

# RELEVANT FINDINGS FROM THE CLINICAL HISTORY OF CLUTTERERS

## *Achados relevantes da história clínica de taquifêmicos*

Bruna Antonini Santana<sup>(1)</sup>, Cristiane Moço Canhetti de Oliveira<sup>(2)</sup>

### ABSTRACT

**Purpose:** to characterize the relevant findings of the clinical history of adults who clutter. **Methods:** participants were 8 adults who clutter (AWC), with ages between 8 and 39 years old, which 7 were men. The inclusion criteria were: complaint of fast speech rate, with damages in the communication; presence of excessive other disfluencies; score above 120 in the Predictive Cluttering Inventory. Data were gathered by clinical and familial history, assessment of fluency and Predictive Cluttering Inventory. **Results:** the familial history was positive for fluency disorders for all subjects, whereas 3 for cluttering and 5 for stuttering. According to the complaint, 100% reported fast speech rate and 50% reported impairments in speech intelligibility. All the AWC showed awareness of the speech difficulty and presented some strategy of self-monitoring. Information about language - cognition showed that the majority of the adults reported word-finding problems, excessive revisions, interjections/fillers and hesitations in the speech. **Conclusion:** the main findings of the clinical history from AWC were: positive familial history for fluency disorders; the beginning of the manifestations was in the childhood without apparent cause; complaints of fast speech rate and impairments in speech intelligibility; improvement of the clinical status during the years, which may be associated with an awareness of the speech difficulty and ability of self-monitoring; inappropriate articulation, prosody and writing; word-finding problems; respiratory-speech-articulatory incoordination, and presence of anxiety.

**KEYWORDS:** Speech, Language and Hearing Sciences; Speech; Diagnosis; Speech Disorders; Anamnesis.

### ■ INTRODUCTION

Cluttering is a fluency disorder wherein segments of conversation in the speaker's native language typically are perceived as too fast overall, too irregular, or both. The segments of rapid and/or irregular speech rate must further be accompanied

by one or more of the following symptoms: excessive disfluency; excessive omission of syllables, and/or abnormal pauses, syllable stress or speech rhythm<sup>1</sup>.

Generally, cluttering occurs with stuttering disorder, attention-deficit/hyperactivity disorder (ADHD), dyslexia and/or autistic spectrum disorder deficit<sup>1</sup>. Thus, the pure cluttering is rare<sup>2</sup>.

This communication disorder is considered multidimensional and complex, because its features encompass the main aspects of communication: speech rate, speech intelligibility, prosody, articulation, formulation of language and pragmatic<sup>2</sup>. Therefore, cluttering should be observed since the diagnostic process, broadly comprising the various dimensions of communication, whether oral language, written language, speech, articulation and / or hearing abilities, thus providing a more effective therapy<sup>3</sup>.

The main features of cluttering are: excessive disfluencies in speech<sup>3-6</sup>, rapid and / or irregular

<sup>(1)</sup> Curso de Fonoaudiologia da Faculdade de Filosofia e Ciências da Universidade Estadual Paulista - UNESP, Marília, SP, Brasil.

<sup>(2)</sup> Departamento de Fonoaudiologia e da Pós-Graduação em Fonoaudiologia da Faculdade de Filosofia e Ciências da Universidade Estadual Paulista - UNESP, Marília, SP, Brasil.

Source of financial support: FAPESP - Scientific Initiation Scholarship Process No. 2012/00541-9.

This work was presented in poster format at the 21st Brazilian Congress of Speech Pathology and 2nd Ibero-American Congress of Speech Pathology.

Conflict of interest: non-existent

speech rate<sup>3,4,7,8</sup> and decreased intelligibility<sup>4</sup>. It is also believed that there is an interaction between these manifestations, for example, rapid speech rate could provide insufficient time for the speaker to organize and make the emissions, thereby increasing the amount of speech disfluency<sup>7</sup>.

Other manifestations often found in cluttering, are deficits in oral language<sup>2,9</sup>, in written language<sup>10</sup> and articulatory imprecisions and misarticulation<sup>4, 7</sup>.

To evaluate cluttering, the use of the Predictive Cluttering Inventory<sup>11</sup> to analyze the most important features of the disorder and confirmation of diagnosis is indicated. Total score between 80 and 120 suggests the presence of both, stuttering and cluttering, and score above 120 suggests cluttering diagnosis<sup>11</sup>.

Descriptive analyzes of various clinical manifestations of individuals complaining of cluttering, are rare. Therefore, the aim of this research was to characterize the relevant findings from the clinical history of adults who clutter.

## ■ METHODS

This study was approved by the originating institution's Research Ethics Committee under Protocol n° 0516/2012. To participate in the study, adults were informed about the study objectives and the procedures adopted for the approval, and signed the Informed Consent Form (ICF), before starting the study. All the recommendations of Resolution No. 196/96 of the National Health Council were followed.

This research consists in an experimental and cross-sectional study of adults who clutter, realized in the Laboratory for the Study of Fluency - Study of Education and Health Center, Universidade Estadual Paulista, FFC - Marília.

The sample consisted of 8 adults who clutter, aged between 18 and 39 years (mean age 25.25 years, SD = 9.00), seven males and one female, from the Laboratory for the Study of Fluency, Study of Education and Health Center (CEES - Marília - UNESP). The prevalence of pure cluttering is rare<sup>1</sup> and for this reason, the sample was reduced.

The inclusion criteria of adults, were: to be native speaker of Brazilian Portuguese; pursue rapid speech rate with impairment in communication, by the individual himself; present disfluent speech with excessive common disfluency; present less than 3% of stuttering-like disfluencies, in order to be discarded associated stuttering; score above 120 in the Predictive Cluttering Inventory<sup>11</sup>, suggesting cluttering diagnosis.

The following exclusion criteria were established: absence of any genetic or neurological disorder,

such as: dystonia, extra-pyramidal disorders, mental retardation, epilepsy disorder, attention-deficit/hyperactivity disorder (ADHD); psychiatric symptoms or conditions; presence of conductive or sensorineural hearing loss; and other relevant conditions that could cause errors in diagnosis.

The analysis of the clinical history was realized with the adults, themselves, directed to issues of personal identity and the history of speech-language morbidities. This interview aimed to obtain data on the emergence of the disorder, age, the duration of manifestations, the presence of physical and / or psychosocial stressors related to onset, the main symptoms, the current characterization and clinical course, over the years, the presence and characterization of disfluency, speech rate and regularity, intelligibility and other aspects of speech. Information about oral language, as organization and lexical access difficulty, breathing, articulation, prosody and pragmatics were also collected. Finally, data related to written language, to the difficulty of communication awareness, attentiveness, monitoring, and the presence of other disorders that could affect the results of the assessment, for example, possible neurological, auditory, cognitive and / or visual deficits, were investigated.

For the realization of the familial history, information about the familial antecessors was collected at the end of the clinical history. The adults were questioned about the existence of someone in the family with cluttering or rapid speech rate. To assist adults in their responses, the researcher presented a standard definition of cluttering followed by examples to illustrate it.

Thus, cluttering was defined as "a communication disorder in which the person speaks too fast, in all or in some moments, and presents some pauses or disruptions on the flow of speech, which can impair comprehension of the message" (adapted from St Louis and Schulte)<sup>1</sup>. Examples of common disfluencies, such as: hesitations, interjections, revisions, unfinished words, word repetitions, phrase repetitions and sentences repetitions, were provided.

All adults were filmed so as to obtain samples containing 200 fluent spontaneous speech syllables. The speech of adults could only be interrupted (with questions and comments), where there was a need to encourage production, in order to reach the required number of syllables for analysis.

Speech samples were transcribed in full, considering the fluent and non-fluent syllables. Subsequently, analysis was undertaken to characterize the types of disfluency, according to the following description<sup>12</sup>:

- Common disfluencies: hesitations, interjections, revisions, unfinished words, word repetitions, phrases repetitions and segments.
- Stuttering-like Disfluencies: repetitions of sounds, syllables repetitions, prolongations, blocks, pauses and intrusions.

To characterize the frequency of disruptions, the following measures were used: percentage of common disfluencies, percentage of stuttering-like disfluencies and percentage of speech discontinuity: The speech rate was measured according to flow of syllables and words per minute.

The Predictive Cluttering Inventory was administered to adults who clutter for analysis of the strongest features of the disorder and confirmation of diagnosis. Total score between 80 and 120 indicates presence of stuttering / cluttering and score above 120 suggests cluttering diagnosis<sup>11</sup>.

Statistical analysis of the data collected in this study was analyzed descriptively. Data were entered into Excel spreadsheets, Windows 2010, in order to

store information properly. For quantitative variables, the mean, median, minimum, maximum value and standard deviation were calculated. For qualitative variables, absolute and relative frequencies were calculated.

## ■ RESULTS

Results were presented into tables. The majority of the sample comprised males (87.5%), aged between 18 and 39 years. The percentage of speech discontinuity ranged from 10% to 14%, of the common disfluency from 10% to 13%, while the percentage of stuttering-like disfluency ranged from 0 to 2%. As for the speech rate, the flow of syllables and words per minute ranged respectively from 218 to 315 and from 122 to 180. Total score of the Predictive Cluttering Inventory, ranged from 124 to 148, suggesting cluttering for all cases (Table 1).

**Table 1– distribution of adults who clutter regarding to the gender, age, measures of the fluency assessment and score of the predictive cluttering inventory (pci)**

Participant	Gender	Age	%DS	%CD	%SLD	SPM	WPM	PCI
1	M	22	12	10	2	235	122	142
2	M	37	10	10	0	273	158	124
3	M	39	11	10,5	0,5	315	180	129
4	M	18	11	11	0	240	168	142
5	M	18	11,5	10	1,5	238	165	130
6	M	19	11	10	1	315	178	148
7	F	31	11,5	11,5	0	218	165	129
8	M	18	14	13	1	221	162	141
Mean		25,25	11,5	10,75	0,75	256,87	162,25	135,62
Standard Deviation		9	1,16	1,06	0,75	39,52	17,92	8,6

Note: M = male; F = female; %DS = percentage of discontinuity of speech; %CD = percentage of common disfluencies; %SLD = percentage of stuttering-like disfluencies; SPM = syllables per minute; WPM = words per minute; PCI = total score of Predictive Cluttering Inventory.

Table 2 presents the relevant information from the clinical history of clutterers. The family history was positive for fluency disorders in all cases, 3 for cluttering and 5 for stuttering. The beginning of speech difficulties has occurred in childhood, for most of the sample, and lasted for more than 1 year. All adults reported presence of anxiety and perfectionism, and most of them also have reported other important features about personal factors, such

as: shame, impatience, restlessness, hyperactivity, irritability, shyness, insecurity and distraction.

For half of the sample, cluttering was noted by the parents. Referring to comments from listeners, most adults reported repetition of the utterance, difficulties in speech intelligibility, complaints of rapid speech rate, and the presence of hesitations and repetitions of words (Table 2).

**Table 2 – Distribution of the adults who clutter regarding the informations about the familial history, age in the beginning of the cluttering, duration of the cluttering, personal aspects, person who perceived the speech problem and comments from listeners in relation to the their speech.**

Relevant information	N	%
<b>Familial history</b>		
Positive for cluttering	3	37,5
Positive for stuttering	5	62,5
<b>Age in the beginning of the cluttering</b>		
Before 12 years old	6	75,0
After dos 12 years old	1	12,5
No informed	1	12,5
<b>Duration of the cluttering</b>		
Less than 1 year	0	0
More than 1 year	7	87,5
No informed	1	12,5
<b>Personal aspects</b>		
Anxiety and perfectionism	8	100
Shame and impatience	7	87,5
Restlessness, hyperactivity, irritability and shyness	6	75
Distraction and insecurity	5	62,5
Low self-esteem	4	50
Fear and excessive sensitivity	3	37,5
<b>People who perceived the speech problem</b>		
Parents	4	50,0
Self-adult who clutter	2	25,0
Friends	1	12,5
No informed	1	12,5
<b>Comments from listeners in relation to the speech</b>		
Reported repetition of the utterances	7	87,5
Difficulties in the speech intelligibility	7	87,5
Rapid speech rate	7	87,5
Hesitations and word repetition	5	62,5
Inappropriate topic maintenance	4	50,0
Inappropriate prosody	4	50,0

Note: N = number; % = percentage.

Regarding language complaint, the entire sample reported presence of rapid speech rate, and half expressed complaint related to impairments in intelligibility (Table 3). The minority of adults reported having difficulty speaking and speech disfluencies. For most of the investigated population, it was observed that difficulty in speech has started with no association to psychosocial stress. Half of adults reported that the manifestations improved throughout the years.

The results for the presence of concomitant physical and muscle tension showed that most adults did not report presence of these occurrences. Cases that have reported presence of muscle tension, informed its occurrence in the laryngeal and / or neck muscles.

Most of the adults reported impairments in their personal life, due to communication difficulties presented, and the majority informed having experienced *bullying* in the school environment and concern about the reaction of the listeners and impaired quality of life.

**Table 3– Distribution of the findings regarding to speech-language complaints, stress factors, evolution of the clinical manifestation, physical concomitants, muscular tension and personales impairments due the cluttering**

	Yes		No	
	N	%	N	%
<b>Speech-language complaints</b>				
Rapid speech rate	8	100	0	0
Impartments in the speech intelligibility	4	50	4	50
Difficulties to speech	3	37,5	5	62,5
Speech disfluencies	2	25	6	75
<b>Occurrence of psychosocial stress factors near the beginning of the cluttering</b>				
	2	25	6	75
<b>Evolution of the clinical manifestation</b>				
Improved	4	50	0	0
Stable	2	25	0	0
Worsened	2	25	0	0
<b>Physical concomitants</b>				
	1	12,5	7	87,5
<b>Muscular tension</b>				
	3	37,5	5	62,5
<b>Personal impairments due the cluttering</b>				
<i>Bullying</i> in the school	6	75	2	25
Preoccupations with the reactions of the listeners	6	75	2	25
Impairments in quality of life	6	75	2	25

Note: N = number; % = percentage.

Tables 4 to 6 were arranged according to the proposal of the Predictive Cluttering Inventory division, which selects relevant information to the diagnosis of the disorder, in 4 areas: pragmatic, motor - speech, language - cognition and motor coordination - writing problems.

In the pragmatic area, all cases presented speech problems awareness, and performed a self-monitoring strategy. The majority showed speech improvement when concentrated, and anxiety in relation to speech. According to perceptions of the clutterers, as the motor aspect - speech, the rapid speech rate and the unintelligibility were irregular. It was also mentioned by more than half of the adults,

improper use of prosody, and half of them reported articulatory difficulties. Information concerning the use of language-cognition showed that the characteristics described by most adults were related to word-finding problems, presence of excessive revisions, interjections and hesitations in speech flow as well as distractibility (Table 4).

Information collected regarding motor coordination - writing problems, showed that difficulties for using proper punctuation in writing were reported by most adults, and half of them also reported difficulties for using accents. Information on the motor skills showed that half reported presence of respiratory-speech articulatory incoordination (Table 4).

**Table 4 – Distribution regarding the informations collected in the area of pragmatic, motor - speech, language - cognition and motor coordination – writing problems**

	Yes		No	
	N	%	N	%
<b>Pragmatic</b>				
Speech problems awareness	8	100	0	0
Effective self-monitoring skills	8	100	0	0
Speech better under pressure	7	87,5	1	12,5
Anxiety regarding speaking	6	62,5	3	37,5
Effort during the disfluencies	3	37,5	5	62,5
<b>Motor – speech</b>				
Inappropriate prosody	6	75	2	23
Articulation errors	4	50	4	50
Rapid speech rate				
Almost always	4	50	0	0
Always	2	25	0	0
Sometimes	1	12,5	0	0
Almost never	1	12,5	0	0
Unintelligible speech				
Sometimes	4	50	0	0
Never	3	37,5	0	0
Frequently	1	12,5	0	0
<b>Language – cognition</b>				
Words-finding problems	5	62,5	3	37,5
Excessive revisions, interjections and hesitations	5	62,5	3	37,5
Distractibility	5	62,5	3	37,5
Seems to verbalize before adequate thought formulation	3	37,5	5	62,5
Poor concentration	3	37,5	5	62,5
Language is disorganized	3	37,5	5	62,5
<b>Motor coordination – writing problems</b>				
Respiratory-speech articulatory incoordination	4	50	4	50
Messy	3	37,5	5	62,5
Poor motor control	3	37,5	5	62,5
Delay in walking	1	12,5	4	50
No informed	3	37,5	0	0
Delay in speech	1	12,5	4	50
No informed	3	37,5	0	0
Poor punctuation	6	75	2	25
Inappropriate accents	4	50	4	50
Writing includes omission or transposition of letters, syllables, or words	1	12,5	7	87,5

Note: N = number; % = percentage.

The main manifestations described by the clutterers were organized into Table 5. In motor area – speech, the most frequent characteristics in the population of clutterers were: Rapid and / or irregular speech rate, lack of pauses, excessive common disfluencies and presence of condensed words. In the pragmatic area, it can be observed little or no effort during disfluencies, improvement of speech under pressure and word-finding problems (Table 5).

Concerning the area of language – cognition it is noteworthy the most frequently features: excessive revisions, interjections and hesitations in speech flow, disorganized or confusing language, and speech which seemed to occur before thought was completed. Manifestations related to the motor coordination area - writing problems were varied, as irregular respiration and the presence of fast or impulsive motor activities, were the most frequently mentioned by subjects (Table 5).

**Table 5 – Main manifestations of the adults who clutter regarding to the characteristics of the predictive cluttering inventory**

Areas of PCI	Descriptions of the manifestations	Score
<b>Participant 1</b>		
<b>Motor – speech</b>	Irregular speech rate; speaks in spurts or bursts; rapid speech rate; condenses words; lack of the pauses in the communication.	
<b>Pragmatic</b>	Speech better under pressure; compulsive talker; word-finding problems.	
<b>Language – cognition</b>	Many revisions; interjections; filler words; seems to verbalize before adequate thought formulation.	
<b>Motor coordination – writing problems</b>	Motor activities accelerated or impulsive; respiratory dysrhythmia.	
<b>Score Total</b>	<b>142</b>	
<b>Participant 2</b>		
<b>Motor – speech</b>	Rapid speech rate; speech rate progressively increases; repetition of multi-syllabic words and phrases.	
<b>Pragmatic</b>	Lack of effective self-monitoring skills; does not recognize or respond to listener's visual or verbal feedback; little or no excessive effort observed during disfluencies.	
<b>Language – cognition</b>	Many revisions; interjections; filler words; seems to verbalize before adequate thought formulation; distractible; language is disorganized.	
<b>Motor coordination – writing problems</b>	Motor activities accelerated or impulsive.	
<b>Score Total</b>	<b>124</b>	
<b>Participant 3</b>		
<b>Motor – speech</b>	Irregular speech rate; rapid speech rate; festinating; irregular melody or stress pattern; lack of pauses in the communication.	
<b>Pragmatic</b>	Little or no excessive effort observed during disfluencies; speech better under pressure; inappropriate turn-taking.	
<b>Language – cognition</b>	Inappropriate topic introduction, maintenance, or termination; seems to verbalize before adequate thought formulation; language is disorganized; many revisions; interjections; filler words.	
<b>Motor coordination – writing problems</b>	Respiratory dysrhythmia.	
<b>Score Total</b>	<b>129</b>	

Areas of PCI	Descriptions of the manifestations	Score
<b>Participant 4</b>		
<b>Motor – speech</b>	Irregular and rapid speech rate; Speech rate progressively increases; articulation errors; condenses words; lack of pauses in the communication; repetition of multi-syllabic words and phrases.	
<b>Pragmatic</b>	Little or no excessive effort observed during disfluencies; lack of effective self-monitoring skills; inappropriate turn-taking; speech better under pressure.	
<b>Language - cognition</b>	Language is disorganized; many revisions; interjections; filler words; distractible.	
<b>Motor coordination – writing problems</b>	Respiratory dysrhythmia.	
<b>Score Total</b>	<b>142</b>	
<b>Participant 5</b>		
<b>Motor - speech</b>	Rapid speech rate; festinating; inappropriate pauses; excessive disfluencies.	
<b>Pragmatic</b>	Inappropriate turn-taking; lack of effective self-monitoring skills.	
<b>Language - cognition</b>	Many revisions; interjections; filler words; confused wording; seems to verbalize before adequate thought formulation.	
<b>Motor coordination - writing problems</b>	Respiratory-speech articulatory incoordination.	
<b>Score Total</b>	<b>130</b>	
<b>Participant 6</b>		
<b>Motor – speech</b>	Irregular and rapid speech rate; festinating; inappropriate pauses; excessive disfluencies.	
<b>Pragmatic</b>	Compulsive talker; inappropriate turn-taking; word-finding problems.	
<b>Language – cognition</b>	Many revisions; interjections; filler words; language is disorganized; poor language formulation; Inappropriate topic introduction, maintenance, or termination.	
<b>Motor coordination – writing problems</b>	Motor activities accelerated or impulsive; poor motor control for writing; writing includes omission or transposition of letters, syllables, or words.	
<b>Score Total</b>	<b>148</b>	
<b>Participant 7</b>		
<b>Motor – speech</b>	Rapid speech rate; Irregular speech rate; condenses words.	
<b>Pragmatic</b>	Speech better under pressure; little or no excessive effort observed during disfluencies.	
<b>Language – cognition</b>	Inappropriate topic introduction, maintenance, or termination; seems to verbalize before adequate thought formulation.	
<b>Motor coordination – writing problems</b>	Writing includes omission or transposition of letters, syllables, or words.	
<b>Score Total</b>	<b>129</b>	
<b>Participant 8</b>		
<b>Motor – speech</b>	Initial loud voice trailing off to unintelligible murmur; festinating; rapid speech rate; lack of pauses in the communication; irregular speech rate.	
<b>Pragmatic</b>	Lack of awareness of own communication errors or problems; compulsive talker; word-finding problems.	
<b>Language – cognition</b>	Language is disorganized; many revisions; interjections; filler words; Inappropriate topic introduction, maintenance, or termination.	
<b>Motor coordination – writing problems</b>	Respiratory dysrhythmia; Writing includes omission or transposition of letters, syllables, or words.	
<b>Score Total</b>	<b>141</b>	

Note: PCI = Predictive Cluttering Inventory



The total average score on the Inventory Predictive Cluttering Inventory was 135.63 (Table 6). The maximum total score, of the PCI is 198. In reference to pragmatic and motor - speech, the maximum score that can be achieved is 60, for each, in the area of language - cognition may reach 48, and

in the area referring to motor coordination- writing problems, the highest score is 30. Accordingly, the data in Table 6 showed that, in descending order, the most affected areas in this protocol were: motor - speech, language - cognition, pragmatic and motor coordination - writing problems.

**Table 6- Distribution of the mean and standart-desviation of the scores in the predictive cluttering inventory**

Scores	N	Mean	Standard Deviation
Pragmatic	8	38,50	3,34
Motor – speech	8	46,75	4,30
Language- cognition	8	33,00	4,28
Motor coordination – writing problems	8	17,38	2,07
Score total	8	135,63	8,60

Note: N = number.

## ■ DISCUSSION

Cluttering is a rare fluency disorder and is not deeply investigated. In this sense, information described by the adults, themselves, with cluttering, should be characterized for better comprehension of the clinical manifestations by the speech therapists. In this study the relevant findings from the clinical history of 8 adults with cluttering were characterized. There was predominance of males in the sample studied.

Data collected from fluency assessment, showed that the group was heterogeneous, as some presented speech rate values and speech discontinuity close to the ones considered as normal<sup>12</sup>. However, others expressed higher values than the normative data, confirming previous studies<sup>3-6,8</sup>. This finding supports the literature, considering that cluttering clinical aspect is heterogeneous<sup>13</sup>. It is noteworthy that, according to the definition of cluttering most accepted by the scientific community, the flow of syllables per minute should not necessary be increased<sup>1</sup>. In this sense, an adult showed the flow of syllables per minute within the confidence interval of normality. The results of this study reinforce previous findings that the irregularity in speech rate is a typical feature of cluttering, which may interfere in the fluency assessment of this population<sup>8</sup>.

The values found in this Predictive Cluttering Inventory were higher than 120, according to the inclusion criteria, with great variability, reinforcing the heterogeneity of the studied group.

The family history of adults showed that positive hereditary for fluency disorders (stuttering and cluttering) was present in all cases. Therefore, genetic fluency disorders is an important aspect to be considered in the clinical cluttering history.

The onset of the disorder occurred mainly in childhood, often noticed by parents, although they had sought care in adulthood. The emergence of the disorder was not often associated with any psychosocial stressful factor, highlighting the organic nature of cluttering<sup>13</sup>. Therefore, the person with cluttering lived several years with the disorder, and often heard comments from listeners, on complaints of speech intelligibility and rapid speech rate. This fact may have helped all clutterers to report that they had developed some awareness about the difficulty of speech and were able of self-monitoring (in the opinion of the clutterers). However, only half of the sample reported clinical improvement. It is noteworthy, therefore, the importance of speech therapy for reducing the clinical cluttering manifestations.

Findings relating to speech difficulty awareness, described by the investigated clutterers, may justify the concern about the reaction of the listener, reported by the majority of the sample. However, most adults did not report presence of muscle tension or physical concomitants.

Data on the comments of listeners showed that, for most of them, people observed the rapid speech rate and decreased speech intelligibility, and therefore requested repetition of the message. Similar information was found in the language complaint, because all of them expressed

complaints of rapid speech rate and half presented complaints of impaired speech intelligibility. These data are consistent with the researches in literature<sup>4</sup>.

In reference to personal factors or personality described by clutterers, all of them reported feelings of anxiety and perfectionism. Often feelings concerning shame, impatience, restlessness, distractibility, were also reported by adults. Information on these aspects was not found in the most recent compiled literature, about cluttering.

Findings related to articulatory difficulties corroborate to a study which reported presence of articulatory difficulty of clutterers, as omission of unstressed syllables, wheezing and consonants omission difficulty<sup>7</sup>. Another research also highlights the imprecise articulation as an important cluttering manifestation<sup>4</sup>.

The wide spectrum of clinical manifestations described by adults with cluttering corroborates to the complexity of the disorder cited in the literature<sup>2,3</sup>. In addition to the changes discussed above in respect to speech, there is the spoken language, prosody and writing. Changes in language are frequently cited in cluttering clinical aspect<sup>2,7</sup>. In addition, excessive common disfluency also expressed by clutterers, also represent language difficulties, not motor<sup>2,8</sup>. It is noteworthy that, concerning language – cognition, the difficulty of coordinating thought with speech, was often cited by adults with cluttering. This finding supports the literature which described, in cluttering, there may occur lack of synchrony between the organization and elaboration of the message, during the sequencing of ideas<sup>5</sup>.

The inadequacy of reported prosody in oral language results in changes in writing especially in accent inappropriate use, since the clutterer does not recognize, nor properly uses the syllabic stress. Lack of pauses and rapid speech rate, cause writing difficulties reported by clutterers. The findings on reading and writing confirm the previous outcomes for clutterers<sup>10</sup>.

It is important to highlight that the interaction between the various manifestations which occur in speech, as respiratory-speech articulatory incoordination, rapid speech rate, inadequate prosody, excessive disfluencies and articulatory difficulties, in addition to the manifestations of language, such as difficulty to lexical access and confusing language, result in impairments in speech intelligibility.

In summary, these findings present important clinical implications, considering that they contribute, either to assist the realization of cluttering diagnosis, as well as the elaboration of therapeutic planning. One of the limitations of the study consists on the utilization of information based on reports of adults with cluttering, rather than assessment of these manifestations. Additional investigations may confirm these findings and thus provide a better comprehension of cluttering clinical aspects.

## ■ CONCLUSION

The main relevant findings of clinical history of adults with cluttering, were: positive family history for fluency disorders; emergence of manifestations in childhood without apparent cause; complaining of rapid speech rate and impaired speech intelligibility; clinical improvement over the years, which may be associated with difficulty awareness and ability to self-monitoring; changes in articulation, in prosody and writing; difficulties in lexical access; respiratory-speech articulatory incoordination, and presence of anxiety. Therefore, a wide spectrum of speech manifestations, in oral and written language, was reported by adults with cluttering.

## ■ ACKNOWLEDGMENTS

We would like to thank the Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP) for their support with the development of this research, under process number 2012/00541-9.

**RESUMO**

**Objetivo:** caracterizar os achados relevantes da história clínica de adultos com taquifemia. **Métodos:** participaram 8 adultos com taquifemia, de 18 a 39 anos, sendo 7 do gênero masculino. Os critérios de inclusão foram: apresentar queixa de taxa de elocução aumentada, com prejuízo na comunicação; manifestar excesso de disfluências comuns; escore acima de 120 no Inventário Preditivo de Taquifemia. A coleta de dados foi realizada por meio do levantamento da história clínica e familiar, a avaliação da fluência e, aplicação do Inventário Preditivo de Taquifemia. **Resultados:** o histórico familiar foi positivo para os distúrbios da fluência em todos os casos, sendo 3 para taquifemia e 5 para gagueira. Quanto à queixa, 100% informaram presença de taxa de elocução aumentada e 50% manifestaram queixa relacionada ao prejuízo na inteligibilidade. Todos os casos apresentaram consciência da dificuldade de fala e realizavam alguma estratégia de automonitoramento. Informações relativas ao uso da linguagem–cognição mostraram que a maioria dos adultos relataram dificuldades de encontrar palavras, presença de excessivas revisões, interjeições e hesitações na fala. **Conclusão:** os principais achados relevantes da história clínica de adultos com taquifemia foram: histórico familiar positivo para os distúrbios da fluência; surgimento das manifestações na infância sem causa aparente; queixa de taxa de elocução aumentada e prejuízo na inteligibilidade da fala; melhora do quadro clínico no decorrer dos anos, que pode estar associada à consciência da dificuldade e habilidade de automonitoramento; alterações na articulação, na prosódia e na escrita; dificuldades de acesso ao léxico; incoordenação pneumofonoarticulatória, e presença de ansiedade.

**DESCRITORES:** Fonoaudiologia; Fala; Diagnóstico; Distúrbios da Fala; Anamnese

**■ REFERENCES**

1. St Louis KO, Schulte K. Defining cluttering: The lowest common denominator. In: Ward D, Scott S, editors. Cluttering: A handbook of research, intervention and education. New York: Psychology Press; 2011. p. 233-53.
2. Bretherton-Furnee J, Ward D. Lexical access, story re-telling and sequencing skills in adults who clutter and those who do not. *J Fluency Disord.* 2012;37(4):214-24.
3. Oliveira CMC, Broglio GAF, Bernardes APL, Capellini SA. Relação entre taxa de elocução e descontinuidade da fala na taquifemia. *CoDAS.* 2013;25(1):59-63.
4. LaSalle LR, Wolk L. Stuttering, cluttering, and phonological complexity: Case studies. *J Fluency Disord.* 2011;36:285-9.
5. Myers FL, Bakker K, St Louis KO, Raphael LJ. Disfluencies in cluttered speech. *J Fluency Disord.* 2012;37(1):9-19.
6. Souza JB, Paschoalino FC, Cardoso VM, Oliveira CMC. Frequência e tipologia das disfluências: análise comparativa entre taquifêmicos e gagos. *Rev CEFAC.* 2013;15(4):857-86.
7. Van Zaalen Y, Wijnen F, Dejonckere PH. Differential diagnostics characteristics between cluttering and stuttering - part one. *J Fluency Disord.* 2009;34:137-46.
8. Oliveira CMC, Bernardes APL, Broglio GAF, Capellini SA. Perfil da fluência de indivíduos com taquifemia. *Pró-Fono R Atual Cient.* 2010;22(4):445-50.
9. Van Zaalen Y, Wijnen F, Dejonckere PH. Differential diagnostics characteristics between cluttering and stuttering - part two. *J Fluency Disord.* 2009;34:146-54.
10. Oliveira CMC, Capellini AS, Kanabben R, Borges L. Avaliação da leitura e escrita em taquifêmicos. *J Bras Fonoaudiol.* 2000;1:48-54.
11. Daly DA. Predictive of Cluttering Inventory (PCI) [homepage na Internet]. Pennsylvania: International Cluttering Association- ICA, [atualizada em 2006; acesso em 2013]. Disponível em: <http://associations.missouristate.edu/ICA/>.
12. Andrade CRF. Perfil da fluência da fala: parâmetros comparativos diferenciados por idade para crianças, adolescentes, adultos e idosos [CD-ROM]. Barueri (SP): Pró-Fono; 2006.
13. Alm PA. Cluttering: a neurological perspective. In: Ward D, Scott KS, editors. Cluttering: a handbook of research, intervention and education. New York: Psychology Press; 2011. p. 3-28.

Received on: November 21, 2013

Accepted on: March 14, 2014

Mailing address:

Cristiane Moço Canhetti de Oliveira

Av. Hygino Muzzi Filho, 737, Vila Universitária

Marília – SP – Brasil

CEP: 17525-000

E-mail: [cmcoliveira@marilia.unesp.br](mailto:cmcoliveira@marilia.unesp.br)