
Small citizen project: health promotion and prevention of child nutrition and orofacial motricity disorders

Projeto pequeno cidadão: promoção de saúde
e prevenção dos distúrbios alimentares e
miofuncionais orofaciais em pré-escolares

Proyecto pequeño ciudadano: promoción
de salud y prevención de los disturbios
de la alimentación y miofuncionales
orofaciales em pré-escolares

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Abstract

*Multidisciplinary work promotes better child development. **Objective:** To promote child health and prevent nutritional disorders and myofunctional orofacial disorders in children attending the daycare center of Lagarto, Sergipe. **Methods:** Three daycare centers in Lagarto were invited to participate in the proposal and the guardians signed a free and informed consent - (FIC - CEP 270 079). Participated*

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in interdisciplinary screening only children whose parents signed a FIC (n = 163) and participated at extension activities (n=293). The children, of both genders, aged between 2:1 and 5:11 years old. Activities performed: interdisciplinary workshops and screening; murals; child guidance and observation in everyday situations; guidelines and lectures (90 parents and 23 teachers) and construction of teaching material for educators. **Results:** The interdisciplinary screening was observed as normal in most participants (nutritional aspects – 69.4%, extra and intraoral and muscle tonus - 73.4 %), with workshop proposals for the improvement of functions with the worse scores in screening (mobility - 85.5 %, chewing and breathing - 83.2 %). The children agreed to the proposal of the Workshops. With an adherence of 10 % of the relatives in the lectures and textbooks were distributed. There was improvement (82.85 %) after reapplying the screening. Those children who remained with alterations were referred for treatment. **Conclusion:** The analysis of the nutritional and myofunctional orofacial demands in preschoolers allowed the execution of interdisciplinary prevention and successful health promotion. Actions between Speech Language Pathology and Audiology and Nutrition are important to improve the community's quality of life and the partnership formalized with Education enabled to foster and encourage the proposal of Health Promoting Schools.

Keywords: Health Promotion; Disease Prevention; Stomatognathic System; Speech, Language and Hearing Sciences; Nutrition Programs.

Resumo

A atuação interdisciplinar permite melhor desenvolvimento infantil. **Objetivo:** Promover a saúde infantil e prevenir os distúrbios alimentares e miofuncionais orofaciais de crianças frequentadoras de creches de Lagarto, Sergipe. **Métodos:** Três creches municipais de Lagarto foram convidadas a participar da proposta e os responsáveis assinaram termo de consentimento livre e esclarecido – TCLE (CEP 270.079). Participaram de triagem interdisciplinar e retriagem dos aspectos miofuncionais orofaciais apenas as crianças cujos familiares assinaram o TCLE (n=163) e participaram das atividades de extensão (n=293). As crianças, de ambos os sexos, apresentaram idades entre 2:1 e 5:11 anos. Atividades realizadas: triagem e oficinas interdisciplinares; murais; observação e orientação infantil em situações do cotidiano; orientações e palestras (90 pais e 23 professores) e construção de material didático para os educadores. **Resultados:** nas triagens interdisciplinares foi constatada normalidade na maioria dos participantes (aspectos nutricionais - 69,4%, extra e intraorais e tônus – 73,4%), sendo propostas oficinas para o aprimoramento das funções com piores escores nas triagens (mobilidade – 85,5%, mastigação e respiração – 83,2%). As crianças aderiram à proposta das Oficinas. Houve adesão de 10% dos familiares nas palestras e os manuais didáticos foram distribuídos. Houve melhora (82,85%) após retriagem. Aquelas crianças que permaneceram com alterações foram encaminhadas para tratamento. **Conclusão:** A análise das demandas nutricionais e miofuncionais orofaciais em pré-escolares permitiu a execução de ações interdisciplinares de prevenção e promoção de saúde com êxito. Ações integradas entre Fonoaudiologia e Nutrição são importantes para o aprimoramento da qualidade de vida da comunidade e a parceria formalizada com a Educação possibilitou fomentar e incentivar a proposta de Escolas Promotoras de Saúde.

Palavras-chave: Promoção da Saúde; Prevenção de Doenças; Sistema Estomatognático; Fonoaudiologia; Programas de Nutrição.

Resumen

La actuación interdisciplinar permite un mejor desarrollo infantil. **Objetivo:** Promover la salud infantil y prevenir los disturbios de la alimentación y miofuncionales orofaciales de niños frequentadores de guarderías de Lagarto-Sergipe. **Métodos:** Tres guardería municipales de Lagarto fueron invitadas a participar de la propuesta y los responsables firmaron Carta de Consentimiento Libre e Esclarecido CCLE (CEI 270.079). Participaron de tria interdisciplinar y retri de los aspectos miofuncionales orofaciales solamente los niños cuyos familiares firmaron la CCLE (n=163) y participaron de las actividades de extensión, (n=293). Los niños de ambos los sexos presentaron edades entre 2:1 y 5:11.

Actividades realizadas: tría y talleres interdisciplinario; murales; observación y orientación infantil em situaciones del cotidiano; orientaciones y charlas (90 padres y 23 profesores) y construcción de material didático para los educadores. Resultados: en las trías interdisciplinarias fue constatada normalidad en la mayoría de los participantes (aspectos nutricionales – 69,4%, extra y intra-oral y tonus – 73,4%), siendo propuestas talleres para la mejoría de las funciones con peores resultados em las trías (movilidad–85,5%, masticación y respiración–83,2%). Los niños adherieron a la propuesta de los talleres. Hubo adhesión de 10% de los familiares en las charlas y los manuales didáticos fueron distribuidos. Hubo mejoría (82,85%) después de la tría. Los niños que permanecieron com alteraciones fueron encaminados para tratamiento. Conclusión: El análisis de las demandas nutricionales y miofuncionales orifaciales em pre escolares permitió la ejecución de acciones interdisciplinarias de prevención y promoción de salud de forma exitosa. Acciones integralizadas entre Fonoaudiología y Nutrición son importantes para la mejoría de la calidad de vida de la comunidad y el trabajo formalizado con la Educación posibilitó fomentar e incentivar Escuelas Promotoras de Salud.

Palabras claves: Promoción de la Salud; Prevención de Enfermedades; Sistema Estomatognático; Fonoaudiología; Programas de Nutrición.

Introduction

Health-promoting actions in educational institutions must be permanent in order to promote capacity, acquisitions and skills development of each individual and the community; provide the development of healthy habits and encourage the citizenship exercise¹.

With an early intervention, it can be avoided or minimized the changes to a particular individual, group, community or environment², preventing possible deviations of the development and installation of disorders.

The partnership between daycare centers, family, educators, managers and health professionals is needed, so that, different actions can be planned, such as lectures, screenings, playful activities with children, training educators and others in order to provide health promotion and prevention of communication disorders, mostly in preschoolers³, especially of the essential functions of life that can be compromised, such as breathing, chewing, sucking and swallowing.

The indexes of orofacial myofunctional disorders revealed by the literature point to the need for intervention, as in a study⁴ that showed changes in 84% of the sample of children between five and eight years old. The prevalence of harmful oral habits in children from Recife (n = 970) aged between five and twelve years old, of both sexes, was 60.8%⁵, and, in another study in Juiz de Fora, Minas Gerais, with fifty children and their parents, the percentage was higher, equal to 92%⁶.

Researchers⁷⁻¹⁰ have been concerned about the possibility of the influence of nutritional disorders in Speech, Language and Hearing Sciences aspects.

Schoolers aged between six and ten years old were assessed regarding the breathing mode and nutritional status. Mouth breathers presented greater changes in sleep, decreased carbohydrate intake and increased lipid intake. However, the authors⁷ did not find sufficient and consistent data that pointed an association between mouth breathing and nutritional status. Research with different themes (involving language and nutrition) also found no association between nutritional status and the Speech, Language and Hearing Sciences aspect observed, namely, the development of language. Despite the above, researchers⁸ add that the percentiles of height/age and weight/age presented a tendency to lower results in the group of children with language impairment.

But in research of literature review⁹, it was reported a relation between the altered breathing mode and the change in the general process of power, revealing difficulties in smell, taste and orofacial myofunctional disorders that could reflect the nutritional status.

Another study¹⁰ revealed that malnourished schoolers in the crucial period of the central nervous system development presented lasting cognitive impairments, even after nutritional recovery. Such children presented learning difficulties in phonological and auditory processing and were, according to the author, affected by malnutrition.

Thus, interdisciplinary actions between Nutrition and Speech, Language and Hearing Sciences deserve attention of their professional categories.

Researchers¹¹⁻¹⁵ showed that simple practices and with the involvement of different actors, such as family, educators, community health workers and preschoolers, can promote the good development of the cranio-oro-cervical complex, in order to promote health and prevent the orofacial myofunctional disorders during preschool stage. However, there is no specific Brazilian program in public schools with preventive focus in the orofacial motor area¹⁶.

Regarding nutrition, dietary and nutritional education, it is a strategy that is efficient to improve the Programa Nacional de Alimentação Escolar [National School Meal Program (PNAE)] which guarantees the human right to adequate feeding¹⁷.

Therefore, the objective of this work was to promote child health and prevent eating and orofacial myofunctional disorders of children attending the municipal daycare centers of Lagarto, Sergipe.

Methods

This study was approved by the Research Ethics Committee (CAAE: 14504313.3.0000.5546), signed with the Free and Informed Consent by the guardians of the children. Because of the use of images and recording of the speech of the research subjects, their guardians read and also signed the term for the use of voice and image.

The sample participant of the proposal arose from three municipal daycare centers of Lagarto, Sergipe, Brazil, of both sexes and aged between two and five years old.

In a space donated by the own daycare centers (room with good lighting, well ventilated and with minimal noise interference), it was applied Speech, Language and Hearing Sciences screening in orofacial motricity, which included interviews with parents/guardians and assessment of the child's myofunctional orofacial system.

The instrument (form) for data collection was divided into three parts. The first part aimed at the data identification (name, date of birth, age, education), knowledge of the socioeconomic profile of families (household income, education level, number of people living in the house, if the property was rented or own, what kind of housing, how many rooms - including whether they were

ventilated, lighted and the frequency of cleaning, if it had sanitation, type of water, if there was water treatment at home, floor carpeting, which destiny had the garbage disposal and the educational level of parents).

The second part of the proposal was the myofunctional screening itself, by using the myofunctional orofacial evaluation protocol MBGR¹⁸ in a synthesized form, being used in this assessment the standard precautionary measures of biosecurity¹⁹, like gloves and disposable spatulas. The following tests are performed in the protocol:

Extraoral examination (by visual inspection and photographic record): 1a) *objective*, using Vonder® metallic caliper, being checked the type and facial proportions and 1b) *subjective*, in frontal view (symmetries and asymmetries), lips (usual position, shape, upper lip length, inner mucosa and presence of saliva) and in lateral norm, the facial type (I - straight, II - convex or III - concave) and the nasolabial angle (close to 90°, acute or obtuse).

Intraoral examination (by visual inspection, flashlight use, spatula and photographic record), being checked the lips (mucosa with or without wounds and upper frenulum), the mucosa of the cheeks (observing tooth marks, Alba line and the presence of wounds), the tongue (usual position, symmetry, mucosa and sublingual frenulum), the hard palate (depth and width), the soft palate (symmetry and extension), the uvula (with or without deviation, crack - forked uvula, extension, etc.), the palatine tonsils (presence, size, color and position), the teeth (amount, presence or absence of dental flaws, conservation condition), gum (conservation status) and the occlusion (presence of horizontal, vertical or transverse alterations). It is noteworthy that, regarding the visual inspection of occlusion, it was observed the anteroposterior relation between deciduous molars, the relation of deciduous canines²⁰ and even horizontal changes (top bite, overjet and anterior crossbite), vertical (top bite, overbite, open bite: anterior and posterior), transverse (right or left posterior crossbite) and midline deviation (right or left).

For the inspection of the teeth and occlusion, students of the Dentistry course, under the supervision of an orthodontist, together with the ones of Speech, Language and Hearing Sciences who participated in the project, made such remarks, and previously attended a Training Course of 45 hours, ministered by a Specialist Professor in Orthodontics

and a speech therapist with specialization course in Orofacial Motricity. All children were photographed and analyzed by the respective experts.

Mobility: of lips, tongue, cheeks, jaw and palatal veil - by a verbal request and, in the case of difficulty in understanding or realization of the movement, by imitation.

Muscle tonus: of lips, tongue and cheeks (by palpation).

Screening of oral functions such as breathing (type, mode, nasal flow and the possibility of nasal use) - by visual inspection and use of Altmann graded mirror, chewing - by offering a slice of bread, swallowing (solids - in this case, bread and as liquid, water, offered in transparent glass in guided situation) and directed talks, by naming figures.

The evidence regarding oral functions were photographed and filmed, on a Sony Cyber Shot, video function, digital (7.2 mega pixels), DSC P200 model, as well as for recording the evaluation of posture and occlusion.

The sum of the scores was performed according to the literature¹⁸, being possible to obtain a total of 189 points.

Concomitantly with the activities of orofacial motricity, it was performed, by students of the Nutrition Course, the nutritional screening, with anthropometric measurements to verify the weight and height measurements, being determined the total body mass indicators ($\text{weight} / \text{height}^2 - P / A^2$) and linear growth ($\text{height} / \text{age} - H / A$) for analysis and comparison between sex and age groups, according to the World Health Organization²¹ for children. Two measurements for each child were carried out and the final result was accomplished by the average obtained. For measuring the weight, a platform scale was used, digital, WELMY® brand, calibrated, with a maximum capacity of 150 kg, with accuracy of 0.1 kg.

To measure the height, the children were told to stay erect and barefoot. It was performed a reading from the use of a measuring tape, Seca® brand, attached to the wall, with a maximum capacity of 150 cm and 0.5 cm accuracy.

The Nutrition course also assessed the daily menu of daycare centers and in day and pre-scheduled time, provided guidance (verbal and with the help of visual aids) about the importance of healthy eating and preparing snacks.

The results were tabulated and submitted to descriptive and analytical statistical analysis by

the SPSS® program, using Kendall's test to obtain averages and proportions, and the Chi-square test to check for verifying the association between the results. It was considered the value of 5% ($p \leq 0.05$), as the level of statistical significance.

From the results with statistical significance, the activities were designed, planned and executed in the form of workshops (total of ten), from July 3 to September 20, 2013.

The workshops used for promotion and prevention of eating and orofacial myofunctional disorders were performed in the classroom or in the dining hall of the participating institutions. Were included mobility activities of lips, tongue and cheeks; the awareness raise for food eaten, the nasal breathing mode and alternate bilateral mastication, as well as stimulation of smell. For this purpose, role play strategies, reading stories, cinema exhibition, musical parodies, games, contests and more were used.

During the activities involving the act of feeding, in the snack of the children, for example, were carried out observation and intervention activities, when necessary, with specific guidelines addressed to each situation, regarding food and other functions such as breathing, chewing and swallowing.

For interdisciplinary actions of Health Education, bulletin boards were available at the entrances of the three daycare centers, being exposed for a week, when the wall was replaced. The murals were located in receptions, visibly and legibly for educators, managers, relatives, cooks, staff of general services, security and visitors - so they could monitor their work and become aware about the importance of Speech, Language and Hearing Sciences and Nutrition for child development. The topics covered in this modality were: Speech, Language and Hearing Sciences (definition and areas), healthy eating, chewing, oral hygiene and harmful oral habits. Informative flyers were delivered to relatives about breathing and feeding, so that, they could have expanded their knowledge about such matters.

After carrying out their workshops, the screening of 140 preschoolers was performed and those who remained with deviations in the development of the stomatognathic system were carried out, referrals were hired.

It was prepared a didactic manual for educators, with explanations related to breathing, chewing, swallowing and harmful oral habits. The manual was built with information taken from

literature and worked so that the language could be affordable and with figures to complement the above. Its material was finalized in November 2013 and delivered to educators (one printed and one virtual copy - on compact disc, with "pdf" file) in December of that year.

The feedbacks were conducted with the managers: verbally, in the form of a report and with the use of power point (*Microsoft Office®* package). To parents or guardians were offered feedbacks of activities, and referrals were delivered to different specialists (speech therapist, otolaryngologist, nutritionist and periodontist).

Results

163 children were screened, being 88 male preschoolers (53.9%) and 75 female (46.1%), aged between 2:1 and 5:11 years old (average: 4.43 ± 1.22), with no statistically significant difference in gender ($p = 0.296$).

All municipal day care centers were located in the center of Lagarto, Sergipe, being airy, illuminated and clean. Most responsible relatives had not completed primary education (63.77%) and had a family income of up to two minimum wages (82.44%).

Most children presented adequate extraoral aspect and muscle tonus (81.6% and 79.75%, respectively).

In contrast, most preschoolers presented intraoral change (58.90%), being tooth conservation and occlusion diseases the most obvious changes. The same occurred when regarding the mobility and the movements involving the tongue, lips and cheeks were the ones that showed higher prevalence of difficulties (90.18%) (Table 1).

Regarding the oral functions, 14.11% presented no change, therefore, they did not have to make a second screening about this aspect, and found that most of them presented changes (85.89%). The changes found by function, chewing showed the most frequent difficulties (Table 2).

Table 1. Results of the screenings in orofacial motricity of preschoolers in the municipality of Sergipe, 2013.

Screened aspects/results		N	%	P*
Gender	Male	88	53,9%	0,296
	Female	75	46,1%	
Extraoral examination	Without changes	133	81,60%	0,000*
	With changes	30	18,40%	
Intraoral examination	Without changes	67	41,10%	0,000*
	With changes	96	58,90%	
Mobility	Without changes	16	9,82%	0,000*
	With changes	147	90,18%	
Muscle tonus	Normal	130	79,75%	0,000*
	Changed	33	20,25%	
Oral Functions	Normal	23	14,11%	0,000*
	Changed	140	85,89%	

* Statistical Chi-square Test revealing statistically significant differences

Table 2. Results of the screening of oral functions of 163 preschoolers of the municipality of Sergipe, 2013.

Results/ Functions	Breathing		Chewing		Swallowing	
	N	%	N	%	N	%
Normal	125	76,7	95	58,3	117	71,7
Changed	38	23,3	68	41,7	46	28,3

It is noteworthy that the overall scores were low (with an average of 17.11 points, of a total of 189 points).

The nutritional screening (Table 3) showed that most were eutrophic (69.4%), while 25.2% presented some degree of overweight (overweight

risk or overweight / obesity) and 5.4% presented underweight. Regarding growth, only one child did not show linear growth suitable for age. There was no significant difference in the comparison between the sexes ($p > 0.05$).

Table 3. Body weight and linear growth indicators of preschoolers of the municipality of Sergipe, 2013.

Anthropometric indicators	Male	Female	General
	N (%)	N (%)	N (%)
Weight/Height (n=111)			
Slimness	3 (5,1)	3 (5,8)	6 (5,4)
Adequate	41 (69,5)	36 (69,2)	77 (69,4)
Overweight risk	8 (13,6)	9 (17,3)	17 (15,3)
Overweight/obesity	7 (11,9)	4 (7,7)	11 (9,9)
Height/Age (n=111)			
Low height for age	1 (1,7)	-	1 (0,9)
Adequate height for age	58 (98,3)	52 (100,0)	110 (99,1)

In speeches with the parents, many doubts were clarified, especially regarding the trials carried out, to referrals, regarding the oral habits and feeding. The parents were quite active, sharing stories and experienced situations related to the exposed subjects.

The workshops held with children were, mostly, well received by the participants. Regarding the educators, two daycare centers showed good acceptance, so that, they gave space and time to carry out the planned activities. In one of the day care centers, it was possible to notice the resistance of some teachers, who did not exempt the preschoolers for all workshops offered. Thus, not all preschoolers participated in the proposal in that institution.

The puppet theater strategy, in which various topics were treated, provided better acceptance by children, which was realized by the enthusiastically participation in the proposed activities. In the theater involving the mobility of phonoarticulatory structures through onomatopoeia, the children imitated the sounds included. In the theater of the consequences of the habit of eating quickly, participants liked the story and enjoyed it a lot.

Regarding the individual instructions given during feeding, the preschoolers, most of the time, tried to improve their performance from the given guidelines. It is noteworthy that some preschool-

ers relate the action of the observation with the story above.

The Nutrition course also assessed the daily menu of the daycare centers. The results were discussed with the cooks, that, from received guidance, clarified doubts and implemented adjustments related to the preparation of snacks.

Generally, it can be inferred that the playful activities have been well accepted by preschoolers, who participated motivationally in workshops proposals. Thus, it can be inferred that the activities were carried out to the satisfaction of children of all daycare centers involved in the project.

The teaching manual distributed to educators was well accepted and in the meeting of the closure of academic activities stated that they had appreciated the proposal. At the time, the family also expressed appreciation for the informative flyers about breathing and feeding.

After the completion of the second screening (in 140 preschoolers, given that 23 presented normality in all aspects, in the screening situation) when it was examined whether there was at least one item with improvements, it can be seen that 116 (82.85%) of the participants improved one aspect of the second screening (Tables 4 and 5). It is noteworthy that the values given in the tables refer to the results obtained with the preschoolers that presented changes in that aspect. For example,

68 children presented abnormal chewing and, after the educational activities in health, most of them presented improvements (n = 41), representing 21.28% of the sample of subjects with changes in oral functions (n = 140).

Those children who remained with delays, dysfunctions and deviations were referred to specialists in the Sistema Único de Saúde (Unified Health System) of the city (37.42% for evaluation and speech therapy, 34.35% for dental care and 7.36% for evaluation and Otolaryngology conduct).

Table 4. Results of the second screening of mobility of preschoolers of the municipality of Sergipe, 2013.

Results/Mobility	Lips		Tongue		Cheeks	
	N	%	N	%	N	%
Did not improve	32	21,77	32	21,77	31	21,09
Improved	36	24,49	57	38,77	36	24,49
Total of preschoolers with mobility changes in the screening (n = 147)	68	46,26	89	60,54	67	45,58

Table 5. Results of the second screening of oral functions of preschoolers of the municipality of Sergipe, 2013.

Results/Functions	Breathing		Chewing		Swallowing	
	N	%	N	%	N	%
Did not improve	16	11,42	27	19,28	19	13,57
Improved	22	15,71	41	29,28	27	19,28
Total of preschoolers with changes in oral functions in the screening (n = 140)	38	27,13	68	48,56	46	32,85

Discussion

It is known that early childhood is a critical period for triggering various changes arising from common bad habits at this stage, because it is a period of change and learning in all aspects of the individual's life. Since daycare centers are environments where children spend most of the time, favorable environments for the full child development must be created, requiring awareness of the importance of health promoting daycare centers²²⁻²⁴.

Literature² shows that by intervening early, changes can be avoided or minimized to a particular individual, group, community or environment. In this sense, the speech therapist and nutritionist has an essential role in the prevention of communication and nutrition disorders, respectively, since they can carry out preventive work and early detection of risk factors that may interfere with child development. Furthermore, they can perform guidance, screening, referrals, research and others.

Health programs of the schooler, as in this work, contribute to minimize the impact that these problems can bring to children's health, being necessary to stimulate the partnership of schools/daycare centers with higher education institutions, providing mutual benefits to both parties involved, emphasizing a training in Health of a future professional concerned with loco-regional problems of the surroundings, as well as the possibility of a larger number of research and extension activities that promote the empowerment of the community.

Thus, so that projects related to the health of schoolers become successful, it is important to foster the partnerships among Health professionals, the education institutions (in this case, daycare centers, including managers, educators and technical staff) and families. The purpose is not the assistance in Health, but the adoption of a collaborative and responsibility approach of all people, for the sake of a better quality of life for all involved. Some authors have ratified the abovementioned, occur-

ring a reduction of reports of problems related to poor dental occlusions and improvements of oral hygiene through orientations^{3,11}.

Thus, different actions can be planned, such as lectures, screenings, playful activities with the children, training of teachers and others, in order to provide health promotion and prevention of communication disorders in infants and preschoolers.

The planning of actions requires knowledge of space and local demands. Therefore, interviews with managers and application of screening were planned and, therefore, specific actions have been implemented.

From the results obtained in screenings of orofacial motricity skills, it was found that most children did not present extraoral and muscle tonus changes. Similar studies corroborate with these findings, in which 120 children were evaluated, of which, 64.2% presented appropriate adequate muscle tonus of lips with good mobility and 35.8% of muscle tonus of lips changed with impaired mobility and 74.5% with muscle tonus and adequate mobility of tongue²⁵. In contrast, researchers⁴ found, in 50 children between five and eight years old, changed muscle tonus of orofacial muscles in 70% of the sample, although the research group has been over the age of this study.

Regarding the intraoral aspects, changes were realized in most of the preschoolers, being dental conservation and malocclusions the most evident ones. Authors⁴ showed that 70% of the evaluated children presented dental malocclusion. Deleterious oral habits are considered a risk factor of great influence in triggering occlusal changes, since authors²⁶ showed that most of the study sample (78.38%) used more than one deleterious oral habit, causing occlusal changes.

The presence of harmful oral habits creates muscle imbalance in the orofacial structures and dental malocclusion, directly affecting the oral functions such as swallowing, chewing and speech²⁷⁻²⁸.

In the present study, it was shown that 85.89% of the screened children presented some type of difficulty regarding the oral functions, and chewing and breathing were the functions with the higher occurrences. The same occurred with regard to mobility, and the movements involving the tongue, lips and cheeks were those that showed higher prevalence of difficulties. It is noteworthy that one of the limitations of this study was not to

include strategies for knowledge of harmful oral habits of preschooler participants. For this reason, it was designed an undergraduate research project to address this issue and thus, help in minimizing nutritional and orofacial myofunctional disorders in preschoolers.

The possibility of evaluating the demands of children's institutions in an interdisciplinary way, as well as planning and execution of integrated actions between Speech, Language and Hearing Sciences and Nutrition were important both for training in Health, since it fosters the construction of less fragmented knowledge and therefore more globalized, and for a differentiated and collective praxis.

The influence of nutritional aspects in the Speech, Language and Hearing Sciences ones, or vice versa, still needs further research, although some researchers observed no significant impacts, however tendentious^{7,8}; others have found results that showed such interrelation^{9,10}.

After the data analysis and verification of the greatest difficulties of children, both in Speech, Language and Hearing Sciences and Nutrition, playful interventions were made with the aim to promote improvements regarding the difficulties encountered. The study stressed that strategies to raise awareness through playful activities are effective for eliminating oral habits in children, as quoted by the literature¹⁵.

The feedback to parents of preschoolers and daycare professionals aimed to give a return of what was done with the children and guide them regarding the conducts to be established in each situation. Researchers¹⁵ claimed that the success of the work is related to the cooperation and participation of parents and the awareness gained by children. Therefore, for these aspects to be automated there is the need for educators and relatives to give continuity to the process started.

The actions must, ideally, take place in the interdisciplinary context, since only in this way, the full view of the individual can be contemplated. Such practices require constant team effort for planning meetings, execution and strategic alignment of actions to be developed, which spends time and need for collaboration to build teamwork.

Accordingly, authors²⁹ commented that, although professionals of Pediatric Dentistry, Orthodontics, Speech, Language and Hearing Sciences, Psychology and Pediatrics recognize the

importance of working together for the removal of harmful oral habits, there is little interdisciplinary interaction to overcome this problem both on prevention and rehabilitation.

The implementation of Health Promoting Schools should consider not only the health of the schooler, but must overcome the school limits, in order to stimulate intersectorial approach, extending its actions to different subjects, with stories and different social roles, as other relatives and professionals, integrated with the Equipes de Saúde da Família [Family Health Teams (ESF)]³⁰. Integration with the ESF has not been realized yet, being a weakness to be faced.

This action-research fomented the first partnership of Speech, Language and Hearing Sciences and Nutrition courses of the Federal University of Sergipe with the Health Department of the Municipality of Lagarto, Sergipe and approached teachers and students of the local reality, favoring the construction of Health promoter environments and the development of research in the area.

Conclusion

It can be seen that the performance of the speech therapist and the nutritionist in daycare centers requires epidemiological subsidies for the implementation of actions, being very wide its intervention, ranging from a good institutional diagnosis through the guidance to parents, teachers and school staff, to referrals to children, to the execution of interdisciplinary educational activities in health.

Such educational activities produced beneficial effects to preschoolers, since it was found that after the application of the second screening, the majority (82.85%) presented an improvement in some previously changed aspect.

The high prevalence of oral myofunctional disorders in the study group points to the need for deepening the interdisciplinary study related to harmful oral habits in the institutions participating in the research.

Furthermore, interdisciplinary actions between Speech, Language and Hearing Sciences and Nutrition added knowledge to all involved, showing that promoting health practices are possible, when Health professionals engage pro-actively in collective actions for the construction of institutions that care about the child's quality of life.

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