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Original articles

Correlation between speech pathology screening and diagnosis of children aged 0-12 years

Concordância entre classificação das queixas obtidas nas triagens e diagnóstico fonoaudiológico de crianças de 0-12 anos

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Conflict of interest: non-existent

ABSTRACT

Purpose: to analyze the correlation between the classification of speech therapy findings on screening with the results of specific assessments of each area in a speech therapy school clinic in southern Brazil.

Methods: a descriptive, retrospective study of the cross-sectional cut from secondary data collected from medical records of 133 children under 12 years old. The complaints classification found during screening were compared with the diagnoses assigned after evaluation. They were classified into 3 groups: Group 1 - totally in agreement: When the complaints and diagnoses identical in number and classification, Group 2 - Partially disagree: Equal complaints and diagnoses, however, are others disagreeing in number or in the area of Speech Therapy and Group 3 - Complete disagreement: When there was disagreement on complaints and / or diagnosis, in number and classification.

Results: the prevalence was 61 % for males. The average age was seven years and two months. There was no significant difference between the values of groups 1 and 2, 47.4 % and 46.6 % respectively. Group 3 had only 6 %. The complaints that were reported during screening were classified in Orofacial Motricity (34.9 %) , Speech (23.1 %) , Language (13.4%) and Phonology (8.6%). The most frequent diagnoses were : Orofacial Motricity (39.8%) , Phonology (20.4%), Language (11.8%), Speech (6.5%) . The complaints and diagnoses that had higher agreement were: Phonology, Orofacial Motricity, Stuttering and Language. The complaint of voice showed a greater disagreement.

Conclusion: there was agreement between the results of the screening and diagnosis, in number and speech therapy areas, with the highest concerning the classification of complaints and diagnoses related to Orofacial Motricity.

Keywords: Speech, Language and Hearing Sciences; Health Services Needs and Demand; Health Sciences; Diagnosis; Triage

RESUMO

Objetivo: analisar a concordância entre a classificação das queixas fonoaudiológicas encontradas na triagem com os resultados das avaliações específicas de cada área em uma clínica-escola de Fonoaudiologia no sul do Brasil.

Métodos: estudo descritivo, retrospectivo, de corte transversal, a partir de dados secundários, coletados de 133 prontuários das crianças com idade até 12 anos. A classificação das queixas encontradas nas triagens foi comparada com os diagnósticos atribuídos após a avaliação. Foram classificados 3 grupos: Grupo 1 - totalmente em acordo: Quando houve queixas e diagnósticos idênticos em número e classificação; Grupo 2 – Parcialmente em desacordo: Queixas e diagnósticos iguais, mas havendo outros discordando em número ou em área da Fonoaudiologia; e Grupo 3 - Totalmente em desacordo: Quando houvesse discordância entre queixas e diagnósticos, em número e classificação.

Resultados: a prevalência foi de 61% para o sexo masculino. A média de idade foi de sete anos e dois meses. Não houve diferença significante entre os valores dos grupos 1 e 2, 47,4% e 46,6% respectivamente. O grupo 3 teve apenas 6%. As queixas que mais foram relatadas na triagem foram classificadas em Motricidade Orofacial (34,9%), Fala (23,1%), Linguagem (13,4%) e Fonologia (8,6%). Os diagnósticos mais encontrados foram: Motricidade Orofacial (39,8%), Fonologia (20,4%), Linguagem (11,8%), Fala (6,5%). A classificação das queixas e diagnósticos que obtiveram maior concordância foram: Fonologia, Motricidade Orofacial, Disfluência e Linguagem. Apresentou maior discordância a queixa de voz.

Conclusão: houve concordância entre os resultados da triagem e do diagnóstico, em número e área fonoaudiológica, sendo que a maior foi referente à classificação de queixas e diagnósticos em Motricidade Orofacial.

Descritores: Fonoaudiologia; Necessidades e Demandas de Serviços de Saúde; Ciências da Saúde; Diagnóstico; Triagem

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INTRODUCTION

The fundamental starting point for any kind of speech therapy is to find out a person's complaint or reason for seeking a speech therapist. A patient's complaint should be the core of treatment planned by the therapists, since it is the motivation for people to seek and adhere to treatment. It is essential that patients cooperate because speech therapists work with changing previously acquired habits and/or patterns[1,2].

Many people looking for speech therapists are referred by other health professionals (dentists, doctors, etc.) or by teachers without knowledge of how to speech therapy is performed and if there is real need for it. More importantly, the complaint is actually not made by the patient or guardian, but by the professional who referred the patient. By finding out patients' complaints, these issues are addressed in order to understand how interested and involved in the treatment patients are[1,2].

Often, a patient is undergoing speech therapy, but they are not aware of what this science deals with and what it can contribute to their quality of life. A survey on the knowledge of caregivers of patients in a speech pathology university clinic on the work of speech therapists, showed that there was a narrow perception of the role of speech therapists in their profession and what they can offer to the population in terms of health promotion and disease prevention. In that survey, most participants answered that a speech therapist is someone who is working with speech and hearing, to improve people's communication, quality of life and social relationships[3].

The medical history interview has an important role in enunciating the complaint, and it must be configured as a space for listening and making patients feel comfortable, because at this point they should explain their suffering as related to symptom(s)[4]. A complaint is understood as the spontaneous demonstration by the patient of physical injuries and harm caused by any change in the field of speech therapy. Being aware and sensitive to patients' complaints helps prioritize the care given to people seeking speech therapy.

The result of clinical assessment, in turn, should provide sufficient conditions for diagnosis, prognosis, treatment plan and possible referrals for effectively solving the problems identified[2,5]. Thus, a speech therapist must determine whether or not the patient needs therapy; define a unique treatment plan; identify the needs and limitations of intervention, necessary additional tests, referrals and partnerships with other professionals, and discuss patients' conditions to start treatment, if they need referrals to other professionals, and in the case of starting a speech therapy, what the limits of this work are[2].

The objective of this study is to analyze the correlation between the classification of speech and hearing complaints reported in screenings with the results of specific assessments of each speech and hearing area in a university speech pathology clinic in southern Brazil.

METHODS

This is a descriptive, retrospective, cross-sectional study. It was developed in the speech and hearing university clinic of the Speech Therapy Program of the Federal University of Rio Grande do Sul (UFRGS), located at the School of Dentistry. It was approved under protocol number 137.238 by the Research Ethics Committee - CEP / UFRGS, which dismissed the signing of IC due to the profile of the research.

Data were collected from medical records of children aged under 12, who received care from speech therapists and interns in the above-mentioned university clinic, from March 2010 to October 2012. Patients who seek speech therapy university clinics do so spontaneously or are referred by other professionals, researchers and other university clinics. The dental clinics, which operate in the same building, make the most referrals.

Out of a total of 702 screenings carried out, 544 were cataloged in a database, while the others (22.5%) were not filled in correctly or were incomplete, hence they were excluded from the sample. Only 133 records met the selection criteria - children up to 12 years of age and complete screening and assessment. These records were included in the sample.

Data were taken from the screening protocols available in the Speech Pathology Clinic at UFRGS and from assessment/ therapy data, contained in the speech-language records belonging to the above-mentioned clinic.

The variables identified for the study were gender, age, education (at the time of screening), origin, result of screening, identification number of speech and hearing complaints and speech and hearing diagnosis.

Speech and hearing complaints were classified according to the various aspects of competence for speech therapists: Orofacial Motricity, Cleft Lip and Palate, Phonological Disorder, Hearing Complaint, Neurological Changes, Learning Deficits,

Temporomandibular Disorder (TMD), Autistic Spectrum Disorders, Oral Language, Speech, Stuttering, People with Disabilities (PwD), Voice, Dysphagia and others. The same classification was used to categorize the speech and hearing diagnosis.

Complaints found in every medical records were compared with the diagnoses given after assessment. The presence or absence of correlation was observed between the complaints and the respective diagnoses. The result of this survey was compared using the following variables: number and identification of identical complaints and diagnosis.

Thus, three groups were classified: Group 1 (G1) - Full agreement: When the number and classification of complaints and diagnoses were similar; Group 2 - Partial disagreement: Many complaints and diagnosis were identical, but there were others that disagreed on number or area of speech therapy. Group 3 - Total disagreement: When there was disagreement between complaints and diagnoses in terms of number and classification.

Based on the analysis of the information contained in the medical records of patients, the data stored in a Microsoft Excel® spreadsheet were transposed into the statistical analysis software Statistical Program for Social Sciences (SPSS) version 17, and descriptive statistics was performed (frequency and percentage).

RESULTS

Out of the 133 records analyzed, there were 61% male patients and 39% females.

The mean age was 7.2 months (standard deviation 2.75), with a minimum age of two years and five months and a maximum age of 12.9.

Table 1 shows data on gender, education and origin of the study population.

Table 1. Profile of patients who receive care in the Speech Pathology university clinic, Federal University of Rio Grande do Sul - gender, education and origin. (Porto Alegre, 2013)

Variables	N	%
Sex		
Male	81	60.9
Female	52	39.1
Education		
Incomplete Elementary School	86	64.7
Early Childhood Education	3	2.3
Not reported	44	33.1
Municipality of Origin		
Porto Alegre	75	56.4
Viamão	23	17.3
Gravataí	2	1.5
Other	23	17.3
Not reported	10	7.5

Figure 1 shows the absolute and percentage values of children that received care at the university clinic as far as age is concerned.

As shown in Figure 2, groups 1, 2 and 3 show the classification for screening and diagnosis. There was little difference between the values of groups 1 and 2. Group 2 is worth of notice as it has high values; this shows partial agreement between the results of screening and assessment. Group 3 shows the results of the disagreement, numbers and classification, between complaint and diagnosis. Figure 3 shows the distribution of the number of reported complaints per patient.

In the screenings, the complaints that have been reported most frequently are related to Orofacial Motricity (34.9%), Speech (23.1%), Language (13.4%), Phonology (8.6%), Stuttering (7.5 %) and Learning (4.8%). The most frequent diagnoses were: Orofacial Motricity (39.8%), Phonology (20.4%), Language (11.8%), Speech (6.5%).

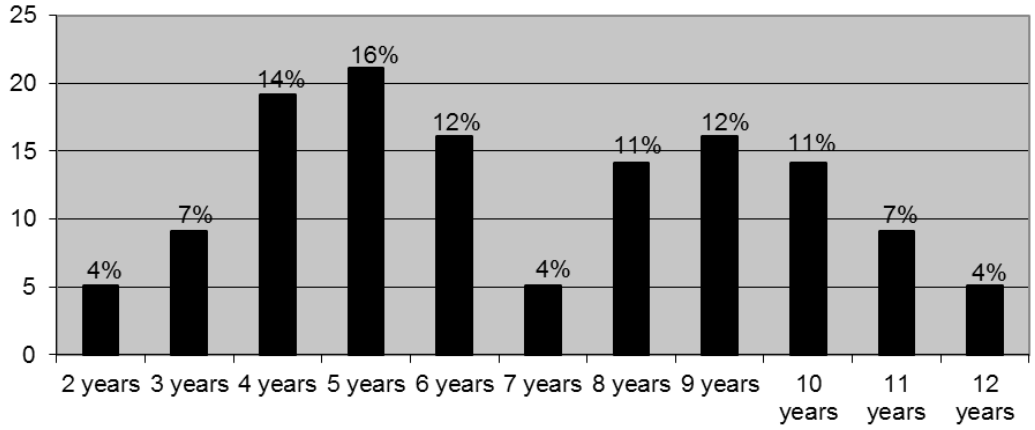

Figure 1. Distribution of screened and assessed patients at the Speech Pathology Clinic, as per age (Porto Alegre, 2013).

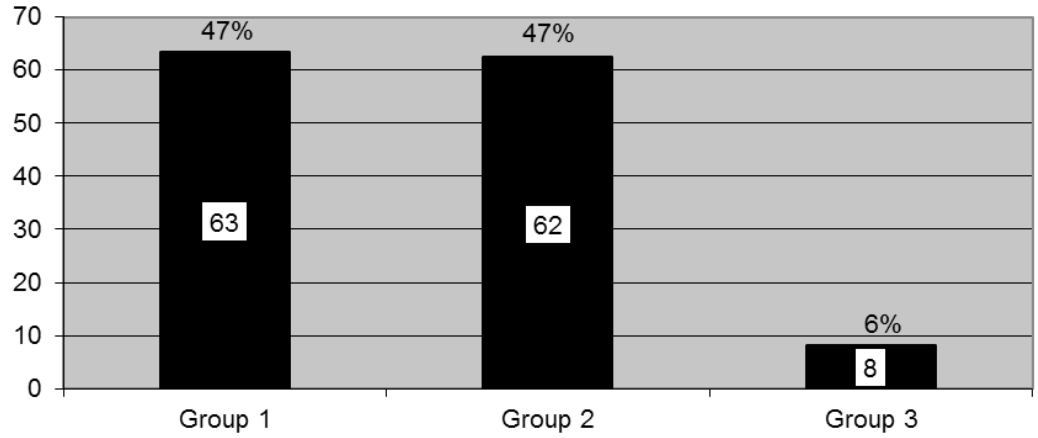

Figure 2. Distribution of patients screened and assessed according to the classifiers of correlation between complaint and diagnosis (Porto Alegre, 2013).

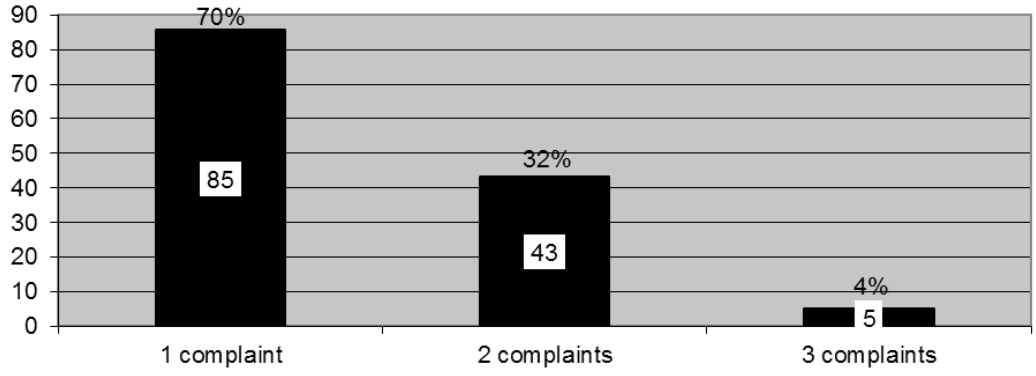

Figure 3. Distribution of the number of complaints reported by patient (Porto Alegre, 2013).

The frequency test showed the correlation between classification of complaints by patients and the diagnosis made after the clinical assessment, which can be seen in Table 2. The classification of complaints that were mostly related to the diagnoses were: Orofacial Motricity, Phonology, Language, Speech and Stuttering. The classification of complaints and diagnoses that were completely non-correlated referred to voice. The test also showed diagnoses for patients who had no associated complaints: there were 19 cases, distribued as such: 8 Orofacial Motricity, 3 Learning, 3 Voice, 2 Other, 1 Language, 1 Speech and 1 Autism.

Table 2. Correlation between the classification of complaints and diagnoses made in the Speech Pathology university clinic, Federal University of Rio Grande do Sul. (Porto Alegre, 2013)

Classification of complaints	Agree on diagnosis	Disagree on diagnosis
Phonology	14	1 Orofacial Motricity 1 Stuttering
Orofacial Motricity	53	4 phonology 3 no change 3 speech 1 learning 1 voice
Stuttering	7	2 no change 2 Orofacial Motricity 2 Phonology 1 Language;
Language	11	5 Phonology 3 Orofacial Motricity 2 no change 2 learning 1 TMJ 1 PwD
Speech	8	14 no change 12 Phonology 3 Orofacial Motricity 3 Stuttering 2 Language 1 Learning;
Learning	3	5 no change 1 Language
Speech and Hearing Complaint	1	1 Orofacial Motricity 1 PwD
TMJ	1	1Orofacial Motricity 01 Language 1 other
Clef palate	1	1 Phonology
PwD	3	1 Language 1 Orofacial Motricity
Voice	0	1 Orofacial Motricity
No associated complaint		8 Orofacial Motricity 3 Learning 3 Voice 2 other 1 Language 1 Speech 1 Autism

DISCUSSION

Most research previously reviewed agrees on the findings of the present study, whereby there is higher incidence of referrals to speech therapy for males[6-13]. The explanations for this finding are not consensual, and an author states that the brains of boys have slower maturation than those of girls[6]. Other studies point to genetic factors that determine the prevalence of specific language disorders in males[14,15].

There was a higher incidence of ages 4-6 years, followed by 8-10 years, i.e., 42.1% of screenings and assessments occurred in children at pre-school and school age. Other authors described the relationship between speech-language disorders at similar ages[7,11,12,16]. It is noteworthy that at the age of five, there was the largest number of complaints (15.8%). This result had been found previously and agrees on the literature[13].

Most patients live in the city of Porto Alegre, where the speech pathology clinic is located. In a similar study conducted in Salvador, Bahia[8], the researchers found a similar result to the one in the present study as regards place of residence of patients who sought for the speech theraphy clinic: 94.9% lived in the capital and only 5.1% lived in neighboring towns. In another study with similar objectives[11], the authors found that 84.5% of patients who sought the speech pathology clinic at the University Hospital of the University of São Paulo (Ribeirão Preto campus) were from Ribeirão Preto, and the rest lived in other locations in the state of São Paulo.

This information suggests that services linked to universities are important references for the municipality, in different regions of Brazil. However, the role of these clinics has not been identified on the network of speech therapy care associated with local SUS units, nor in neighboring municipalities. Thus, the impact of the service on people's access to speech therapy treatment cannot be assessed.

Studies show speech disorders as the most common complaints in speech therapy[7-9,12,16] offered in public services. In some studies, Orofacial Motricity is the second most frequent complaint [7-9]. A survey conducted in a clinic specializing in Language showed that, within this area, there was higher prevalence of delayed language acquisition, language disorders and learning disorders[11]. A survey found that low educational level is related to hearing complaints, while low income is associated with changes in the oral and vocal motricity.

The authors suggested that the speech-language disorders found (Language, Voice, Orofacial Motricity and speeach and hearing complaints) are influenced by the environment where people live[17].

In the present study, the area of Language was divided didactically into a few points: Phonology, Language, Speech, Speech and Hearing Complaints, Stuttering, Autism and PwD. People classified as others had low frequency of complaints and were grouped together.

Studies show the prevalence in diagnosis of language[8] and speech[7,17,18] in the population. In two studies, the most common diagnosis was change in speech and the second, changes in language [7,8]. The present study shows the most frequent diagnoses: Orofacial Motricity, Phonology and Language. Thus, the most frequent diagnosis does not agree on the findings of the literature cited, but the second and third agree on the reports of this literature.

The classification of voice complaints in the screening was not correlated with the diagnosis obtained in the assessment, since patients with this complaint had actually changes in Orofacial Motricity. Although there are no similar data in Brazilian literature to data in the present study, there is common sense about the scope of the term "voice", which people in general associate with any problem related to "speaking", from voice itself to problems in language, fluency and even speech articulation.

At the School of Dentistry X, the speech pathology clinic receives patients who come spontaneously, but also those referred by external projects and activities (internships, research). However, a significant portion of patients come from speech therapy provided in pediatric and orthodontic clinics and also to PwD. PwD patients receive care from a university extension project of the School of Speech Therapy from the institution of origin.

Thus, the emphasis on diagnosis of Orofacial Motricity can be justified by the sample, which includes many patients referred by the university clinic of the School of Dentistry to the university clinic of the School of Speech Therapy.

To obtain data more accurately, it would be interesting to standardize medical records, with specific options for classifying complaints and diagnoses within the school clinic because these data were filled by several students and various professionals. It is suggested that during the education and training of speech therapists, they practice using at least the quick

reference guide to the ICD-10, prepared by the Federal Council of Speech Therapy[19].

There is a different nomenclature in each article for the study speech pathologies, suggesting the need for standardization of the nomenclature in each area of speech therapy[8,19]. The literature consulted used different nomenclatures such as: phonological disorder[9,13] phonetic deviation[12], language delay[9], language change[7], abnormal speech[7,12], field of Language[8]. The Federal Board of Speech Therapy published a practical reference guide to the ICD-10, in which much of the speech-language disorders are cataloged[19]. Therefore, speech therapists should refer to the classification so that speech pathology can be uniformly registered throughout the Brazilian territory.

In addition, other data were absent in patients' records. It would be interesting to continue the record of the activities for conducting research with a wider range of records. Other studies have reported difficulty accessing data from medical records for the same reason[10-16]. There should be uniformity in medical records in institutions for more adequate records of the procedures, production and conduction of more reliable research.

CONCLUSION

This study investigated the correlation between the classification of complaints reported on the results of screening and speech pathology assessments performed in a university clinic in southern Brazil.

These findings indicate higher incidence for males, aged 4-6 years, living in the city of Porto Alegre.

There was a larger number of complaints and diagnoses for Orofacial Motricity probably because the service was located next to the dental clinics. The second most frequent complaints and diagnoses occur in the area of Language, corroborating the literature.

There was correlation between the results of screening classification and diagnosis. The complaints that were correlated with the diagnosis were: Phonology, Orofacial Motricity, Stuttering and Language. In some sub-areas of speech therapy, there was little correlation regarding complaints and diagnoses. The classification of complaints about voice in the screenings showed partial or no correlation with the diagnosis obtained in the assessment.

Standardization of speech pathology nomenclature in diagnoses is highly recommended, using the practical guide of the ICD-10, prepared by the Federal Board of Speech Therapy. Uniformity in the medical records of institutions is also crucial, in order to survey more reliable information to allow comparison between the different services.

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