

## Original articles

# Discourse analysis of individuals with fluent aphasia and slight oral comprehension difficulty

*Análise do discurso de indivíduos afásicos fluentes e com leve dificuldade de compreensão oral*

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## ABSTRACT

**Purpose:** to analyze the narrative, descriptive, conversational and procedural discourse of fluent aphasic individuals and to compare their performance with healthy individuals.

**Methods:** the authors selected by a systematic sample 22 fluent aphasic individuals complaining of discursive difficulty and that presented language disorders poststroke. The individuals are or were in treatment in the institution of origin. The aphasic individuals were matched in age and education. Both groups were subjected to a protocol of oral discursive tasks to the evaluation of narrative, descriptive, conversational and procedural discourse.

**Results:** in most of the investigated variables there were statistically significant differences in all types of discourse in the quantitative and qualitative analysis.

**Conclusion:** aphasic individuals presented better performance in narrative discourse and greater difficulty in the other discourse tasks, although when comparing their discourse with the healthy individuals' discourse they presented greater difficulty in all the oral discursive genres.

**Keywords:** Language; Speech; Communication; Aphasia; Evaluation; Stroke.

## RESUMO

**Objetivo:** analisar os discursos narrativo, descritivo, conversacional e procedural de indivíduos afásicos fluentes e compará-los com indivíduos saudáveis.

**Métodos:** foram selecionados, por meio de amostragem sistemática, 22 indivíduos afásicos fluentes com queixas de dificuldade discursiva e que apresentam alteração de linguagem pós-acometimento em Sistema Nervoso Central decorrente de Acidente Vascular Encefálico, que estão ou já estiveram em tratamento na instituição de origem. Estes foram pareados a indivíduos saudáveis de mesma idade e escolaridade e ambos os grupos foram submetidos a um protocolo de tarefas discursivas orais para avaliação dos discursos narrativo, explicativo, conversacional e procedural.

**Resultados:** houve diferenças estatisticamente significantes na maioria das variáveis investigadas em todos os tipos de discursos tanto na análise quantitativa quanto na qualitativa.

**Conclusão:** indivíduos afásicos apresentaram maior facilidade no discurso narrativo e maior dificuldade nos demais discursos, porém comparando-os aos indivíduos saudáveis apresentaram maior dificuldade em todos os gêneros discursivos orais.

**Descritores:** Linguagem; Fala; Comunicação; Afasia; Avaliação; Acidente Vascular Encefálico.

## INTRODUCTION

Stroke is considered the second leading cause of death worldwide and is among the most important chronic diseases in Brazil, a major cause of hospitalization and mortality, causing in most patients some kind of physical disability, either partial or complete<sup>1</sup>. In addition to the motor sequelae resulting from the injury, it is common the patient has aphasia, considered a disorder of communication be characterized as a difficulty or inability both oral communication and graphically texts or speeches and words; when diagnosed, it is necessary to start a process of speech rehabilitation<sup>2</sup>.

By following the assumption that it is from the complaint and the demonstrations that conducts the evaluation, we must also understand the language skills when facing the aphasia in order to conduct a proper therapeutic intervention<sup>3</sup>.

The aphasic individuals have language disorders, which involves comprehension and oral and graphic expression, and the development of speech, which can be classified into narrative, procedural, explanatory and conversational<sup>4,5</sup>, which are among the main difficulties presented by the fluent aphasic patient.

Studies have investigated different methods to quantify significant changes communication skills of aphasics adults, which are often not detected in battery standard aphasia tests, these are not always present discursive tasks in their different genres, such as explanatory and procedural, this research set out to do. Therefore, analyze the different oral genres of individuals with aphasia offers greater potential to determine the skills and deficits in aphasics in conditions closer to the natural than such tests<sup>6</sup>.

Some standardized test batteries have discursive tasks. For example, the Boston contains a conversational task and a task description figure. The Montreal-Toulouse battery also includes discursive task. However, not always the kind of discourse analysis proposed in these assessments include the wealth of information that can be extracted in more complex discursive analysis or making use of software that enables investigate in greater detail certain aspects such as this article aims to do. Furthermore, there is a lack of discourse variety of tasks, especially in procedural tasks and explanatory in standardized tests.

Wright (2011)<sup>7</sup> conducted a study and found that the lexical diversity in individuals with aphasia is influenced by the type of discursive evocation of tasks used, ranging from discourses to oral retelling task. Thus, in future research is clinically important for researchers

to establish reliable methods and valid for the analysis of aphasic speech in order to identify linguistic elements make individuals aphasic more effective communicators.

Thus, the aim of this study was to analyze the narrative discourse, descriptive, conversational and procedural fluent aphasic individuals and compare them with healthy individuals.

## METHODS

This study was approved by the Ethics Committee of the Assistência à Criança Deficiente (AACD) under number 040170/2015. It is characterized by an observational cross-sectional study.

### Sample:

It were selected through systematic sampling, 31 fluent aphasic individuals with complaints of discursive difficulty and have post-impairment language disorders in the central nervous system (CNS) due to stroke, which are or have been in treatment in the Assistência à Criança Deficiente (AACD). Of the 31, 09 were excluded from the sample, 02 not fit the inclusion criteria, 07 for not having availability to attend the evaluations, the final composition of the sample was 22 aphasic individuals.

The inclusion criteria of aphasic individuals were present injury Left Hemisphere, to be aphasic with greater difficulty in speaking, fluent, and present slight change listening comprehension. Most of the individuals who made this study had anomia aphasia.

Exclusion criteria of aphasic individuals were present injury of another etiology that were not stroke or injury in the right hemisphere, with psychiatric disorders referred by professionals and those in electronic AACD records, not fluent and have difficulty understanding moderate to severe.

Healthy individuals were selected in health institutions, companies, community centers and community, following the criterion 2: 1, ie each rated aphasic individual were selected two healthy subjects of the same age and education, with a range of up to two years more or less to compare the discourses.

It was used as inclusion criteria for healthy individuals self-reported reading knowledge and previous writing, absence of neurological, psychiatric and / or sensory self-reported, no signs suggestive of cognitive impairment with minimum score on the Mini-Mental State Examination of 26 for individuals with high education and 19 for those with low education<sup>8</sup>,

combined with a minimum score of 7 on the Clock Drawing Test<sup>9</sup>.

Exclusion criteria were adopted risks of brain micro infarction not noticeable (abuse of alcohol, tobacco or drugs), have a history of brain injury and history of psychiatric change.

The characterization of the sample with the mean age and education of aphasic individuals and healthy individuals who composed the groups of this study are presented in Table 1:

**Table 1.** Mean age and years of study of aphasic and healthy individuals

Variable	Individuals	n	Mean	SD	Minimum	Maximum	25th percentile	50th percentile (Median)	75th percentile	p*
Age	Aphasic	22	56.86	9.88	35	82	51.25	55	62.25	0.876
	Healthy	44	56.68	10.27	35	84	51	55	63.25	
	Total	66	56.74	10.07	35	84	51	55	62.25	
Years of study	Aphasic	22	10.45	4.47	2	15	5.75	11	15	0.779
	Healthy	44	10.8	4.97	2	23	6	11	15	
	Total	66	10.68	4.78	2	23	6	11	15	

SD: standard deviation; \*p value < 0.05.  
Mann-Whitney Test

## Procedures

After signing the consent form, the aphasic individuals underwent assessment of language by the Boston test protocol Diagnostic Aphasia Examination (TBDA), which was translated and adapted to Brazilian Portuguese by Radanovick, Mansur and Scaff<sup>10</sup>. The application time with aphasic individuals averaged two sessions being held on different days.

Healthy individuals also signed a consent form and underwent the following instruments applied in the following order: 1) Mini-Mental State Examination - MMSE<sup>11</sup>; 2) clock drawing test<sup>12</sup>; 3) sociocultural questionnaire and health aspects<sup>13</sup>. The mean time for evaluating the application of healthy individuals was 10 minutes.

To obtain all types of speech in both groups, subjects were submitted to evaluation of narrative discourse, descriptive, conversational and procedural (Annex I). All discourses were recorded in MP4 Philips® device for later transcription and analysis.

## Transcript of discourses

The recordings of the speech samples were transcribed orthographically, not being transcribed questions or asides that had no relation to the given stimulus and hesitations, interjections and extensions, which are not considered essential information in

discourse analysis, but changes in the topic stimulation were considered.

Transcripts of Discourses of aphasic individuals were reviewed by a second speech therapist to confirm the identification of transcription and manifestations of the aphasia; when there were conflicting terms or expressions, the two speech therapists checked the fittings of the doubt with a third speech therapist expert in the field to ensure the reliability of discursive analysis.

After the transcripts of different discourses, the words used in each type of speech 2014® were inserted in Excel program for obtaining the rate of occurrence of the words to be selected as key information; that is, words with frequency equal to or higher than 0.80%, some being grouped by relative ideas or synonyms. They were disregarded articles, prepositions, conjunctions and adverbs, because they are not classified as essential units in the speech. The discursive analysis will be better outlined in the item below.

## Discourse analysis

The discursive analysis in this study was guided by the model proposed by Nicholas and Brookshire<sup>14</sup>, which have a system of quantification of key units of speech and can be described as intelligible words in context, but not have accuracy, relevance or relevance to the stimulus. Moreover, in this analysis model are excluded words with closed parts of speech (articles,

prepositions, conjunctions and interjections), plus extensions, hesitations and neologisms.

Thus, also according to Nicholas and Brookshire<sup>14</sup>, they were recorded: time, total number of words, words per minute (pal / min), the total number of essential information (NIE), percentage of essential information (% NIE) and essential information for minute (NIEs / min).

The time was counted from the first enunciation of the individual, following the instruction, and finished so this ended the speech.

Over time, number of words and NIE were calculated three measures: words per minute (pal / min), percentage of essential information (% NIE) and number of essential information per minute (NIE / min).

It also conducted an analysis of the production of discourse, considering: if the person told the story narrated or a related story; if the person described the scene presented or performed another narration; if the person argued and answered the question asked by the valuer; it was reported the procedures required in procedural discourse task or made in the form of narration. In addition, fluency was analyzed, considering the essential information analyzed, and the difficulty, classified as mild, moderate and severe or absent.

Both quantitative and qualitative analysis presented in which discursive oral genres here investigated the fluent selected in this study have greater ease and difficulty compared to healthy individuals of the same age and education.

The results were submitted to statistical analysis to be made relevant analyzes to study.

## Statistical analysis

To check possible differences between aphasic and healthy individuals, we used the Mann-Whitney test for scalar variables of interest, and categorical variables of interest used the Likelihood Ratio Test.

It adopted the significance level of 5% (0.050), for the application of statistical tests.

## RESULTS

The presentation of the results will obey the order mentioned in the method of this study.

Below there is a comparison between the performance of aphasic and healthy individuals in oral speech tasks.

By analyzing Table 2, there were statistically significant differences with respect to time, the number of words per minute, and the information units per minute in oral narrative discourse task.

Below is the comparison of aphasic and healthy individuals in oral speech descriptive task.

In Table 3, there were statistically significant differences with respect to time, the number of words per minute quantity of information units, information percentage of units and units of information per minute in the oral speech descriptive task.

Then shows the comparison between aphasic and healthy individuals in oral conversational speech task.

In Table 4, there were statistically significant differences with respect to time, the number of words per minute quantity of information units, information percentage of units and units of information per minute in the oral conversational speech task.

**Table 2.** Comparing the performance of aphasic individuals and healthy subjects in the oral narrative discourse task

Variable	Individuals	n	Mean	SD	Minimum	Maximum	25th percentile	50th percentile (Median)	75th percentile	p*
Number of words	Aphasic	22	60.91	46.2	0	181	25.25	52.5	89.5	0.304
	Healthy	44	51.27	43.95	0	177	18.25	32	72.75	
	Total	66	54.48	44.59	0	181	19	42	76.75	
Time	Aphasic	22	63.91	50.28	0	222	32.25	49.5	81	<
	Healthy	44	26.86	18.61	0	80	11.25	23.5	35.5	
	Total	66	39.21	36.82	0	222	13	32	52	
Words per minute	Aphasic	22	55.79	26.83	0	97.5	35.22	50.46	81.82	<
	Healthy	44	108.01	45.62	0	226.15	83.55	104.76	140.19	
	Total	66	90.61	47.17	0	226.15	51.35	89.95	127.47	
NIEs	Aphasic	22	4.45	1.84	0	7	3.75	5	5.25	0.431
	Healthy	44	5.18	1.9	0	10	4	5	6	
	Total	66	4.94	1.9	0	10	4	5	6	
%IEs	Aphasic	22	11.73	10.59	0	41.66	5.34	8.91	14.16	0.058
	Healthy	44	16.11	10.96	0	55.55	7.46	13.81	24.31	
	Total	66	14.65	10.96	0	55.55	6.29	11.32	21.24	
IEs/min	Aphasic	22	5.71	3.93	0	15	2.11	4.91	7.71	<
	Healthy	44	16	9.93	0	40	8.92	14.03	22.44	
	Total	66	12.57	9.7	0	40	5.16	10	15.95	

NIEs: Number of essential information; %IEs: percentage of essential information; IEs/min: essential information per minute; SD: standard deviation; \*p value<0.05. Mann-Whitney Test

**Table 3.** Comparison between performance aphasic individuals and healthy subjects in the oral descriptive discourse task

Variable	Individuals	n	Mean	SD	Minimum	Maximum	25th percentile	50th percentile (Median)	75th percentile	p*
Number of words	Aphasic	22	60.05	36.59	20	158	35.75	49.5	67.25	0.765
	Healthy	44	57.5	29.42	19	189	40.25	53	71.25	
	Total	66	58.35	31.73	19	189	38.5	50.5	68.25	
Time	Aphasic	22	83.86	46.87	18	240	54	77	114	<
	Healthy	44	31.7	14.08	8	78	22.25	28.5	37.75	
	Total	66	49.09	38.14	8	240	25	37	61.25	
Words per minute	Aphasic	22	51.25	31.83	14.75	127	26.5	46.35	76	<
	Healthy	44	110.32	35.34	6	195	84.67	106.97	143.01	
	Total	66	90.63	44.06	6	195	56.83	90.27	123.57	
NIEs	Aphasic	22	7.86	3.21	3	16	5.75	8	9.25	<
	Healthy	44	11	2.85	4	16	9.25	11	13	
	Total	66	9.95	3.31	3	16	8	11	12	
%IEs	Aphasic	22	15.86	6.89	4.43	32	9.28	16.09	20.1	0.004
	Healthy	44	21.45	6.68	7.93	39.28	17.17	20	25	
	Total	66	19.59	7.2	4.43	39.28	15.51	19.2	23.15	
IEs/min	Aphasic	22	7.59	5.97	1.38	24	3.88	5.87	9.06	<
	Healthy	44	23.57	10.68	11.5	75	16.46	20.87	27.48	
	Total	66	18.24	12.03	1.38	75	9	18.22	24.43	

NIEs: Number of essential information; %IEs: percentage of essential information; IEs/min: essential information per minute; SD: standard deviation; \*p value<0.05. Mann-Whitney Test

**Table 4.** Comparing the performance of aphasic individuals and healthy subjects in the oral conversational speech task

Variable	Individuals	n	Mean	SD	Minimum	Maximum	25th percentile	50th percentile (Median)	75th percentile	p*
Number of words	Aphasic	22	69.5	77.2	0	335	27.5	47.5	82.5	0.978
	Healthy	44	64.68	63.75	2	300	20	54	85.75	
	Total	66	66.29	67.96	0	335	22.25	49	85.25	
Time	Aphasic	22	69.95	70.41	0	325	28.25	56.5	76	0.001
	Healthy	44	30.52	25.7	2	126	11.25	27.5	43	
	Total	66	43.67	48.88	0	325	13.75	32	55	
Pa/min	Aphasic	22	55.97	27.53	0	118	36.53	58.65	72.9	< 0.001
	Healthy	44	127.78	56.66	44.34	415.71	98.56	125.4	149.32	
	Total	66	103.84	59.43	0	415.71	64.34	99.62	130.44	
NIEs	Aphasic	22	1.55	1.26	0	4	1	1	2	< 0.001
	Healthy	44	3.36	1.87	0	7	2	3	5	
	Total	66	2.76	1.89	0	7	1	2	4	
%NIEs	Aphasic	22	3.84	6.87	0	33.33	1.25	2.16	4.27	< 0.001
	Healthy	44	8.2	6.43	0	25	3.34	6.03	12.69	
	Total	66	6.75	6.85	0	33.33	2.13	4.5	10	
NIEs/min	Aphasic	22	2.81	6.21	0	30	0.64	1.44	2.15	< 0.001
	Healthy	44	9.72	7.62	0	30	4.3	7.22	14.46	
	Total	66	7.41	7.85	0	30	1.68	4.61	10.86	

NIEs: Number of essential information; %IEs: percentage of essential information; IEs/min: essential information per minute; SD: standard deviation; \*p value < 0.05. Mann-Whitney Test

Below is a comparison of aphasic and healthy individuals in oral speech procedural task.

In Table 5, there were statistically significant differences with respect to time, the number of words per minute quantity of information units, information percentage of units and units of information per minute in the oral speech procedural task.

**Table 5.** Comparing the performance of aphasic and healthy individuals in oral speech procedural task

Variable	Individuals	n	Mean	SD	Minimum	Maximum	25th percentile	50th percentile (Median)	75th percentile	p*
Number of words	Aphasic	22	80.45	116.02	9	557	24	49.5	94	0.373
	Healthy	44	46.45	30.26	9	133	23.25	39.5	62.5	
	Total	66	57.79	72.22	9	557	23.75	43	70.75	
Time	Aphasic	22	62.18	64.85	14	326	33	46.5	60	<
	Healthy	44	20.73	13.27	3	58	10.25	17	27	
	Total	66	34.55	43.16	3	326	14.75	24	43.25	
Words per minute	Aphasic	22	67.96	29.43	18.62	119.23	41.25	63.75	95.79	<
	Healthy	44	139.23	30.41	84.78	240	121.72	135.76	156.86	
	Total	66	115.47	45.14	18.62	240	86.15	122.06	141.38	
NIEs	Aphasic	22	5.41	1.79	2	9	4	5.5	6.25	<
	Healthy	44	8.14	2	3	12	7	8	10	
	Total	66	7.23	2.31	2	12	6	7.5	9	
%NIEs	Aphasic	22	15.01	13.08	0.89	50	7.53	10.67	15.38	0.001
	Healthy	44	24.24	13.13	6.1	57.14	14.61	21.23	31.08	
	Total	66	21.16	13.73	0.89	57.14	10.69	15.38	28.83	
NIEs/min	Aphasic	22	8.34	6.27	0.92	26.25	4.28	6.85	9.77	<
	Healthy	44	33.9	21.83	8.27	105	19.24	30.88	41.14	
	Total	66	25.38	21.8	0.92	105	9.09	20.9	33.75	

NIEs: Number of essential information; %IEs: percentage of essential information; IEs/min: essential information per minute; SD: standard deviation; \*p value < 0.05. Mann-Whitney Test

Below is the comparison of aphasic and healthy individuals than the qualitative analysis of the realization of oral discourses and comparing the difficulties of graduations.

In Table 6, there are statistically significant differences in relation to the realization of related history and about the graduations of difficulty in oral narrative discourse task.

**Table 6.** Comparison between aphasic and healthy individuals in the qualitative analysis of the completion of oral narrative discourse and the comparison of the difficulties of graduations

Variable	Category	Individuals				p*
		Aphasic		Healthy		
		Frequency	Percentage	Frequency	Percentage	
Storytelling	Yes	7	31.80%	21	47.70%	0.218
	No	15	68.20%	23	52.30%	
Narration related story	Yes	8	36.40%	6	13.60%	0.033
	No	14	63.60%	38	86.40%	
Fluency	Yes	22	100.00%	44	100.00%	> 0.999
	No	0	0.00%	0	0.00%	
Analysis of difficulty	No difficulty	4	18.20%	16	36.40%	0.007
	Mild	1	4.50%	10	22.70%	
	Moderate	7	31.80%	13	29.50%	
	Severe	10	45.50%	5	11.40%	

\*p value < 0.05.  
Likelihood Ratio Test

Below is a qualitative comparison and graduation of difficulty among aphasic and healthy individuals, the oral descriptive speech task.

It was, in Table 7, statistically significant differences in the achievement description and the graduation of difficulty in oral speech descriptive task.

**Table 7.** Comparison between aphasic and healthy individuals performing qualitative analysis of oral descriptive speech difficulties and comparison of graduations

Variable	Category	Individuals				p*
		Aphasic		Healthy		
		Frequency	Percentage	Frequency	Percentage	
Description scene	Yes	15	68.20%	42	95.50%	0.002
	No	7	31.80%	2	4.50%	
Another type of discourse	Narration	3	13.60%	1	2.30%	0.068
	No	19	86.40%	43	97.70%	
Fluency	Yes	22	100.00%	44	100.00%	> 0.999
	No	0	0.00%	0	0.00%	
Analysis of difficulty	No difficulty	7	31.80%	38	86.40%	< 0.001
	Mild	3	13.60%	4	9.10%	
	Moderate	2	9.10%	0	0.00%	
	Severe	10	45.50%	2	4.50%	

\*p value < 0.05.  
Likelihood Ratio Test



Next, there is a qualitative comparison and graduation of difficulty between the aphasic and healthy individuals, the oral conversational speech task.

In Table 8, there are statistically significant differences in relation to the answer to the question and the graduation of difficulty in oral conversational speech task.

**Table 8.** Comparison between aphasic individuals and healthy subjects in the qualitative analysis of the completion of oral conversational speech and compared the difficulties of graduations

Variable	Category	Individuals				p*
		Aphasic		Healthy		
		Frequency	Percentage	Frequency	Percentage	
Held argument	Yes	14	63.60%	31	70.50%	0.575
	No	8	36.40%	13	29.50%	
Answer the question	Yes	11	50.00%	41	93.20%	< 0.001
	No	11	50.00%	3	6.80%	
Fluency	Yes	22	100.00%	44	100.00%	> 0.999
	No	0	0.00%	0	0.00%	
Analysis of difficulty	No difficulty	5	22.70%	26	59.10%	< 0.001
	Mild	5	22.70%	17	38.60%	
	Moderate	1	4.50%	1	2.30%	
	Severe	11	50.00%	0	0.00%	

\*p value < 0.05.

Likelihood Ratio Test

Below is a qualitative comparison and graduation of difficulty among aphasic and healthy individuals, the oral speech procedural task.

In Table 9, there are statistically significant differences in relation to the realization of procedural discourse, conducting another type of speech, speech related to another task, and on the graduation of difficulty in oral speech procedural task.

**Table 9.** Comparison between aphasic individuals and healthy subjects in the qualitative analysis of the completion of oral procedural discourse and compared the difficulties of graduations

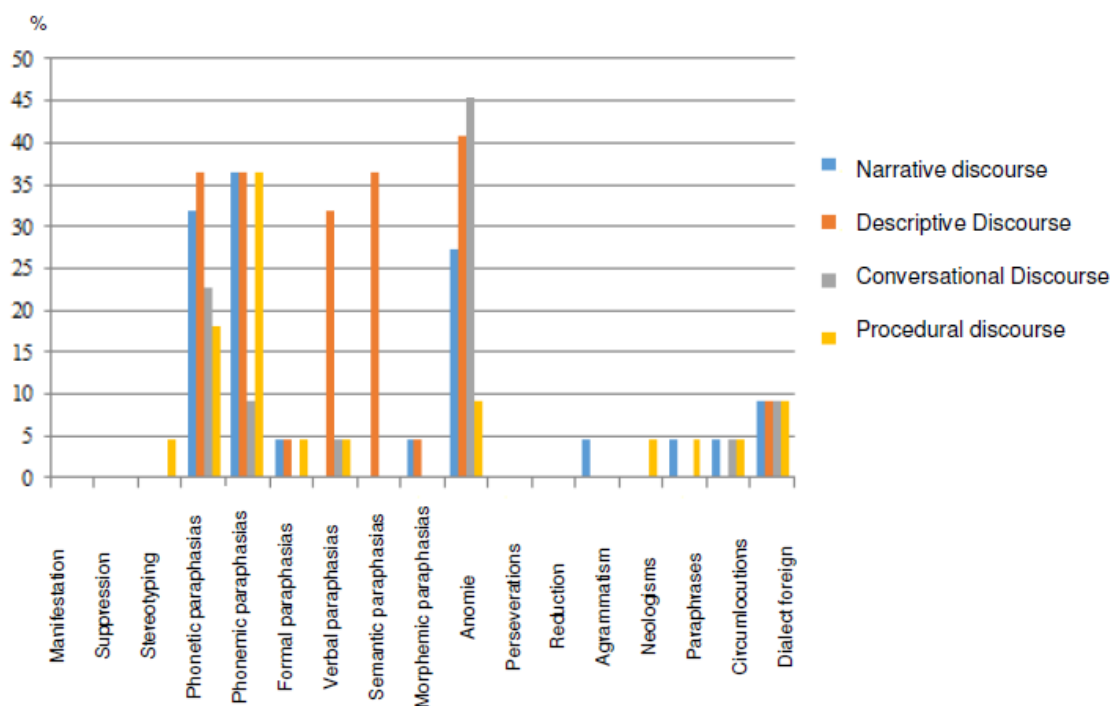
Variable	Category	Individuals				p*
		Aphasic		Healthy		
		Frequency	Percentage	Frequency	Percentage	
Reported procedures	Yes	11	50.00%	40	90.90%	< 0.001
	No	11	50.00%	4	9.10%	
Performs other discourse	No	16	72.70%	39	88.60%	< 0.001
	Narrative	6	27.30%	4	9.10%	
	Descriptive	0	0.00%	0	0.00%	
	Conversational	0	0.00%	1	2.30%	
Reported procedures related to another task	Yes	4	18.20%	0	0.00%	0.004
	No	18	81.80%	44	100.00%	
Fluency	Yes	22	100.00%	44	100.00%	> 0.999
	No	0	0.00%	0	0.00%	
Analysis of difficulty	No difficulty	1	4.50%	20	45.50%	0.001
	Mild	6	27.30%	15	34.10%	
	Moderate	6	27.30%	5	11.40%	
	Severe	9	40.90%	4	9.10%	

\*p value < 0.05.  
Likelihood Ratio Test

Next, in figure 1, the following percentages of the demonstrations that aphasic individuals presented in four types of speech.

In figure 1, it is observed that the oral narrative discourse the most frequent manifestations were paraphasia phonemic, followed by phonetic and anomie paraphasias; the less frequent manifestations were the formal paraphasias, morphemics paraphasias, agrammatism and foreign dialect. In oral descriptive speech the most frequent manifestations were paraphasias phonetic, phonemic, verbal, semantic and anomie; the less frequent manifestations were the

formal paraphasias, morphemics paraphasias, agrammatism and foreign dialect. Conversational speech the most frequent manifestations were the phonetic paraphasias and anomie; the less frequent manifestations were phonemic paraphasias, the circumlocution and foreign dialect. In procedural discourse the most frequent manifestations were paraphasias phonetic and phonemic paraphasias; the less frequent manifestations were stereotyping, paraphasias formal, verbal paraphasias, anomie, neologisms, paraphrases, circumlocutions.



**Figure 1.** Description percentage of aphasic individuals with manifestations in the oral issue in the four types of discourse

## DISCUSSION

Below is a critical analysis of the results of this study to analyze the narrative discourse, descriptive, conversational and procedural fluent aphasic individuals and compared to healthy subjects.

The aphasic individuals had fewer pal / min, NIE, % IE, IE / min and longer statement in the discourses of descriptive, conversational and procedural type compared to healthy individuals of the same age and education (Tables 3, 4 and 5), which demonstrates the best performance of the sample of healthy individuals. These findings agree with studies by Hong et al.<sup>15</sup> and Andreetta et al.<sup>16</sup> that investigated the performance of aphasic individuals in narrative discourse tasks.

In the narrative discourse there was no statistically significant difference between the groups in the NIE and the % IE, and none of the types of discourse was no statistically significant difference in the number of words (Table 2), which differs from the study of Nicholas and Brookshire<sup>14</sup>, which they found a greater number of words, NIE and IE% in the healthy population compared to aphasic. This difference may be due to the selected sample, as in this study were selected only individuals with aphasia who have greater impairment of speaking, with fluency one of its main features; since that study, we selected individuals with different diagnoses of aphasia, being fluent or not.

To better delineate performance between groups, as well as quantitative analysis, since only the essential information unit or the number of words are insufficient to characterize the discursive difficulty, also held a qualitative analysis of the four types of speech, to evaluate the production and the degree of difficulty<sup>11,17,18</sup>, as explained in item analysis discursive previously presented in this study.

The qualitative analysis of narrative discourse took into account the production history requested, and the narrative structure<sup>16</sup>. Individuals who draw up story related to the proposed theme (family, travel and holidays), but not string together the ideas into a single narrative or draw up one sentence had worse performance than the individuals who carried out the task properly. Thus, the narrative production task, the aphasic individuals had 81.80% of difficulty from mild to severe, while the healthy subjects showed 63.60%, establishing a statistically significant difference in the degree of difficulty of the production of narrative discourse and production of a story related to the proposed theme (Table 6).

The aphasic individuals, as expected, showed worse performance than healthy. In contrast, there was no statistically significant difference in the production of the narrative between the groups (Table 6). Through these data it is possible to hypothesize that both groups

had difficulty in the production of narrative discourse chaining probably due to the requested task, since the account was elicited from three related words. Other studies in the international literature<sup>19-21</sup>, investigated the task of narrative discourse through figures in sequence; and Stark<sup>22</sup> assessed the narrative discourse of aphasic not fluent through oral retelling of a children's story. The findings of these studies indicate that both aphasic as healthy presented better performance in narrative discourse task than that presented in this study. In the national literature studies were not found, so far, that compared different stimuli to elicit oral narrative.

In the analysis of the production of descriptive discourse aphasic showed worse performance in the description of the scene than healthy individuals, with statistically significant results both in the production of the description of the scene as the level of difficulty ranging from mild to severe (Table 7). This difference in production and the groups degree of difficulty was due to the presence of typical manifestations of aphasia as phonetic changes, phonemic, formal, verbal, semantic, morphemic and anomie, which damaged the description of scenes of aphasic individuals (Figure 1). Moreover, they were not considered as descriptions only the appointments of the elements of the scene without describing the actions that were taking place in the figure.

The difficulty in selecting particular word or phrase is common to aphasic and healthy individuals<sup>23</sup>, but these have features like personal course corrections and restatements resulting from epilinguistic activities and reveal the work of the subject on the language resources to face difficulties in selecting and combination<sup>24</sup> required for the production of statements. Already some of aphasic individuals used only the structure of narrative discourse as a strategy to tell what happened in the scene, which also contributed to the performance be considered lower than that of healthy subjects (Table 7).

In the following we discuss the results of qualitative analysis of the conversational speech.

The aphasic individuals also had lower performance in "answer to the question" during conversational speech task and analysis of difficulty (Table 8). However, there was no statistically significant difference in the production of conversational speech, because both groups had proportionally similar performance, that is, able to argue, but the aphasic individuals had a difficulty in organizing and planning of ideas, not reaching the proposed objective the task. The results

of Tables 4 and 8 confirm that the transmission of message precedes a significant combination of information units coherently<sup>7</sup>. In the literature makes is important to emphasize the study of Doyle and Bourgeois<sup>25</sup>, they reported that aphasic individuals that increase the length of your statement, but do not increase the essential information in your speech, do not become more effective communicators.

This performance proximity between groups in conversational speech argument task presented in Table 8 may have been influenced by two factors: the first, related to the given task, because the argument task of conversational speech held was not explicitly requested from the individual to justify their response to the problem presented; however, according to Costa<sup>26</sup>, in a conversational theme in general discourse is presented in the form of a question, that the conversational rules, requires the speaker to provide an answer, which generally corresponds to the formulation of a thesis. It is part of discursive knowledge of the speakers need to present justifications for the views expressed.

The second factor may be related to an educational problem in Brazil, considering that the Brazilian population is not used to argue. Barroso<sup>27</sup> discussed this subject in schools within the textual argumentative discourse in the school tradition has unknown relevance of argumentative discourse as object of teaching and learning in the early grades, is justifying thus its systematic absence in school literacy practices, in favor of the narrative type. What can justify the fact that some individuals in both groups just answer the question and not argue, because such tasks, even if informal, complement to teaching, which requires formality, which includes the sphere of everyday colloquial communication, making oral expression gain in density, diversity and complexity<sup>28</sup>. So far, there were no studies that show the aphasic performance in other countries where education includes the argumentative task in schools, but the review presented here, got up this hypothesis.

The results of the procedural discourse analysis showed worse performance of aphasic patients when compared to healthy (Table 9), in all aspects analyzed: reporting procedures, carry out another type of discourse, procedures related to other tasks and degree of difficulty. But both aphasic and healthy individuals underwent another type of discourse, the narrative being the predominant genre, especially in the speech of aphasic individuals. This performance can be explained by Pacheco<sup>29</sup> that the data obtained in dialog

situations with aphasic individuals help determine that one of the genres that most resistance in aphasia is the narrative.

The analysis of all the data in this study allows us to highlight the variables that were most relevant to evaluate four types of oral discourse and differentiate healthy aphasic which are: words per minute and essential information per minute oral production in each type speech and the degree of difficulty. The aphasic individuals performed better only in the narrative genre of discourse, showing that analyze the narrative discourse alone does not provide a complete picture of the individual's ability to communicate day to day given the important differences between genders speech<sup>22</sup>. Thus, it is important to analyze the four types of speech as a measure to evaluate the oral speech in different situations, considering the communication functionality.

There weren't found in Brazilian literature, studies to assess the production of different genres of oral discourse comparing the aphasic individuals to healthy individuals. Also, find the most relevant variables for analysis of oral discourse allows us a more objective measure for clinical practice with the aphasic individuals.

## CONCLUSION

Aphasic individuals showed greater ease in narrative discourse and difficulty in other discourses, but comparing them to healthy subjects had greater difficulty in all oral genres.

Future studies may investigate the influence of age and schooling, to check for differences in the production of different types of oral speech both in aphasic as healthy individuals. Furthermore, comparison of tasks with different stimuli could be analyzed to see if influence the elicitation of different types of speech.

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**ANEX X I****ASSESSMENT PROTOCOL OF DISCURSIVE ORAL TASKS**

## 1) Identification:

Name:

Age:

Genre:

Scholarity:

Profession:

Telephone:

Imaging data:

Diagnostic hypothesis speech therapy:

Diagnostic hypothesis Manifestation:

Diagnostic hypothesis Etiologically:

Evaluation date:

Tasks:

## 2) Oral descriptive discourse:

Instruction: "Describe everything you see in this scene."

The discourse should be recorded in transcript later to be analyzed.

Analysis of oral descriptive discourse:

Time (second):

Number of words:

Words per minute (pal/min):

Total number of essential information (IE):

Percentage of essential information (%IEs):

Units of essential information per minute (IEs/min):

Manifestation:

## 3) oral conversational discourse:

Instruction: "Violence in Brazil has grown, we know that there is violence towards people and animals. In your opinion, what should be done to reduce violence in Brazil?"

Analysis of oral conversational discourse:

Time (second):

Number of words:

Words per minute (pal/min):

Total number of essential information (IE):

Percentage of essential information (%IEs):

Units of essential information per minute (IEs/min):

Manifestation:

## 4) Oral procedural discourse:

Instruction: "People go to the bakery to buy bread, tell how do you go to the bakery, ask for bread, buy and finalize the purchase."

Analysis of oral procedural discourse:

Time (second):

Number of words:

Words per minute (pal/min):

Total number of essential information (IE):

Percentage of essential information (%IEs):

Units of essential information per minute (IEs/min):

Manifestation: