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# Caregivers' perception of children with Autism Spectrum Disorder regarding to the communicative profile of their children after a communicative orientation program

## *Percepção de cuidadores de crianças com Transtorno do Espectro do Autismo quanto ao perfil comunicativo de seus filhos após um programa de orientação fonoaudiológica*

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### ABSTRACT

**Purpose:** To analyze the perception of caregivers of children with Autism Spectrum Disorder regarding the functional profile of their children's communication in three moments, before and after the guidelines. **Methods:** Caregivers of 62 children diagnosed with ASD (AUTISM SPECTRUM DISORDER) participated in this study, divided into three groups of interventions. All interventions included a program with five pre-set monthly orientation sessions in daily life. In G1 (group 1), the caregivers received the group orientation program, and the children received individual speech therapy. In G2 (group 2), caregivers received the same program orientations but individually, and their children received different treatment. G3 (group 3), composed of caregivers of children waiting for speech-language pathology on the waiting list, received group guidance. All caregivers answered the Functional Communication Checklist (PFC-C) in three moments: baseline, five and eight months. **Results:** In the PFC-C the parents reported an increase in the occurrence of gestural, vocal and verbal means in all groups, to express interpersonal communicative functions, except in G2. In non-interpersonal communicative functions, there was a decrease in the occurrence of the gestural communicative environment, an increase in the verbal climate, with no statistical difference between the groups. As for the vocal climate, there was no difference over time. **Conclusion:** Communication guidelines for caregivers of children with ASD (AUTISM SPECTRUM DISORDER) (Autism Spectrum Disorder) contributed to the understanding of the communicative process in different situations, by detecting differences in their perception of the communication functionality of their children.

### RESUMO

**Objetivo:** Analisar a percepção de cuidadores de crianças com Transtorno do Espectro do Autismo quanto ao perfil funcional da comunicação de seus filhos em três momentos, antes e após as orientações. **Método:** Cuidadores de 62 crianças com diagnóstico de TEA participaram deste estudo, divididos em três grupos de intervenções. Todas as intervenções incluíram um programa com cinco sessões de orientação mensais pré-estabelecidas para fornecer informações sobre o desenvolvimento da comunicação e incentivar atividades práticas de comunicação na vida diária. No G1, os cuidadores receberam o programa de orientação em grupo e as crianças receberam terapia fonoaudiológica individual. No G2, os cuidadores receberam as mesmas orientações do programa, mas individualmente, e seus filhos receberam terapia individual. O G3, composto por cuidadores de crianças que aguardavam atendimento fonoaudiológico em lista de espera, recebeu orientação em grupo. Todos os cuidadores responderam ao Perfil de Comunicação Funcional-Checklist (PFC-C) em três momentos: marco zero, cinco e oito meses. **Resultados:** No PFC-C os pais relataram aumento na ocorrência dos meios gestual, vocal e verbal em todos os grupos, para expressar as funções comunicativas interpessoais, exceto no G2. Nas funções comunicativas não interpessoais, houve diminuição da ocorrência do meio comunicativo gestual, aumento do meio verbal, sem diferença estatística entre os grupos. Quanto ao meio vocal, não houve diferença ao longo do tempo. **Conclusão:** As orientações de comunicação para cuidadores de crianças com TEA contribuíram para a compreensão do processo comunicativo em diferentes situações, por meio da detecção de diferenças em sua percepção quanto à funcionalidade da comunicação de seus filhos.

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## INTRODUCTION

Autism is defining by social, linguistic and behavioral difficulties.

The communication of children with Autism Spectrum Disorder (ASD (AUTISM SPECTRUM DISORDER)) involves the focus on the different subsystems of language, but the inabilities of functional communication, that is, of pragmatic competence is one of the areas that always altered in these children<sup>(1-3)</sup>.

The first definitions of pragmatic language referred to the use of a word in context, covering verbal and nonverbal aspects<sup>(4-6)</sup>. Currently, contemporary interpretations reflect the understanding that in the development of practical communication skills, social and emotional elements intertwined. These aspects involve the development of social skills that help individuals to interpret and solve problems, social information and situational expectations through the use of strategies in natural contexts<sup>(7)</sup>. In this sense, it should remember that the development of pragmatic competence does not refer only to the immediate context, as proposed by Bronfenbrenner<sup>(7)</sup>, but to a hierarchy of contexts that influence human behavior. Pragmatics is considered an aspect of the nucleus of language<sup>(8-10)</sup> that organizes the structure of language; that is, it is not enough for the child to speak morphologically and grammatically correct words and phrases with appropriate phonology and semantics, it is necessary that all this composition is consistent with the intentionality of the speaker and coherent with the social and communicative context.

One way a perceived interlocutor influence is decisive as linguistic choices, both formal and functional was being used during an interaction. Therefore, a communication that establishes between two people qualifies, values or, on the contrary, disqualifies future interactive options<sup>(9,11,12)</sup>. It was being known that the family is the child's first social group. Parents represent the social culture and are also the first effective bond of the child. The way they perceive and interact with their children reflects on their psychosocial structure and social inclusion process<sup>(13)</sup>. A child's ability to realize his intentions to be understood by the other and to understand the purposes of the other is fundamental to communication and can be recognized before one year of age.

Thus, pragmatic abilities emerge with the baby's intent and the caregiver's reciprocity for sharing affection, perfecting combinations of looks (following, responding, switching) and developing gestures involving facial and body facial expressions directed at the interlocutor; these skills are essential for assessing environmental situations through the understanding of social references<sup>(9,14,15)</sup>. In the natural course of development, before 18 months, children call attention to others, protest, request requests (comfort, action, object, information, social routine, etc.), imitate and share care with communicative purpose.

In this period, the ability of shared attention stands out as a precursor of language development. Shared care involves the child and the adult in mutual engagement with a focus on dividing a situation related to a third object, person or event. The term shared care<sup>(12)</sup> has also been used to refer to

a complex set of socio-cognitive behaviors that emerge at the end of the first year of life (e.g., social referencing, observing and pointing)<sup>(16,17)</sup>. Prutting and Kirchner<sup>(15)</sup> stated that the involvement between the caregiver and the baby functions as the basis and mold for acquiring knowledge of oneself, the other and the world.

Progressively, vocalizations involving vowels and consonants that precede or follow vowels may be associated with gestures in the child's effort to make comments and cues about their focus of interest. With the emergence of words or approximation of words, children begin to specify their wishes, because in addition to previous functions, with the development of *multiword* and combination of them, children use language to greet, to name spontaneously, to respond with questions, to request actions and responses, express and explain their feelings, and report experiences and stories. As the child develops, his understanding acquires more sophisticated levels of representation, and thus, it is not exactly the number of functions that increase, but the communicative and linguistic ability to express them<sup>(9,10,18,19)</sup>.

In a recent systematic review<sup>(20)</sup> of practical skills interventions for children with ASD (AUTISM SPECTRUM DISORDER), 20 effective interventions were being identified for individuals with ASD (AUTISM SPECTRUM DISORDER) and the results revealed that the most promising approaches were in groups and those that included active participation of the child and their caregivers during the intervention process.

Collaboration between the speech therapist and caregivers of children with ASD (AUTISM SPECTRUM DISORDER) is a vital partnership considering language as the primary social mediator<sup>(13,21-23)</sup>. In general, family members are the closest people who are being engaged with the child in daily activities. Thus, considering their perception to understand the child's communicative functioning perspective is also to include spaces and contexts beyond intervention<sup>(22,24,25)</sup>.

Miilher<sup>(10)</sup> reported that during social interaction, the interlocutors consolidate their communicative competence. And capability is closely related to the increase in sensitivity to the listener and the conditions under which the communicative acts occur and are considered appropriate or not. However, some caregivers face challenges to recognize and understand the set of factors that involve communicative skills and competencies<sup>(13)</sup>.

Therefore, this study hypothesizes that the Caregiver Communication Guidelines Program (POCC) of children with ASD (AUTISM SPECTRUM DISORDER) (Autism Spectrum Disorder) contributes to changes in the perspective with which parents of ASD (AUTISM SPECTRUM DISORDER) (Autism Spectrum Disorder) children perceive the communication of their children.

Thus, the objective of the present study was to analyze the perception of caregivers of children with Autism Spectrum Disorder regarding the functional profile of their children's communication in three moments (baseline, five-month interval, an eight-month interval) before and after the guidelines.

## METHODS

This research approved by the research ethics committee of the Faculty of Medicine of the University of São Paulo under protocol number 383/14. All subjects were aware of the procedures of this research and signed the Informed Consent Term.

### Participants

Caregivers of 62 children with Autism Spectrum Disorders, diagnosed by neurologists, neuropediatricians, psychiatrists and child psychiatrists, according to the criteria established by the ICD (International Classification of Diseases (de la OMS / WHO) - 10 or the DSM - IV, assisted in the private network system, in a private clinic, or public network, in the Association of Parents and Friends of the Exceptional, in the state of Rio Grande do Sul - Brazil.

Inclusion criteria were: caregivers of children with ASD (AUTISM SPECTRUM DISORDER) between two and twelve years of age, who were willing to participate in the proposed interventions. The exclusion factors considered were: absence of caregivers in more than two orientation or speech therapy sessions.

Caregivers divided into three groups. The sample made for convenience. Thus, the formation of the groups and the distribution of the participants were not controlled, occurred according to the services received and availability of the participating facilities. In this sense, for this research, the three groups of orientation sessions were named interventions, and the speech therapy sessions were titled speech therapy treatment.

Next, it will be possible to visualize in detail the sample characterization in the three groups of interventions.

### Sample constitution

- Group 1: This group received the Communicative Guidance Program for Caregivers of individuals with ASD (AUTISM SPECTRUM DISORDER) in a group, and the children received individual speech therapy. The group consisted of 15 caregivers, 3 (20%) male, and 12 (80%) female. The mean age was 31.7 years, with a minimum of 19 years and a maximum of 56 years. Regarding schooling: six (40%) individuals had elementary education and nine (60) secondary education. The children were 13 (86.7%) boys and two (13.3%) girls, with a mean age of seven years, a minimum of four years and a maximum of 12 years;
- Group 2: This group received the Communicative Guidance Program for Caregivers of individuals with ASD (AUTISM SPECTRUM DISORDER) in individual sessions and the children also received particular speech therapy. The group consisted of 24 caregivers, nine (37.5%) males, and 15 (62.5%) females. The mean age was 38.4 years, with a minimum of 26 years and a maximum of 48 years. As for schooling: three (12.5%) individuals had an elementary education, 15 (62.5%) high school and six (25%) higher education.

The children were 18 (75%) boys and six (25%), female girls, with an average age of five years and two months, minimum of two years and maximum of 12 years;

- Group 3: This group of children whose parents were waiting for speech therapy for their children received the Communicative Guidance Program for Caregivers of individuals with ASD (AUTISM SPECTRUM DISORDER) in a group. The group consisted of 23 caregivers, two (8.7%) male and 21 (91.3%) female. The mean age was 33.7 years, with a minimum of 21 years and a maximum of 49 years. As for schooling: three (13%) individuals had an elementary education, 17 (74%) high school and three (13%) higher education. The children were 20 (87%) boys and three (13%) girls, with an average age of five years, a minimum of two years and a maximum of eight years.

### Materials

#### *Evaluation and reevaluation*

The evaluation tool used was the Functional Profile of Communication - Checklist (PFC-C) for the investigation of functional aspects, derived from the Pragmatic Logging Protocol<sup>(26)</sup>. This questionnaire investigates the communicative means, being: verbal means (when the emission has at least 75% of the phonemes of the language), vocal means (when the emissions do not reach 75% of the phonemes of the word) and gestural means (encompassing the movements of body and face).

It also evaluates communicative functions, divided into interpersonal and non-interpersonal. The interpersonal functions are: OR object request, AR action request, IR information request, CR consent request, Routine Social request SR, C comment, Other OT recognition, PR protest, PE protest expression, NA narrative, shared game SG, DE display and exclamative. The non-interpersonal functions are reactive RE, non-focused NF, self-regulatory SR, G game, exploratory EX, performative PE and AP appointment. This protocol also investigates the occurrence and communicative environment about each communicative function. The event has classified as: (always A, often O, rarely R or never N). Orientation program.

The Communication Guidelines for Caregivers (POCC) of children with ASD (AUTISM SPECTRUM DISORDER) was organized and structured on an ongoing basis through five sessions of communicative guidance. Each of the meetings had a support material to be delivered to caregivers.

The proposed guidelines for caregivers were be divided into five themes presented and discussed with parents at monthly meetings. The topics covered sought to facilitate the understanding and detailing of the content, and printed material - which should take home - aimed to include other members of the home environment, favoring the sharing of information.

Thus, in each orientation session caregivers received a printed brochure, including a theoretical part, a part about stimulation, and a piece about activities for observations and experience reports about their routines.

In the first session, we discussed the importance of context for the development of communicative skills and competencies.

The second session sought to provide insights into language skills and competencies, that is, the ability to understand symbols and use them for interaction in different contexts. In addition, the importance of the various communicative means and functions discussed.

In the third session, the theme was the importance of the aspects that involve the sharing of attention, the spontaneous acts and the possibility to follow the child's interests for active engagement.

In the fourth session, we discussed critical socio-communicative aspects such as motivation, validation of emotions, respect for each child's development time, the importance of games and symbolic games and independence. More challenging elements such as monopolization, excessive commands, distraction, and lack of shared interests were also commented on.

The fifth session offered guidance on how to increase children's communication possibilities, support for improving communicative development and the quality of the child's interaction in the family and society.

## Procedures

### *Evaluations and reevaluations*

In all groups, the interviews were carried out by the researcher to collect the data of the Functional Profile of the Communication - Checklist individually, with the same caregiver and performed in three moments.

Conforme mencionado, estes procedimentos foram realizados em três momentos, são eles:

- 1º) Baseline: it has been considering as the first moment at which the data collections began. An evaluation of the caregivers' perceptions has been performing through the Functional Profile of Communication - Checklist protocol;
- 2º) Five-month interval: it was considering for the first reassessment. The Functional Communication Profile - Checklist was reapplied shortly after the five monthly orientation sessions;
- 3º) Eight months: was considered for the second reevaluation, the last three months being a period without guidelines. Thus, the Functional Profile of Communication - Checklist was being again answering.

### *Organization of intervention groups*

- Group 1: 15 caregivers of children who underwent speech therapy for 45 minutes per week in the public health care network. During the five months, in the public service network. Aiming at participants' participation, performance and comfort, caregivers were subdivided into three groups of five people for the guidance program. Thus, each group of five participants received a monthly communication orientation session. The dates and times were pre-established, lasting 90 minutes, during the five months;

- Group 2: Were composed of 24 caregivers of children who were in Speech Therapy for 45 minutes per week in a private clinic. After four speech therapy sessions with the child, the caregivers received a 90-minute monthly orientation session. The dates had set at the end of each month, during the five months;
- Group 3: Composed of 23 caregivers who were waiting for speech therapy for their children. They received a monthly, 90-minute, orientation session on communication. The dates and times were pre-established during the five-month period.

In the speech therapy sessions, different communicative situations and contexts were established, according to the activities (games, toys, and games) proposed by the therapist or chosen by the children.

Regarding the orientation sessions, they had always started with the presentation of the topic by the researcher and the delivery of printed material that included a part with information about the subject, a piece about the possibilities of stimulation and the last part with activities for observations and experience reports. Each session was started with the story of a real and natural episode of events between caregiver and child, seeking the association of the topics of the guidelines to the natural daily life of the family.

## Data analysis

For the statistical analysis, the Generalized Estimating Equation (GEE) Models had used. These models had calculated from the Wald statistic, along the baseline, and intervals of five and eight months.

The selected models had defined according to the distribution of the dependent variable (Normal or Poisson). The Bonferroni correction had applied to the P values as a result of multiple tests. Since a P was significant for  $\alpha = 0.0009$ , the Post Hoc analysis also corrected by the Bonferroni method had performed. Data were presented as mean (standard deviation) and confidence interval of 95% (95% CI) and n (%), as indicated in the captions and footers of the figures and tables.

## RESULTS

The results will be present according to the perception of the caregivers in relation to the interpersonal and no personal communicative functions expressed by the children and the communicative environment used to represent them in the different interventions, that is, in the three participating groups, in the different times analyzed and are shown in Table 1 and in Figures 1 and 2.

Table 1 shows the statistics of the three variables: time, intervention and interaction (time \* intervention) tested in the MEEG models, demonstrating the main effects for each communicative medium used to express interpersonal functions and not interpersonal skills. These results had also shown in Figures 1 and 2.



**Table 1.** Generalized estimating equation models to evaluate the effects of intervention on gestural, vocal and verbal communicative functions of children of the autism spectrum over time in the caregivers' perception

Variables	Wald Chi-square	df	P-value	P-value Corrected
<b>Interpersonal</b>				
<b>Gestual</b>				
Time	39.8	2	<0.000001	<b>&lt;0.000001</b>
Intervention	1.5	2	0.462361	1
Time*Intervention	7.7	4	0.104414	0.626484
<b>Vocal</b>				
Time	36.4	2	<0.000001	<b>&lt;0.000001</b>
Intervention	1.5	2	0.467065	1
Time*Intervention	11.7	4	0.019399	0.116394
<b>Verbal</b>				
Time	32.9	2	<0.000001	<b>&lt;0.000001</b>
Intervention	0.7	2	0.700892	1
Time*Intervention	4.8	4	0.312452	1
<b>Non-interpersonal</b>				
<b>Gestual</b>				
Time	14.5	2	0.000705	<b>0.004230</b>
Intervention	5.6	2	0.061443	0.368658
Time*Intervention	9.1	4	0.059810	0.358860
<b>Vocal</b>				
Time	3.9	2	0.140263	0.841578
Intervention	4.4	2	0.109048	0.654288
Time*Intervention	10.4	4	0.034489	0.206934
<b>Verbal</b>				
Time	13.3	2	0.001322	<b>0.007932</b>
Intervention	3.2	2	0.201932	1
Time*Intervention	6.5	4	0.163600	0.981600

**Caption:** df = degrees of freedom

### Interpersonal communicative functions (Figure 1)

Regarding the perception of interpersonal communicative functions, the caregivers reported an increase in the occurrence of gestural and verbal means in all groups of interventions, in the first reassessment, at five months, when compared to baseline.

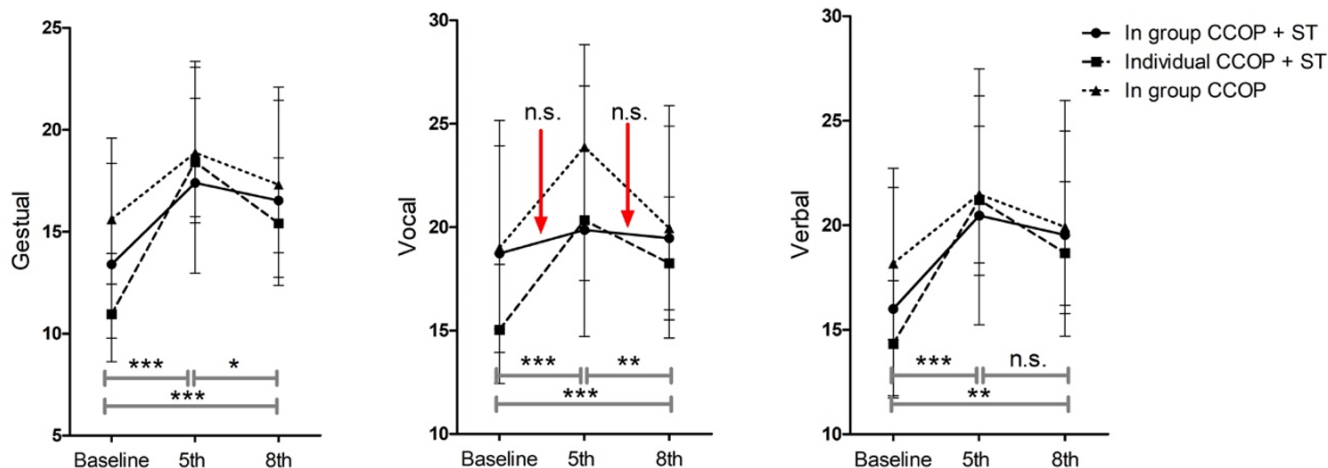
In the second re-evaluation, at eight months, three months after the end of the guidelines, there was a decrease in the use of these means; even so, this proportion remained higher than baseline. There were no statistically significant differences between the intervention groups.

As for the vocal medium, there was no change over time in G1. However, the caregivers of the other two G2 and G3 groups perceived an increased use of the communicative vocal medium to express communicative functions more interpersonal at five months when compared to baseline. In the revaluation of the eight months, they noticed the decrease in the occurrence of this medium, but it continued higher than in the baseline.

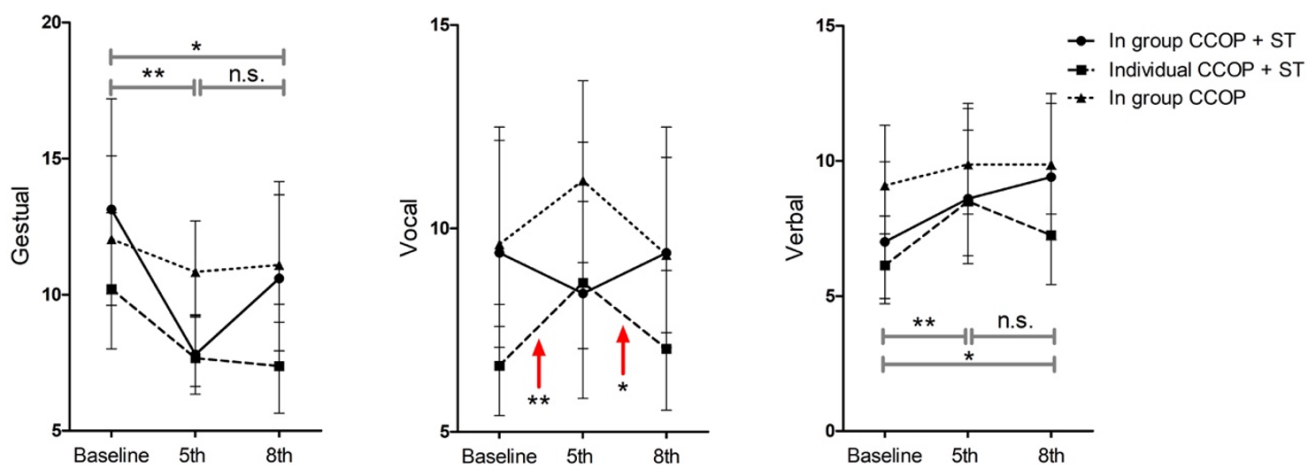
### Non-interpersonal communication functions (Figure 2)

Regarding noninterpersonal communicative functions, caregivers noticed a decrease in the use of the gestural communicative medium in the first reassessment, at five months when compared to baseline, with no change for eight months. There was no statistically significant difference between the intervention groups.

Concerning the perception of the use of vocal communicative means to express no interpersonal communicative functions, G2 caregivers noticed an increase in the occurrence in the first re-evaluation returning to the initial levels at eight months. In the other two groups, G1 and G3 had not observed statistically significant changes over time. The caregivers perceived an increase in the occurrence of the verbal environment when compared to the baseline for the five months, and this did not change at eight months, in the three groups, with no statistical difference between them.



**Caption:** CCOP = Caregivers Communicative Orientation Program; ST = speech therapy; n.s. = non-significant  
**Figure 1.** Effects of interventions over time on the perception of the use of interpersonal communicative functions, expressed by different communicative means, by caregivers. The red arrows signal the post-hoc of the variable “Time\*Intervention,” while the gray bar signals the effect of the variable “Time.” \*  $P \leq 0.050$ ; \*\*  $P \leq 0.010$ ; \*\*\*  $P \leq 0.001$ . Data had expressed as mean and 95% confidence intervals



**Caption:** CCOP = Caregivers Communicative Orientation Program; ST = speech therapy; n.s. = non-significant  
**Figure 2.** Effects of interventions over time on perceived use of non-interpersonal communicative functions, expressed by the different communicative means, by caregivers. The red arrows signal the post-hoc of the variable “Time\*Intervention,” while the gray bar signals the effect of the variable “Time.” \*  $P \leq 0.050$ ; \*\*  $P \leq 0.010$ . Data had expressed as mean and 95% confidence intervals

## DISCUSSION

The instrument chosen for the present study is often used to complement the evaluation of the Communication Functional Profile of children with ASD (AUTISM SPECTRUM DISORDER). The PFC-Checklist essentially had been used by language therapists as an alternative way of evaluating the occurrence frequencies of each communicative function and its form of expression<sup>(26)</sup>.

In this study, the objective was to evaluate, in the perception of caregivers, the communicative function of their children, through the PFC-Checklist. It was determined because the aim was to verify the changes in the perspectives of parents of children

with autism spectrum disorders, regarding the communication of their children, from a set of orientations directed to this theme.

It is the use of procedures that can evaluate the language must be thorough and preferably two-dimensional<sup>(27)</sup>. The assessment of communicative competence includes a clear understanding of the contexts where the child uses his / her language skills. For this reason, it was decided to investigate caregivers. We analyzed only the interpersonal and no personal functions and the communicative means: gestural, vocal and verbal, observed by parents over time.

It is possible to report that the caregivers perceived an increase in the use of the gestural means to express the interpersonal communicative functions in the three groups of interventions

proposed. Gestures such as showing, pointing, delivering, bringing, alternating with the look, are non-verbal ways of making invitations, comments, questions for information or clarification about objects, what they are and what they are for, and all this movement engenders complex chains of social interaction<sup>(9,14,15)</sup>. It is in this conjunction, the exchange of looks, gestures, attributions of meanings and mutual involvement between caregiver and child, which functions as the base from which the child learns about himself, the other and the world<sup>(20,28)</sup>.

On the other hand, after the three months of the end of the guidelines, the caregivers began to notice a statistically significant decrease in the occurrence of the gestural communicative environment in all groups. However, the averages remained higher when compared to the baseline.

As for the analysis between the media and communicative function, a contrary tendency is observed when analyzing the use of the gestural medium to express no interpersonal communicative functions. In all the interventions, the caregivers perceived a statistically significant decrease in the use of the zero-sign communicative means for the 5-month interval.

Also, these results may be related to the topics covered in the second session of orientations, directed to forms and communicative means. One possibility is that caregivers have been more attentive to the movements and gestures presented by their children.

It had noted that, in terms of both interpersonal and non-interpersonal communicative functions, the communicative vocal medium differed from the others. Concerning the interpersonal communicative roles, a perception of a significant increase of the caregivers regarding the use of the vocal medium between baseline and the interval of 5 months in G1 and G3 had identified. However, there is a statistically significant perception of a decrease in these reports between the range of 5 and eight months, but still with reports of higher frequency than in baseline. In G1 it was not possible to notice changes over time in the use of interpersonal functions expressed in the vocal communicative environment.

On the other hand, in all the intervention groups, there was a perception of a higher frequency of caregivers in the use of non-interpersonal functions, that is, the communicative vocal medium was statistically significant from baseline for the 5-month interval, but in the second interval, returned to baseline level.

These variations presented in the use of the vocal communicative medium refer to the idea of Wetherby<sup>(26)</sup>, in the sense that from the knowledge that the caregivers have about the possibilities of manifestations about the communication of their children, they begin to refine their perceptions and, probably acts or broadcasts considered to be typically no communicative, have been evaluated differently, and may or may not be regarded as interactive. Thus, it could be inferred that caregivers appear to be attentive to the ways their children communicate. It can increase the possibilities of communication and improve the synchrony of the language of caregivers with their children<sup>(28)</sup>.

These facts are essential, since innumerable times the children present intentionality, however, some of them in an isolated

way; other times, children have interaction initiative, but they cannot continue after the first shift; or respond to the interaction, but do not engage in an exchange activity involving multiple variations of communication<sup>(10,14,18,29)</sup>. Thus, it was possible to perceive how vigilant the caregivers seem to be for the ways their children communicate and being aware of this can increase the possibilities of communication and improve the synchrony of the language of caregivers with their children<sup>(28)</sup>.

Regarding the verbal environment, caregivers reported a perception of increased use, both to express interpersonal and non-interpersonal functions between the baseline and the 5-month interval in all three groups.

It had noted that G3 caregivers also perceived their children as more efficient in communication, as well as those who received language therapy.

With these results, some reflections emerge, because depending on the appreciation, these data assume different levels of importance. For this study, one of the most relevant data is the movement of the perception about communication of the caregivers, that is, more important than the increase or decrease of this frequency is the possibility of their judgment about the discussion presented by their children, according to the results showed. According to Wetherby<sup>(30)</sup>, acts and communicative functions had loaded with information in their contents, whether or not they have a purpose in the other, and in this sense, parents seem to have attributed meanings to many of these manifestations.

As mentioned, it is known that pragmatic theories consider the context extremely important for communication from the pre-verbal period; that is to say, before even uttering the first words the child can respond to social initiatives, with the emergence of skills that underlie conversational exchanges. These data, which converge with research<sup>(28,30)</sup>, have shown that context, attentive and responsive parental behaviors, predict subsequent language gains in children with ASD (AUTISM SPECTRUM DISORDER), as can be observed through these results, according to their caregivers.

Reflecting the course of development of communicative functions and media, autistic children's caregivers demonstrated a similar profile, qualitatively and quantitatively, among the groups studied in this study. In this sense, it can be inferred, based on the results, that, regardless of the approach, the clinical space can be understood as a potentiator of transformations in relation to the needs of the family, once the caregivers perceive changes in the analysis of the communicative profile of their children, throughout the process.

In general, it was possible to identify increases in the means obtained from the caregiver's reports regarding the occurrences of the communicative methods, mainly in the interpersonal communicative functions. However, it is unusual for these children to evolve rapidly in such a short time, suggesting that the results of this research are likely to be related to caregiver looks. Regardless of the hypotheses raised, this shows a positive effect in the three groups of interventions, over time.

As described by several authors<sup>(19,28)</sup> and research committee<sup>(21)</sup> on interventions aimed at language alterations, it was possible to identify progress in the perception of caregivers regarding the development of language in terms of flexibility in the use of media and communicative functions by all subjects of the research. These advances in the three proposed interventions require other studies that seek to investigate not only the communicative initiative perceived by the caregivers but also the context and the responses given to them, as well as the effective performance of the children and the relationship between this performance and the caregivers' perception.

It should have noted that a limitation to be considered in the present study concerns the time intervals. In an attempt to minimize the loss of subjects, we opted to anticipate the second reassessment, adopting a three-month range instead of five months.

## CONCLUSION

The hypothesis of this study, that it would be possible to produce positive changes in the perspective with which parents of ASD (AUTISM SPECTRUM DISORDER) (disorder attention deficit) children perceive the communication of their children from an Orientation Communication Program for Caregivers (POCC) of children with ASD (AUTISM SPECTRUM DISORDER) can be considered confirmed detection of differences in the perception of caregivers regarding the functionality of their children's communication. The fact that similar results have obtained from different strategies of presentation and discussion of the themes seems to indicate that they may constitute alternatives that can have applied in different contexts and different realities.

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#### **Author contributions**

*JIB prepared the initial proposal for the study, organized and implemented the procedures, analyzed the results and drafted the text, in collaboration with FDMF, as a mentor:*