

RELATIONSHIP BETWEEN RECEPTIVE AND EXPRESSIVE VOCABULARY IN CHILDREN WITH SPECIFIC LANGUAGE IMPAIRMENT

Relação entre vocabulário receptivo e expressivo em crianças com transtorno específico do desenvolvimento da fala e da linguagem

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ABSTRACT

Purpose: to compare receptive and expressive vocabulary indexes in children with Specific Language Impairment. **Methods:** cross-sectional study, with sample constituted of 21 children with Specific Developmental Disorder of Speech and Language, assessed in a Speech Therapy school clinic, being 09 girls and 12 boys, with an age range between 3 and 11 years old. For this study, Proof of Vocabulary of Teste ABFW and the Teste of Vocabulary Picture Peabody-TVIP was used. **Results:** 80,95% of the children presented adequate development compatible with the evaluation of expressive vocabulary, while 52,4% presented development compatible with the age range in evaluation of receptive vocabulary. There was no statistical significance. **Conclusion:** children in the present study presented better performance in the evaluation of expressive vocabulary in relation to receptive vocabulary. This data prove the need of a careful and investigative view by the speech therapist for both the aspects of production and understanding of language.

KEYWORDS: Vocabulary; Child Language; Child; Semantics; Speech; Speech, Language and Hearing Sciences

■ INTRODUCTION

The lexicon is the set of all the words available to the individual, except for the words the child has not had contact with. Vocabulary is a sample of the individual lexicon, that is, the set of words which are in fact used by the speaker in the act of speaking, and does not allow us to evaluate the entirety of the knowledge of words of the individual. The vocabulary can be evaluated based on evidence, while the lexicon cannot¹.

The beginning of the lexical development maintains an inter-relation with the socio-interactional experiences of the children, and these experiences provide the conventional lexical forms they

know in the beginning of the development. Children acquire their first words between the ninth and twelfth month of age, with a vocabulary boom when they achieve from twenty to forty words, and around five hundred words between two and two and a half years of age².

Studies have shown that language acquisition, vocabulary in particular, are extremely complex, subject to influences and interferences of the environment in which the child is inserted, the social relations established and particular characteristics of each individual, in relation to cognitive skills, executive and memory functions, besides the relation with language in all its aspects. Thus, the panorama of the normal process of language acquisition contributes with the establishment of more and more precise diagnosis and, specially, with the development of more efficient therapeutic resources³.

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The expressive vocabulary corresponds to the lexicon, which can be emitted by the child and evaluated by the number of words he or she produces. Therefore, it is possible to evaluate the expressive vocabulary from the moment the child begins to speak⁴.

The receptive vocabulary is necessary for the reception and processing of information and is one of the most important measurements of the intellectual ability⁵. The beginning of the understanding of the words occurs around the first year of age⁶. The development of the receptive vocabulary is the basis for the development of expressive vocabulary, and the understanding of the words precedes its production⁵.

The acquisition of receptive vocabulary in children with normal development is directly related to the cognitive development of the inferential capacity, because using contextual and phrasal information to infer meanings in face of unknown words is one of the main ways to acquire vocabulary⁵.

The diagnosis of Specific Language Impairment (TEL), a nosological condition proposed by the International Classification of Diseases - ICD 10, is suggested when the individual presents language alterations which cannot be attributed to the auditory, neuromotor dysfunction, mental deficiency, attention deficit and hyperactivity, invasive development disorders deficiency, among others⁷.

The manifestations found in the general sphere of language are varied, they depend on the seriousness of the clinical picture and are changeable as the child develops. They normally manifest: phonological simplifications (frequently not observed in the normal process of language acquisition); restricted vocabulary; difficulty in acquiring new words; simplified and little varied grammar structures; and unusual ordering of words⁸.

The objective of this study is to compare indexes of receptive and expressive vocabulary of children with Specific Language Impairment. However, it assumes the hypothesis that aspects of the receptive and expressive vocabulary may represent abilities depending on the development of children language, as the receptive precedes the expressive. Therefore, there must be a similarity between the performance in receptive and expressive vocabulary.

■ METHODS

This is a cross-sectional study (CEP 1382/10 Universidade Federal de São Paulo). All parents or responsible for the children were aware of the procedures of the study, and signed the Informed Consent Form, according to the suggestions of the Committee of Ethics in Research.

Sample

The sample was constituted of 21 children: 9 girls and 12 boys, with ages ranging from 3 to 11 years old, and the average age of 6 years old. All children were evaluated and diagnosed by a multidisciplinary team with Specific Language Impairment according to the criteria of the CID-10⁹, and were offered support at a Speech Therapy school-clinic. As criteria for inclusion for this research we have had: audiologic evaluation with auditory thresholds compatible with the parameters of normality in all children; indexes of intellectual quotients, which vary from 85 to 110, obtained by means of the application of the Brazilian version of the *Wechsler Intelligence Scale for Children - WISC III*¹⁰; data of development and clinical evaluation of the children that have indicated motor acquisition also inside the standards of normality, obtained by anamneses and clinical observation: children classified as verbal, because they have shown capable of producing phrases in a systematic and contextualized way and executed verbal orders, thus demonstrating adequate verbal understanding; and all the children are regularly enrolled in kindergarten or fundamental public schools.

As criteria of exclusion: genetic syndromes, malformations, sensorial and/or motor deficiencies and intellectual deficiencies.

Procedures

For the evaluation of the receptive and expressive vocabulary, the Brazilian version of the Peabody Picture Vocabulary Test – TVIP^{11,12} and the Vocabulary Test of the ABFW Test¹³.

Both tests were applied during the initial evaluation of the child, that is, at the moment of arrival at the service.

1. Peabody Picture Vocabulary Test – TVIP¹¹

This test consists of the identification of words drawn in 5 boards of practice followed by 125 boards of test. The boards are composed by 4 drawings of black line over a white background. The child must select among the alternatives, pointing to the picture that best represents the word said by the evaluator.

The correction is done adding the number of rights. These rights are then converted in scores by age levels and distributed in normality curves.

2. Vocabulary Test of the ABFW Test of Language.¹³

This test consists of the presentation of 118 pictures distributed in nine conceptual fields: clothing, animals, food, means of transportation, furniture and utensils, professions, places, shapes and colors, toys and musical instruments. The

evaluator shows one picture at a time and the child must name it immediately. The answers are classified according to the criteria:

- Usual Word Designation (DVU): correct naming of the word.
- Non-Designation (ND): if the child is not able to name it.
- Substitution Processes (PS): if the child uses some process of substitution.

There is a reference of normality (RN) for each of the conceptual fields, for each of the criteria mentioned and for each age.

In this study only the answers by Usual Word Designation were considered.

As the indexes of reference of normality of the original proposal go on until the age of six only, a linear regression was done (Table 1) with the objective to obtain values for reference of normality

to 7, 8, 9 and 10 years old, based on the original indexes of the Test.

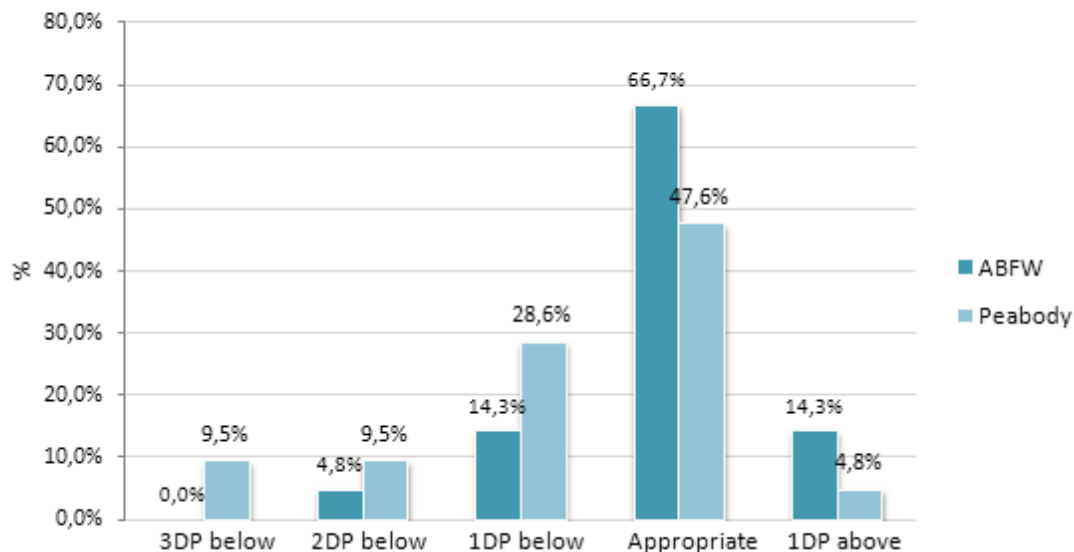
Statistical Method

For the statistical analysis of the data, the following tests were used: Test for Equality of Two Proportions and the Kappa Index of Agreement, Confidence Interval of Average and Linear Regression.

■ RESULTS

In Figure 1 we observe the comparison of the performance of the children of the sample in both tests. We have verified a tendency for a better development in the expressive vocabulary in comparison with the receptive.

Compares Classification ABFW and Peabody



DP: Standard Deviation

Figure 1 - Comparison of Classification in Teste of Vocabulary from ABFW and Peabody

In Table 1 we observe the statistical analysis of Linear Regression, which was used to estimate parameters of performance in the ABFW Vocabulary Test¹³ for children with ages superior to those established by the test.

In Table 2 we present the distribution of the performances in both tests, according to the values of standard deviation and the value of p.

Table 1 - Application of Linear Regression Model

Age (years)	ABFW	Expected	Error (%)
2	56,44	18,76	201%
3	62,56	39,35	59%
4	68,67	55,3	24%
5	74,79	71,95	4%
6	80,91	84,4	-4%
7	87,02		
8	93,14		
9	99,26		
10	105,37		
11	111,49		

Table 2 - Comparison of Tests ABFW and TVIP

	ABFW		TVIP		P-value
	N	%	N	%	
3 DP below	0	0,0%	2	9,5%	0,147
2 DP below	1	4,8%	2	9,5%	0,549
1 DP below	3	14,3%	6	28,6%	0,259
Appropriate	14	66,7%	10	47,6%	0,212
1 DP above	3	14,3%	1	4,8%	0,293

Test of Two Proportions

■ DISCUSSION

In order to relate and compare indexes of receptive and expressive vocabulary of children with Specific Language Impairment, this study has been based on the hypothesis that the receptive and expressive vocabulary depend on the development of children's language, and present similar performances.

The clinical pictures of Specific Language Impairment are pretty heterogeneous and the subsystems of language involved suffer a variation in number and level of commitment. Thus, the vocabulary restriction is taken as a frequent manifestation in these cases because they represent an important biological milestone of the development¹⁴.

There is evidence that the learning of words in pre-school children with TEL is difficult. They present performances that are below the expected

in tasks of understanding and production of new words, and need a larger number of expositions and greater contextual support, besides the focus on a smaller number of items to be acquired^{15,16}.

These clinical pictures, initially characterized by delays in the language acquisition show meaningful semantic deficits observed by a restricted vocabulary¹⁴. They generally present a delay in the development of the first words and fail to expand the vocabulary. They also demonstrate difficulty to acquire abstract concepts, to combine meanings of words to form sentences and present important phonologic alterations, common and manifested by an unintelligible speech¹⁷.

It is known that both the indexes of expressive and receptive vocabulary are fundamental measures in the process of evaluation of children language. Therefore, specific tests of vocabulary are fundamental instruments of analysis of the

lexical-semantic aspects¹⁸. However, the distinct character of utilization and analysis of the tests may influence the responses given by the individuals.

This study has found a more appropriate performance of the participating children in the test that assessed the expressive vocabulary (Figure 1 and Table 2), when compared to the performance obtained in the test of receptive vocabulary, contrary to the initial hypothesis.

However, the tests used must be considered in their formulation and composition. TVIP is a test of simple application, presented as a version of Black and White drawing, which characterizes verbs and adjectives, as well as nouns of low and high frequency, and comprehends a more complex range of the lexicon. The ABFW Test of Vocabulary, in its turn, consists of colorful pictures, presented individually and entails nouns which belong to basic semantic categories.

Therefore, the discoveries by means of this study may result from these aspects and can indicate inabilities in relation to the receptive vocabulary in the children studied beyond the recognition of nouns. In this way, children with Specific Language Impairment present more facility in the acquisition of open class words, more frequently occurring in the language, which follow phonological and metrical restrictions of the lexical selection (whose initial consonants are part of their phonological inventory, with simple syllables).

Besides that, children present a better performance in tasks of comprehension in relation to tasks of production of new words and are subject to the same principles of acquisition (even though these go through great interference of the abilities of information processing); they are able to map the unknown name to its referential based on their previous knowledge of the category to which the known object belongs to¹⁹, assuming the principle of mutual exclusiveness (that each object corresponds to a name) when in face of non categorized referentials^{15,20} and are influenced by the referential intention of their interspeakers²¹.

The data presented by these studies^{15,19-21} lead us to create hypothesis that the results found in the present study are due to the fact that the instrument used to evaluate the expressive was simpler, in terms of lexical complexity, in relation to the instrument that evaluated the receptive vocabulary, thus favoring

the more appropriate performance when it comes to expressive vocabulary. As stated before,¹⁹ children with Specific Language Impairment present greater ease in acquiring open class words, like nouns, which constitute the whole and the ABFW Test of Vocabulary, contrarily to TVIP, which comprehends greater complexity.

When the age range of the groups assessed in the present study is considered, we can create the hypothesis that the aspects of the ABFW Test of Vocabulary may have facilitated and, consequently, contributed with the performance of the kids.

To analyze the result found, in which the children presented a better performance in expressive vocabulary, we must also consider the age level of the groups assessed, between 3 and 11 years old, with an average age of 6, with children at a superior age in relation to the age limit evaluated in the ABFW Test of Vocabulary¹³.

The expressive vocabulary is one of the important milestones of the typical development and, generally speaking, in the cases of TEL, it tends to be lowered in relation to the receptive vocabulary. In general, children present a delay in the manifestation of the words and fail at the "vocabulary boom". Studies^{22,23} have indicated a smaller number of naming of the pictures when compared to normal children, and the results have demonstrated certain difficulty in lexical retrieval, in limited capacity, information storage, memory and in the slower naming. Such aspects, related to the lexical storage and retrieval, were not raised in the present study, however, they are important to be clinically highlighted, since this factor can be an orienting factor of the diagnosis and of the intervention.

■ CONCLUSION

Children presented a better performance in the evaluation of the expressive vocabulary in relation to the receptive vocabulary. This data, although different from the initial hypothesis raised, signal to the need for a more attentive and investigative look of the speech therapist, taking into account both aspects of production and understanding of the language, as well as indicate the need for a more extensive knowledge of the tools used in respect to the development of children language.

RESUMO

Objetivo: comparar os índices de vocabulário receptivo e expressivo de crianças com Transtorno Específico do Desenvolvimento da Fala e da Linguagem. **Métodos:** trata-se de estudo transversal, com amostra constituída por 21 crianças com Transtorno Específico do Desenvolvimento da Fala e da Linguagem, avaliadas em clínica-escola de Fonoaudiologia, sendo 9 crianças do gênero feminino e 12 crianças do gênero masculino, com idades entre 3 e 11 anos. Para este estudo foi utilizada a Prova de Vocabulário do Teste ABFW e o Teste de Vocabulário por Imagem Peabody – TVIP. **Resultados:** 80,95% das crianças apresentaram desempenho adequado na avaliação do vocabulário expressivo, enquanto 52,4% apresentaram desempenho compatível com a faixa etária na avaliação do vocabulário receptivo. Não houve significância estatística. **Conclusão:** as crianças apresentaram melhor desempenho em avaliação do vocabulário expressivo em relação ao vocabulário receptivo. Esses dados comprovam a necessidade de um olhar atento e investigativo do fonoaudiólogo para os aspectos tanto de produção quanto de compreensão da linguagem.

DESCRIPTORIOS: Vocabulário; Linguagem Infantil; Criança; Semântica; Fonoaudiologia.

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