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ORIGINAL ARTICLE

Speech and language disorders in children from public schools in Belo Horizonte

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KEYWORDS
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Abstract
Objective: To investigate the prevalence of oral language, orofacial motor skill and auditory processing disorders in children aged 4–10 years and verify their association with age and gender.
Methods: Cross-sectional study with stratified, random sample consisting of 539 students. The evaluation consisted of three protocols: orofacial motor skill protocol, adapted from the Myofunctional Evaluation Guidelines; the Child Language Test ABFW – Phonology; and a simplified auditory processing evaluation. Descriptive and associative statistical analyses were performed using Epi Info software, release 6.04. Chi-square test was applied to compare proportion of events and analysis of variance was used to compare mean values. Significance was set at $p \leq 0.05$.
Results: Of the studied subjects, 50.1% had at least one of the assessed disorders; of those, 33.6% had oral language disorder, 17.1% had orofacial motor skill impairment, and 27.3% had auditory processing disorder. There were significant associations between auditory processing skills' impairment, oral language impairment and age, suggesting a decrease in the number of disorders with increasing age. Similarly, the variable ''one or more speech, language and hearing disorders'' was also associated with age.
Conclusions: The prevalence of speech, language and hearing disorders in children was high, indicating the need for research and public health efforts to cope with this problem.

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PALAVRAS-CHAVE
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Fala;
Transtornos da linguagem

Alterações fonoaudiológicas em crianças de escolas públicas em Belo Horizonte

Resumo

Objetivo: Investigar a prevalência de alterações de linguagem oral, motricidade orofacial e processamento auditivo em crianças de 4–10 anos e verificar a sua associação com a idade e o gênero.

Métodos: Estudo transversal com amostra aleatória e estratificada, composta por 539 crianças. Foram utilizados para avaliação protocolo de motricidade orofacial, adaptado do Roteiro para Avaliação Miofuncional; prova de Fonologia do Teste de Linguagem Infantil ABFW; e avaliação simplificada do processamento auditivo. Foram realizadas análises estatísticas descritivas e de associação utilizando o *software* Epi Info, versão 6.04. Para comparar as proporções foi empregado o qui-quadrado e, para comparar médias, foi empregada a análise de variância. Foi considerado significante $p \leq 0{,}05$.

Resultados: Das crianças avaliadas, 50,1% apresentaram pelo menos uma das alterações estudadas, sendo que 33,6% mostraram alteração de linguagem oral, 17,1% de motricidade orofacial e 27,3% do processamento auditivo. Observou-se associação significativa entre alterações fonoaudiológicas de processamento auditivo, linguagem oral e a faixa etária, sugerindo diminuição do número de crianças com alterações fonoaudiológicas com o aumento da idade. A variável ''uma ou mais alterações fonoaudiológicas'' também se associou à faixa etária, de maneira similar à acima descrita.

Conclusões: A prevalência de alterações fonoaudiológicas na população estudada foi considerada alta, evidenciando a necessidade de pesquisas e ações em saúde para o enfrentamento do problema.

Introduction

The need to communicate is inherent to human beings and is essential for the integral development, knowledge acquisition and learning. Language development involves physical, neurological, behavioral, cognitive, social and emotional aspects.

The adequacy of the auditory processing, which is the transformation of the acoustic signal into a meaningful message,[1] is essential in language acquisition. Another important aspect is related to the orofacial motricity, which is associated with structural and functional aspects of the orofacial and cervical regions, including the functions of sucking, swallowing, chewing, breathing and articulation.[2] For the oral language to occur, the sounds produced in the vocal folds are modeled and articulated during their passage through the larynx, pharynx, and oral and nasal cavities. It is necessary for the physical movements involved in the emission of sounds (phonetic aspects) to be produced adequately, while respecting the organizational aspects of the language sound system (phonoaudiological aspects).[3]

Some delays may occur, during child development that will have an adverse impact on children's lives. Phonoaudiological alterations may be responsible for these delays, leading to social maladjustments, learning and interpersonal skills' difficulties, with negative effects on the overall development.[4] Additionally, during the process of acquiring literacy, children transfer errors from the oral signs' system to the written language,[5] with learning difficulties being one of the main impacts of oral language alterations. Early recognition of these disorders, followed by appropriate interventions, can reduce the impact of these alterations on the lives of the affected children, allowing their social development and improving their quality of life.

The impact of communication disorders and evidence that the prevalence is high in schoolchildren[3,4,6–11] justify further studies on the subject. Based on these data, it may be possible to develop effective actions for health promotion, speech therapy and pediatric interventions, which will help to prevent learning, emotional and social disorders.

This study aims to assess the prevalence of oral language, orofacial motricity and auditory processing alterations in children aged 4–10 years from public schools located in the area of a health care center in Belo Horizonte, as well as to verify their association with age and gender.

Method

This is a cross-sectional study, approved by the Institutional Review Board of the Federal University of Minas Gerais (ETIC notice 263/08), with a representative random sample of 1853 children aged 4–10 years enrolled in the six public schools from the area served by the Health Care Center in the northeast region of Belo Horizonte. This health care center is a teaching, research and continuing education facility for students of the Universidade Federal de Minas Gerais, and it was used as a reference support facility for the referral of the assessed children.

Sample calculation considered as 40% the prevalence of phonoaudiological alterations,[3,4,6,11] with a margin of error of 5%, 95% confidence interval, and increase of 15% for