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Communication Attitude of Japanese School-Age Children Who Stutter

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Introduction:

A communication attitude of children who stutter (CWS) has been considered as a key factor that impacts fluency disorders (Van Riper, 1982; De Nil & Brutten, 1991; Healey et al., 2004, Guitar, 2005). The importance to understand CWS' and adults who stutter (AWS)'s speech-associated attitude has been well recognized by clinicians and researchers.

Specifically, a multidimensional approach to stuttering (Smith, 1990, 1999; Healey, et al., 2004) has become popular with clinicians and researchers who specialize in fluency disorders. Emotional and social factors are critical components that influence behaviors and are important factors to consider in treating the disorder.

Recently, several studies completed by Brutten and his colleagues have examined CWS' communication attitudes via the Communication Attitude Test (CAT) and the Communication Attitude Test-Revised (CAT-R) (Brutten, 1985; Brutten & Dunham, 1989; De Nil & Brutten, 1991, Vanryckeghem & Brutten, 1997).

A Japanese version of the CAT (CAT-J) was first developed in 1994 (Kawai, 1995) by directly translating the CAT-R into Japanese to assess the speech-associated attitude of Japanese CWS and children who do not stutter (CWDNS). A significant attitudinal difference between CWS and CWDNS was found. However, Japanese CWDNS demonstrated a much more negative attitude than CWNS in western countries (Kawai, 1995, 1997; Nagasawa & Kawai, 1998).

The original CWDNS' data of CAT-J were collected from 4th to 6th graders. Therefore, it was necessary to collect CAT-J score for CWDNS who were 1st, 2nd, and 3rd graders. Additional data from CWS were also necessary to measure reliability.

Method:

Participants

Eighty elementary school CWS between the ages of 5 (the1st grade) to 12 (the 6th grade) and 144 CWNS participated in this study. All CWS were receiving speech therapy from

special education teachers (equivalent to speech-language pathologists in the U.S.) at resource rooms at the time of this investigation. None of them had any language, hearing, and learning disabilities other than fluency disorders according to their special education teachers' reports. None of the CWNS had history of language, hearing, cognitive, and learning disabilities according to their school records.

Procedures

For the CWS, the CAT-J was administered to each child by his or her special education teacher. A special education teacher was instructed to read each question on the CAT-J to his or her student if he or she was in the 3rd grade or lower to assure they understood the meaning of all questions. If a student was in the 4th grade or higher, a special education teacher simply gave a form of CAT-J to him or her, and the student had to answer each question by reading the test items silently. In both groups, students had to answer a couple of demonstration questions to practice how to reply to each question on the CAT-J.

Either the first author or classroom teachers administered the CAT-J to CWNS in general classroom environments. For 3rd graders or below, the first author or classroom teachers read a question then asked students to answer the question. For 4th graders or above, the first author or classroom teachers simply handed out the CAT-J form and asked the students to answer all the questions.

Data Analysis

A one-way ANOVA was calculated to determine whether there was a significant difference in the mean CAT-J scores between CWS and CWDNS..

A two-way ANOVA was conducted to calculate whether the mean CAT-J scores were significantly different between CWS and CWDNS in all grade levels. Another two-way ANOVA was calculated to determine whether the mean CAT-J scores were significantly different between CWS and CWDNS as a group and subdivided by gender.

A three-way between-group 6 x 4 x 3 factorial ANOVA was calculated to determine whether grade level (age), severity of stuttering, and teachers' clinical styles influence CWS' communication attitude toward stuttering.

In addition, pair wise comparisons for each CAT-J item were made to determine which items of the CAT-J were not significantly different between these populations or which items CWDNS showed more negative communication attitude than CWS (if any).

1. I don't talk right. **
2. I don't mind asking the teacher a question in class. **
3. Sometimes words will stick in my mouth when I talk. **
4. People worry about the way I talk. **
5. It is harder for me to give a report in class than it is for most of the other kids. *
6. My classmates don't think I talk funny. **

7. I like the way I talk.
8. People sometimes finish my words for me. *
9. My parents like the way I talk.
10. I find it easy to talk to most everyone.
11. I talk well most of the time. *
12. It is hard for me to talk to people. **
13. I don't talk like other children. **
14. I don't worry about the way I talk. **
15. I don't find it easy to talk. **
16. My words come out easily. *
17. It is hard for me to talk to strangers. *
18. The other kids wish they could talk like me. **
19. Some kids make fun of the way I talk. *
20. Talking is easy for me. *
21. Telling someone my name is hard for me. **
22. Words are hard for me to say. **
23. I talk well with most everyone.
24. Sometimes I have trouble talking. **
25. I would rather talk than write. **
26. I like to talk.
27. I wish I could talk like other children. **
28. My words do not come out easily. **
29. I don't worry about talking on the phone. **
30. People don't seem to like the way I talk. **
31. I let others talk for me.
32. Reading out loud in class is easy for me. **

FIGURE 1. Actual items of CAT-J (written in English). (* : $p < .05$, ** : $p < .01$ between CWS & CWDNS) *Copyright, Brutten, 1985. (Revised by De Nil & Brutten, 1991).

Results:

The results showed that the mean score of CWS was 14.74 (SD = 5.44) and for CWNS was 9.65 (SD = 2.97). These results were similar to the previous study that administered a Dutch translated version (CAT-D) to CWS and CWNS (De Nil & Brutten, 1991).

A one-way ANOVA showed that the mean CAT-J score of CWS was significantly higher than CWNS' mean CAT-J score ($F (1, 222) = 81.86$, $p < .001$). In other words, CWS showed a significantly more negative speech-associate attitude than CWNS. This was true in both CWNS and CWS groups for all grade levels.

A two-way ANOVA showed that the CAT-J score of CWS and CWNS groups were significantly different across all grade levels. The significant main effects for CWS vs. CWNS group ($F (1, 212) = , P < .001$, MSE = 1291.55) and grade levels ($F (5, 212) = 4.37$, $p < .005$, MSE = 67.29) were found and there was no significant group x grade interaction ($F (5, 16) = .196.$, $p = .964$, MSE = 3.02).

TABLE 1. Descriptive statistics of the CAT-J scores for the CWS and CWDNS at each of six grade levels.

Group	Mean	N	STD	Group	Mean	N	STD
CWS				*CWDNS*			
1st	11.50	12	3.37	1st	7.54	24	2.80
2nd	14.57	14	4.18	2nd	9.25	24	3.33
3rd	14.71	14	6.70	3rd	9.79	24	3.01
4th	15.43	14	5.88	4th	10.42	24	2.70
5th	15.25	12	6.27	5th	10.13	24	2.74
6th	16.57	14	5.12	6th	10.79	24	2.28
TOTAL	14.74	80	5.44	TOTAL	9.65	144	2.97

Another two-way ANOVA was conducted to evaluate whether the CAT-J scores of CWS and CWNS groups were significantly different between boys and girls. The results showed that there was no significant main effect of gender ($F(1, 220) = 2.99$, $p = .085$, $MSE = 48.09$) or interactions between group and gender ($F(1, 220) = 3.30$, $p = .071$, $MSE = 53.02$). Then, the data from the CWS were further analyzed to evaluate whether stuttering severity and duration of therapy contributed to the CAT-J scores. The results showed that these variables did not impact the CAT-J scores.

TABLE 2. Descriptive statistics of the CAT-J scores for the CWS and CWDNS as a group and subdivided by gender.

Group	Mean	N	STD	Group	Mean	N	STD
CWS				*CWDNS*			
Male	14.25	63	5.37	Male	9.68	72	2.96
Female	16.53	17	5.51	Female	9.63	72	3.01
TOTAL	14.74	80	5.44	TOTAL	9.65	144	2.97

The results of a three-way between-group 6 x 4 x 3 factorial ANOVA showed that there was no significant main effects of severity ($F(3, 35) = 1.91$, $p = .15$), grade ($F(5, 35) = .24$, $p = .94$), and teachers' clinical styles ($F(2, 35) = .10$, $p = .91$).

There were seven items that were not significantly different between CWS and CWDNS, which were the items 7, 9, 10, 11, 23, 26, and 31.

When a post hoc definition that the attitude is considered positive when the mean score of each item is less than .5, and is considered negative when the mean score of each item is .5 or above, the items 7, 9, 10, 26, and 31 were considered positive in CWS and CWDNS. The items 11 and 23 were considered negative in both groups.

There were three items that CWDNS showed significantly negative communication attitude than CWS, which were the items 2, 5, and 29.

Discussion:

The present study showed that the overall scores of the CAT-J showed significant difference between CWS and CWDNS. This was observed in all grade levels. This replicates the results of the CAT-D study (De Nil & Brutten, 1991).This indicates that the CAT-J is a useful tool to determine CWS' communication attitude in daily-living situations.

Unlike the De Nil and Brutten's study, the present study did not find either grade level (age) or gender influence to CWS' communication attitude according to the results from a three-way between group factorial ANOVA. This indicates that Japanese CWS generally show negative communication attitude even in young age regardless of gender.

Severity did not influence the CWS' communication attitude, either. This means that even CWS with mild stuttering shows the same degree of negative communication attitude as those who have very severe stuttering.

Even though the CAT-J distinguishes the communication attitude between CWS and CWDNS, it should be noted that there are several items that did not show significant difference between CWS and CWDNS, and the items that CWDNS showed significantly negative than CWS.

The items that both groups showed negatively were "I talk well most of the time." and "I talk well with most everyone." These were self-perception or cognitive type of questions. Generally, Japanese school-age children do not practice public speaking skills. Thus, they might not have a good understanding how well they can speak in public.

The items that both groups showed positively were such as "I like the way I talk.," "My parents like the way I talk.," " I like to talk." These were related to feelings toward their speech.

The items that CWDNS showed negative communication attitude were"I don't mind asking the teacher a question in class.," "It is harder for me to give a report in class than it is for most of the other kids.," and "I don't worry about talking on the phone." This is probably due to most CWS practicing their speech in these situations with their special education teachers. Also they might have become very comfortable in these situations.

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