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Speech-language hearing performance in social project: preliminary study

Atuação fonoaudiológica em projeto social: estudo preliminar

Actuación fonoaudiológica en proyecto social: estudio preliminar

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Abstract

Introduction: Research has shown the importance of early life in brain development. When the child does not have the expected language development, may have impairment in acquisitions. Thus, early identification of changes avoids unfavorable educational and social consequences. **Objective**: to propose a speech-language intervention project in a childcare institution; collect data about children's language before and after speech therapy intervention; enable overcoming language changes. **Methods**: Observation of children, in the collective activity room, through the observation form. Then, children at risk for language impairment were selected and were submitted to assessment through the Language Development Assessment (ADL) and the Child Phonological Assessment (CFA). The children were stimulated during 12 weekly group meetings and then reevaluated. Data were tabulated and analyzed by comparing the evaluations before and after stimulation and reporting the data obtained from the questionnaires answered by the caregivers. **Results**: The four children - 3 boys and 1 girl - who participated in the study had improved language assessments after the stimulation period, 3 modified the severity of the language disorder, and one outperformed the language disorders - "normal development of language "- after reevaluation. **Conclusion**: The caregivers' reports and reassessment results showed that the

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RMMP: data collection, tabulation and analysis, and article review;
ATBOB: co-supervision and article review;
IMAMM: data collection, tabulation and analysis, and article review;
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interventions had positive effects and were relevant for the children, characterizing **a good proposal for collective speech therapy intervention**.

Keywords: Speech, Language and Hearing Sciences; Child Language; Language Arts; Public Health; Language Development Disorders.

Resumo

Introdução: Pesquisas vêm demonstrando a importância dos primeiros anos de vida no desenvolvimento do cérebro. Quando a criança não apresenta o desenvolvimento de linguagem esperado, poderá ter prejuízo em aquisições. Desta forma, a identificação precoce de alterações evita consequências educacionais e sociais desfavoráveis. **Objetivo**: propor projeto de intervenção fonoaudiológica em instituição de acolhimento de crianças; levantar dados acerca da linguagem das crianças antes e depois da intervenção fonoaudiológica; possibilitar a superação de alterações da linguagem. **Métodos:** Observação das crianças, em sala de atividades coletivas, por meio do formulário de observação. Em seguida, foram selecionadas crianças com risco para alteração de linguagem e estas foram submetidas a avaliação por meio da Avaliação do Desenvolvimento da Linguagem (ADL) e Avaliação Fonológica da Criança (AFC). As crianças foram estimuladas durante 12 encontros semanais, em grupos, e depois foram reavaliadas. Os dados foram tabulados e analisados comparando-se as avaliações antes e depois da estimulação e relatando-se os dados obtidos pelos questionários respondidos pelas cuidadoras. **Resultados:** As quatro crianças - 3 meninos e 1 menina - que participaram do estudo tiveram melhora nas avaliações da linguagem após o período de estimulação, 3 modificaram o grau de gravidade do distúrbio de linguagem, e uma superou as alterações de linguagem - "desenvolvimento normal da linguagem" - após a reavaliação. **Conclusão:** Os relatos das cuidadoras e resultados das reavaliações demonstraram que as intervenções surtiram efeitos positivos e foram relevantes para as crianças, caracterizando uma boa proposta de intervenção coletiva fonoaudiológica.

Palavras-chave: Fonoaudiologia; Linguagem; Estudos de Linguagem; Saúde Pública; Transtornos do Desenvolvimento da Linguagem.

Resumen

Introducción: la investigación ha demostrado la importancia de la vida temprana en el desarrollo del cerebro. Cuando el niño no tiene el desarrollo del lenguaje esperado, puede tener un impedimento en las adquisiciones. Por lo tanto, la identificación temprana de los cambios evita consecuencias educativas y sociales desfavorables. **Objetivo**: proponer un proyecto de intervención de habla y lenguaje en una institución de cuidado infantil; recopilar datos sobre el lenguaje de los niños antes y después de la intervención de terapia del habla; permitir la superación de los cambios de idioma. **Métodos**: Observación de niños, en la sala de actividades colectivas, a través del formulario de observación. Luego, se seleccionaron los niños con riesgo de discapacidad del lenguaje y se los sometió a evaluación a través de la Evaluación del desarrollo del lenguaje (ADL) y la Evaluación fonológica del niño (AFC). Los niños fueron estimulados durante 12 reuniones grupales semanales y luego reevaluados. Los datos se tabularon y analizaron comparando las evaluaciones antes y después de la estimulación e informando los datos obtenidos de los cuestionarios respondidos por los cuidadores. **Resultados**: Los cuatro niños (3 niños y 1 niña) que participaron en el estudio mejoraron las evaluaciones del lenguaje después del período de estimulación, 3 modificaron la gravedad del trastorno del lenguaje y uno superó los trastornos del lenguaje: "desarrollo normal de lenguaje "- después de la reevaluación. **Conclusión**: Los informes de los cuidadores y los resultados de la reevaluación mostraron que las intervenciones tuvieron efectos positivos y fueron relevantes para los niños, caracterizando una buena propuesta para la intervención colectiva de terapia del habla**.**

Palabras clave: Fonoaudiología; Lenguaje; Estudios del Lenguaje; Salud Pública, Transtornos del Desarrollo del Lenguaje.

Introduction

This study reports on the experience conducted with children in a childcare institution for children and adolescents, from a highly vulnerable region in a large city in the country.

The progress of aspects that contribute to effective communication through language is expected as the child develops. For this, the child needs to be stimulated and have contact with the social environment, which will lead to the improvement of specific language faculties[1].

Language is the main form of communication for people. According to Vygotsky, the development is affected by the mediations of adults, characterizing the operation in the zone of proximal development - even though the child alone is not able to solve some problems, they manage to solve them with the assist of someone, through social interaction with those around them in their living environment[2].

Even though the oral language develops in the flow of dialogues, depending on the environment in which children are inserted, they can be more or less encouraged to come into contact with the oral language; that is, to put themselves in, to make themselves understood, to narrate, etc.[3].

In order to enable speech, the central nervous system, peripheral system, breathing, resonance, articulation and phonation must be intact and without any changes, along with the adequacy of the cognitive and phonological development. Changes in speech may occur due to lack of linguistic knowledge or processing failure. The sooner, the better for the identification of deviations in the development of the phonological system, as the early intervention will favor the chances of optimizing the treatment according to the needs, and favoring the prognosis[4].

Children's games, which are very important for the development of oral language, have a cultural nature in which children reproduce what adults do in their social life, using words that they heard in other contexts and reproducing them in a story created by themselves. When playing games, children use playful objects, giving a meaning and naming them according to the game. They share this meaning with other participants through oral language, both to name the objects and to define the characters of the games and to interact with each other[5].

According to the chronological age, speech and language production may be considered appropriate or not. The cognitive and emotional aspects of development need to be considered in order to assess this issue. These aspects may indicate the severity of the case, as well as the need for specialized family guidance and/or speech-language pathology therapy. Studies have shown the importance of the first three years of life in human brain development. When children do not have the expected developmental knowledge in relation to language, they may have impairment in other acquisitions. There are characteristics of speech and language identified in children that may predict learning disorders at school age. The literature reports a significant deficit in the language subsystems in children with learning disorders when compared to other children who don't have the same condition. Studies also raise awareness on the importance of the early identification of disorders in preschool children, in order to enable early intervention and minimize subsequent failures[6-7].

Before speaking, children use their eyes, facial expression and gestures to communicate. The phonological and grammatical systems provide form to language. The intention to communicate can be shown in a non-verbal way through facial expression, signs, and also when children start to respond, wait for their turn, question and argue. This communicative ability suggests that knowledge of the adequacy of language to a given situation and the learning of social rules of communication is as important as semantic and grammatical knowledge[7].

The basic principles of therapy intervention in children are the evaluation of language development at all levels, guidance to the family and school and the therapy itself[7].

There are many explanations for changes in comprehension, such as the failure of linguistic processing, in which sentences cannot be processed in automatism, which may compromise the speed of comprehension or accuracy in the long term. Children with Language Development Disorder (LDD) progress in understanding and in the responses provided, but the lack of understanding remains in the individual. These children must be diagnosed early and must receive adequate treatment in order to allow a good prognosis. Parents, teachers and health care professionals must have good communication and interaction to identify

the real difficulties and stimulate children, thus enabling the progress in this deficit[8].

An early diagnosis is required to achieve a successful treatment and progress for the child, in addition to a treatment that is appropriate to the difficulties presented, as the LDD can be improved, but will always be present in the lives of these children[8].

Learning difficulties and disorders are believed to be closely related to a previous history of language acquisition delay. Language changes refer to changes in the process of developing verbal and/or written expression and reception. Therefore, the early identification of these changes in the normal course of development avoids further unfavorable educational and social consequences[6].

This study was conducted in a Social Project of a non-governmental and non-profit entity, initially founded in response to the major problems faced by young people in towns and villages. All three units of this Social Project are located in Belo Horizonte. The Project serves children and adolescents from three to fourteen years of age, in a complementary time to that of the regular school, including some children from three to five years old who remain full-time on the premises.

Based on the importance of the typical development of oral language and in order to prevent communication disorders, this study aimed to design a speech-language pathology intervention proposal in one of the Project's units with children up to 5 years, 11 months and 29 days; to collect data on the children's oral language, before and after the speech-language pathology intervention; to show the relevance of the speech-language pathology inclusion within the scope of the Social Project; and to provide education professionals with a more in-depth knowledge on the stimulation of children's language and its peculiarities, making it possible to overcome the language changes of the participating children.

Methods and procedures

Ethics Approval

This study was approved by the Research Ethics Committee (REC) of PUC Minas, whose Certificate of Presentation for Ethical Appreciation (CAAE) is: 63058716.7.0000.5137, opinion no. 1.930.348.

Study Design and sample composition

This is an observational analytical study composed of children attending a social project in a region of high vulnerability. Children aged 3 to 5 years, 11 months and 29 days who do not attend the school remain full-time in the social project, while the other children attend the social project during the time when they are not at school. Children are separated into rooms according to the age group and supervised by a caregiver/recreation worker: 3 years old (seven girls and five boys); 4 years olds (nine girls and eleven boys) and 2 rooms with 5 year old children (eighteen girls and twenty-two boys), totaling seventy-two children.

Data Collection

At first, the researchers observed the 72 children in the rooms in which they perform collective activities, using the observation form collecting data on language, orofacial motricity, behavior and hearing in order to select children at risk for language disorders.

Chart 1. Individual Observation Form

Child's Name:	**Date of Birth:**		**YES/NO**
Orofacial motricity	Mouth breathing		
	Deleterious Oral Habits		
	Stomatognathic functions		
Voice	Screams		
	Dysphonia		
Hearing	PSAP		
	Responds when called		
	Does not respond when called		
Language	Expression	Vocal	
		Verbal	
		Gestures	
		Disfluency	
		Phonetic/Phonological	
	Development Level	Holophrase	
		Juxtaposition	
		Telegraphic	
		Phrasal Organization	
		Speech	
	Understanding		
Additional Notes	Information from family or education professionals		

After analyzing the data collected in the observation, eight children were selected as at risk for language disorders. Children who had other changes, in addition to language or speech changes, were excluded from the research. The eight children selected were submitted to individual assessment through the Language Development Assessment (LDA)[9]. Two children had phonetic-phonological changes and were also submitted to the Children's Phonological Assessment (CFA)[10]. In addition, the caregivers/recreation workers who supervise the children answered the questionnaire on communicative difficulties (Appendix 1). Caregivers and guardians of the children signed the Free Prior Informed consent (FPIC) authorizing the study. Children were organized in groups of three and two for stimulation exercises for 12 sessions - two 40-minute sessions per week. The stimulation exercises were conducted in the local toy library, including materials and strategies produced and developed by the researchers, in addition to toys from the local toy library. .

Chart 2. Description of stimulation activities

Day 1
LANGUAGE • Purpose: Identification of primary colors (green, yellow, red and blue), quantity, communicative skills of communicative shift change, attention to verbal command, anticipation of movement and pairing. • Strategy: Twelve Lego bricks in blue, green, red and yellow were hidden in the room, three of each color. Upon receiving the command ('1,2,3 and go') the children should look for one brick at a time. After the third command, the number of bricks for each child was counted, the color was checked and paired with figures of the corresponding colors (blue - blue pencil; green - tree; red - apple; yellow - bird). SPEECH • Purpose: Contrast identification between phonemes. • Strategy: Auditory bombardment at the beginning and end of the activity, Dice game with 'v' phoneme.
Day 2
LANGUAGE • Purpose: Identification of primary colors, laterality, inside/outside, bigger/smaller, following an order of up to three simple commands and communicative skills of communicative shift change, attention to verbal command, anticipation of movement. • Strategy: Commands given through the playful game 'Simon says.' Children were asked to put an object inside the box, on the chair or next to the chair. Then, they should pick up a larger or smaller object on the table, jump on one foot and place their hands on parts of the body (foot, belly, ear, eyes, mouth and nose). SPEECH • Purpose: Contrast identification between phonemes and production of the target phoneme isolated and in words. • Strategy: Auditory bombardment at the beginning and end of the activity, using a visual and kinesthetic tactile clue, with mirror support and using honey at the desired articulation point to make an isolated sound. Followed by the production of words with the target sound in a riddle game with supporting figures, such as: 'What do we use to slice bread?' and the child should answer 'a knife.' There were two cards on the table, one with a drawing of a knife and the other with a drawing of a notebook.
Day 3
LANGUAGE • Purpose: Semantic field of animals, onomatopoeia, identification of equal and different, communicative skills of communicative shift change, attention to verbal command, anticipation of movement and pairing. • Strategy: Use of a domino game with animal figures. The game was used in the conventional way and was explored according to the exercise (onomatopoeia, colors, among others). SPEECH • Purpose: Contrast identification between phonemes and production of the target phoneme isolated and in words. • Strategy: Auditory bombardment at the beginning and end of the activity, aid of visual and kinesthetic tactile clue, with mirror support and using honey at the desired articulation point to make an isolated sound. Production of isolated sound followed by vowels and words with the target sound in naming figures that include the target sound.
Day 4
LANGUAGE • Purpose: Semantic field of animals, onomatopoeia, identification of equal and different, laterality, inside/outside, bigger/smaller, communicative skills of communicative shift change, attention to verbal command, anticipation of movement and pairing. • Strategy: Use of board game with animals theme. The game was used in the conventional way and was explored according to the exercise (onomatopoeia, colors, animals that were near/far, among others), other aspects were used during therapy, such as asking the child to take the card inside the box. SPEECH • Purpose: Contrast identification between phonemes and production of the target phoneme isolated and in words. • Strategy: Auditory bombardment at the beginning and end of the activity, aid of visual and kinesthetic tactile clue, with mirror support and using honey at the desired articulation point to make an isolated sound. Production of isolated sound followed by vowels and words with the target sound in naming figures that include the target sound.
Day 5
LANGUAGE • Purpose: Semantic field of animals, onomatopoeia, identification of equal and different, communicative skills of communicative shift change, attention to verbal command, anticipation of movement and pairing. • Strategy: Use of the electronic application 'Memory game.' The game was used in the conventional way and was explored according to the exercise. SPEECH • Purpose: Contrast identification between phonemes and production of the target phoneme isolated and in words. • Strategy: Auditory bombardment at the beginning and end of the activity, aid of visual clue with support of the mirror to produce the isolated sound and in words. Naming figures that include the target sound.
Day 6
LANGUAGE • Purpose: Identification of equal and different, identification of colors, concepts of laterality, inside and outside, communicative skills of communicative shift change, attention to verbal command, anticipation of movement and pairing. • Strategy: Use of colored bowling pins, matching the same colors and 'Simon says' for the children to place the pins where requested (on the chair, near the table, among others). SPEECH • Purpose: Contrast identification between phonemes, production of the target phoneme isolated, in words and automation in connected speech. • Strategy: Auditory bombardment at the beginning and end of the activity, production of isolated sound imitating a bee, and in words supported by figures that include the target sound.
Day 7
LANGUAGE • Purpose: Semantic field of clothes, identification of miniature sizes, identification of body parts, development of symbolism, identification of equal and different, colors, communicative skills of communicative shift change, attention to verbal command, anticipation of movement and pairing. • Strategy: Dolls and corresponding clothes were used (dress, shorts, shirt and shoes) and children were asked to dress the dolls by naming their body parts and matching them on their own bodies, as well as the clothes they were wearing. Colors and laterality (the green shirt is on the chair, for example) were explored.

SPEECH
- Purpose: Contrast identification between phonemes, production of the target phoneme isolated, in words and automation in connected speech.
- Strategy: Auditory bombardment at the beginning and end of the activity, production of isolated sound, and in words, supported by figures that included the target sound, production of isolated sound imitating a bee (Child 4), and in words, supported by figures that included the target sound and symbolic play for speech with miniatures including the target phoneme in absolute onset (daughter, stove, beans, knife, etc.) (Child 5).

Day 8

LANGUAGE
- Purpose: Development of symbolism, identification of colors and quantity, fast and slow, sequence of up to three simple orders, development of fine motor, communicative skills of communicative shift change, attention to verbal command and anticipation of movement.
- Strategy: Development of a circuit in which children should throw the ball at each other, make a sequence of movements (jump on one foot, pick up an object of that color and throw it up, for example), find Lego bricks of a certain color in a box, imitate the steps of animals, such as ants and elephants.

SPEECH
- Purpose: Contrast identification between phonemes, production of the target phoneme isolated, in words and automation in connected speech.
- Strategy: Auditory bombardment at the beginning and end of the activity, production of isolated sound, and in words, supported by figures that included the target sound, production of isolated sound imitating a bee (Child 4), and in words, supported by figures that included the target sound and symbolic play with miniatures including the target phoneme in absolute onset (daughter, did, was, happy, etc.) (Child 5).

Day 9

LANGUAGE
- Purpose: Development of symbolism, identification of figures and their functions, phrasal structure, communicative skills of communicative shift change, attention to verbal command and anticipation of movement.
- Strategy: Use of a deck including figures of objects used in daily life, such as knife, shoe, soap, among others. The figures were placed on the table face down, in order, then each child should turn a figure, name it and should talk about the object in the figure.

SPEECH
- Purpose: Contrast identification between phonemes, production of the target phoneme isolated, in words and automation in connected speech.
- Strategy: Auditory bombardment at the beginning and end of the activity, production of isolated sound, with the support of fringed paper, and in words, with the support of figures that included the target sound, production of isolated sound imitating a bee (Child 4). Words supported by figures that include the target sound and symbolic play for speech with miniatures that include the target phoneme in absolute onset (daughter, did, was, happy, etc.) Child 5).

Day 10

LANGUAGE
- Purpose: Development of symbolism, identification of figures and their functions, phrasal structure, communicative skills of communicative shift change, attention to verbal command and anticipation of movement.
- Strategy: Use of a deck including figures of objects used in daily life, such as knife, shoe, soap, among others. The figures were placed on the table face down, in order, then each child should turn a figure, name it and should talk about the object in the figure.

SPEECH
- Purpose: Contrast identification between phonemes, production of the target phoneme isolated, in words and automation in connected speech.
- Strategy: Auditory bombardment at the beginning and end of the activity, production of isolated sound and in words supported by figures that include the target sound, including the use of a book that had the story of the card corresponding to the target sound that should be retold by the child. Children were asked when they performed the phonological process and then performed self-correction, or questioning was not necessary.

Day 11

LANGUAGE
- Purpose: Semantic field of animals, onomatopoeia, identification of equal and different, inside/outside, laterality, quantity, communicative skills of communicative shift change, attention to verbal command, anticipation of movement, pairing and sharing of objects.
- Strategy: Use of board game with the zoo theme. The game was used in the conventional way and was explored according to the exercise (onomatopoeia, colors, animals, who was near/far, among others), including exchange of cards between the participants, number of cards, matching of equal cards.

SPEECH
- Purpose: Contrast identification between phonemes, production of the target phoneme isolated, in words and automation in connected speech.
- Strategy: Auditory bombardment at the beginning and end of the activity, production of target sound in words supported by figures that include the target sound, and symbolic play. Introduction of isolated production of the voiced contrast phoneme.

Day 12

LANGUAGE
- Purpose: Identification of equal and different, inside and outside, laterality, bigger and smaller, quantity, colors, sequence of three commands, body awareness, communicative skills of communicative shift change, attention to verbal command, anticipation of movement, pairing and memory.
- Strategy: A mini-path was prepared in the room using a chair, table, box and Lego bricks in different colors. Upon receiving the command ('1,2,3 and go'), the child should follow the command, such as 'placing the green brick inside the box.' As the children performed the activity, some sequences were followed, such as taking the biggest brick out of the box, jumping and placing it next to the chair.

SPEECH
- Purpose: Contrast identification between phonemes, production of the target phoneme isolated, in words and automation in connected speech.
- Strategy: Auditory bombardment at the beginning and end of the activity, production of target sound in words supported by figures that include the target sound, and symbolic play. Isolated production of the voiced contrast phoneme and in words supported by figures.

After the stimulation exercise, the participants were reassessed using the LDA and CFA, and then the data were tabulated, compared and described.

Results

The preliminary data resulting from the observation of the 72 subjects in classrooms are described initially. Among the twelve 3-year-old children, only one had a deleterious oral habit (digital sucking). All twelve children responded when called by their names, used verbal expression and two of them used gestures associated with words to communicate. Two children had an acceptable phonetic change for their age (previous lisp); one had a level of language development in juxtaposition of words; two had telegraphic language; eight were able to organize sentences; and one communicated with speech-level language.

Table 1. Speech, Language and Hearing Aspects Observed

Groups			3-year-old children	4-year-old children	5-year-old children (1)	5-year-old children (2)
Aspects Observed		**Total Children**	**12**	**20**	**20**	**20**
	Orofacial motricity	M.B.	0	0	0	1
		O.H.	1	0	1	0
		S.F.	0	0	5	2
	Voice	SC.:	0	1	0	0
		DYSP.	0	0	1	0
	Hearing	PSAP	0	0	0	0
		R.W.C.	12	19	20	20
		L.U.	0	0	1	0
L	**Expression**	VO	0	0	0	0
A		VE.	12	20	20	19
N		GE	2	1	0	1
G		DISFL	0	0	0	0
U		PHONO.P.	0	3	1	1
A		PHONO.C.	2	1	3	1
G	**Development Level**	HOLOP.	0	0	0	0
E		JXT.P.	1	0	0	1
		TLGR	2	0	0	0
		PHRA.O.	8	0	0	0
		SPEE.	1	19	20	19
	Understanding		12	20	20	20

Legend:
M.B.: Mouth Breathing
O.H.: Deleterious Oral Habits
S.F.: Stomatognathic Functions
SC.: Screams
DYSP: Dysphonia
PSAP: Personal Sound Amplification Product
R.W.C.: Responds when called by the name
L.U.: Lack of understanding ('hum?', 'what?')
VO.: Vocal
VE.: Verbal
GE.: Gestures
DISFL.: Disfluent
PHONO.P.: Phonological Process
PHONO.C.: Phonetic Change
HOLOP.: Holophrase
JXT.P.: Juxtaposition
TLGR.: Telegraphic
PHRA.O.: Phrasal Organization
SPEE.: Speech

A child in the group of 4-year-olds was diagnosed with Autism Spectrum Disorder (ASD) with bad vocal habit (scream), did not eat at school, did not respond when called by his/her name, used verbal expression associated with gestures, had no speech-level language, with referral for individual speech-language pathology therapy. All other children responded when called by name and communicated verbally. Three children had a phonological process; a child with phonetic change; and nineteen had speech-level language.

Observation of group 1 of 5-year-old children highlights one child who had a deleterious oral habit (thumb/digital sucking), five children who had changes in the stomatognathic function (chewing without lip seal); and a child who had dysphonia due to bad vocal habit (scream). A child lacked understanding at times and used interjections such as 'hum?', 'what?'; all had a level of development in speech and a good understanding of language.

Group 2 of 5-year-old children had twenty children. One child was a mouth breather and had phonetic disorders. Nineteen children used verbal means to communicate and only one child used gestures to communicate with level of development in juxtaposition of words. One child had phonological processes, while nineteen children had speech-level language and twenty had good understanding.

After analyzing the data from the protocols applied to eight children selected by observation, two boys were within normal language development for age (LDA) and were excluded from the research. A girl did not participate in the study - as her family withdrew the authorization. Three boys were identified with language disorders and one girl with language and speech disorders. These children received the stimulations during the period mentioned above. When discussing the findings of the pre- and post-stimulation assessments, the participants were named as follows: participant 1, 2 and 3 (P1, P2, and P3) for language stimulation and participant 4 (P4) for language and speech stimulation.

P1, male, aged 5 years and 5 months, had the standard score of 77 points for receptive language and 53 for expressive language in the first language assessment, obtaining 61 points as the standard score of global language, which includes him in the classification of severe language development disorder. After the twelve stimulations, the standard score of P1 in the language reevaluation was 81 points for the receptive language and 72 for the expressive language, obtaining 74 points as the standard score of the global language, progressing to the classification of moderate language disorder.

The following relevant data were found in the evaluation of the questionnaire answered by the caregiver about communicative difficulties: difficulty to understand what P1 means; she prefers to point to something rather than verbally asking for things; she doesn't know how to act when she doesn't understand him; she has difficulty interacting with P1; she is upset when P1 does not start the conversation; she believes that other people do not understand him when he speaks; other children and people criticize him when he says something; he has few friends due to his speech problem; people correct him when he says something wrong; people laugh when he tries to communicate; he avoids oral communication; his performance is low due to the speech problem; he becomes aggressive when he cannot communicate properly, and she is not sure if P1 has low self-esteem due to these issues.

P2, male, aged 4 years and 7 months, had the standard score of 63 points for receptive language and 51 for expressive language in the first language assessment, obtaining 52 points as the standard score of global language, which includes him in the classification of severe language development disorder. After the twelve stimulations, the standard score of P2 in the language reevaluation was 67 points for the receptive language and 82 for the expressive language, obtaining 72 points as the standard score of the global language, progressing from a severe disorder to a moderate language disorder.

The relevant data described in the evaluation of the caregiver are related to difficulties in understanding what P2 means; the feeling that others do not understand what he says; his performance is low due to his speech problem and she is also not sure if people correct him when he says something wrong.

P3, also male, aged 4 years and 6 months, had the standard score of 53 points for receptive language and 51 for expressive language in the first language assessment, obtaining 50 points as the standard score of global language, which includes him in the classification of severe language development disorder. Soon after the twelve stimulations, the standard score of P3 in the language reevaluation was 67 points for the recep-

tive language and 51 for the expressive language, obtaining 55 points as the standard score of the global language, remaining in the classification of severe language disorder.

In the questionnaire, the caregiver reports difficulties due to speech changes; lack of understanding by colleagues about what he says; in addition to the difficulty of understanding what P3 means.

P4, the only female of the sample, aged 4 years and 3 months, had the standard score of 82 points for receptive language and 77 for expressive language in the first language assessment, obtaining 77 points as the standard score of global language, which includes her in the classification of mild language development disorder. After the twelve stimulations, the standard score of P4 in the language reevaluation was 97 points for the receptive language and 83 for the expressive language, obtaining 89 points as the standard score of the global language, progressing to the classification of normal language development.

Table 2. Comparison of the LDA results of participants - pre and post stimulation

General Information		Identification	P1	P2	P3	P4
		Gender	M	M	M	F
		Educational Level	2nd Y	1st Y	1st Y	1st Y
Pre	LDA	Age	5y5m	4y7m	4y6m	4y3m
		Date of 1st Evaluation	6/28/2017	6/23/2017	6/12/2017	6/23/2017
		Receptive Language	77	63	53	82
		Expressive Language	53	51	51	77
		Global Language	61	52	50	77
Post	LDA	Age	5y8m	4y11m	4y9m	4y7m
		Date of Revaluation	10/2/2017	10/17/2017	10/17/2017	10/2/2017
		Receptive Language	81	67	67	97
		Expressive Language	72	82	51	83
		Global Language	74	72	55	89

As for the relevant data reported by the caregiver in the questionnaire, it is possible to highlight the difficulty in understanding what the student means; the feeling that other students and people do not understand what she says and that her performance is low due to her speech problem.

In the first speech evaluation, P4 had the following processes: unstressed syllable deletion; liquid semivocalization (lateral and non-lateral), lateral liquid replacement for non-lateral in consonant cluster /kl/ for /kr/, final fricative deletion (glottal and alveolar in ESIW), consonant cluster reduction, fricative plosivization (/f/ and /v/ both at the beginning and in the middle of words) and deletion of velar nasal deletion. After the stimulations, P4 had the following processes in the reassessment: pre-tonic unstressed syllable deletion, final glottal fricative deletion in ESIW, replacement of lateral to non-lateral liquid, posteriorization of alveolar fricative, consonant cluster reduction, lateral final liquid deletion in ESIW, intervocalic liquid deletion..

Table 3. CFA data of P4 pre and post stimulation

General Information	Identification	P4	
	Gender	F	
	Age	4 years old	
CFA		Occurrence Pre-Stimulation	Occurrence Post-Stimulation
Age		4y3m	4y7m
Date of Evaluation		5/29/2017	10/17/2017
Consonant Cluster Reduction	-	5	3
Unstressed Syllable Deletion	Pre-tonic	2	3
	Post-tonic	0	0
Final Fricative Deletion	ESIW	3	1
	ESEW	0	0
Final Liquid Deletion	Lat. ESIW	0	1
	Non-Lat. ESIW	0	0
	Lat. ESEW	0	0
	Non-Lat. ESEW	0	0
Intervocalic Liquid Deletion	Lat.	2	1
	Non-Lat.	2	0
Initial Liquid Deletion	Lat.	0	0
	Non-Lat.	0	0
Devoicing	Plos.	0	0
	Fric.	0	0
Anteriorization	Palat.	0	0
	Velar	0	0
Liquid Replacement	Lat.	4	5
	Non-Lat.	0	1
Semivocalization	Lat.	4	3
	Non-Lat.	1	0
Plosivization	-	15	0
Posteriorization	Plos.	0	0
	Fric.	0	1

Discussion

As previously described, the speech-language pathology stimulation exercises were performed in groups, taking into account the respective changes, as follows: Group 1 (G1), with three preschoolers for language stimulation (P1, P2 and P3) and Group 2 (G2), with two preschoolers for language and speech stimulation (P4 and P5). P5 was not mentioned above, as he was withdrawn from the study for not participating in the reassessment after the stimulation sessions. It is noteworthy that even without the reevaluation data, the researchers noticed that the child was showing better linguistic performance during the period that he remained in the stimulation sessions.

P1 missed one stimulation session and also left earlier, an average of 15 minutes, in six stimulation sessions. It was possible to notice an improvement in receptive language and a significant improvement in expressive language, resulting in progress in the classification from severe disorder to moderate language disorder. He was always quiet in the classroom and the caregiver reported that 'he is a shy child' and used more signs than oral language to request something. Situations were created during interventions in which P1 needed to express himself orally. Despite being the oldest child in the G1, he was also the one with the greatest impairment, which can be explained by his family history. According to the school's report, he is from a low-income family, with an unemployed father, a mother with severe psychiatric problems, and he lives with 3 more siblings, so it is possible to observe the lack of stimuli at home. In one of the stimulation sessions, the child urinated when receiving the instruction of the game.

P2 missed two stimulation sessions, slept in one session and had to leave early in another. Improvement was observed after stimulations, mainly in expressive language. There was also an improvement in relation to the receptive language, since it was also possible to notice the improvement in the latency between question and answer after the stimulations. When comparing the global language score, P2 progressed from a severe language disorder to a moderate language disorder.

Despite having missed two stimulation sessions and remaining with a score for severe language disorder, P3 had an improvement in receptive language, in line with the findings in the literature that report that receptive/comprehensive language precedes expressive language, being part of cognitive development and inferential capacity of the individual, constituting the basis of their development[11].

As part of the G2, P4 attended all stimulation sessions and had significant improvement, progressing from mild language disorder to the normal score for the age. P4 also improved in receptive and expressive language.

The child acquires the /v/ phoneme at one year and eight months of age and the /f/ phoneme at one year and nine months of age. Due to the impairment of speech intelligibility and, as the name of the preschooler starts with the /f/ phoneme, this phoneme was chosen as the initial target of the work, and then the /v/ phoneme was worked on. Both were acquired and used properly at the end of the stimulations. As there was no family involvement during the stimulation sessions, it is possible to notice the evolution of P4 in a short time and the involvement of the caregiver should be highlighted, since, under the guidance of the researchers, she effectively stimulated the child during collective activities every day. It was not possible to remedy the other processes conducted due to the time limit of the research. It is known that the bases of phonological systems are universal and innate. Therefore, the occurrence of phonological processes may be observed during the language and speech development of children in general. Some studies suggest that there are socio-cultural factors and little constructive environments that do not contribute to the cognitive development, but cooperate in the development of an altered standard of articulatory production and it can be observed in the speech of P4[12,13].

This study had a higher incidence of male children with language disorders, corroborating with previous studies, which report this prevalence. In addition to being a possibility not yet well explained scientifically, it may be due to a behavior characterized by male disobedience and impulsivity and also by inattention[3,14,15].

As studies show the effectiveness and efficiency of speech-language pathology interventions performed in groups, this intervention had the same results that corroborate with the literature. The groups were composed according to the age group and the type of change, but with different levels of impairment. At various times, children who had less impairment lost interest and patience with those with greater difficulty and ended up hindering not only those who were being stimulated, but also those who were conducting the stimulation[16-18].

During the application of the CFA test, it was possible to notice that the children did not recognize or, when recognizing, they changed names of some figures shown in the cards. The regionalization of the test and its preparation must be taken into account. Although the figures represent our daily lives, the names of some objects and furniture have changed over time, such as 'radio, disc and antenna.' The substitutions or non-recognition of the figures were noticed both in the evaluation and revaluation of the children. Some substitutions have been described in the literature[19].

It is worth mentioning the recognition of this study regarding the importance of family involvement in speech-language pathology therapy. However, it was not possible to provide guidance to the families of the participants during the stimulation, due to the difficulty of direct contact with them.

In order to try to attenuate the facts observed during this research and stimulation, the caregivers were provided with guidance on the difficulties of each child. They were informed on what was being stimulated each week and their opinions were heard regularly.

Conclusion

Children had improvements in language development; it was also found that some children needed individual and intensive intervention, as they were in a borderline age range for the development of language functions. They also needed other evaluations that could not be conducted due to the

purpose of the group intervention. The caregivers' reports and reassessment results showed that the interventions had positive effects and were relevant for the children, characterizing a good proposal for collective speech-language pathology intervention.

References

1. Cupello RCM. A linguagem do meu filho. Rio de Janeiro: Ed. Revinter; 1993.

2. Vygotsky LS. Pensamento e Linguagem. Ed. Ridendo Castigat Mores, set. 2001. [E-Book online]. Disponível em http://www.ebooksbrasil.org/eLibris/vigo.html.

3. Scopel RR, Souza VC, Lemos SMA. A influência do ambiente familiar e escolar na aquisição e no desenvolvimento da linguagem: revisão de literatura. Rev. CEFAC [publicação online]; 2012 [acesso em 30 out 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-18462012000400018&lng=pt.

4. Terra VRA, Rodrigues CF, Passos FC, Vasconcelos SBS, Friche AAl, Lindgren CRa, et al. Alterações fonoaudiológicas em crianças de escolas públicas em Belo Horizonte. Revista Paulista de Pediatria [publicação online]; 2015 [acesso em 29 out 2017]. Disponível em http://www.redalyc.org/articulo.oa?id=406042818013.

5. Costa DMV, Gontijo CMM. A linguagem oral como elemento integrante da brincadeira. Cad. Pesquisa. 2011; 41(142): 268-89.

6. Schirmer CR, Fontoura DR, Nunes ML. Distúrbios da aquisição da linguagem e da aprendizagem. J. Pediatr. (Rio J.) [publicação online]; 2004 [acesso em 27 out 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0021-75572004000300012&lng=en.

7. Simões JM, Assencio-Ferreira VJ. Avaliação de aspectos da intervenção fonoaudiológica junto a um sistema educacional. Rev. CEFAC. [publicação online]; 2002 [acesso 29 out 2017]. Disponível em http://www.revistacefac.com.br/fasciculo.php?url=1&form=edicoes/revista/revista42/Artigo%201.pdf.

8. Befi-Lopes DM, Toba JR. Como crianças e adolescentes com Distúrbio Específico de Linguagem compreendem a linguagem oral?. Rev. soc. bras. fonoaudiol. [publicação online]; 2012 [acesso em 03 out 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-80342012000100019.

9. Menezes MLN. ADL: Avaliação do desenvolvimento da linguagem. São Paulo: Pró-Fono; 2004.

10. Yavas M, Hernandorena CM, Lamprecht RR. Avaliação Fonológica da Criança. Porto Alegre: Artmed; 1991.

11. Armonia AC, Mazzega LC, Pinto FCA, Souza ACRF, Perissinoto J, Tamanaha AC. Relação entre vocabulário receptivo e expressivo em crianças com transtorno específico do desenvolvimento da fala e da linguagem. Rev. CEFAC [publicação online]; 2015 [acesso em 16 nov 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-18462015000300759&lng=en. http://dx.doi.org/10.1590/1982-021620156214

12. Lamprecht RR et al. Aquisição Fonológica do Português: Perfil de desenvolvimento e subsídios para terapia. Porto Alegre: Artmed; 2004.

13. Goulart BNG, Chiari BM. Prevalência de desordens de fala em escolares e fatores associados. Rev. Saúde Pública [publicação online]; 2007 [acesso em 21 nov 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-89102007000500006&lng=pt.

14. Rocha S, Netto L. Perfil de pacientes com alteração de linguagem atendidos na clínica de diagnóstico dos distúrbios da comunicação - Universidade de São Paulo - Campus Bauru. Revista CEFAC [publicação online]; 2005 [acesso em 10 out 2017]. Disponível em http://www.redalyc.org/articulo.oa?id=169320507006

15. Brito RS. Intrincada trama de masculinidades e feminilidades: fracasso escolar e meninos. *Cad. Pesqui.* [publicação online]; 2006 [acesso em 10 out 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-15742006000100006&lng=en&nrm=iso.

16. Araujo MLB, Freire RMAC. Atendimento fonoaudiológico em grupo. Rev. CEFAC [publicação online]; 2011 [acesso em 29 out 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-18462011000200019&lng=en.

17. Veis Ribeiro V, Panhoca I, Dassie-Leite AP, Bagarollo MF. Grupo terapêutico em fonoaudiologia: revisão de literatura. Revista CEFAC [publicação online]; 2012 [acesso em 29 out 2017]. Disponível em http://www.redalyc.org/articulo.oa?id=169322955014.

18. Souza APR, Crestani AH, Vieira CR, Machado FCM, Pereira LL. O grupo na fonoaudiologia: origens clínicas e na saúde coletiva. Rev. CEFAC [publicação online]; 2011 [acesso em 29 out 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-18462011000100017&lng=en.

19. Savoldi A, Gubiani MB, Brancalioni AR, Soares MK. Relação entre as palavras eliciadas na Avaliação Fonológica da Criança e as variáveis idade, gênero e gravidade do desvio fonológico. Rev. Soc. Bras. Fonoaudiologia. [publicação online]; 2012 [acesso em 20 nov 2017]. Disponível em http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1516-80342012000300010

Appendix 1: COMMUNICATION DIFFICULTIES QUESTIONNAIRE

Communication Difficulties Questionnaire	Marques. B.; Abreu, G.; Egídio. V.; Britto. ATBO	Date of Application:
Student:	Gender: F ( ) M ( )	
Date of birth of the student:	Class:	
Teacher (initials):		

	Domain: The effect of my student's speech problem on me.	**Strongly agree**	**Agree**	**Undecided**	**Disagree**	**Strongly disagree**
1	I have difficulty to understand what my student want to say.					
2	I usually interrupt the speech of my student.					
3	I believe my student prefers to point to something rather than verbally asking for things.					
4	I don't know how to act when I don't understand my student.					
5	I don't know how to act when my student doesn't seem to understand what I mean.					
6	I don't feel comfortable talking to my student outside the classroom.					
7	I have difficulty talking to my student when others are close.					
8	I have difficulty interacting with my student.					
9	I talk to my student even if he/she doesn't talk to me.					
10	I get upset when my student doesn't start the conversation.					
	Domain: The effect of the student's speech problem on other people.	**Strongly agree**	**Agree**	**Undecided**	**Disagree**	**Strongly disagree**
11	I believe that other students or other people criticize the student when he/she says something.					
12	I believe that other students or people ignore the student.					
13	I believe that other students and/or people do not understand what the student says.					
14	People correct the student when he/she says something wrong.					
15	People or other students laugh at the student when he/she tries to communicate.					
16	I believe that people avoid talking to the student.					
	Domain: The effect of the student's speech problem on himself/herself.	**Strongly agree**	**Agree**	**Undecided**	**Disagree**	**Strongly disagree**
17	I believe that the student avoids communicating orally.					
18	I believe that my student has few friends due to his/her speech problem.					
19	The student has low self-esteem due to his/her speech problem.					
20	The student isolates himself/herself for not being able to communicate correctly.					
21	The student's academic performance is low due to his/her speech problem.					
22	The student becomes aggressive when he/she cannot communicate properly.					