http://dx.doi.org/10.23925/2176-2724.2019v31i3p446-453

Health promotion and speech language and hearing therapy contributions in psychomotor and linguistic development in childhood: experience report

Promoção da saúde e contribuições da fonoaudiologia no desenvolvimento psicomotor e linguístico na infância: relato de experiência

Promoción de la salud y contribuciones del terapia del habla en el desarrollo psicomotor y lingüístico en la infancia: relato de experiencia

*Flávia Rodrigues dos Santos**
*Eduarda Marconato**
*Tatiane Sbrugnara**
*Keylla Geovanna Laureano Tolentino**
*Mariane Letícia Luiz Aguiar**
*Edinalva Neves Nascimento**

Abstract

Introduction: The current public policies on health and education enable the intersectoral actions of Speech Language and Hearing therapist in the promotion of children's health. **Objective:** To describe

*Universidade Estadual Paulista "Júlio de Mesquita Filho" – UNESP, Marília/SP, Brazil.

Authors' contributions:
FRS was responsible for the bibliographic gathering of the literature, analysis of the results, elaboration and critical review of the manuscript; EM was responsible for the bibliographic gathering of the literature, analysis of the results, elaboration and critical review of the manuscript; TS was responsible for outlining the study, collection and organization of the results; KGLT was responsible for outlining the study, collection and organization of the results; MLLA was responsible for outlining the study, collection and organization of the results; ENN was responsible for outlining the study, analysis of the results, elaboration, critical review of the manuscript, and providing guidance in all stages of the elaboration of the study.

Correspondence address: Edinalva Neves Nascimento edinalvanevesnascimento@gmail.com
Received: 08/12/2018
Accepted: 30/09/2019

a experience of health promotion for psychomotor and linguistic development in childhood. **Methods:** The experience was conducted in a Kindergarten public school in São Paulo interior. Five activities that promote child's development were planned, elaborated and carried out by students of the third year of the Speech Language and Hearing Sciences Course of a public university. The activities were developed with the school teachers, in an integrated and collaborative manner, where 60 children from two to four years old participated in this study. **Results:** In the activities, the children were able to recognize objects, to experience sensations, to develop practical intelligence and body scheme and to improve motor coordination. Moreover, the activities provided opportunities for linguistic development of children. **Conclusion:** The described experience highlights the importance of health promotion and intersectoriality provided by current policies and contributed to the academic training of future speech-language and hearing pathologists.

Keywords: Speech, Language and Hearing Sciences; Health Promotion; Intersectoral Collaboration; School Health Services.

Resumo

Introdução: As atuais políticas públicas de saúde e de educação possibilitam a atuação intersetorial do fonoaudiólogo na promoção da saúde infantil. **Objetivo:** Descrever uma experiência de promoção da saúde para o desenvolvimento psicomotor e linguístico na infância. **Método:** A experiência foi realizada em uma escola pública de educação infantil do interior paulista. Foram planejadas, elaboradas e realizadas cinco atividades promotoras do desenvolvimento infantil pelas acadêmicas do terceiro ano do Curso de Fonoaudiologia de uma universidade pública. As atividades foram desenvolvidas em parceria com os professores da referida escola, de forma integrada e colaborativa, em que participaram 60 crianças de dois a quatro anos de idade. **Resultados:** Nas atividades, as crianças foram capazes de reconhecer objetos, experienciar sensações, desenvolver inteligência prática e esquema corporal e aprimorar a coordenação motora. Além disso, foi proporcionado às crianças oportunidades para o desenvolvimento linguístico. **Conclusão:** A experiência descrita reforça a importância da promoção da saúde e da intersetorialidade, previstas pelas políticas atuais, além de contribuir para a formação acadêmica dos futuros profissionais fonoaudiólogos.

Palavras-chave: Fonoaudiologia; Promoção da Saúde; Colaboração Intersetorial; Serviços de Saúde Escolar.

Resumen

Introducción: Las actuales políticas públicas de salud y de educación posibilitan la actuación intersectorial del fonoaudiólogo en la promoción de la salud infantil. **Objetivo:** Describir una experiencia de promoción de la salud para el desarrollo psicomotor y lingüístico en la infancia. **Metodos:** La experiencia fue realizada en una escuela pública de educación infantil del interior paulista. Se planificaron, elaboraron y realizaron cinco actividades promotoras del desarrollo infantil por las académicas del tercer año del Curso de Fonoaudiología de una universidad pública. Las actividades se desarrollaron en colaboración con los maestros de la escuela, de manera integrada y colaborativa, en la que participaron 60 niños de dos a cuatro años de edad. **Resultados:** En las actividades, los niños pudieron reconocer objetos, experimentar sensaciones, desarrollar inteligencia práctica y esquema corporal y mejorar la coordinación motora. Además, las actividades permitieron a los niños oportunidades para el desarrollo lingüístico. **Conclusión:** La experiencia descrita refuerza la importancia de la promoción de la salud y la intersectorialidad, prevista por las políticas actuales, y contribuye a la formación académica de futuros terapeutas del habla y el lenguaje.

Palabras clave: Fonoaudiología; Promoción de la Salud; Colaboración Intersectorial; Servicios de Salud Escolar.

Introduction

Historically, the Speech Therapy was characterized by the biomedical view, or rather, focused on disease and especially rehabilitation-oriented[1, 2]. Since the regulation of the profession by the law no. 6965, of December 9th, 1981[3], and the implementation of the Unified Health System (SUS) in the beginning of the decade of 1990, significant changes in the actions of Speech Therapy brought a widened perspective of the profession, resizing the technicist nature of the time[2].

The present outlook of SUS, with the current public policies, is configured as an interdisciplinary network of health assistance, in the individual and collective scope, organized in different levels of attention to health. Among these levels, basic attention stands out, consisting of a strategy centered on integral care of the users, being the main gateway to the health system[4]. In this context, the possibilities of insertion of the speech therapists are evident, and they play an important role in intersectorial actions of promotion of health[1, 2, 5].

The promotion of health consists of a set of intersectorial actions, leaded to the community, aiming at the conception of a social subject and his condition concerning culture, history and the health-disease process[1].

In the perspective of widening the actions on health in the intersectorial approach, through shared management between the areas of Health and Education, the Health in School Program (PSE) was created, aiming at contributing to the integral formation of children from the public network of education, with an emphasis on the prevention of diseases and the promotion of health[6, 7].

PSE is constituted of 12 actions, and among these, the action of "Promotion of hearing health and identification of students with possible signs of alteration" is directly attached to the action of the speech therapists. In PSE, these professionals can also work in the action of "Prevention of violence and accidents"[6, 8].

However, it is possible to widen the actions advocated in PSE, conducting other activities of prevention of diseases and promotion of health. In this sense, the speech therapist can contribute to the educators in children development, in creating communicative environments, in language development (oral and/or written), in motricity, in hearing and cognition[8-11]. If there is an involvement of Speech Therapy undergraduates in these actions, it can be an excellent opportunity of approximation and experience in SUS[10, 12, 13].

Thus, the aim of this study was to describe an experience of promotion of health for the psychomotor and linguistic development in childhood.

Methods

It is a descriptive study of an experience of third-year students of the Course of Language and Hearing Sciences of a public university of the state of São Paulo.

The experience was at a Municipal School of Child Education (EMEI), as part of the proposal of the mandatory curricular internship of Community Speech Therapy. This internship happened in a Family Health Unit (USF) in a medium-size municipality in the countryside of São Paulo, between March and July 2018, corresponding to a workload of 60 hours.

The casuistry was constituted by sample of convenience, in which 60 children from three kindergarten classes participated, at the ages between two and four, enrolled in an EMEI located in the coverage area of the USF. It is worth highlighting that, both the school and the USF are inserted in the PSE of the municipality where the study was conducted, according to the current legislation[14].

Educational activities of promotion of health were conducted by the interns of Speech Therapy, in partnership with the teachers, in a collaborative and integrated manner, with an emphasis in the development of psychomotricity, based on the theoretical assumptions of Piaget[15]. These activities occurred in the EMEI, totaling 5 meetings, with an average of time of 20 minutes in each classroom. A previously authorized plan was elaborated, in accordance with the teacher's seminar and with the political-pedagogical project of the school, corresponding to the following stages:

Stage I – Recognition of the musical instruments by sensorial-motor experiencing and developing the symbolic function

This stage had the aim of identifying musical instruments through hearing and tactile-kinesthetic clues, as well as developing the symbolic function, characteristic of the pre-operational period[15].

The instruments used were: a toy keyboard, rattle, electric guitar, and guitar. The children were allowed to play the instruments and listen to the sound of each of them, and their names were presented by the interns, which helped in their recognition. Then, the interns sang children's songs like, for instance, "O sapo não lava o pé", "A barata diz que tem" e "Borboletinha", focusing on the symbolic function, by the abstraction of the information contained in the songs.

Stage II – Representation of sensations through tactile-kinesthetic and visual ways

The aim of this stage was to understand the concept of different sensations through tactile-kinesthetic way and recognize objects that refer to those sensations, through visual way.

A sensorial carpet was elaborated with the following materials which referred to the respective sensations: velvet cloth, cotton, feathers, and wool, soft; sand, sandpaper, and steel wool, rough; CDs and aluminum objects, cold; corn grains, plastic bottle caps, egg boxes, pressure.

The children were followed up by the interns during the experience of the carpet, viewing and perceiving the sensations with their feet and hands.

Stage III – Developing practical intelligence

This stage aimed at developing the skills related to the construction of the categories of object and space, or rather, the practical intelligence which occurs during the sensorial-motor period and the intuitive thinking, characteristic of the pre-operational period[15].

Geometrical shapes (square, triangle, and circle) were used, in different colors (yellow, green, blue, and pink) in order to facilitate the identification of the shapes' referred characteristics. The children were supposed to fit the geometrical shapes according to their respective gap and color.

Stage IV – Developing body scheme

The aim of this stage was to develop the awareness about the parts of the body, which occurs from the evolution of the mental schemes related to the spatial notion[15].

The activity was developed with the songs "Cabeça, ombro, joelho e pé" ("Head, shoulders, knees, and toes") and "A dança do morto-vivo", played on a portable radio device. Children were supposed to point to the parts of the body (head, shoulder, knee, foot, eyes, ears, mouth, and nose) as they were mentioned in the first song, and squat at the word "dead" and stand up at the word "alive" in the second song, which increased the pace gradually, providing the development of motor coordination, attention, concentration, agility, and the concept of words.

Stage V – Improve motor coordination

This stage aimed at improving the motor coordination skill, which results from actions/operations of body movement from the experience, as in pre-school phase, the motor skills like running, jumping, throwing, and catching are developed[16].

Kraft paper and crayons were given to the children and they were asked to draw freely in a space on the paper, being allowed to change the materials between them.

In all stages, the activities were conducted with an emphasis on socialization among the children and on linguistic skills, being considered as important factors to their cognitive development[17].

Results

The following results are described according to the stages reported previously.

Stage I – Recognition of the musical instruments by sensorial-motor experiencing and developing the symbolic function

The children were able to recognize the toy musical instruments, answering by naming these objects. They also showed curiosity and attention during the experience. Besides, they developed the symbolic function, which was demonstrated through gestures as responses to the content of the songs.

The carrying out of this activity enabled the interns to evaluate their difficulties concerning the management of the plan to be executed in the time provided by the school, as well as in the conduction of the interaction between the children.

Stage II – Representation of sensations through tactile-kinesthetic and visual ways

In the beginning, the children looked apprehensive when facing the proposal of this stage. The interns motivated the children to participate in the activity and followed them up during the sessions of the sensorial carpet, where it was possible to see the enthusiasm and desire to go through the route in an independent and participatory way.

Besides, different facial expressions were observed as they experienced the sensations provided by the carpet, and some children named the objects which referred to some sensations, showing that they represented their concepts. However, other children had some difficulty with the sensations of rough and cold. In order to facilitate the representation of concepts, the interns asked questions and gave verbal explanations related to the tactile-kinesthetic and visual information experienced on the carpet.

This stage contributed to help the interns develop mechanisms to get the children's attention during the activity.

Stage III – Developing practical intelligence

A large part of the group was involved in the activity, fitting correctly the figures according to the corresponding gap. When there were incorrect fits, due to the fact that the children were based on only one piece of information of the object (color or shape), the interns facilitated the performance of the task by asking questions like, for instance, "don't you think this one would fit better?" It is worth highlighting that the children who were withdrawn expressed interest in participating during the activity.

We observed that this stage contributed to the interns' training, because it was necessary the use of adjustments in the explanation of the activity, according to the level of comprehension of each child. Besides, the teacher responsible for the class expressed satisfaction with the interns' work.

Stage IV – Developing body scheme

We verified that the children developed an awareness of the parts of their body, pointing to them when they were mentioned in the first song and performing the movements suggested in the second song properly. However, the children could not associate the movements as the song's pace increased.

In this activity, the interns concluded that songs are an indispensable strategy for the development of the motor aspect, language, and, consequently, cognition, at this age.

Stage V – Improve motor coordination

The activity made it possible to improve the motor coordination skills, by the children's actions with the materials taken by the interns, being possible to structure a significant experience. Initially, there were difficulties in changing turns among the group, which was established by the guidance of the interns. We highlight that some children did the movement of tweezers to draw, indicating the stage of development of fine motor coordination.

The interns verified the interaction of the children at this age with the environment and with their peers, and realized the importance of the organization of the environment during the performance of the activity.

The Chart 1 synthesizes the stages described previously and their respectful results.

Chart 1. Synthesis of the stages developed and the results observed.

Stage	Aim	Materials	Activity	Results
I	Recognizing musical instruments and developing the symbolic function.	Toy musical instruments (keyboard, rattle, electric guitar and guitar) and songs "O sapo não lava o pé", "A barata diz que tem" and "Borboletinha".	Experiencing musical instruments and children's songs.	The children recognized the musical instruments by naming them and developed the symbolic function, demonstrated by gestures in response to the songs' contents.
II	Understand and recognize the concept of different sensations through objects.	Sensorial carpet with the following materials: velvet cloth, cotton, feathers, wool, sand, sandpaper, steel wool, CDs, aluminum objects, corn grains, plastic bottle caps, and egg bottle.	Going through the carpet, experiencing the respective sensations: soft, rough, cold, and pressure.	Some children showed a representation of the concept of the different sensations, observed by the naming of the respective objects and by the different facial expressions. Difficulties of the group concerning the sensations of rough and cold were also verified. The interns developed mechanisms to obtain the children's attention in the activity.
III	Developing the skills related to the construction of categories of the object and space, namely, practical intelligence.	Geometrical figures in different colors.	Fitting geometrical figures according to the respective gaps and colors.	A large part of the group was able to fit the figures correctly. Incorrect fittings were also verified, due to the support in only one characteristic of the figure (color or shape). The interns developed the skill of adjusting the explanations, according to the level of understanding of each child.
IV	Developing body scheme.	Children's songs and portable radio.	Dance referring to the aspects related to the body with the children's songs "Cabeça, ombro, joelho e pé" and "Dança do morto-vivo".	The children pointed to the parts of the body, when they were mentioned in the first song, and performed the movements required in the second song properly. However, they could not associate the movements as the song's pace increased. The interns realized that the song is an indispensable strategy to the development of the motor aspect, language, and, consequently, cognition, at this age.
V	Improve the motor coordination skill.	Kraft paper and crayons of different colors.	Free drawing.	The activity enabled the improvement of the motor coordination skills, being observed that some children did the movement of tweezers. The group showed difficulties in changing turns, which was established after the interns' guidance. The interns verified the children's interaction with the environment and their peers, realizing the importance of the organization of the environment during the performance of the activity.

Discussion

This work used the constructivist theory for the plan, elaboration, and conduction of the activities of promotion of health in the school scope. Such activities promote the child development, encompassing the motor, sensorial, affective, and linguistic aspects[17].

According to the constructivist theory, child development is divided in four stages: sensorimotor (0 to 4 years old), pre-operational (2 to 7 years old), concrete operational (7 to 11 years old), and formal operational (from 11 years old)[15, 17].

This work was focused on the second stage of development, the pre-operational, as it included children at ages between two and four years old. At this stage of child development, children develop language and socialize with the other subjects around them[15, 17].

Certainly, the aspects worked provided functional development, considering the children's potential, helping them in balance and in the expansion of their affectivity through the socialization with the environment[18, 19].

Traditionally, the action of speech therapists in the school environment is directed to the creation of communicative environments, propelling of children's oral and written language[9-11].

This work was innovative in the sense of giving visibility to the psychomotor activities of promotion of health which can be done by the speech therapist in the context of school, widening, moreover, those suggested by the Health in School Program[6, 7].

This previous study aimed at describing the actions done by the Speech Therapy team of the Health in School Program, by practices of education, prevention, and promotion of health, and concluded that the interface between the work of the Speech Therapy team and the schools' teaching staff results in global development of students and

helps in the prevention of hearing and oral language alterations[13].

The experience of speech therapy work in actions of promotion of health was also reported in another study, through household visits, highlighting the importance of these practices for the training of the undergraduate students of speech therapy and the necessity of restructuring the action of speech therapists in basic attention, as health assistance in this context is still centered on individual attendance[20].

Other authors reinforce the relevance of sheltering an interdisciplinarity of the actions of promotion of health, in the context of the waiting room, enabling humanized care and the user's understanding about his health condition[21].

In this sense, carrying out actions of promotion of health is fundamental since childhood, so that children may become promoters of their own care in the future. Thus, promotion of health must become apparent to blur the view centered on diseases, as it is so characteristic of the biomedical paradigm[1, 2, 5].

Nothing keeps Speech Therapy from doing a screening in school and forwarding questions pertaining to its area, including the cases with more special needs[13].

However, future professionals of speech therapy must develop actions that are pertinent to the assumptions of the Unified Health System[12], or rather, perform actions of prevention of diseases and of health promotion in an intersectorial manner.

Conclusion

The descriptive experience promoted child health in the school context and contributed to the academic training of future professionals of speech therapy, besides contributing to the widening of the actions of the Health in School Program. We highlight the importance of this practice, in the perspective of multiplying it in different public community contexts of health and education, involving the multiprofessional teams from both sectors.

References

1. Casanova IA, Moraes AAA, Ruiz-Moreno L. O ensino da promoção da saúde na graduação de fonoaudiologia na cidade de São Paulo. Pro-Posições. 2010; 21(3): 219-34.

2. Nascimento CL, Nakamura HY. Speech, language and hearing sciences in the SUS in São Paulo state. Disturb Comum. 2018; 30(1): 179-85.

3. Brasil. Lei nº 6.965, de 9 de dezembro de 1981. Dispõe sobre a regulamentação da profissão de Fonoaudiólogo, e determina outras providências. [Internet]. 1981. [cited 2018 Dez 06]. Available from: http://www.planalto.gov.br/ccivil_03/leis/L6965.htm

4. Cecilio LCO, Reis AAC. Notes on persistent challenges for basic health care in Brazil. Cadernos de Saúde Pública. 2018; 34(8): 1-14.

5. Oliveira JP, Schier AC. Supports for the speech-language pathologist performance in the school. Rev CEFAC. 2013;15(3): 726-30.

6. Brasil: Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Manual de adesão ao Programa Saúde na Escola. Brasília: DF; 2017.

7. Sousa MC, Esperidião MA, Medina MG. Intersectoriality in the 'Health in Schools' Program: an evaluation of the political-management process and working practices. Ciênc. Saúde Colet. 2017; 22(6): 1781-90.

8. Nascimento EN, Gimeniz-Paschoal SR, Sebastião LT, Ferreira NP. Inter-sector actions to prevent accidents in children education: teacher's assessments and students' knowledge. J. Hum. Growth Dev. 2013; 23(1): 99-106.

9. Fernandes DMZ, Lima MCMP, Silva IR. The perception of kindergarten teachers about the speech therapist work at school. Disturb Comum. 2017; 29(1): 86-96.

10. Moura TFOR, Maldonade IR. Teachers and health team's view of the performance of speech-language therapy's role in early childhood education. Disturb Comum. 2018; 30(3): 440-53.

11. Conselho Federal de Fonoaudiologia. Resolução 309, de 01 de abril de 2005. Dispõe sobre a atuação do fonoaudiólogo na educação infantil, ensino fundamental, médio, especial e superior, e dá outras providências [Internet]. 2005. [cited 2019 Set 26]. Available from: https://www.fonoaudiologia.org.br/cffa/wp-content/uploads/2013/07/res-309-site.pdf

12. Goés TRV, Rocha MCG, Lima BPS, Porto VFA. University extension: profile of the speech-language pathology students of a public University. Disturb Comun. 2018; 30(3): 429-39.

13. Santos AM, Lacerda AR, Pereira CF, Roberto CR, Carvalho KM, Souza KI. Atuação da Fonoaudiologia no Programa Saúde na Escola em Sete Lagoas, Minas Gerais. Rev Tecer. 2016; 9:161-8.

14. Brasil. Portaria nº 2.706, de 18 de outubro de 2017. Lista os Municípios que finalizaram a adesão ao Programa Saúde na Escola para o ciclo 2017/2018 e os habilita ao recebimento do teto de recursos financeiros pactuados em Termo de Compromisso e repassa recursos financeiros para Municípios prioritários para ações de prevenção da obesidade infantil com escolares [Internet]. 2017. [cited 2019 Set 26]. Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2017/prt2706_20_10_2017.html

15. Souza NM, Wechsler AM. Reflexões sobre a teoria piagetiana: o estágio operatório concreto. Cadernos de Educação: Ensino e Sociedade. 2014;1(1): 134-50.

16. Figueroa R, An R. Motor skill competence and physical activity in preschoolers: a review. Matern Child Health J. 2017; 21(1): 136-46.

17. Dias FO. O desenvolvimento cognitivo no processo de aquisição de linguagem. Letrônica. 2010; 3(2): 107-119.

18. Dos Santos A, Costa GMT. A Psicomotricidade na Educação Infantil: Um enfoque Psicopedagógico. Rev de Educação do IDEAU. 2015;10(22):1-12.

19. Fernandes CT, Dantas PMS, Mourão-Carvalhal MI. Desempenho psicomotor de escolares com dificuldades de aprendizagem em cálculos. Rev Bras Est Pedagog. 2014; 95(239): 112-38.

20. Goulart BNG, Henckel C, Klering CE, Martini M. Fonoaudiologia e promoção da saúde: relato de experiência baseado em visitas domiciliares. Rev CEFAC. 2010;12(5): 842-9.

21. Lenz AJ, Gernhardt A, Goulart BNG, Zimmer F, Rocha JG, Vilanova JR et al. Acolhimento, humanização e fonoaudiologia: relato de experiência em unidade básica de saúde de Novo Hamburgo (RS). Boletim da Saúde. 2006; 20(2): 59-69.