



Speech and Language Pathology (SLP) Intervention in a Special Education Reference Center by Undergraduates from Brazilian Northeast

Ações de graduandos de Fonoaudiologia em Centro de Referência em Educação Especial do Nordeste

Acciones de graduandos en Fonoaudiología en el Centro de Referencia en Educación Especial del Nordeste

*Neuza Josina Sales**

*Regina Yu Shon Chun***

*Francielle Feitosa Dias Santos****

*Anne Thamires Santos Sampaio*****

*Pammela Suhellen Viana Noronha******

*Renata Silvestre Santos Gonçalves******

*Tâmara Isis Santana Santos******

*Speech Language Pathologist and Audiologist. PhD in Health Sciences, Universidade Federal de Sergipe – Brazil.

**Speech Language Pathologist and Audiologist. Professor at Speech-Language Pathology and Health, Interdisciplinarity and Rehabilitation Master Program, Faculdade de Ciências Médicas of Universidade Estadual de Campinas, São Paulo, Brazil.

***Speech Language Pathologist and Audiologist. Master's student in Health Sciences, Universidade Federal de Sergipe – Brazil.

****Speech Language Pathologist and Audiologist, specializing student at CEFAC Health and Education.

*****Speech Language Pathologist and Audiologist.

*****Statistics. Professor at the Department for Statistics and Actuarial Sciences at Universidade Federal de Sergipe – Brazil.

*****Pediatrics. Professor for the Health Science Post graduate Program at Universidade Federal de Sergipe – Brazil.

Conflict of interests: *No*

Authors' Contributions: NJS, RYSC and RQG designed the study, took part in it at all stages, from the initial design and approval by the Ethics Project to the final documentation and revision. FFDS, ATSS, PSVN, RRSSG, TISS, PMO and TRRR took part in field work activities, documentation and revision of the manuscript. DFNC took part in data processing and analysis as well as in revising and analyzing the manuscript.

Correspondence address: Neuza Josina Sales. Rua Senador Rolemberg, 550/701, Bairro São José, Aracaju (SE), Brasil. CEP: 49015-120.

Email address: njsales@infonet.com.br

Received: 12/09/2014 **Accepted:** 24/05/2015



Poliane Marques de Oliveira****
 Thais Ramos Ribeiro****
 Daniel Francisco Neyra Castaneda*****
 Ricardo Queiroz Gurgel*****

Abstract

The aim is to describe SLP activities carried out by undergraduates of a university in the Northeast of Brazil at a Reference Center for Special Education. It's a longitudinal study approved by CEP. Data was collected from records and statements made by users' parents and the SLP students. The activities took place at the only Reference Center in the state and included supervised SLP individuals and groups activities carried out by the undergraduates. Among the students referred to the center were 47 with speech and language/learning problems, beneficiaries of other public services from different municipalities. The sample group was made up of 27 participants, 19 (70%) boys and 23 (85%) coming from mainstream education. The participants were allocated to eight groups and took part in five language workshops, run by two undergraduates and supervised by a tutor, while the participants' parents were invited to two meetings. Apart from giving the parents the opportunity to receive advice, the workshops proved to favour linguistic-cognitive abilities and to improve the interaction in the researched group. For further SLP treatment, the participants were referred to the school clinic of the university, considering the reference and counter-reference system between services. Both, the development the users underwent and the parents' and undergraduate students' testimonies show that activities were effective. The future professionals had the opportunity to experience SLP activities aiming to promote health in the area of inclusive education, besides made a contribution to the further development and process of socio-educational inclusion of the researched group.

Keywords: Speech Language Pathology and Audiology; Health promotion; Language; Education

Resumo

O objetivo desta comunicação é descrever ações de fonoaudiologia no Centro de Referência em Educação Especial, junto aos usuários e familiares, realizadas por graduandos de uma universidade do Nordeste do Brasil. Trata-se de estudo longitudinal aprovado pelo CEP (Conselho de Ensino e Pesquisa). Os dados foram coletados em prontuários e em relatos de pais e discentes e as ações ocorreram no único Centro de Referência em Educação Especial do Estado. Foram realizadas ações fonoaudiológicas individuais e grupais pelos discentes sob supervisão, encaminhando a esse Centro 47 escolares provenientes de serviços de Saúde e de Educação, de diferentes municípios, com queixas de dificuldades de linguagem/aprendizagem. A amostra final constituiu-se de 27 usuários, 19 (70%) meninos e 23 (85%) inseridos em ensino regular. Os usuários foram organizados em oito grupos, participando de cinco oficinas de linguagem conduzidas por duplas de graduandos sob supervisão docente. Os pais participaram de dois encontros. Após as oficinas, observou-se favorecimento dos aspectos linguístico-cognitivos e de interação do grupo estudado, além de se ter propiciado espaço de escuta para os responsáveis. Os resultados evidenciam a eficácia das ações a partir da evolução das crianças e dos adolescentes também a partir dos depoimentos dos familiares e dos graduandos. Os usuários foram encaminhados para atendimento fonoaudiológico na Clínica-Escola da Universidade, considerando-se o sistema de referência e contrarreferência entre os serviços. Os futuros profissionais tiveram a oportunidade de experienciar ações de fonoaudiologia norteadas pela Promoção da Saúde, no âmbito da educação inclusiva, contribuindo para o desenvolvimento do grupo estudado com repercussão em seu processo de inclusão sócio educacional.

Palavras-chave: Fonoaudiologia; Promoção da saúde; Linguagem; Educação.



Resumen

El objetivo de esta comunicación es describir acciones de fonoaudiología en el Centro de Referencia en Educación Especial junto a usuarios y sus familiares, realizadas por graduandos de una universidad del nordeste de Brasil. Es un estudio longitudinal aprobado por el Consejo de Enseñanza e Investigación de una universidad. Los datos fueron recolectados por medio de informes y del relato de padres y discentes. Las acciones ocurrieron en el único Centro de Referencia en Educación Especial del estado. Los discentes realizaron acciones fonoaudiológicas individuales y en grupo bajo supervisión y direccionaron a ese Centro 47 estudiantes de servicios de Salud y de Educación, de distintos municipios, con dificultades de lenguaje/aprendizaje. La muestra final constó de 27 usuarios, de los cuales 19(70%) eran niños y 23(85%) estaban inseridos en la enseñanza regular. Los usuarios fueron divididos en ocho grupos y participaron de cinco talleres de lenguaje, conducidos por parejas de graduandos bajo supervisión docente. Los padres participaron de dos encuentros. Tras los talleres, se observó una mejora en los aspectos lingüístico-cognitivos y de interacción del grupo estudiado, además de haberse propiciado espacio para escuchar a los responsables por los niños. Los resultados demuestran la eficacia de las acciones a partir de la evolución de los niños y de los adolescentes y también por los testimonios de familiares y graduandos. Los usuarios fueron dirigidos a la Clínica-Escuela de la Universidad para recibir atención fonoaudiológica, gracias a un convenio entre los sistemas de educación y salud. Los futuros profesionales tuvieron la oportunidad de experimentar acciones fonoaudiológicas para la Promoción de la Salud en el ámbito de la educación inclusiva, lo que contribuyó con el desarrollo del grupo e influyó en su proceso de inclusión socio educacional.

Palabras clave: Fonoaudiología; Promoción de la salud; Lenguaje; Educación.

Introduction

Various factors affect the health conditions of pupils with speech-language disorders. As already discussed in the World Report on Disability by the World Health Organization¹, among these factors is the lack of access to health services to be able to benefit from rehabilitation, support and/or assistance measures.

Candeias² explains that health promotion is defined in terms of a combination of educational and environmental support measures whose objective is to perform actions and create conditions of life which lead to health. Health promotion aims to empower individuals and social groups to be able to intervene as active agents when they face health problems and needs. It runs along the following main lines of action: creation and implementation of public health policies as well as health promoting environments, support for community action, development of personal skills and reorientation of health systems and service^{2,3}.

Under this perspective, undergraduate activities in the field of Speech-Language Pathology (SLP) were developed in cooperation with the State Ministry of Education of Sergipe – SEED, Brazil. A proposal of this kind, which materialized in 2011 on the basis of the partnership formed in 2009 between the only special education reference

center CREESE/SEED of the state and the Speech Language Pathology and Audiology undergraduate program of the Federal University of Sergipe, is the framework in which this study was set. It is a rare experience in the context of SLP and Audiology student programs, particularly, if one considers the small number of public organizations of the CREESE type in Brazil.

Founded in 1996, CREESE responds to the respective demand from all municipalities of the state, from private as well as public institutions such as the Ministries of Education, Health, Social Action and Justice. Moreover, its role extends to giving educational advice to the teaching network by providing multidisciplinary (pedagogical, psychological, speech-language-pathological and other) assessment for pupils with and without special educational needs as well as language, behavior and learning complaints. Furthermore, it is responsible for selection, assessment, parent orientation, referrals, and pedagogical support for mainstream education schools. It does not, however, provide therapeutic services in these areas.

Providing educational and environmental support, CREESE plays an important role in the education and health service network for children and adolescents with language and learning problems within the perspective of inclusive health and education promotion.





The purpose of the institution is educational assessment, however, without relying on support from the public health system. Its main objective is to offer diagnostic services aiming at socio-educational inclusion.

Upon multi-disciplinary assessment, users are referred to mainstream education or pedagogic services with special resource classes if this is necessary. There, the educational services provided in the classes of the mainstream education network can be supplemented and complemented.

At the beginning of each enrolment period, during the semester or if pupils are to be referred from one school or class level to another, schools and institutions have been requesting assessment services from the reference center since its foundation. Hence, a Speech and Language Pathologist and Audiologist is also part of the team.

Upon special analysis, those requiring specific clinical care are referred to one of the few reference services of the public health system. However, due to the limited number of Speech and Language Pathologists compared to the number of users on the waiting list, the existing services do not manage to satisfy the demand. As a consequence, the majority of users attended by the institution do not gain access to SLP follow-up treatment, a situation which, once again, highlights the importance of providing SLP and reaffirms the institutional partnership based on the presuppositions of health promotion in the context of inclusive education described here.

For a more effective process of educational inclusion, some authors highlight the urgent necessity to reformulate the education system in a way that, apart from setting up directives and enforcing political action^{1,5}, it should come up with offers benefiting the majority of students⁴. Other authors⁶ address the importance of assessing pupils with learning and language difficulties to create guidelines for designing projects run by interdisciplinary teams. These could give additional support and have the potential to integrate and formulate common action with different parts of society in order to guarantee access to school and avoid dropouts through high-quality education focusing on building citizenship in the pupils and motivating them to exercise it.

Such a setting would be in line with what was laid down in the document “Fonoaudiologia na Educação” (Speech and Language Pathology and

Audiology in Education) – worked out by Conselho Regional de Fonoaudiologia – 2ª Região (Regional Speech Language Pathology and Audiology Council – 2nd Region) and edited by Conselho Federal de Fonoaudiologia (Federal Speech Language Pathology and Audiology Council). The document reaffirms the need for SLP and Audiology professionals in health and education services, which, thanks to their complementary role of constant and varied dialogue, contribute to improving services and teaching, learning and health. Seen in this light, the objectives of health promotion are in line with that of education which is quality for everyone⁷.

Furthermore, given that school is a space favoring health education activities⁸, various professionals can contribute to this process. Among them are Speech and Language Pathologists and Audiologists, who play the important role of suggesting health education measures at school⁹ which could promote the pupils’ cognitive-linguistic abilities. Also, these professionals can make contributions through partnerships for acquiring resources and equipment to support the teaching/learning process and the socio-educational inclusion of the pupils.⁶

Given the differences and singularities, offering health activities in the school context makes it possible to identify user potential, needs, and conditions of life with a focus on health and quality of life^{9,10}. Thus, the principles of health promotion can become important referential guidelines for SLP activities at school.

Focusing on the socio-educational inclusion process, psychologists carried out on the spot qualitative needs assessment with the population of a center for special children¹¹. The result of their observation was that, given that well-being depends on the satisfaction of personal, relational and collective needs, such as affection and the access to education¹², basic human needs are common to all people, whether they are disabled or not.

Here, reference is made to the relationship between health and quality of life in our country discussed by important authors, where they *underline that quality of life is all about social representation created on the basis of subjective parameters (well-being, happiness, love, joy, personal achievement) and also objectives, whose references are the satisfaction of basic needs and*



*the needs created by the level of economic and social development of that given society.*¹³

SLP activities adapted to the requirements of school can contribute to improving the pupils' quality of life. Furthermore, the results of a study¹⁴ analyzing the communicative development and inclusion of children with language disorders due to neurological problems from a parent and educator perspective show that there is a demand for SLP treatment to promote the inclusion of these children. Such findings reaffirm the importance of experience reports like those produced by the undergraduates inserted in a special education reference center presented here.

It is understood that such activities must draw on conceptual work as well as therapeutic tools that sustain the SLP intervention in the public and collective health system in the way it is addressed by authors of the field, such as careful attention to health promotion¹⁵ and SLP in the framework of the Family Health Strategy program¹⁶.

In accordance with these authors, we make reference to the tools which were developed on the basis of the experience reported here: *clinical and functional assessment* for diagnosing and planning activities; *one-to-one sessions* with one user at a time to guarantee an individual-specific approach; *shared sessions* as a strategy for highlighting co-responsible integral attention and knowledge exchange between the health professionals¹⁶ (cf. op.cit., p.825); in this case, the SLP and Audiology undergraduates were included; *group sessions with an educational approach* aiming to bring the person closer to clinical situations and thus favoring the acquisition of knowledge, autonomy and attention regarding health promotion through self-care¹⁶ (cf. op.cit., p.825) and the fixed duration characteristic of such measures. In the present report, the latter are named "language workshops" and will be described later.

The advantage of group processes is the possibility to exchange experiences and share feelings, difficulties, needs and expectations, while at the same time creating greater autonomy and opportunity on the side of the participants to confront problems. Since the 1990s, an ever increasing amount of studies on group practices has been seen, while the importance of the latter has grown not only as therapeutic intervention measures, but also as preventive and educational practices, like the ones suggested here^{17,18}.

Nevertheless, it is understood that the inclusive education and health promotion inherent in the SLP

activities realized at CREESE described in this report were carried out in an attempt to empower the children and adolescents with special educational needs and their families for self-care; or, as it were, to stimulate them to become active agents of their own health by means of activities which validate their potential and, as a consequence, can contribute to their socio-educational insertion.

The aim of this communication is to describe the SLP activities performed by undergraduate students of Universidade Federal de Sergipe at the only reference center for special education in the State of Sergipe with users of this center and their families.

Description

This descriptive study was approved by the Ethics Committee on Research Involving Human Subjects of the University Hospital of Universidade Federal de Sergipe – CEP/UFES, N° 525/2011. All parents/guardians of participants signed the Informed Consent Form after the study had been explained to them. The members of CREESE and the SLP and Audiology course signed the Term of Consent.

The activities at CREESE were developed by the SLP and Audiology undergraduates in the context of a traineeship course of the SLP and Audiology Program at the partner university. All elements of the SLP intervention were carried out in this physical space within the duration of one academic semester. 18 undergraduate students in their fifth academic semester participated in the project under supervision of one of the authors, who, at the time, was a lecturer for the SLP and Audiology course and as well a member of the team of the public organization.

The study included the users' record files as well as attached documents such as: pupil profile sheet made out by the school teacher, medical (neurological and genetic) and audiological (SLP) report, assessment report by the CREESE team, and an SPL report from the undergraduates. The latter contained data about the supervision dynamics and the performed activities, including a report with videos showing testimonies from the family members who participated in the proposed activities.

47 users (children/adolescents) were referred to the institution with language, behavior, and learning difficulties. They came from different municipalities of the state and different organizations, namely: schools of the public municipal and





regional network, the University Hospital, basic health care units, the Public Ministry, the Municipal Secretariat for Family and Welfare, the Guardian Council, and institutional shelters.

All those referred to the institution were diagnosed by the CREESE team, consisting of a social assistant, a psychopedagogue, a psychometricist, a physiotherapist, a psychologist and a Speech and Language Pathologist. In some cases medical and audiological diagnoses were included. The SLP assessment was carried out by the undergraduates in a way that, on several occasions, the users were invited to take part in supervised intervention sessions.

In view of the main purpose of the special education reference center which is that of diagnosing and assessing users as well as of what was laid down by the Federal Council of Speech Language Pathology and Audiology in its directives regarding SLP activities in school environments⁷, the activities involving users and members of their families were of non-therapeutic nature.

The majority of participants showed delayed or impaired oral or written language skills and were all included in the proposed activities. Excluded from the study were those whose parents/guardians did not agree to participate as well as others who refused to take part in the SLP activities during the studied period. The final number of parties who concluded the entire SLP intervention process (interview with the parents/guardians, SPL assessment and language workshops) was 27 – each consisting of a child or adolescent and his or her parents/guardians.

SLP Intervention Proposal at CREESE

The intervention carried out by the SLP and Audiology undergraduates with the users and their parents/guardians included individual and group activities, which were realized in the following order: situational diagnosis made by CREESE, interview with the parents/guardians, SLP assessment and feedback for the parents/guardians, language workshops and final feedback including recommended action for the parents/guardians (with permission from the legal guardians, the activities were video recorded and transcribed).

To guarantee the alignment of the proposal with its objectives, the undergraduates took part in weekly supervision sessions with the research

lecturer where they discussed articles, planned activities, selected assessment tools and materials. In addition, the students were provided with alternative ways of dealing with the participants through multidisciplinary case studies discussed with the psychologists and psychiatrist of the community, who were invited for this purpose.

The SLP intervention began with the implementation of the situational diagnosis by the reference center, which involved reading the beneficiaries' medical files, institutional reports and attached records in order to become familiar with the physical, material, human and organizational resources and be able to set up an action plan for the users (children/adolescents) and their parents/guardians. The latter was then worked out by the undergraduates and the supervising lecturer.

After that, *for clinical and functional* assessment, one-to-one interviews with the parents/guardians were conducted in order to identify SLP complaints and collect data regarding the history of the children and adolescents, including aspects relative to the pupils' achievement at school as well as to family interaction and dynamics.

Following the SLP assessment, there was an average of 5 *one-to-one sessions* with each of the participants. The undergraduates were asked to not only assess existing deficits but to primarily analyze the children's and adolescents' cognitive-linguistic potential. After this stage, individual feedback about SLP relevant observations was given to the parents/guardians, in which the attempt was made to highlight existing potential. The feedback was then followed by the presentation of and the invitation to the proposed workshops.

Speech-Language Pathology and Audiology Assessment Tools

For the assessment of speaking skills, the validated protocol TERDAF⁸ (Teste de Rastreamento de Distúrbios Articulatorios de Fala – speech and articulation disorders screening test) was used. According to the criteria suggested by the relevant literature¹⁹, phonetic-phonological deviance and phonological processes no longer expected for the respective age group were identified on the basis of the participants' responses.

For written language assessment, the participants had to produce a text or take a letter or word dictation. For voice analysis, the assessors used the CAPE-V scale (*Consensus Auditory-Perceptual Evaluation Voice*) designed by the



American Speech-Language-Hearing Association – ASHA, a systematized protocol for documenting voice deviance²⁰⁻²¹. To assess orofacial motor skills and stomatognathic functions, the validated AMIOFE22 (Avaliação Miofuncional Orofacial com Escores – miofuncional orofacial assessment with scores) protocol was followed. The behavioral assessment of auditory abilities was performed using the Central Auditory Processing Screening tool²³, which tests sound localization abilities and auditory sequential memorizing skills for non-verbal and verbal sound as well as the cocleopalpebral reflex.

SLP Activities – Language Workshops and Referrals

Given the objectives of CREESE as well as the provisions made by Conselho Regional de Fonoaudiologia (Regional Council for Speech Language Pathology and Audiology) regarding SLP activities in educational counseling skills training, group sessions *with an educational approach* in the form of language workshops were proposed. The aim of these sessions of a fixed duration was to contribute to the empowerment of the children and adolescents and their families as agents of their own health and make them aware of their own abilities and difficulties in a group context to enable them to self-care.

When setting up the study groups the attempt was made to give all participants the chance of social inclusion and interaction, regardless of their deficits. To this effect, the groups were formed by simply including all of them without consideration of homogeneity of their respective hypothetical medical and speech language pathological diagnoses.

In the end, eight groups were formed, each consisting of an average of three users and two SLP and Audiology undergraduates as mediators supervised by the lecturer. Those cases with major motor skill and interactional problems were given individual attention.

In each group an average of five sessions lasting 60 minutes was conducted. At the workshops, priority was given to interaction and the promotion of linguistic aspects by running various activities which, in addition to language, also involved all other the human senses – sound, vision, smell, taste and even bodily proprioception.

Based on the results of the SLP assessment, activities were defined and proposed to the groups. These activities were designed to take into account

the users' potential and difficulties and, apart from interaction games (played even during the meals offered by the institution), included playful and contextualized activities using games, puppets, clay, music, dance, drawing, painting, story books, and activities involving different concepts like color, shape, texture, same/different, and together/separate. Moreover, breathing and body relaxation exercises were carried out.

There was space for listening to the parents/guardians who took part in two meetings. Whenever possible, this was realized without the presence of the child or adolescent, who at these moments were taken care of by one of the undergraduate mediators. On these occasions, there was time for answering questions, discussing fears or addressing issues related to the children, such as personal hygiene, support during school activities, and the continuity of the workshop activities. The focus of the meetings was on empowering the parents to care for and promote development in their children.

At the end of the semester, the workshops were concluded by means of a feedback session for the parents/guardians about the work that had been done. During the session the attempt was made to highlight the children's and adolescents' potential. In addition to aspects like providing a supporting environment to the children and adolescents, issues were raised that were related to creating incentives for them to use language, or offering them foods of different consistencies, textures and flavors to promote the functions of chewing and swallowing. Finally, the pupils were referred to appropriate SLP follow-up treatment measures at the clinic school of the university.

Participant Profile and Results of the SLP Intervention at the Center

The age of the 27 participating children and adolescents varied between 3 and 15 years, with an average age of 7 years. 19 subjects (70%) were male and 23 (85%) took part in mainstream school education. The distribution of the hypothetical diagnosis was diversified; the majority of the participants displayed delayed neuropsychomotor development, attention deficit and hyperactivity disorder. Regarding the results of the speech language assessment, a greater distribution of 9 (33%) users with delayed language acquisition and 7 (26%) with oral and written language disorders was observed, as shown in Table 1.



**TABLE 1.** SAMPLE DESCRIPTION (n=27)

Variables	N	%
Gender		
Male	19	70
Female	8	30
Age group (years)		
3-6 years	15	56
8-10 years	7	26
11-15 years	5	18
Schooling		
Mainstream education	23	85
Special school	1	4
Referred to school	3	11
Hypothetical diagnosis by the CREESE team		
Delayed neuropsychomotor development	7	26
Attention deficit and hyperactivity disorder	6	25
Autism spectrum disorder	3	11
Intellectual deficit	3	11
Down syndrome	2	7
Cerebral palsy	2	7
Deafness	2	7
Epilepsy and delayed neuropsychomotor development	1	3
Microcephaly and rheumatoid arthritis	1	3
Undergraduates' speech language assessment		
Delayed language development	9	33
Oral language disorder	4	15
Oral and written language disorder	7	26
Miofunctional orofacial alteration	4	15
Voice alteration	3	11

Individual SLP assessment realized dynamically throughout the activities carried out during the individual and group meetings and the workshops. Using the tools described above, the focus of the observation was on the level of the participants' performance. The data was presented in the form of an SLP report.

The results of the report show that the workshops contributed to sensitizing the participants to their own difficulties and potential. Furthermore, they benefited the users, who were incentivized by the undergraduates and by the mere fact that the intervention was taking place, in general, with every participant showing a different level of progress, particularly regarding the aspects of



reduced body tension, increased social interaction and intended and functional use of language.

Considering the condition of each subject and the heterogeneity of cases, the SLP reports prove that, in the interactional context some of them showed an increase in visual and auditory attention and others improved their facial and body or even verbal expression. In other specific cases, the use of imagination in order to express ideas during

verbal or graphical activities became apparent in the form of an increase in the attention to musical sounds and/or speaking or singing voices or during the manipulation of clay and/or drawing or free painting activities. Last but not least, it is important to mention the interest in free graphic designing, which was one instance of evidence of change in the majority of the studied sample, as Chart 1 shows.

VARIABLES	PRE-WORKSHOP	POST-WORKSHOP
Body tension	Present	Reduced
Interpersonal interaction	Restricted	Increased interaction
Language, speaking and cognition	Disorders of different levels and types	Improvement of linguistic and cognitive aspects, manifest in terms of increased verbal and nonverbal production as well as intention and communicative functionality
Auditory perception	Restricted	Increased interest
Visual perception	Restricted	Increased interest
Smelling	Present	Increased perception
Tasting	Present	Increased perception
Chewing	Impaired	Increased appropriacy
Swallowing	Impaired	Increased appropriacy
Pneumophonic coordination	Impaired	Improved coordination
Clay manipulation, drawing, painting, music	little interest	Increased interest
Free graphical expression	Absent or restricted	Greater looseness of the drawn line

OBS- In autistic subjects (n=3), severe motor deficit (n=3) and hyperactivity (n=6) the evolution was less evident as when compared to the other cases.

CHART 1. SAMPLE DEVELOPMENT AS TO LINGUISTIC, PERCEPTIONAL AND INTERNATIONAL PRE- AND POST- LANGUAGE WORKSHOP

Taking into account assiduity and active participation, the findings show how important it was for the families and users to take part in the offered language workshops.

In accordance with the data from the pupils' reports, the feedback sessions with the parents aimed at highlighting the relationship of the family with the child/adolescent as well as with school and health professionals. The parents/guardians were encouraged to not only embrace diversity of communication but also value their children's overall health condition. The inclusion of the parents also led to increased interaction between the child/adolescent and his or her family – a fundamental factor in the subjects' development.

Moreover, the results show that, in this space, the families were able to verbalize their needs and feelings and felt welcome, respected and sensitized

to their children's possibilities and potential. Hence, it can be said that the objectives of health promotion were achieved.

The family members reported to have noticed the evolution of their children and were satisfied with the SLP activities carried out by the undergraduates, as shown in testimonies from mothers just like the ones below:

[...] I loved it... because they found things that R. is able to do. I had been informed that he could not attend school and she said that it was possible to refer him to clinic school. The exercises he did here were very good. (Mother 1)

[...] I am very happy because he came here and is now leaving a completely different person. He has changed a lot in comparison to when he





first came here. At home, his speaking skills have improved and he is already trying to repeat some of the things we say there. (Mother 2)

To conclude the SLP traineeship course, the undergraduates and the supervisor produced a report containing the data from SLP assessment and the results of the workshops. To the specific orientations for the parents/guardians, they also added referrals and further necessary measures for the attention of the schools, the team of the Special Education Reference Center and the clinic school of the university.

Before the end of the one-semester course, which, as a consequence, also meant the end of the undergraduates' intervention, all participants in the study were referred to follow-up measures at the clinic school of that course. Due to organizational issues within the course and at CREESE, it had not been possible to continue the project.

It is worth mentioning that an agreement between the university and a special education reference center administered by the State Ministry of Education paved the way for the experience reported here – activities carried out with the studied population under the intended perspective that proved effective.

The experience the undergraduates had, ranging from planning the activities and the direct contact with the families to finalizing the work and documenting the results while cooperating with an organization administered by the State Ministry of Education, reasserts the necessary presence of SLP in that ministry.

A look at the recorded testimonies from the undergraduates reveals that the project provided knowledge about the functioning of public institutions like the reference center, contact with other disciplines, and an increased understanding of family and school dynamics, the socioeconomic and cultural particularities of the families as well as the impact the intervention had on the children and adolescents and on themselves. This can be seen in the following extract from a student's testimony:

[...] There is nothing more rewarding... on the first day, he appeared to be absent-minded, not showing any interest in you, and only controlling the situation... today, he cares about your presence and tries to show that he is capable of

something. The change in his behavior is visible. (Undergraduate 1)

In addition, the undergraduates expressed their fears and doubts and highlighted the importance of the experience. They also emphasized the importance of supervision in creating a better understanding of their own actions, reflecting on theory and practice, competency and skill development, building a professional attitude, and confronting their own fears and anxiety when faced with new challenges. The following testimonies illustrate these aspects.

[...] I tried out ways to communicate, joke and play with him, but his reactions were minimal... monosyllabic words... I was completely at a loss of what to do. During supervision, the teacher showed me to what extent I had done things which, in my opinion, didn't bring any information at all... I am now more confident in the sessions and observe every detail with a more trained eye. I have seen something that until then I had only seen in books: the important role a Speech and Language Pathologist can play in the life of a child. B. shows interest in learning... he is making efforts... he just needs someone who gives him attention and helps him with this process. (Undergraduate 2)

[...] planning and applying the right posture in front of the patient helped to create more interaction with the children. Having studied the topics in theory and applying protocols and tests is necessary to have a theoretical foundation to understand and to know how to deal with things in practice. (Undergraduate 3)

The majority of the studied users attended mainstream school education and showed delayed school progression. Nevertheless, they had never been given SLP attention. The inclusion process represents a socio-educational improvement^{24,25}. However, schools need to offer complimentary services meeting the needs of their pupils and also consider that inclusion should not be restricted to the immediate learning environment^{4,5} – a fact which reaffirms the importance of the work described here.

A population-based study with a control group carried out at municipal public schools in Aracaju, in which 600 pupils without deficits aged between



7 and 10 participated, showed that delayed school progression is a reality for children with (54%) and without (38%) a street-history²⁶. The children and adolescents of the present study showed communication disorders with a greater distribution of delayed oral and written language acquisition – a result similar to that of the other population-based study²⁷.

The limited number of Speech and Language Pathologists and Audiologists in the public health network impedes the access of the population to this service, while the inclusion of the respective professionals in education could contribute to identifying SLP impairments. Apart from that, the presence of a specialist makes it possible to identify potential and to promote activities favoring collective health which aim at integral development and social inclusion^{6,9,25,28-30} so that all pupils can study together, regardless of their limitations or difficulties.

The supervised activities conducted by the undergraduates at the institution promoted interpersonal interaction and communication between the studied subjects, thus reasserting what has been suggested by a number of authors⁹: health promotion in education can effectively contribute to the process of human development and has a positive effect on the health and quality of life of pupils with special educational needs.

A study³⁰ analyzing national special education policies focusing on inclusive education underlines how important it is for different social actors to participate in the formulation of a Brazilian education policy that really includes all of its population. In this way, the study reaffirms both the relevance of the contribution Speech Language Pathology and Audiology makes in this context and the importance of undergraduate training.

Final Considerations

The results show that, in addition to creating space for listening to parents/guardians, the performed activities promoted cognitive-linguistic and interactional aspects in the studied group, as shown not only by the reports from the children's and adolescents' families, but also by those produced by the SLP and Audiology students. The actions carried out in cooperation with a public organization contributed to increasing the interaction between all involved.

The activities proved to be efficient and effective for the studied group, but it is important to note that the number of SLP initiatives of this kind in special education is still small. The partnership between the reference center for special education and the Universidade Federal de Sergipe allowed the SLP and Audiology undergraduates to plan strategically. By establishing interaction with the families, the students had the chance to experience what it is like to act out the social role of promoters of health and education in an inter-sectoral and inter-institutional setting. The outcome of the intervention represented a contribution to the undergraduate students' training under the perspective of integral and humanized care in the context of inclusive education.

References

1. World Health Organization (WHO). Relatório Mundial sobre a Deficiência. The World Bank; tradução Lexicus Serviços Linguísticos. São Paulo: SEDPCD, 2012.
2. Candeias, NMF. Conceitos de Educação e Promoção da saúde. *Rev. Saúde Pública.* 1997; 32(2):209-13.
3. Chun, RYS. Promoção da Saúde e a Produção do Cuidado em Fonoaudiologia. In: Fernandes FDM, Mendes BCA, Navas, ALPGP (org). *Tratado de Fonoaudiologia.* São Paulo: Roca; 2009, p.605-11.
4. Gomes C, Barbosa AJG. Inclusão escolar do portador de paralisia cerebral: atitudes de professores do ensino fundamental. *Rev. Bras. Ed. Esp.* 2006;12(1):85-100.
5. Silva FT, Gonçalves EAV, Alvarenga KF. Inclusão do portador de necessidades especiais no ensino regular: revisão da literatura. *J Soc Bras Fonoaudiol.* 2012;24(1):96-103.
6. Melo FRLV, Martins LAR. Acolhendo e atuando com alunos que apresentam paralisia cerebral na classe regular: a organização da escola. *Rev. Bras. Ed. Esp.* 2007;13(1):111-30.
7. CRFa. A Fonoaudiologia na Educação. Políticas Públicas e Atuação do Fonoaudiólogo. São Paulo: Conselho Regional de Fonoaudiologia 2ª Região. 2010. Disponível em: <http://www.fonosp.org.br/wordpress/wp-content/uploads/2010/04/livro-fonoaudiologia-na-educacao.pdf>. Acesso em 04/02/15.
8. Goulart BNG, Chiari BM. Prevalência de desordens de fala em escolares e fatores associados. *Rev Saúde Pública.* 2007;41(5):726-31.
9. César CPHR, Calheta PP. *Assessoria e Fonoaudiologia – Perspectivas de ação.* Rio de Janeiro: Livraria e Editora Re-vinter Ltda; 2005.
10. Czereśnia D. The concept of health and the difference between promotion and prevention. *Cad. de Saúde Pública.* 1999; 15(4): 701-10.
11. Araújo MG, Vieira MJ. Necessidades de Saúde Psicológica em Crianças com Deficiência Mental. *Psicol.Cienc.* 2005; 25 (4): 572-89.
12. Prilleltensky I. Child Wellness and Inclusion: Values for Action. *Am. J. Community Psychol.* 2010; (46): 238-49.
13. Minayo MCS, Hartz ZMA, Buss PM. Quality of life and health: a necessary debate. *Ciência & Saúde Coletiva,* 2000; 5(1):7-18.





14. Takase EM, Chun RYS. Comunicação e inclusão de crianças com alterações de linguagem de origem neurológica na perspectiva de pais e educadores. *Rev. Bras. Educ. Espec.* 2010;6(2):251-64.
15. Chun RYS; Nakamura HY. Cuidado na Produção da Saúde – Questões para a Fonoaudiologia. In: Marchesan IQ, Silva HJ da, Tomé MC.(orgs). *Tratado das Especialidades em Fonoaudiologia.* Fonoaudiologia. São Paulo: Guanabara Koogan, 2014, p.744-9.
16. Molini-Avejonas DR, Mendes VLF. Atenção Básica – Atuação fonoaudiológica no Núcleo de Apoio à Saúde da Família (NASF). In: Marchesan IQ, Silva HJ da, Tomé MC.(orgs). *Tratado das Especialidades em Fonoaudiologia.* São Paulo: Guanabara Koogan, 2014, p.822-30.
17. Machado MLCA, Berberian AG. A terapêutica grupal na clínica fonoaudiológica voltada à linguagem escrita. In: Santana AP; Berberian AP, Guarinello AC, Massi, G, organizadores. *Abordagens grupais em fonoaudiologia: contextos e aplicações.* São Paulo: Plexus; 2007, p. 58-79.
18. Penteado RZ, Panhoca I, Siqueira D, Romano FF, Lopes P. Grupalidade e família na clínica fonoaudiológica: deixando emergir a subjetividade. *Rev. Distúrbios Comun.* 2005;17(2):161-71.
19. Lamprecht RR. Aquisição fonológica do português. Perfil de desenvolvimento e subsídios para terapia. Porto Alegre: Artmed, 2004.
20. Kempester GB, Gerrat BR, Verdoline AK, Barkmeier-Kramer J, Hillman RE. Consensus auditory-perceptual evaluation of voice: development of a standardized clinical protocol. *Am. Speech Lang Pathol.* 2009; 18 (2): 124-32.
21. Belhau L, Oliveira G, Madazio G, Yamasaki R. Speech Overview. In: *Internacional Perspectives on Voice Disorders* 9, 39, 2013. Ed Multilingual Matter.
22. FelícioCM, FerreiraCLP. Protocol of orofacial myofunctional evaluation with scores.2008; 72(3):367-75.
23. Pereira LD, Schochat E. *Processamento auditivo central: Manual de avaliação.* São Paulo: Lovise; 1997. 231p.
- 24 Silva TOF da, Calheta PP. Reflexões sobre assessoria fonoaudiológica na escola. *Distúrbios Comun.* 2005; 17(2): 225-32.
25. Ramos AS, Alves LM. A Fonoaudiologia na Relação entre Escolas Regulares de Ensino Fundamental e Escolas de Educação Especial no Processo de Inclusão. *Rev. Bras. Ed. Esp.* 2008; 14(2): 235-50.
26. Sales NJ, Gurgel RQ, Gonçalves MIR, Cunha E, Barreto VMP, Todt Neto JC, et al. Characteristics and Professional Use of Voice in Street Children in Aracaju, Brazil. *Journal of Voice.* 2010;24(4):435-40.
27. Sales NJ. Fatores de risco e epidemiologia dos distúrbios da comunicação em crianças de cinco anos de idade da coorte de nascimentos de 2005 em Aracaju-SE [Tese de Doutorado]. Aracaju (SE): Universidade Federal de Sergipe. Doutorado em Ciências da Saúde. Pós Graduação em Medicina; 2013. Disponível: http://bdtd.ufs.br/tde_busca/arquivo.php?codArquivo=1356. Acesso em: 24 de junho de 2014.
28. César AM, Maksud SS. Caracterização da demanda de fonoaudiologia no serviço público municipal de Ribeirão das Neves - MG. *Rev Cefac.* 2007; 9(1):133-8.
29. Goulart BHG, Chiari BM. Comunicação humana e saúde da criança: reflexão sobre promoção da saúde na infância e prevenção de distúrbios fonoaudiológicos. *Rev. CEFAC.* 2012; 14(4):691-6.
30. Kassar, M de CM. Percursos da constituição de uma política brasileira de educação especial inclusiva. *Rev. Bras. Educ.* Espec. 2011; 17(1):41-58.