

PREVALENCE OF COMMUNICATION DISORDERS IN SCHOLARS OF THE MUNICIPAL ELEMENTARY SCHOOL NETWORK IN THE CITY VILA VELHA STATE OF ESPÍRITO SANTO

Levantamento da prevalência de distúrbios da comunicação em escolares do ensino público fundamental da cidade de Vila Velha/ES

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ABSTRACT

Purpose: to check the prevalence of communication problems in Vila Velha County Schools. **Method:** 15 municipal elementary schools took part in the study. 1103 children were evaluated in five stages: a) assessment, b) presentation of proposal and training of school community c) speech triages d) hearing triages e) presentation of results to school community. **Results:** on hearing screening of 1103 children being screened, 22.4% failed, demonstrating some kind of hearing impairment. The speech screening of 1014 assessed children – 30.4% had some type of alteration in communication: 32.5% alteration in oral motor function, 25% showed to have a speech disorder, 17.8% voice alterations, 8.8% language impairment (oral or written) and 15.9% had a combination of two or more alterations. **Conclusion:** the most common communication problems in order of frequency were: problems in oral motor function, speech disorder, voice alterations, hearing impairment and oral and written language impairment. We have also found many children with more than one communication trouble.

KEYWORDS: Language Development Disorders; Auditory Screening; School Health; Education

■ INTRODUCTION

The concern with the social policies in Brazil has increased in last decades as a result of acting social forces. Those social policies specially turned to childhood and adolescence became effective with the promulgation of the Child and Adolescent Statute in 1990¹.

The young population is a priority group for the promotion of health all over the world, because the childhood and adolescence period is determinant for the personal and social development. The child and the young people socialize behaviors; organize knowledge and sediment knowledge that define their profile as adults. The school, in spite of social and technological changes of nowadays, is still a privileged space for the implementation of policies, once 96% of children and teenagers are part of that teaching institution².

This way, the concerning of making the school as a great health promoter has also mobilized the audiologists who, have as work object the communication, are configured as important partners, contributing for the reflection on the learning conditions of the children who go to public schools.

The increasing number of children who fail at school, who present difficulties in learning how to read and write because of alterations prior to process of acquisition and language development^{3,4}, has

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risen researches that aim at listing which alterations make difficult the process and what can be made to solve or minimize such problems. Currently, it is possible to verify that the premature detection of the communication disorders⁵⁻¹¹ by the audiologists in scholars has enabled preventive actions in the phase that the child is in the apex of the language development. Researches' results point that those problems affect significantly the children at school age^{12, 13}.

With the alarming number of children in unfavorable school situation, it is necessary to understand that damages or delays in the process (for organic, intellectual/cognitive and emotional factors) may result in linguistic-cognitive difficulties that reflect in the learning of Reading and writing¹⁴⁻¹⁶.

Facing that situation, it was done a research with the objective to identify the prevalence of communication disorders in the school community of the Vila Velha/ES district, detecting possible language alterations, orofacial motor, voice and hearing of the second grade students of the elementary teaching. Although it has not been the focus of the current study, it was also made a capacitation of teachers aiming at motivating those professionals to observe the children behavior and to identify possible communication disorders, as well as how to assist when leading with the alterations found.

■ METHOD

During the period of March, 2007 until November, 2007 all five to ten year-old children, students of the second grade of the elementary teaching of 15 public schools in the district of Vila Velha/ES participated in the study, through the following steps:

- a) situational setting-up – the initial proposal was marked by the informal institutional diagnosis, with the goal to know the conceptions of education, methodology used, institution structure, working hours and physical and material resources, for the directing of audiologist job expected to be done;
- b) formal presentation of the goals and methodology of the research – the objective was presented to the school community through lectures and workshops, providing the teachers the opportunity to solve doubts and to clarify specific issues of each school, approaching topics related to the cases already suspected by them
- c) speech screening – data was collected by a team of six graduation students and two supervisors audiologists through patterned triages in the voice, orofacial motor and language areas.

The scholars were taken out of their respective rooms at class time, one by one, in order to do a speech triage protocol in a room designated to that aim by the school direction;

- d) Auditory screening – it was composed of two steps: the otoscopy and the research of audiometric thresholds. It was considered result of REFER in the auditory screening every student who presented hearing alteration in one of the steps, suggestive of external, medium or internal problems with the ear. The cases that failed in the first step otoscopy do not proceed to continue in the second step (research of audiometric thresholds) and were sent to diagnosis and ENT conducts in the place. The research of pure tone thresholds of 500 to 4000 Hz (sweeping technique in 30 dB) was generated on the headphone by an Audio test audiometer calibrated according to the ANSI S3.1989 pattern, in an audiometric cabin also calibrated, located in a quiet room. The test was made by the same students who collected the speech screening data, under the supervision of audiologists. To initiate the test, there was a biological calibration and the child was evaluated individually.
- e) feedback session with parents, teachers and guiders.

It is necessary to stand out that, among the hearing and speech screening, 89 children were disconnected of the study due to familiar request.

The research was approved by the Ethics Committee in Research (CEP) in the University Center of Velha (process n^o:64/2008) and the all the ones responsible for the subjects involved agreed with the accomplishment and divulgation of its results, according to the resolution 196/96.

A quantitative descriptive analysis was made.

■ RESULTS

The result of the initial ear inspection revealed that, out of the 1.103 children screened, 104 presented alteration. In the total, 9,4% of the sample failed in the phase 1.

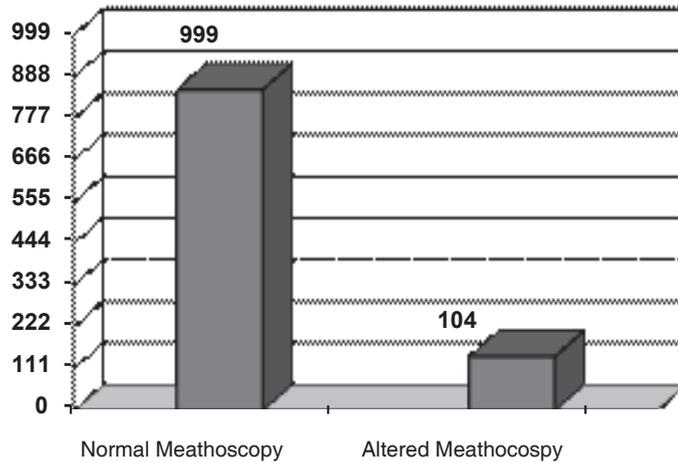
From the 104 cases sent to ENT diagnosis, all of them were confirmed with alteration, and the diagnosis pointed the excess of cerumen as the most found cause in 80 students (7,2%), followed by otorrhea with 18 cases (1,6%).

For the audiometric screener, out of the 1.103 children of the study, 999 passed to do the pure tone screening procedure. Out of those 14,4% failed, showing some kind of hearing alteration.

In the speech screening, 1.104 children were evaluated and 30,4 % presented some kind of communication alteration.

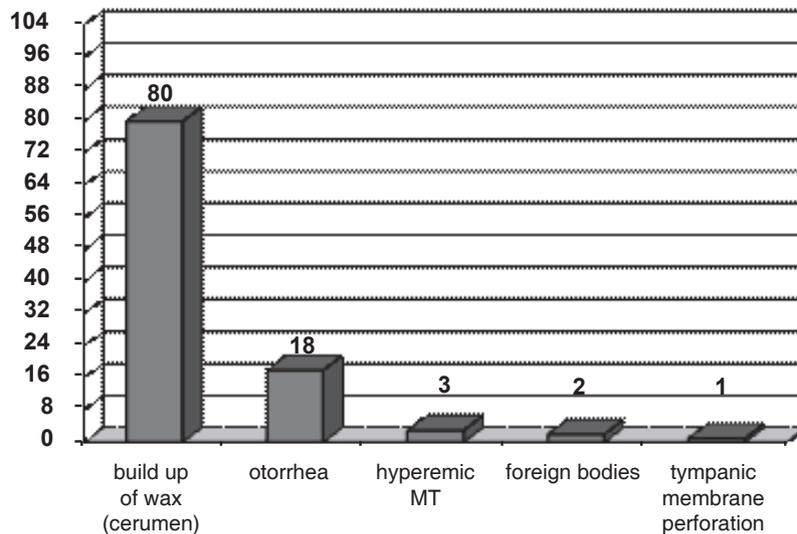
From the alterations found, the one with the higher frequency was the orofacial motor,

corresponding to 32,5% of the total researched, followed by 25% of the speech area, voice (17,8%) and language (8,8%) problems. It was presented the association of two or more alterations, 15,9% of the sample.



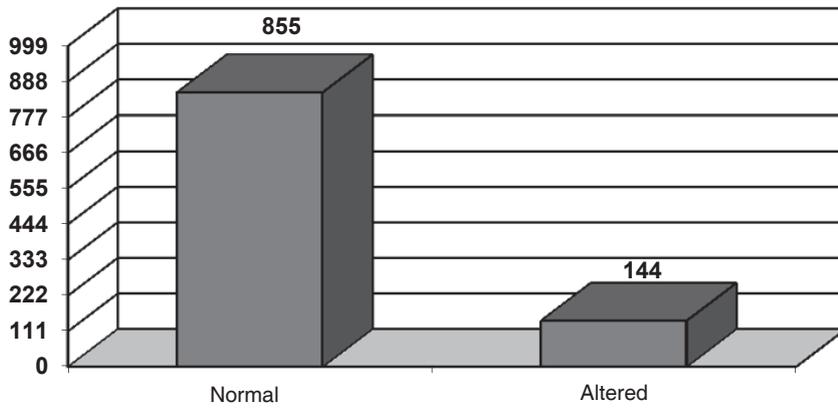
Sample: 1.103 children

Picture 1 – Results of the phase 1 of hearing triage - otoscopy (absolute number of occurrence)



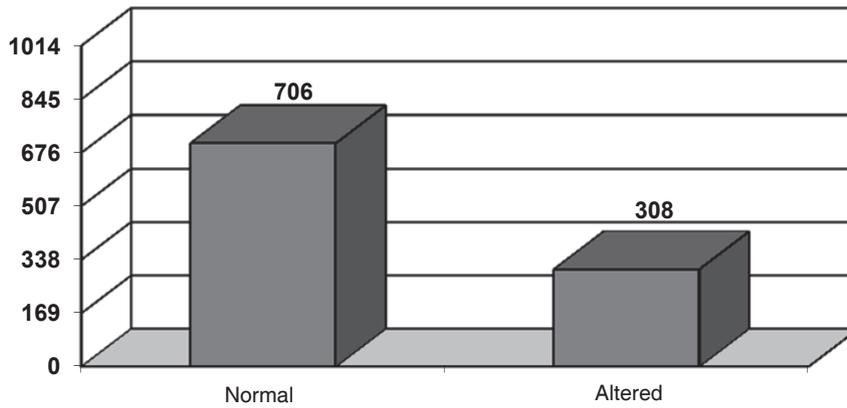
Sample: 104 children

Picture 2 – Result of the alterations found in the ENT diagnosis.



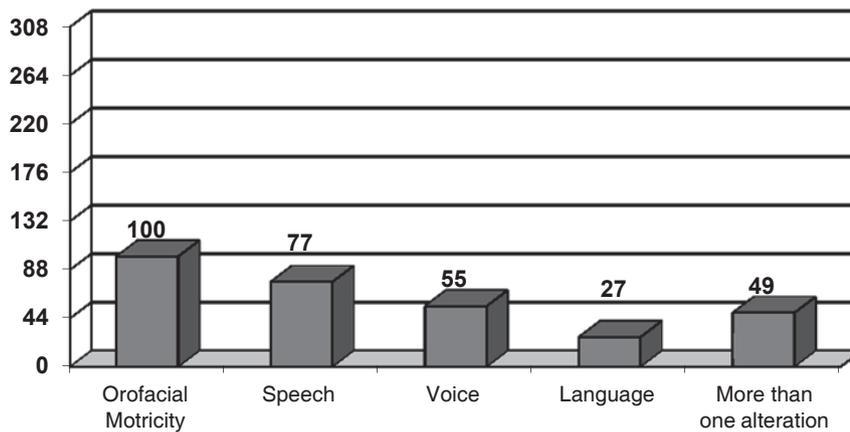
Sample: 999 children

Picture 3 – Results of the phase 2 of hearing triage – research of audiometric thresholds (absolute number of occurrence)



Sample: 1.014

Picture 4 – Results of the speech triage, voice, language and orofacial motor (absolute number of occurrence)



Sample: 308

Picture 5 – Alterations found according to the correspondent area (absolute number of occurrence)

■ DISCUSSION

The acting of the audiology in the school was made in several steps: institutional diagnosis, screening, parents and teachers orientation and the participation in the school planning, aiming at a preventive act preconized in official documents^{1, 2}. The objective of that work was to set up the prevalence of communication disorders, that is the reason to discuss the steps of the speech and hearing triages.

Researches^{3,4} indicate the importance of the early detection of alterations, observing that such identification can and must serve for the development and implementation of school health projects that favor actions aiming at the full development of the children^{8,13,15,16}.

The data collected in the research referent to the hearing screening in the first step, will be here divided in two parts (alteration of otoscopy and ENT diagnosis) for better understanding. The failures found in the inspection in the external acoustic meatus (9,4%) (Picture 1) are considered much superior when compared to the results registered in the researches^{5,6}, which results related to such alterations were, in average, of 4,67%. It was possible to have an ENT diagnosis and it is worthy to highlight that the cases of cerumen excess (Picture 2) were the most found causes. There is a record of studies in which that prevalence was of just 2% of refer in the hearing screening⁷, however the authors say that the population was formed of several social strata, including the most favored classes, what may have influenced for such a low index, mainly, when compared to the researches referent to the less favored populations, as the one in the current research.

In the aforesaid⁵ study, the children who presented such alterations were excluded of the triage and, in this study, those children were accounted as altered result and did not go to phase 2, audiometric research of pure tone. That might have been one more factor that revealed us the high index in the hearing triage in scholars. To consider hearing alteration, through otoscopy alterations is well justified in literature⁸, when it affirms that the conductive alteration, even soft, may result in sensation of sound muffling, alteration in the children's hearing quality, making it difficult for them to hear and notice important details that a sound information may bring, like not realizing all the phonemes likewise and not hearing a weak or distant voice. The hearing, in the school context, considers those children as inattentive and, above all, that alteration may bring the disadvantage to lose some sounds of the speech, like the silent (/s/, /p/, /t/, /k/, /f/, /tʃ/, /ʃ/), which need a minimum amount

of energy, in fast conversation and the sounds go below the normal hearing thresholds.

From the children who participated in the pure tone screening procedure (999), 14% failed, showing some kind of hearing alteration. In Picture 3, there is a result estimative, excluding the children who had alterations in the phase 1, and the result taken from the failure in the threshold research was compatible with some Brazilian studies previously made^{5,6,9}. It is believed that the school environment, with high or low acoustic treatment, the protocol of evaluation, the credit of passing and failing can be the factors that contribute for some differences among the national hearing screening studies, which, from 1975 to 2009, they presented prevalence of failure very variable from 2,40 to 47%⁹, and ours with 22,4% total.

In the results concerning the speech screening (Picture 4), it is observed that, in this study, the alteration of higher prevalence was the orofacial motor (Picture 5) and the second alteration most found was the speech one. The frequency of the speech alteration is fully justified by the high prevalence of the orofacial motor, because such alterations generally affect the motor act of speech. That result (30,4%) is very elevated, if compared to previous researches, for instance, the study that reports the incidence of 4,19%; however, it is compatible with the result found in another work that indicates a percentage of 33,33%⁹.

A recent study³ reports the prevalence of phonetic and phonological disorders in pre scholars and scholars with index of 28%, result close to our findings related to the speech⁸.

A setting-up of the prevalence of speech disorders in scholar aging from five to ten years old¹⁴ showed an index of prevalence of 24,6%. The age group that presented more alterations was the five to seven years old. The authors also relate those alterations with the socioeconomically factors of parents and confirm that the index of alteration was higher in children whose parents have low school degree. The socio economic situation of the children's parents evaluated in the present study can also have justified such high index. Although there is no specific research about the school level, it is known, through information of the school itself and teachers, of study conditions and the houses of the children's family assisted by the schools researched.

Regarding the prevalence of voice disorders, studies⁽¹¹⁾ indicate an index of 26% of children between seven to nine years old with some type of vocal alteration. The most significant of the research was that 95,7% of those children's parents did not realize any voice alteration in their children. That

data highlights the importance of the speech therapy work in the school community¹⁵, orienting and clarifying the families in relation to the vocal health of the children.

The prevalence of vocal disorders of the current study was of 5,7% out of the total of children evaluated, however, in that sample, only the children between six to seven years old counted, what might have contributed for the low index, since the eight to nine year-old children were not participants of the sample.

The setting-up of the prevalence of communication disorders in the school community and the detection of language alterations, orofacial motor, voice and hearing in students of the elementary teaching confirms the necessity of actions and/or

programs of health promotion and the prevention of communication disorders and suggests the optimization of the school development.

■ CONCLUSION

The most common alterations, in order of frequency were: the orofacial motor (32,5%), speech (25%), hearing (22,4%), voice (17,8%) and also in language (oral and/or writing) with 8,8%. It was verified yet, in many children, the presence of two or more alterations. This way, the conduct for scholars who failed in the procedures of screening must involve orientation to teachers about medical conducts and the participative rehabilitation, involving school, speech therapy and family.

RESUMO

Objetivo: levantar a prevalência de distúrbios da comunicação na comunidade escolar do município de Vila Velha – ES. **Método:** participaram da pesquisa 1.103 crianças de 15 escolas municipais de ensino fundamental avaliadas em cinco momentos: a) levantamento situacional; b) apresentação da proposta e orientações à comunidade escolar; c) triagens fonoaudiológicas; d) triagens auditivas, e) retorno dos resultados à comunidade escolar. Neste trabalho, serão descritas as etapas c) e d) **Resultados:** na triagem auditiva, das 1.103 crianças avaliadas, 22,4% falharam demonstraram algum tipo de alteração auditiva. Na triagem fonoaudiológica, das 1.014 crianças avaliadas, 30,4% apresentaram algum tipo de alteração na comunicação: 25% alteração de fala, 32,5% alteração na motricidade oral, 17,8% alteração na voz, 8,8% alteração de linguagem (oral e/ou escrita) e 15,9% apresentaram associação de duas ou mais alterações. **Conclusão:** as alterações mais encontradas, em ordem de frequência, foram: de motricidade orofacial, de fala, de voz, de audição, de linguagem (oral e/ou escrita). Verificou-se, ainda, em muitas crianças, a presença de duas ou mais alterações.

DESCRIPTORIOS: Transtornos do Desenvolvimento da Linguagem; Triagem Auditiva; Saúde Escolar; Educação

■ REFERENCES

- 1 Garcia MMA. Políticas educacionais contemporâneas: tecnologias, imaginários e regimes éticos. Rev Bras Educ [on-line]. 2010, vol.15(45):445-55.
2. Brasil. Ministério da Educação. Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira. Sinopse Estatística Educação Básica. Censo Escolar 2006. Brasília, 2007.
- 3.Nacente VP, França MP. Estudo de prevalência de alterações na aquisição fonológica em pré-escolares e escolares. Revista Fonoaudiologia Brasil 2005; 3(1): 1-4.
4. Gonçalves M S, Tochetto TM, Primo MT. Fonoaudiologia e saúde coletiva: prioridades detectadas pelos usuários de Unidades Básicas de Saúde. Revista Fonoaudiologia Brasil, 2005; 3(2): 1-3.
5. Alvarenga KF, Bevilacqua MC, MTM, Lopes AC, Moret ALM. Participação das famílias em Programas de Saúde Auditiva: um estudo descritivo. Rev Soc Bras Fonoaudiol. 2011;16(1):49-53.
6. Moraes CS. Triagem auditiva em pré-escolares do Município de Sumaré. [Dissertação de Mestrado]. Campinas: Faculdade de Ciências Médicas; 2010.
7. Bigenzahn W. Disfunções orofaciais na infância. 2ed. São Paulo: Santos; 2008.
8. Czlusniak G R, Carvalho FC, Oliveira JP. Alterações de motricidade orofacial e presença de hábitos nocivos orais em crianças de 5 a 7 anos de idade: implicações para intervenções

fonoaudiológicas em âmbito escolar. UEPG Ci Biol Saúde, Ponta Grossa. 2008;14(1): 29-39.

9. Lacerda, A.B.M. Audição no contexto da educação: práticas voltadas à promoção e à prevenção. In: Bevilacqua M.C et al. Tratado de audiologia. São Paulo: Santos; 2011.

10. Roncato CC, Lacerda CBF. Possibilidades de desenvolvimento de linguagem no espaço da educação infantil. *Disturb Comun* 2006;17(2):215-23.

11. Fonteles IBA, Friedman S, Hagiara-Cervellini N. Fonoaudiologia: inserção em instituições educacionais de Salvador *Distúrb Comun*, São Paulo. 2009; 21(1): 55-65.

12. Goulart BNG, Chiari BM. Testes de rastreamento x testes de diagnóstico: atualidades no contexto da

atuação fonoaudiológica. *Pró-Fono*, 2007; (19): 223-32.

13. Fletche RH, Fletcher SW. Prevenção. In: Fletcher R, Fletcher S. *Epidemiologia clínica: elementos essenciais*. 4 ed. Porto Alegre: Artes Médicas; 2006.

14. César AM, Maksud SS. Caracterização da demanda de fonoaudiologia no serviço público municipal de Ribeirão das Neves – MG. *CEFAC*, São Paulo, 2007;9(1):133-8.

15. Guckert LS, Fáveri JE. Dislexia nas séries iniciais: estratégia e atividades de superação. *Revista Caminhos*, Rio do Sul. 2008;1(9):81-90.

16. Befi D. Fonoaudiologia na Atenção Primária à Saúde. *Série Atualidades em Fonoaudiologia*. São Paulo: Lovise; 1997;(3).

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