



Risk Factors of Childhood Stuttering: Persistence Related to Treatment Outcomes



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Introduction

- ❖ Children either persist in stuttering beyond the age of onset (20-26%), or they recover (74-80%) (Yairi & Ambrose, 1999).
- ❖ Yairi & Ambrose (2005) reported longitudinal data suggesting six risk factors:
 - ❖ **Consistency** of stuttering after onset
 - ❖ **Age of stuttering onset**
 - ❖ **Time since onset**
 - ❖ **Sex** of the child: boys persisting more than girls
 - ❖ **Units** of repetitions
 - ❖ **Predisposition:** genetic; family history of stuttering
- ❖ These six risk factors have not yet been compared to other measures such as stutter frequency, sound prolongation proportions, and awareness of stuttering, measures which have also been used to determine if treatment (Tx) is warranted (e.g., Conture, 2001).

Purpose

- ❖ To determine: (a) if Tx vs. No Tx decisions made at the UWEC-CCD Clinic regarding child stuttering evaluations relate appropriately to persistence vs. recovery outcomes, as determined by follow-up contacts of parents; and (b) if certain measures appear useful for improving Tx vs. No Tx decisions and Tx outcomes.

Methods

- ❖ Clinical retrospective methodology was used as per the methods of Yaruss, LaSalle, and Conture (1998). Data were collected from 48 UWEC CCD clinical records of 2- to 10-year-old children referred for "stuttering" concerns between January 2000 and 2007. Treatment session number/type, as well as graduation and discontinuation rates were also recorded.
- ❖ At the time of the initial contact, parents had been asked to estimate the date of stuttering onset via Yairi & Ambrose's (1992) "bracketing" procedure. Parents were asked if any maternal or paternal family member currently stutter or stuttered, to estimate genetic predisposition.
- ❖ Follow-up contacts were successful for 33/48 children.
- ❖ **Table 1** displays the demographics (continuous variables)
- ❖ **Table 2** displays subgroups (dichotomous variables). Nonparametric statistics (chi-square; Mann Whitney *U*) were used because normal distribution could not be assumed.

Table 1: Demographics of sample (n = 48)

	Age at Dx	Age of Onset	Time since Onset	Stutter freq. / 100 wds	% Stutt. Prolong (n = 36)
Mean	54 mos (4;6)	36 mos (3;0)	19 mos	10.4	23.5%
Median	47 mos (3;11)	33 mos (2;9)	15 mos	9.0	18.5%
Mode	62 mos (5;2)	30 mos (2;6)	9 mos	4.0	23.0%
Range	2;6 - 9;8	1;2 - 7;0	1-86 mos	2.0 - 30.0	3.4 - 70%

Results

- ❖ **Figure 1** shows that appropriate diagnostic decisions were made. None of the 5 children for whom 'No Tx' was recommended persisted in stuttering (n = 33). Services are currently occurring or being offered for the 6 children who have persisted in stuttering.
- ❖ **Figure 2**, however, shows that for parents who discontinue therapy services, significantly ($\chi^2 = 9.69$; $p = 0.001$; $n = 26$) less recovery is likely for their children who stutters.
- ❖ Girls began stuttering significantly ($U = 98.0$; $p = 0.02$) earlier ($Mdn = 29$ mos; $Range = 14 - 36$ mos; $n = 10$) than did boys ($Mdn = 34$ mos; $Range = 22 - 84$ mos; $n = 38$).
- ❖ Children who were reported to have recovered from stuttering were significantly ($U = 26$; $p = 0.01$) younger at stuttering onset ($Mdn = 32$ mos; $Range = 14-67$; $n = 27$) than were children who persisted ($Mdn = 44.5$ mos; $Range = 33 - 84$ mos; $n = 6$).
- ❖ Children for whom 'No Tx' was recommended were significantly ($U = 19.5$; $p = 0.000$) lower in documented stutter frequency ($Mdn = 3.5$; $Range = 2-6$; $n = 8$) than children for whom Tx was recommended ($Mdn = 10.0$; $Range = 4-30$; $n = 40$).
- ❖ There were no other significant differences between the two independent variables (Tx v. NoTx; Persistence v. Recovery) and the various dependent variables listed in Table 1 & Table 2.
- ❖ It is noteworthy that all 6/6 children who persisted had parents who reported consistent stuttering since onset.

Table 2: Subgroups of Sample

Consistent stuttering reported = 38/48 (.81)	Concomitant disorder(s) = 15/48 (.31)
Inconsistent stuttering reported = 10/48 (.19)	No Concom. disorder(s) = 33/ 48 (.69)
Male = 38/48 (.79);	Aware of stuttering = 27/48 (.56)
Female = 10/48 (.21) 5:1 ratio	Unaware of stuttering = 21/48 (.44)
Fewer Units of repetitions (1 -3) = 26/41 (.63)	Tx recommended = 40/48 (.83)
More Units of repetitions (4+) = 15/41 (.37)	No Tx recommended = 8/48 (.17)
Unknown = 7/48 (.15)	
Predisposition known = 18/48 (.37)	Recovered (Spontaneous & Tx) = 27/33 (.82)
No Predisposition/Unknown = 30/48 (.63)	Persistent (Inc. Current Tx) = 6/33 (.18)
	Known / F/U Contact = 33/48 (.69)
	Unknown / No F/U Contact = 15/48 (.31)

Figure 1

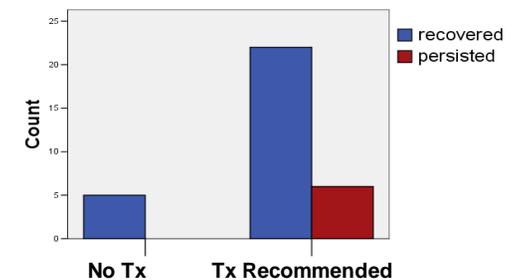
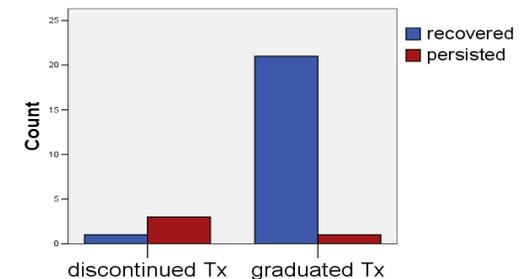


Figure 2



Discussion

- ❖ Many of our findings corroborate those of Yaruss et al. (1998) and Yairi and Ambrose (2005).
- ❖ Therapy services should lessen the negative effect of certain risk factors, which would explain why we did not find any significant relationships between risk factors and persistence.
- ❖ Future research questions should address the stuttering frequency measure. While it factored significantly into Tx vs. No Tx decisions, it has not been found to be a risk factor in predicting persistence (Yairi & Ambrose, 2005).

References

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