Functional Communication Profile – Revised: objective description of children and adolescents of the autism spectrum

Functional Communication Profile – Revised: uma proposta de caracterização objetiva de crianças e adolescentes do espectro do autismo

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ABSTRACT

Purpose: To objectively characterize the alterations of autistic children and adolescents as to their severity degree, according to the answers to the Functional Communication Profile – Revised (FCP-R). **Methods:** Subjects were 50 children (mean age 7 years 11 months) with diagnosis within the autism spectrum that were assessed according to the FCP-R criteria. Answers were scored and classified according to severity, and the results were statistically analyzed. **Results:** This group characterization evidenced results that agree with the literature, showing disorders mainly in the areas of language (expressive and receptive), behavior and pragmatics. Individuals without verbal communication also showed speech and fluency disorders. **Conclusion:** The FCP-R was sensitive to characterize the studied population, and even more efficient for individual assessment.

Keywords: Autistic disorder; Speech, language and hearing sciences; Child language; Questionnaires

INTRODUCTION

Several studies have aimed to identify, describe and present more efficient intervention proposals to symptoms of the autism spectrum disorders.

Autism is classified as a Pervasive Developmental Disorder on the DSM IV[1], and was described by the American Psychiatric Association as a complex group of inabilities which affects the communication, the cognitive capacity and the social interaction of the affected individuals[1].

From the many descriptions of autism, apparently the only point in which there is an agreement among several authors is the attribution of a central role in its description to the language disorders[2]. The functional perspective of language use takes into account, besides the functions and communicative means, the context in which communication happens. This perspective shows that to consider the non-verbal aspects of the communication of children with psychiatric disorders is extremely important for its effective research[3].

The difficulties in communication occur in varying degrees, both in verbal and non-verbal ability of sharing information with others. Some children don't develop communication abilities. Other children present an immature language, characterized by the use of jargon, echolalia, pronoun reversal, abnormal prosody, monotonous tone of voice and other changes. The language and communication deficits tend to persist through adulthood[4]. Those individuals that acquire verbal abilities can show persistent deficits in their capacity to establish and maintain conversation. This difficulties can manifest as lack of reciprocity, difficulties to understand language subtleties, jokes and sarcasm, as well as problems to understand body language and facial expressions[4].

A Brazilian study[5] highlights that, in the conceptualization of communication and language, many elements are involved, considering the communicative effectiveness determined in the speaker-listener relationship, taking into account both the emissions of the speaker and of the receptor, and the roles exchange between them.

The communicative competence, when systematically assessed, allows better understanding by the professionals

about how the situation interferes in the way a child uses the linguistics abilities[6].

The assessment techniques should have as specific objective, the differential diagnosis and questions about the improvement of communicative functions. The determination of evaluation criteria to standardize the obtained data is very important for the success of the proposed therapeutic techniques[7].

The Speech-Language Pathologist (SLP) must consider the relation between language abilities and communicative competence. Language ability refers to the child's capacity to comprehend and formulate the symbolic systems that are spoken or written. Communicative competence refers to the ability of making use of the language as an effectively interactive instrument in other social contexts[6]. This competence involves the communicative intention, regardless of the means used to communicate[8].

Used to assess communication, the Functional Communication Profile – Revised (FCP-R) offers a sensible and organized method to evaluate the individuals' communicative abilities, according to the age, of children with acquired or developmental deficits[9].

The purpose of this study is to characterize the disorders of children and teenagers included in the autism spectrum according to the severity degree of the autism based on the answers to the FCP-R.

METHODS

The study was submitted to the Ethics Committee for the Analysis of Research Projects of the School of Medicine of Universidade de São Paulo, and received approval under protocol number 117/10. A responsible adult of each of the subjects involved signed the consent form.

Subjects were 50 children and teenagers from 3 years and 9 months to 14 years and 8 months (mean age of 7 years and 11 months), of both genders, with diagnosis within the Autism Spectrum Disorders (ASD) enrolled in speech-language therapy at the Research Lab on Language on Autism Spectrum Disorders of the Undergraduate Program in Speech-Language Pathology and Audiology of the School of Medicine, Universidade de São Paulo.

The individuals were assessed according to the criteria of the Functional Communication Profile – Revised (FCP-R), The results obtained were graded, classified and tabulated.

Procedures

The Functional Communication Profile – Revised (FCP-R)[9] can be applied by four different means: interview with the therapist, interview with the parents, direct access or video observation.

As it is an instrument with technical data, extensive and detailed, the application was made during an interview with the therapists responsible for the individual treatment of each one of the subjects. All the therapists are graduated SLPs and have been treating the subjects for at least six months before the questionnaire was applied. This time was considered sufficient

to provide the information required by the FCP-R.

This instrument evaluates the individuals' abilities of communication in the following aspects: Sensorial, Motor, Behavior, Attention, Receptive Language, Expressive Language, Pragmatic/Social, Speech, Voice, Oral Mobility, Fluency and Non-verbal Communication. The questions of each area supply information that allow the commitment of a degree to the subjects in each studied area. The authors propose that this analysis should be made according to the personal impressions derived from the answers obtained.

With the aim of making the instrument more objective and avoid possible interferences due to opinions, the possible answers were graded according to the frequency and to the severity of the manifestation in the autism spectrum. The scores assigned varied from zero to four points, been zero to the best possibility of answer, and four to the worst possibility, or the most severe behavior and/or most frequent in the autism spectrum disorder.

The scoring determined to each possible answer defined the minimum and maximum scoring for each severity degree. The severity possibilities are: normal, mild, moderate, severe and profound, with a specific scoring criterion for each severity degree.

Data analysis

The data obtained were scored and transferred to the spreadsheet according to the severity degree obtained. These data were grouped and placed in percentages with the intention of characterizing this population and verify the most frequent features.

The intra-group comparison used the Analysis of Variance – Anova. The significance level adopted was 0.05 (5%). In the situations where there was significant difference the t Student test for the analysis of pairs of significant variables was applied, considering the prevalent item.

RESULTS

The data obtained in the FCP-R are described in Table 1 and its analysis is presented hereafter.

The results indicate that, for the Sensorial domain, there was a difference for the regular classification regarding the other classifications (p<0.001). In the Motor domain, there was also a difference, being the normal classification significant (p=0.04). In the Behavior domain the moderate classification was representative for the studied population (p=0.001).

For the Attention/Concentration domain, the more prevalent classifications were mild and moderate. When compared to the sum of the other categories, both present differences (p=0.009 and p=0.03, respectively) and the classification between mild and moderate was significant.

To the Receptive Language domain, the regular and mild classifications presented differences regarding to the other occurrences (p=0.004 and p=0.04), but there was no difference between them (p=0.08); therefore the classification comprehended between regular and mild was considered representative of this domain.

Table 1. Proportional distribution of the answers on the FCP-R domains

	Normal	Mild	Moderate	Severe	Profound
Sensorial	80	16	4	0	0
Motor	60	24	14	2	0
Behavior	6	14	60	18	2
Attention/concentration	16	38	36	8	2
Receptive language	40	34	14	10	2
Expressive language	2	42	32	20	4
Pragmatic/social	4	26	18	44	8
Speech	10	12	26	6	46
Voice	76	4	0	0	20
Oral motricity	88	6	6	0	0
Fluency	28	28	6	0	38
Non-verbal communication	40	40	18	2	0

To the Expressive Language, the classifications with higher prevalence were: mild, moderate and severe (respectively). When compared to the two classifications with lower prevalence (normal and profound), the three classifications present significant differences ($p<0.001$, <0.001 and 0.001 respectively). When compared the two more prevalent classifications (mild and moderate) regarding the third more prevalent (severe) there is a significant difference ($p=0.0001$ and 0.0009 respectively) and lastly, when we compare the most prevalent (mild) with the second more prevalent (moderate) there is also a significant difference ($p=0.02$). Thus, it is possible to state that the mild classification for the Expressive Language domain is representative for the studied population; however, the answers varies between mild, moderate and severe, being this classification of variation (light to severe) representative for this domain.

For the Pragmatic/Social domain, the severe classification is considered significant regarding the others ($p<0.001$ for all the pairs of comparison). For the Speech item, the most frequent classification was profound, being representative for this population. In the Voice domain, the representative classification was normal, regarding the sum of the others ($p<0.001$).

On the Fluency domain, the profound classification was representative for the studied group, regarding the other classifications ($p=0.02$; 0.02; <0.001 and <0.001).

In the domain Communication the representative answers varied between regular and mild. When compared (the regular and mild classifications individually) to the sum of the moderate, severe and profound classifications there is a significative difference ($p= 0.0003$).

DISCUSSION

The diagnostic within the autism spectrum requires the identification of deficits in the development of the areas of social interaction, cognition and language. Studies performed over the years[10-13] have demonstrated the large individual variations in this population, what contributes also to the notion of autism spectrum[14].

It is in this perspective that the comprehension of the degree

of severity assessed by FCP-R is based. The variability found in the individuals included in the autism spectrum is, once more, evidenced by the analysis of the degree of severity of many areas affected.

In this study, it was possible to determine a degree, or a degree variation, based on the significant data for each one of the areas assessed by the FCP-R.

For the Sensorial domain, the questions addressed by the protocol involve issues about hearing and visual abilities (regarding hearing loss, visual impairments and visual tracking). In this study, the analyzed population presented, significantly, the normal classification. These data corroborate prior studies that have observed other kind of comorbidities but not the hearing and/or visual losses[15] and studies that investigated the hearing function and have not found deficits[16].

In the area that refers to the Motor abilities presented by these individuals, the regular classification is significant. This area addresses questions regarding, mainly, to the motor coordination. Although there are studies that observes that children with the diagnostic of Asperger syndrome present later motor development[17], there is not a standard correlation between the motor disorders and ASD.

The Behavior area is described in the questionnaire as addressing inappropriate behaviors, involving questions related to characteristic behaviors of ASD, including idiosyncratic speech and echolalia as behavioral disorders, and behaviors not commonly seen, but with greater severity. For this area, the significative classification was moderate. Many studies evidenced that autistic children usually present severe behavioral disorders[4,18]. It is possible to associate the difference of the results obtained in this study not only to the individual variation of this population but also to the fact that these individuals were receiving in language therapy for at least, six months, with focus on the pragmatic and social-cognitive abilities that, according to Wetherby and Prutting[19] are related to the behavioral disorders.

The questions related to Attention/Concentration refer to distraction, answering gap and recognition and, for this population, determined significant distribution from mild to moderate. Studies have been observing these disorders[20-22]

and highlight the various degrees of difficulty of ASD children in attention tasks.

For the Receptive Language item, the answers vary from regular to mild. The questions related to these domains involve understanding of concepts, answers to own name and attention to commands, among others. Specifically in this domain the FCP-R focus on simple aspects of language comprehension and it may be the reason of the general good performances.

Regarding Expressive Language, the answers resulted on a more comprehensive classification, varying from mild to severe. For this domain, the speech is considered in some items, and in this study there was a similar distribution between the individuals that have verbal and non-verbal abilities, probably because of the variation observed. In other study that also involves specific protocols to the diagnostic, the verbalization also inferred with the result, thus recommending a more detailed analysis, according to the individuals variations[23].

In the Pragmatic/social domain, the representative classification was severe. In a study that identified the pragmatic abilities[24], it was verified that ASD children present great difficulties in this area, agreeing with the results obtained with the FCP-R.

On the Speech domain, the significant classification was profound. Considering that the distribution of verbal and non-verbal individuals was similar, the verbal individuals varied between regular and severe and all the non-verbal obtained the classification profound.

In the Voice and Oral Motricity domain the significant classification was normal. There are no studies that assessed these characteristics in ASD individuals, but the questions addressed by the FCP-R are superficial and have more a description purpose, not an evaluation one.

On the Fluency domain, the profound classification was representative. Once more, it happened in this item what happened in Speech, the non-verbal individuals obtained scores related to the profound classification and the verbal individuals related to the other classifications.

In the Non-Verbal Communication domain, the representative classification was mild. For this item, the questions considered the use of sign language or some alternative communication, possibilities of expressing yes/no answers and even the fine motricity abilities. Thus, the scoring obtained is consistent with the comprehensiveness of the questions addressed.

CONCLUSION

The FCP-R has shown to be sensible to characterize the studied population, according to the degree of severity in each one of the domains addressed. It is possible that it can be even more effective to an individualized assessment, aiming to characterize a specific profile, for the delimitation of the therapeutic processes.

The severity degrees found for each one of the areas of the FCP-R are consistent with the data that can be found in the literature, evidencing that the protocol and the scoring system adopted were adequate to characterize this population.

RESUMO

Objetivo: Caracterizar objetivamente as alterações de crianças e adolescentes incluídos no espectro do autismo de acordo com o grau de severidade definido a partir das respostas ao *Functional Communication Profile – Revised* (FCP-R). **Métodos:** Foram selecionadas 50 crianças (idade média 7 anos e 11 meses) com diagnósticos no espectro do autismo que foram avaliados segundo os critérios do FCP-R. As respostas obtidas foram pontuadas e classificadas de acordo com a severidade e realizada análise estatística pertinente. **Resultados:** A caracterização dessa população evidenciou dados concordantes com a literatura, mostrando prejuízos nas áreas de linguagem (expressiva e receptiva), comportamento e pragmática, principalmente. Os indivíduos que não possuem habilidades verbais evidenciaram, ainda, alterações referentes aos domínios fala e fluência. **Conclusão:** O FCP-R foi sensível para caracterizar a população estudada, mostrando-se ainda mais eficaz para a avaliação individualizada.

Descritores: Transtorno autístico; Fonoaudiologia; Linguagem infantil; Questionários

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