "some items were obsolete" and all of them found some items "not suitable to the present-day Indian scenario." The focus group with stuttering felt that, while it was a useful scale, "some items could be added." Both the focus groups suggested rewording or replacing several items of the scale. The principal themes that emerged from the focus groups are listed in Table 3.

As shown in Table 3, the four items that received the highest number of nonresponses or comments such as "I don't understand" were pointed out by the focus group of SLP as "inappropriate for the Indian population." They were, therefore, deleted, yielding Version II.

There was no significant change in subscale scores between Versions I and II. The significant difference in scores of typical and PWS groups was unaffected (avoidance: $t = 3.37$, $P = 0.002$; reaction: $t = 2.98$, $P = 0.006$; and stuttering: $t = 11.32$, $P < 0.001$).

Table 1: Mean and standard deviation values of scores

Subscale	Avoidance		Reaction		Stuttering		Frequency	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
PWS	2.33	0.38	2.33	0.39	2.63	0.72	3.80	0.46
Typical	1.77	0.67	1.84	0.55	1.25	0.15	3.56	0.52

SD: Standard deviation; PWS: Persons with stuttering

Phase III

Changes in Version II were retained and further modifications were made in accordance with the themes that emerged from focus group discussions, yielding Version III. This version of the SSRSS was then administered to 15 typical speakers. No significant difference was seen between mean scores of typical respondents to Version I and Version III (avoidance = 1.81; reaction = 1.98; stuttering = 1.16; and frequency = 3.74). Similar to Version I, there was no significant effect of gender or age. This, therefore, was deemed the final edited Indian version of the SSRSS. The modified statements have been reproduced in Appendix 1.

For this version, only three nonresponses (two from adolescents) for item 13 (matrimonial alliance) and one nonresponse (adolescent) for item 23 (job interview) emerged. There were no nonresponses from adults to the final version.

Discussion

Modification of the existing standardized tools has been carried out extensively in countries where there is a scarcity of assessment resources.[19,20] However, most of them use quantitative approaches to establish the utility of the final version.[21] Use of a mixed methods approach is ideal for investigating the effectiveness of an assessment or a treatment, and if planned well, can provide complementary evidence and rich data.[22] The present study, too, demonstrated the utility of such an approach, since the qualitative data both added to and reaffirmed the findings of the quantitative analysis.

The significant difference between the scores of typical and PWS groups seen in Phase I reaffirmed the utility value of the SSRSS. It must be noted that the frequency subscale scores were not significantly different. This implied that the situations would be encountered as frequently by typical speakers and PWS. The reactions thereto, however, would differ significantly. Nonsignificant differences across age groups and gender suggested that attitudes toward stuttering did not change much from adolescence to adulthood and were not gender specific. While means and SDs of the PWS group were in close agreement with Shumak,[14] nonresponses and frequency ratings of "5" ("I rarely meet this situation") suggested that the SSRSS needed modification.

Table 2: Missing values across the sample

Item number	Item	Missing values			
		Typical		PWS	
		Adolescents ($n=3$)	Adults ($n=13$)	Adolescents ($n=3$)	Adults ($n=13$)
13	Asking for a date	2	2	2	4
26	Parlor games requiring speech	1	4	0	4
28	Participating in a bull session	3	12	2	11
40	Taking leave after a date	2	3	2	4

PWS: Person with stuttering

Table 3: Results of qualitative analysis from focus groups

	Topic	Themes that emerged	
		SLP group	PWS group
1	Utility of the scale	Helpful tool; some items are obsolete/ inappropriate for India	Useful tool; some situations could be added
2	Items inappropriate for India	(26) Parlor games requiring speech (28) Participating in a bull session (13, 40) Items related to dating	None inappropriate
3	Additions/ deletions/ modification suggested	(26) Parlor games (replace with social gatherings) (38) Buying stamps at a post office (delete) (3, 6, 11, 15, and 31) Too many items about telephone conversations (instead, have telephone conversations when the caller is known/ unknown/known well) (13, 40) Replace "dating" with "matrimonial alliance" (29) Replace dinner conversation with "strangers" with "family function" Add: "class discussion" Add: "talking to your doctor" Add: "introducing oneself to a class"	Add Leading a meeting Participating in a discussion/meeting in the presence of a person in authority Family functions Hailing a rickshaw/taxi
4	Modification in language	(8) "Buying something from a store clerk" to "Asking for something at a store" (23) "Asking for a job" to "Giving/talking during a job interview"	"Asking for a job" to "applying for a job"

SLP: Speech language pathologists; PWS: Persons with stuttering

Conclusion

Feedback from participants in Phase I as well as SLP from the focus group suggested that items 13, 26, 28, and 40 were not applicable to the Indian population. The absence of a significant change in subscale scores after deleting these items reconfirmed that these items did not influence the scores and were inappropriate for the Indian scenario.

Nonsignificant differences between the scores of typical speakers obtained from Versions I and III suggested that this modified Indian version was equivalent to the original SSRSS. A major reduction in nonresponses and an absence of nonresponses by adults established that the modified version certainly had higher face validity for the present-day India.

In the quest to develop new tools, research should not neglect periodic revision of the existing, clinically useful instruments. The present study would perhaps be the first to obtain data from typical speakers using the SSRSS or increase its face validity. Situations for which high avoidance scores were obtained for a majority of the participants could be addressed in group therapy.

Further research could add to the present data pool using the modified SSRSS to help establish it as a reliable, valid, and robust tool for assessing the Indian population of persons with fluency disorders.

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Conflicts of interest

There are no conflicts of interest.

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Appendix 1: Statements in the SSRSS that underwent modification

	Avoidance	Reaction	Stuttering	Frequency
2. Introducing myself (face to face)				
5. Introducing myself to a class/group				
6. Telling my destination to a taxi/rickshaw driver				
8. Asking for items at a store				
13. Talking to a prospective partner in a matrimonial alliance				
14. Making a short speech (1 or 2 min) in a familiar class				
15. Receiving a telephone call when I know who is calling				
20. Receiving a telephone call when I don't know who is calling				
23. Giving a job interview				
26. Participating in a social gathering				
28. Participating in a meeting/discussion				
29. Dinner conversation in a family function				
31. Participating in a group discussion in the presence of a person in authority				
38. Speaking to my doctor				
40. Leading a meeting/discussion				