

O uso interativo da comunicação em crianças autistas verbais e não verbais***

Interactive use of communication by verbal and non-verbal autistic children

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Abstract

Background: communication of autistic children. **Aim:** to assess the communication functionality of verbal and non-verbal children of the autistic spectrum and to identify possible associations amongst the groups. **Method:** subjects were 20 children of the autistic spectrum divided into two groups: V with 10 verbal children and NV with 10 non-verbal children with ages varying between 2y10m and 10y6m. All subjects were video recorded during 30 minutes of spontaneous interaction with their mothers. The samples were analyzed according to the functional communicative profile and comparisons within and between groups were conducted. **Results:** data referring to the occupation of communicative space suggest that there is an even balance between each child and his mother. The number of communicative acts per minute shows a clear difference between verbal and non-verbal children. Both verbal and non-verbal children use mostly the gestual communicative mean in their interactions. Data about the use of interpersonal communicative functions point out to the autistic children's great interactive impairment. **Conclusion:** the characterization of the functional communicative profile proposed in this study confirmed the autistic children's difficulties with interpersonal communication and that these difficulties do not depend on the preferred communicative mean.

Key Words: Autistic Disorder; Child; Language.

Resumo

Tema: comunicação de crianças autistas. **Objetivo:** avaliar a funcionalidade da comunicação de crianças incluídas no espectro autístico divididas em dois grupos (verbais e não verbais) e identificar as possíveis relações entre os grupos estudados. **Método:** foram sujeitos 20 crianças autistas, 10 verbais e 10 não verbais, com idade variando entre 2a e 10m e 10a e 6m de vida. Todos os sujeitos foram gravados durante 30 minutos, em situação de interação espontânea com a mãe. O corpus das gravações dos dois grupos foi analisado quanto ao desempenho do perfil funcional de comunicação de cada sujeito, de cada grupo e as possíveis relações existentes entre os dois grupos. **Resultados:** os dados referentes à ocupação do espaço comunicativo sugerem equilíbrio entre a comunicação da criança autista e sua mãe. Quanto ao número de atos comunicativos produzidos por minuto, nota-se que há uma visível divisão entre as crianças, que coincide com a divisão de grupos proposta: crianças autistas verbais e crianças autistas não verbais. Com relação à utilização dos meios comunicativos pelas crianças autistas observa-se que tanto as crianças autistas não verbais como as verbais fazem grande uso do meio gestual para se comunicarem. Os dados correspondentes à utilização das funções comunicativas mais inter-pessoais apontam a dificuldade da criança autista em interagir com o outro. **Conclusão:** a caracterização do perfil funcional da comunicação realizada neste estudo confirmou a dificuldade destas crianças no estabelecimento de interações comunicativas e como essas dificuldades independem do meio comunicativo utilizado.

Palavras-Chave: Transtorno Autístico; Linguagem; Criança.

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Introduction

Infantile autism is considered a developmental disorder that reaches the areas of social interaction, language and cognition. The autism spectrum includes a wide range of neurodevelopmental disorders whose central axes involves three great areas: social interaction impairments, verbal and non-verbal communication disorders and restrict and repetitive patterns of behavior¹. The pragmatic perspective involves the functional aspects of language: including non-verbal, social and environmental issues in the study of language; determining associations between language and context and considering the language development as related to the child's cognitive, emotional and social development². According to the author, the pragmatic theories allow the focus on the language's social value. The communication of children of the autism spectrum has several peculiarities and doesn't follow the same developmental course observed in normal children. Several authors report comparative studies with children in normal development, with mental deficits or with specific language impairments³⁻⁷. Another author⁸ states that mothers of autistic children tend to speak directly toward the child's attention focus as frequently as mothers of children with typical language development. The mother's adaptation attempts to the child's interaction impairments were also identified in a previous study⁹. A research about the gaze direction of autistic children produced results very similar to four-month old babies¹⁰. Longitudinal studies favor the identification of individual and comparative variations in language development of autistic children¹¹. A study about the interactive style of autistic children's mothers identified that the mothers that deal better with the diagnosis tend to establish more effective communicative interactions¹².

The aim of this study was to compare the communicative functionality of verbal and non-verbal autistic children.

Method

This study was approved by the institution's ethic committee (#347/97) and all the caretakers signed the consent form.

Subjects

Subjects of this study were 20 autistic children with ages varying from 2:10 to 10:6, 17 of male gender

and 3 females with diagnosis of autism spectrum disorders determined by psychiatrists according to the criteria determined by the American Psychiatry Association in the DSM-IV13 and by the World Health Organization in the IDC14 and referred to speech and language assessment.

Procedures

All subjects were divided in two groups (verbal and non-verbal) filmed just once before the language assessment. The inclusion criteria in the verbal (V- 10 subjects) or in the non-verbal (NV- 10 subjects) groups was the medical report included in the referral documents. None of the subjects had gone to prior speech and language assessment intervention before the study's onset. All subjects were filmed for 30 minutes during a situation of spontaneous play with their mothers. The recording took place in the same laboratory the children received language therapy after the initial assessment (SLP research laboratory in ASD - School of Medicine - Universidade de Sao Paulo). No special instructions were provided to mothers or children. It was performed by one of the researchers or by the speech and language pathologist that would conduct the posterior assessment in a time and date previously accorded with each mother. The filmed samples were synthesized in individual protocols that identified: the number of communicative acts produced per minute, the communicative functions expressed and the communicative means used according to the criteria suggested by Fernandes¹. The whole corpus was analyzed about the functional communicative profile of each subject, of each group and the possible associations between the groups.

Results

To this study the t-student test was used with a significance level of 5% (0.050).

The proportion of occupation of the communicative space, presented in Table 1, was close to 40%, with the largest variations in the NV group. Non-verbal autistic children (NV group) presented variations between 25% and 63% while in the verbal autistic children (V group) the variation was between 29% and 49%. Different from the communicative space, the number of communicative acts produced per minute resulted in a significant difference between the groups. Non-verbal autistic children produced less communicative acts per

minute than the verbal children.

The next analysis refers to the use of the different communicative means. Table 2 shows that in both groups the gestural communicative mean was the most frequently used. This was the only communicative mean that didn't present significant differences between the groups. It is important to point out that children of group V have verbal communication and even so only four of them used more frequently the verbal than the gestural communicative mean. It should be stressed that among the non verbal autistic children the gestural mean is the most frequent followed by the vocal mean while in the group of verbal autistic children

the vocal mean is less expressive and the verbal mean is more used. The use of the gestural mean is significant in both groups.

Table 3 presents the data referring to the interpersonal communicative functions expressed, that is, the proportion of communication interactivity. It can be noted that just two children of the NV group didn't use any interpersonal communicative function and just one of the V group expressed only interactive communicative acts during data gathering. Although there is a significant difference between the groups, the low proportion of interactive communicative acts in the communication of autistic children is an issue that will be retaken in the discussion of the results.

TABLE 1. Proportion of the communicative space occupied and number of communicative acts per minute expressed by the subjects of the two groups

Subjects	Non-Verbal Group		Subjects	Verbal Group	
	Communicative space %	Acts/minute		Communicative space %	Acts/minute
1	63	3.2	11	38	6.7
2	47	2.4	12	45	3.8
3	25	1.3	13	49	3.9
4	50	3.4	14	31	5.1
5	37	1.6	15	34	4.7
6	34	1.4	16	43	6.3
7	39	1.9	17	38	7.2
8	47	1.8	18	29	3.3
9	48	1.8	19	32	4.5
10	34	1.6	20	31	3.4
Average	42.4%	2.04	Average	37%	4.89
St. deviation	10.2	0.69	St. deviation	6.44	1.33
			(p)	0.19612	0.00001

TABLE 2. Proportion of use of the communicative means by the subjects of both groups

Subjects	Non-Verbal Group			Subjects	Verbal Group		
	VE	VO	G		VE	VO	G
1	0	37	63	11	37	21	51
2	0	48	53	12	18	26	60
3	0	25	75	13	40	13	49
4	1	47	52	14	6	19	79
5	0	54	48	15	24	11	69
6	2	15	83	16	53	24	33
7	7	21	73	17	62	3	41
8	7	44	49	18	60	2	40
9	0	21	81	19	57	8	41
10	0	6	94	20	37	3	64
Average	1.7	31.8	67.1	Average	39.4	13	52.7
St. deviation	3.09	16,29	16.33	St. deviation	19.00	9.06	14.82
				(p)	0.0427	0.0049	0.1134

Legend: VE = verbal; VO = vocal; G = gestural

TABLE 3. Proportion of communication interactivity of subjects of both groups

Non-Verbal Group		Verbal Group	
Subjects	Interpersonal functions %	Subjects	Interpersonal functions %
1	50	11	50
2	56	12	50
3	0	13	63
4	40	14	60
5	50	15	63
6	25	16	64
7	25	17	64
8	50	18	56
9	25	19	50
10	0	20	63
Average	32.1	Average	58.3
St. deviation	19.51	St. deviation	5.88
		(p)	0.0077

Discussão

The analysis of the occupation of communicative space and of the number of communicative acts produced per minute by the subjects of this research shows variations in both aspects. The occupation of the communicative space indicates a certain balance in the mother-child communication. However, when the production of communicative acts is considered in relation to the sample's duration the data about both groups are different suggesting that the reciprocity between mother and child forms the base and the mold from which communication develops. In the first aspect, communicative space occupation, the mother seems to be the agent of the balance. The interactive situation is a privileged one because each child has the own mother as a communicative partner. Knowing the child's communicative needs the mother works as a facilitator to the communication and places the child as the central focus of her attention (at least during the data gathering period). Prior studies^{4-6,16-18} point out to the mother's important as a communicative partner to the communication development process. The mother represents a preferred partner to the child, determining an affective association that will generate symmetric communication patterns¹⁹. Other authors¹⁸ state that the mothers use simple, repetitive speech, grammatically and semantically adjusted to the child's understanding and interest levels. In this sense, the largest data dispersion referring to the non-verbal children with more than 3 years of age shows how difficult is this process undertaken by

the mother, of building a symmetric communication and therefore of building her own role as a communicative partner. In the second aspect, the number of communicative acts expressed per minute, the relation if the communication produced by the child within a certain time lapse and it can be a good indicator of the communicative performance.

In this aspect it can be noted that there is a clear division between the groups. Even not expecting any chronological association, these data allow the consideration of the verbal group as further developed than the non-verbal one in term of communication development since the best performance of the V group practically coincides with the poorest performance of the NV group.

In what refer to the use of the communicative means by autistic children, it was observed that both the verbal and the non-verbal children use mostly the gestural mean of communication. The subjects of the NV group used the vocal communicative mean more than the subjects of the V groups. Brazilian authors²⁰ compared the pragmatic abilities in normally developing children and in children with language developmental disorders and verified that the children with language developmental disorders presented impairments or delays in the preferential use of the verbal mean to communicate and used more gestures and vocalizations to express communicative intent. According to the authors the prevalence or stability of the use of gestural and vocal communicative means may be suggestive of impairments in language development.

A prior research²¹ studied the communication of autistic children in different contexts and observed variations in the use of the different communicative means according to the communicative partner. According to the authors when the interlocutor is less efficient (in the case of this study, a group situation without an adult's facilitation) the use of redundant communicative means is necessary, and so the gestural means may support what is conveyed by the verbal mean, for example. It follows the same principle determined in the present study.

The analysis of the use of the interpersonal communicative functions provides data about the child's interactive competence and the data presented show the autistic children's impairment in this domain. This observation confirms prior studies⁸ that concluded that autistic children are less responsive to interactive attempts and have less spontaneous communication. Other studies^{6,22-24} report the severe impairment of autistic children in the interactive use of communication to specific functions.

Conclusion

The difficulties presented by autistic children with the interactive use of communication reinforces the meaning of the notion that isolated and specific social and cognitive elements evolve together with the linguistic and non-linguistic communication development and there is a mutual interference in the process. Therefore the inclusion of the autism as a developmental disorder makes sense since it involves all the areas of development.

The option of conducting the data gathering in communicative situations with the mothers provided a familiar interlocutor that probably allowed each child's best performance. The characterization of the functional communicative profile confirmed the areas of larger difficulties. The presence of large individual differences demands other studies comparing more homogeneous groups.

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