

A Communication Attitude Comparison between Kannada and Hindi Speaking Children With and Without Stuttering

Rakesh C. VEERABHADRAPPA,¹ Martine VANRYCKEGHEM,² & Santosh MARUTHY³

¹ *Department of Speech and Hearing, Manipal College of Health Professions, Manipal, India*

rakesh.cv@manipal.edu

² *School of Communication Sciences and Disorders, University of Central Florida, Orlando, USA*

martinev@ucf.edu

³ *Department of Speech-Language Sciences, All India Institute of Speech and Hearing, Mysore, India*

santoshm79@gmail.com

1. Introduction

The Communication Attitude Test (CAT) is a subtest of the Behavior Assessment Battery (BAB) for school-age children who stutter (CWS) (Brutten & Vanryckeghem, 2007). Widespread research with the CAT across the globe has proven it to be a valid and reliable tool to measure speech-associated attitude in school-age CWS (Brutten & Vanryckeghem, 2003, 2007; Gačnik & Vanryckeghem, 2014; Kawai et al., 2012; Vanryckeghem & Brutten, 1997). Since the development of the self-reported CAT in the 1980s, it has been translated into numerous region-specific languages across the world and revised and modified periodically to its current format through internationally-based research. Possible adaptation of the test has been considered in light of cultural differences and validation of the test in different areas of the world (Kawai et al., 2012; Vanryckeghem & Brutten, 2020; Vanryckeghem & Mukati, 2003; Veerabhadrappa et al., 2020). However, for a vast country like India with multi-ethnic and linguistic backgrounds, it is challenging to select one language and culture from a specific region or state representing the sub-continent. Hence, a region-specific translation and adaptation of the CAT has been carried out (Kumari et al., 2016; Veerabhadrappa et al., 2020). Kumari et al. (2016) adapted the CAT for Hindi-speaking CWS from North India. In addition, Veerabhadrappa et al. (2020) studied the communication attitude of Kannada-speaking CWS from the southern part of the Indian subcontinent. The environment in which a person is born and raised has a possible cultural influence on the development of speech-related attitudes. India can be categorized into many cultural sub-groups. However, the major sub-group comprises North and South India with significant differences in ethnicity, culture, education, hospitality, cuisine, and infrastructure. In general, south India outmatches north India in the above-mentioned categories. Cross-cultural research may help us to understand the effect of such cultural influence on speech-related attitudes. Two types of cross-cultural studies can be distinguished: (1) studies comparing similar data from different countries, known as cross-national or multinational studies; and (2) investigations where different data from a single country are studied and contrasted. Cross-national research on the speech-related attitude of school-age CWS have been studied and well-documented in the literature (Bernardini et al., 2009; Gačnik & Vanryckeghem, 2014; Johannisson et al., 2009; Kawai et al., 2012; Vanryckeghem & Brutten, 2020; Vanryckeghem & Mukati, 2003; Veerabhadrappa et al., 2020). However, the possible effect of within-country cultural differences on speech-related attitude is relatively unexplored territory. Hence, the present study compared the Communication Attitude Test for School-age Children-Kannada (CAT-K) with the CAT-Hindi (CAT-H) scores of CWS and CWNS to investigate the possible effect of within-country cultural differences on communication attitude.

2. Methods

Participants: A purposive sampling procedure was used to collect data from 488 school-age children. CWNS were recruited from public schools, whereas CWS came from the outpatient department in an institutional setting. Group I consisted of 95 Hindi-speaking (an Indo-Aryan language spoken in northern India) children with an age range of 6-12 years: 30 CWS (27 males and 3 females), and 65 CWNS (29 males and 16 females). Group II consisted of 393 Kannada-speaking (a Dravidian language spoken in the southern state of India) children with an age range of 7-14 years: 100 CWS (88 males and 12 females), and 293 CWNS (152 males and 141 females). The parents/guardians filled out a demographic questionnaire during the interview. Responses to the questionnaire revealed that none of the participants had any cognitive, neurological, language, or hearing impairment. The fourth edition of the Stuttering Severity Instrument (SSI-4) was used to diagnose and estimate the stuttering severity (Riley & Bakker, 2009).

Materials and procedure: CAT-K and CAT-H (Vanryckeghem & Brutten, 2016, 2020) are self-reporting tests consisting of 30 questions children respond to by circling “true” or “false.” Seventeen of the CAT items, if answered as “True” and 13 as “False”, indicate negative speech-associated attitude. Informed assent was taken from the

teachers and parents/guardians before administering CAT-K and CAT-H. All children were seated comfortably in a quiet room, and the examiner read the instructions aloud and clearly. Children followed the instructions silently and asked questions if they needed clarification. The queries were answered neutrally by the examiner without any bias. Two trial test items were provided before the administration of the actual test. Children were instructed to circle 'true' or 'false' depending on what they *think* about their speech. Responses indicating a positive attitude received a score of '0' and a negative attitude a score of '1', with possible scores ranging from 0 to 30. The higher the score, the more the speech-associated attitude is considered to be negative.

Statistical Analysis: The obtained raw data were tabulated and subjected to statistical analysis using SPSS software version 20. Measures of central tendency and variation were obtained. Further, scores between the two groups were compared using independent sample t-tests. Also, the effect size was calculated (Hedges' *g*) along with the percentage of confidence interval to determine the between-group effect.

3. Results and Discussion

The results for the CAT-K and CAT-H are presented in Table 1. For both tests, the Kannada and Hindi-speaking CWS' mean scores were significantly higher compared to those of CWNS [$t(391) = 53.846, p < .001$] and [$t(93) = 27.03, p < .001$]. In addition, the effect size was very large for CAT-K ($d = 6.235; p < 0.001; CI = 2.49/3.257$) and CAT-H ($d = 5.967; p < 0.001; CI = 3.82/3.252$). As demonstrated in several cross-cultural investigations (Kawai et al., 2012; Vanryckeghem & Bruten, 2020; Vanryckeghem & Mukati, 2003; Veerabhadrapa et al., 2020), it can be confirmed that the Kannada and Hindi-speaking CWS report a significantly greater negative speech-associated attitude when compared to typical speakers. The disparity between CWS and CWNS was higher in this investigation than in studies in other countries: for CAT-K, the CWS scored 9 SD above the mean of CWNS; for CAT-H, it was 10 SD. This higher score among CWS could be due to a lack of societal awareness of the problem and poor education regarding stuttering, social stigma, and lack of acceptance of stuttering in the Indian context compared to western countries.

Table 1. Measures of Central Tendency and Variation for CWNS and CWS on the CAT-K and CAT-H Scores

Test	CAT-K		CAT-H	
	CWNS	CWS	CWNS	CWS
N	293	100	65	30
Mean	2.49	22.80	3.82	23.23
SD	2.13	5.34	1.74	5.22
Median	2	24	4	23
Mode	1	27	2	28
Min.	0	9	1	11
Max.	9	30	8	30

Comparing the test results of the Kannada and Hindi-speaking CWS, for both tests the scores were within $<.5$ SD of each other, indicating a similar self-report of speech-related negative attitudes in those two groups of school-age children. An independent sample *t*-test confirmed that the obtained CAT-K and CAT-H mean scores did not differ significantly [$t(128) = -.392, p = .696$]. However, the mean scores of the CWNS for both samples were slightly more than $.5$ SD apart. Independent sample *t*-test results revealed a significant difference between the CAT-K and CAT-H CWNS groups [$t(356) = -4.672, p < .001$], with Hindi-speaking CWNS obtaining higher scores. The sample size might have contributed to the difference in results between the CWS of the two cultures and the CWNS, which could be one of the limitations of the present study. Among Kannada-speaking CWS from the south Indian culture, an area associated with a higher education level (Bala, 2016), and it can be assumed that, with higher education levels, there could be an increased general awareness of disorders of all kinds. However, a difference in speech-associated attitude was not reflected in the KiddyCAT scores of the Kannada and Hindi-speaking (from the north Indian culture) CWS. Given the sample size incongruence and the vast cultural differences in diverse regions of India, it might be cautious to conclude that the best practice is to obtain and use test norms for the different populations within India in their respective language.

4. Conclusion

The present within-country cultural comparison study employed the valid and reliable CAT-K and CAT-H tests (Kumari et al., 2016; Veerabhadrapa et al., 2020) to measure speech-associated negative attitude in school-age children who do and do not stutter. Current results highlight that there is a disparity in the within-country cultural influence on self-reported speech-associated attitude in the studied population, at least for CWNS. As India is a multi-ethnic and multi-lingual nation, more studies comparing different populations from urban and rural areas in East and West India, using their regional languages, are required to generalize the present study results. Similar studies in vast countries such as India, with possible widespread within-country cultural variations, might be useful to study the influence of sub-cultures on speech-associated attitude and other aspects of childhood stuttering. The obtained results will aid the speech-language pathologist in the holistic assessment of stuttering in school-age CWS.

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