Proposta para capacitação de agentes comunitários de saúde em saúde auditiva*******

Training proposal for community health agents in hearing health

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*******Trabalho Realizado no Departamento de Fonoaudiologia da FOB - USP e Associação de Pais e Amigos de Deficientes Auditivos de Sorocaba (Apadas). Agência de Financiamento: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)

Artigo Original de Pesquisa

Artigo Submetido a Avaliação por Pares

Conflito de Interesse: não

Recebido em 21.11.2007.
Revisado em 24.03.2008; 21.04.2008; 7.08.2008.
Aceito para Publicação em 7.08.2008.

Abstract
Background: training of community health agents in hearing health. Aim: to verify the effectiveness of a training program regarding the hearing health of children for Community Health Agents of a Family Health Program. Method: research sample consisted of two groups: Group A, constituted by 31 community health agents, from Bauru, SP, and Group B, constituted by 75 community health agents, from Sorocaba, SP. Training was provided through classes for both groups. For Group A, a text adapted from the material organized by the World Health Organization (2006) was used so that the community health agents could follow the activities in an interactive way. Training focused on the following topics: normal and impaired hearing; types, prevention and causes of hearing loss; procedures to identify and diagnose the hearing impairment and rehabilitation. Pre and post training questionnaires were used to assess the assimilation of the presented content. Results: training demonstrated to be effective, since there was an increase in the overall score when comparing the scores obtained in the pre and post training questionnaires Conclusion: the results indicate the effectiveness of the training program for community health agents of a Family Health Program with the use of texts and with an interactive approach.
Key Words: Training Program; Hearing Loss; Family Health Program.

Resumo
Tema: capacitação de agentes comunitários de saúde na área de saúde auditiva. Objetivo: verificar a efetividade de um programa de capacitação de agentes comunitários de saúde do Programa de Saúde da Família, na área de saúde auditiva infantil. Método: a casuística constou de dois grupos: grupo A foi constituído por 31 agentes comunitários de saúde da cidade de Bauru e, grupo B, formado por 75 agentes comunitários de saúde de Sorocaba, ambos municípios do Estado de São Paulo. A capacitação foi realizada por meio de aulas expositivas para os dois grupos, contudo para o grupo A foi utilizado uma apostila adaptada da *World Health Organization* (2006), para que os agentes comunitários de saúde pudessem acompanhar as atividades realizadas de forma interativa. A capacitação abordou os temas: audição e deficiência auditiva, tipos, prevenção e causas da deficiência auditiva, técnicas de identificação e diagnóstico da deficiência auditiva e aspectos gerais da deficiência auditiva. Para validar a capacitação foi aplicado um questionário pré e pós-capacitação com perguntas sobre os assuntos que foram abordados no decorrer do curso, a fim de analisar a assimilação do conteúdo ministrado. Resultados: a capacitação foi efetiva, com aumento no escore total obtido nos questionários pré e pós-capacitação. Conclusões: os resultados comprovam a eficácia do programa de capacitação com utilização de material e abordagem interativa proposto para os agentes comunitários de saúde dos Programas de Saúde da Família.
Palavras-Chave: Cursos de Capacitação; Deficiência Auditiva; Programa Saúde da Família.

Referenciar este material como:
Alvarenga KF, Bevilacqua MC, Martinez MANS, Melo TM, Blasca WQ, Taga MFL. Training proposal for community health agents in hearing health (original title: Proposta para capacitação de agentes comunitários de saúde em saúde auditiva). Pró-Fono Revista de Atualização Científica. 2008 jul-set;20(3):171-6.

Introduction

The hearing loss in infancy is a public health problem such for the impact of the sensorial privation in the infantile development as for its incidence. The causes and the prevalence of this disorder could be controlled most of the times being a responsibility of professionals involved with primary health attention, in particular, the Family Health Program (FHP), to contribute to the promotion of hearing health by means of preventive care and population orientation1. However, the majority of the professionals of the FHP do not receive information on topics as hearing and hearing loss, becoming difficult for these professionals to identify these alterations in the population.

The World Health Organization (WHO) recommends, since 1998, the qualification of Health care professionals (HCP) in primary attention of hearing and ear affection supported by a system of reference and contra-reference2. The recommendations of the International Workshop on Primary Ear and Hearing Care were transformed in three manuals that correspond to the three levels of HCP qualification: basic, intermediate and advanced3.

Since 1998, following the WHO recommendations, some developing countries have implemented the use of these manuals to qualification of HCP, since educative actions in health through these professionals have been pointed as one of the main preventive ways of infantile hearing loss in developing countries4. In these countries the creation of strategies that complement programs of identification of the hearing deficit in infantile population becomes necessary5.

The objective of this study was to organize and to verify the effectiveness of a HCP of FHP qualification program, in the area of infantile hearing health.

Method

The present study is inserted in the multicentric project Model of infantile hearing health in the Family Health Program, National Council of Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq), process number 403719/2004-6, developed in two cities of the state of São Paulo: Bauru in set with the Speech and Hearing Department of the Dentistry College of Bauru/USP and Sorocaba in set with the Parent and Friends of the Hearing Impaired Association of Sorocaba (APADAS). The approval of the Committee of Ethics in Research of the Dentistry College of Bauru of the Universidade de São Paulo, is protocoled under number 73/2006.

Participants

After receiving information about the study, the HCP were informed that they could participate on the qualification on Infantile Hearing health and that those who accepted to participate on the study and signed the Consent Form would have to do a test before and after the qualification.

Two groups composed the study:

GROUP A - 31 HCP from the three nuclei of FHP of the city of Bauru, and, GROUP B - 75 HCP from the four nuclei of FHP of the city of Sorocaba.

In group A, the HCP age ranged from 20 to 46 years (average of 29,0 years), being that 21 professionals have worked in the FHP on a period between 1-12 months. The education level was characterized by three HCP with junior high school, 26 with high school education and two with bachelor's degree.

In group B the age of the HCP ranged from 19 to 53 years (average of 32,3 years) and the majority of the professionals (34 HCP) have worked on FHP for more than 37 months. The education level was characterized by seven HCP with junior high school, 64 with high school education and four with bachelor's degree.

The HCP from both cities had not received any education in hearing health.

Method

Qualification of the HCP

The audio-visual material used in the qualification on the two cities was elaborated involving the topics:

1. Hearing and Hearing Loss.
2. Types, prevention and causes of Hearing Loss.
3. Techniques of identification and diagnosis of the Hearing Loss.
4. General Aspects of the hearing Loss. The classes were expositive with final interval for questions.

Each participant received an identification badge that contained a specific number, in order to preserve the identification of the participants at the moment of the questionnaire application so that the subjects were not shy to answer it.

Group A - Bauru

A manuscript was elaborated to be used during the qualification, which allowed that the HCP followed the carried through activities on an interactive manner. For such, the material proposed

by the World Health Organization: Primary Ear and Hearing Care Training Resource - beginner, intermediate and advanced levels was adapted (http://www.who.int/pbd/deafness/activities/hearing_care/en/index.html).

The qualification occurred in a meeting of eight hours of duration, with breaks previously programmed. The registration form was returned by the HCP on the day of the qualification, in which the participant filled identification data and information that allowed characterization of the groups in the two cities.

Group B - Sorocaba

The qualification of the 75 HCP was carried through at the Amphitheater of the Hospital Jardim das Acácias, in two meetings with 4 hours of duration and, in this city, the adapted manuscript was not used, in order to inquire the contribution of the same one in the effectiveness of the qualification.

Qualification validation - questionnaire pre and post-qualification

Preceding the beginning of the HCP qualification the adaptation of the questionnaire proposed on the WHO material, with questions on the topics that would be discussed during the course, was applied. The same questionnaire was applied one more time at the end of the qualification in order to analyze the assimilation of the given content (Annex 1). The questionnaire was also adapted, that is, only questions that were related to the topics discussed during the qualification proposal were translated.

Result analysis

For descriptive analysis of the data, the questions on the questionnaire were divided into topics:

1. Concepts of hearing and hearing loss (questions 1 to 6).
2. Prevention: types and causes of the hearing loss (questions 7 to 10).
3. Techniques of identification and diagnosis of the hearing loss (questions 11 to 16).
4. General aspects of the hearing loss (questions 17 to 20).

In order to compare the cities and the timing (pre and post-qualification) the Mann-Whitney and Wilcoxon test were used (Hollander and Wolfe, 1973) using the computational package R2.3.1. For the total score, a repeated measures ANOVA with two factors: city and timing (Verbeke and Molenberghs, 1997) was used. In order to make the post-hoc comparisons the Bonferroni correction was used. The significance level adopted was p 0,05.

Results

The qualification of the HCP was carried through, with 100% of participation and adhesion of the professionals to the research in the two cities.

Descriptive analysis

The descriptive statistical analysis of the total score obtained on the questionnaire pre and post-qualification, as well as the obtained difference for both cities is presented in Figure 1.

Inferential analysis

The inferential analysis of the obtained results comparing timing and cities can be found in Table 1.

In the analysis of variance the p values of the interaction factor between city (p=0294), timing (<0,0001) and city*timing (<0,0001) were significant.

The post-hoc comparisons of total scores pre and post-qualification, in the two cities, are presented in Table 2.

It is verified, when analyzing the total score obtained by the HCP on the questionnaire post-qualification in percentage, that in domain 1, Bauru reached the score of 90%, while Sorocaba reached 40%. Regarding the domain 2, the obtained scores were 77% and 76% for city of Bauru and Sorocaba,

FIGURE 1. Descriptive Statistical Analysis of both cities, according to the total score and difference obtained on the questionnaire pre and post-qualification.

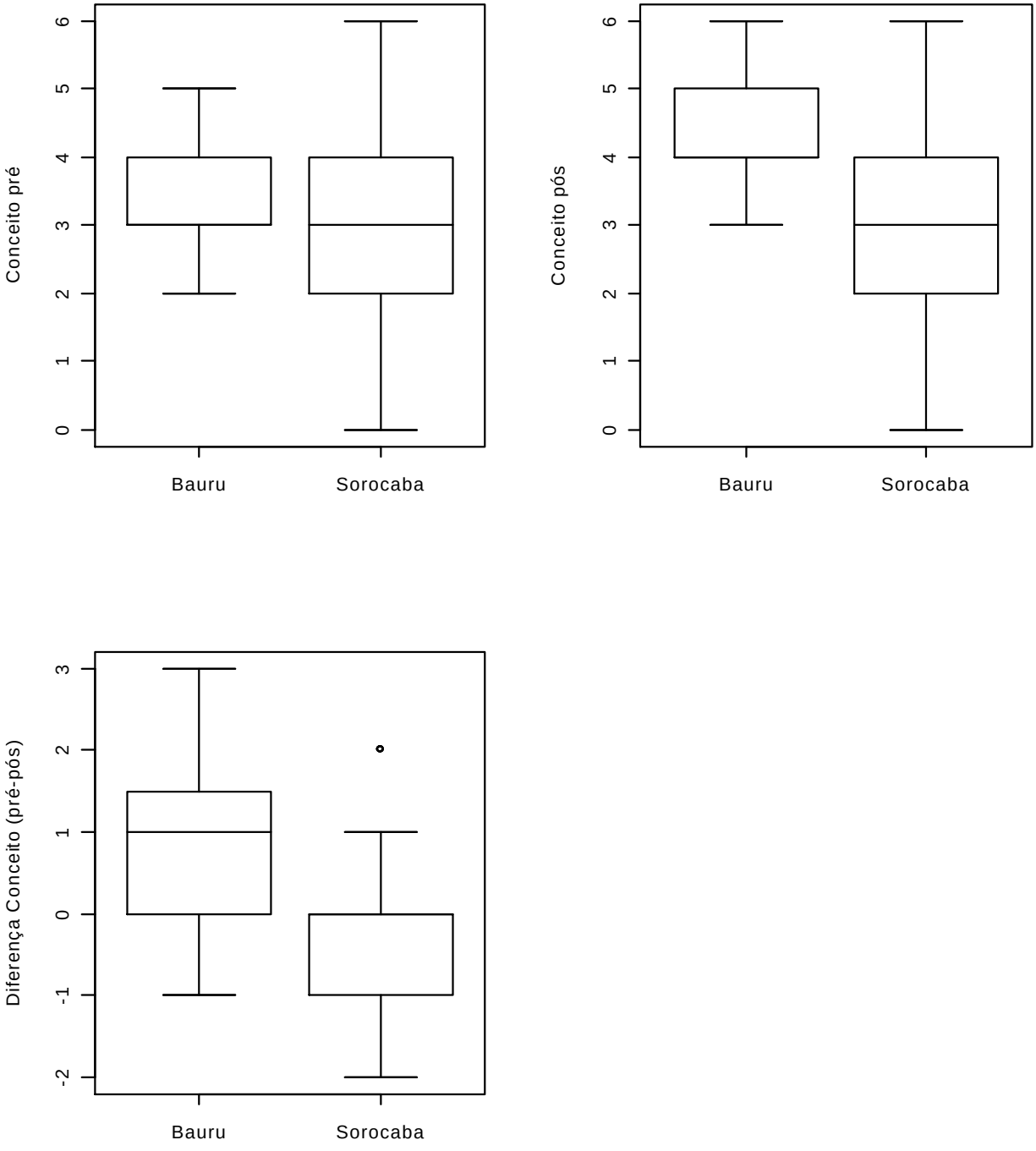

TABLE 1. Inferential analysis of the obtained results comparing timing and cities.

Topic	Comparison	p	Test
Hearing Loss: concept	Bauru x Sorocaba Pre	0,075	Mann-Whitney
	Bauru x Sorocaba Post	0,000	Mann-Whitney
	Pre x Post (Bauru)	0,001	Wilcoxon
	Pre x Post (Sorocaba)	0,702	Wilcoxon
Prevention	Bauru x Sorocaba Pre	0,000	Mann-Whitney
	Bauru x Sorocaba Post	0,434	Mann-Whitney
	Pre x Post (Bauru)	0,000	Wilcoxon
	Pre x Post (Sorocaba)	0,002	Wilcoxon
Identification	Bauru x Sorocaba Pre	0,015	Mann-Whitney
	Bauru x Sorocaba Post	0,003	Mann-Whitney
	Pre x Post (Bauru)	0,000	Wilcoxon
	Pre x Post (Sorocaba)	0,243	Wilcoxon
General aspects of Hearing Loss	Bauru x Sorocaba Pre	0,002	Mann-Whitney
	Bauru x Sorocaba Post	0,000	Mann-Whitney
	Pre x Post (Bauru)	0,078	Wilcoxon
	Pre x Post (Sorocaba)	0,594	Wilcoxon

TABLE 2. Post-hoc comparisons of total score pre and post-qualification in the two cities.

Difference	Expected	Standard Error	gl	p*	Confidence Interval (95%)*	
					Inferior Limit	Superior Limit
Bauru-Sorocaba (Pre)	-3	2,6	139	1,000	-9	4
Bauru-Sorocaba (Post)	13	2,6	139	<0,0005	6	20
Post-Pre (Bauru)	17	1,6	104	<0,0005	13	22
Post-Pre (Sorocaba)	2	1,1	104	0,594	-1	4
(Bauru Post-Pre)-(Sorocaba Post-Pre)	16	2,0	104	<0,0005	10	21

*Corrected by Bonferroni

respectively. In domain 3, Bauru reaches scores of 74%, whereas Sorocaba reaches 83%. Finally, in domain 4, Bauru reached scores of 100% and Sorocaba, in turn, reaches the score of 51%.

Discussion

In Brazil, Articles of Laws number 587/2004 and 589/2004 of the Health Department that line the direction for implementation of the National Politics of Hearing Health in the service of Mild, Moderate and High Complexities were consisted as a landmark in this area of health care.

In this context, the Programs of Infantile Hearing Health must include the level of health attention not only on the identification and precocious diagnosis of auditory alterations, but also with effective actions of hearing health promotion.

The FHP model of health promotion centered on the family allows the development of these actions from prenatal accompaniment to monthly accompaniment of the hearing and language development of the children during first infancy, for the identification and precocious detention of hearing loss.

The performance of the HCP can make possible the diagnosis and the intervention in hearing loss during the critical period of development of the child. These professionals are the bond between the community and the public Brazilian health system (Sistema Unico de Saúde - SUS) and, in this way, the HCP could identify the hearing loss and/ or send the patient to evaluation (when necessary).

However, in order to the professionals of the FHP, especially the HCP, become able to act in family orientation with regards to prevention, identification of delayed or acquired hearing losses and the support to the families for adhesion to rehabilitation process, it becomes necessary the supplement of specific information on Infantile Hearing health6,7, once that this subject is not present on the qualification of these professionals. This way, it is fundamental to enable these professionals regarding causes and types of hearing loss, development of hearing and language of the listener children, the impact of the hearing loss on the bio-psycho-social development of the child and the possibilities of identification, diagnosis and intervention.

In the analysis of the total score obtained in the questionnaire pre and post-qualification (Figure 1), it is possible to evidence that the qualification was effective, in a more evident form, for the city of Bauru. The increase on the total score of the questionnaire post-qualification demonstrated that there was assimilation, by the HCP, of the presented content.

It was evidenced statistically significant difference when comparing pre and post-qualification scores (Table 1), of the city of Bauru, on the topics:

1. Concepts of hearing and hearing loss (p = 0,001).
2. Prevention: types and causes of the hearing loss (p = 0,000).
3. Techniques of identification and diagnosis of the hearing loss (p = 0,000), not being the same observed for domain.
4. General Aspects of the hearing loss (p = 0,078).

In the city of Sorocaba, the difference on the performance of the HCP after the qualification was significant only for the topic Prevention.

The post-hoc comparisons (Table 2) showed statistically significant difference between the knowledge of the HCP of the two cities on hearing health on the stage pre-qualification; however, the HCP of Bauru presented higher score after the activity.

When considering the percentage of correct responses of 70% on the questionnaire post-qualification as satisfactory, it is possible to evidence that the HCP of the city of Bauru obtained superior performance on all the topics, however the group of Sorocaba did not reach 70% correct responses on the topics (1) Concept of hearing and hearing loss and (4) General Aspects of the hearing loss and its best performance was 83% on topic (2) Prevention: types and causes of the hearing loss.

This difference of performance between the two cities indicates that the adoption of manuscripts made possible a more efficient qualification of the HCP and allowed the understanding of topics that are not inherent to the practice. In the group of Sorocaba, the best final result was on the subject Prevention, for being this more easily related to the other actions that the HCP already develop.

Thus, from the obtained results, it is possible to infer that the adaptation of the material proposed by WHO2 for the qualification of HCP was adjusted for the considered objective and propitiated the formation of the HCP in diverse aspects of the Hearing health area. It is important that the HCP begins to act as an agent of promotion of hearing health guiding the families on the importance of the hearing and on how to prevent and to treat the hearing loss.

The proposal was revealed feasible, having the participation of the HCP when bringing the experience obtained on the home visits to exemplify topics discussed on normal development of the child. The questionings of the HCP transformed the dynamics interactive and made possible the approach of

theoretical contents to practical and daily experience.

In this direction, posterior studies must be carried through in order to analyze whether the daily practice would or would not allow the HCP to extend the knowledge on the discussed topics, once the same would have the opportunity to apply the discussed theoretical concepts to the population.

After 1 month of accomplishment of the qualification there was a meeting with each FHP in order to carry through a qualitative evaluation of the project, and the opinion to follow describes the importance that the HCP had attributed to the qualification. (...) "Because of the training I do a better work with the children of my area. The work is very good because it has continuity. After participating on the training, we were able to bring the knowledge to our community."

In Sorocaba, the mother of a child who was a patient for more than one year at APADAS commented, two months after the qualification, that the HCP of her neighborhood was going to her house every month to ask if the child was using the hearing aid, if the mother was taking the child to Speech and Hearing Therapy and if she was changing the hearing aid batteries. The effect of preventive actions is not immediate, but the commentary of this mother indicates the effect of the qualification with the incorporation of theoretical topics to actions that develop daily, corroborating with literature7 when the impact and the importance of the performance of the HCP are evaluated.

Conclusion

The results of this study prove the effectiveness of the qualification program with use of material and interactive approaching proposed for HCP from FHP.

When considering that in the hearing screening programs, even when universal, there are a percentage of newborns that are not submitted to hearing screening because of inherent difficulties of this type of program. The occurrence of evasion of families during stages of identification, diagnosis or treatment, as well as, the occurrence of acquired or delayed beginning hearing loss can conclude that the qualification of the HCP, when inserted on a program of neonatal hearing health, will assist on the hearing loss prevention, as well as on the accompaniment of language and hearing development of all children.

It is also important to highlight that the qualification must necessarily include the topic rehabilitation and electronic devices so that the HCP can also offer support to families at the moment of the audiological diagnosis and on the process of adaptation of the electronic device for hearing rehabilitation.

Acknowledgments: We would like to thank the National Council of Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq) for the grant that made possible this study (Multicentric Project: Model of infantile hearing health in the Family Health Program - process number 403719/2004-6) and the City Health Department of the cities of Bauru, Sorocaba and São Paulo for the participation and effective support of the managers for the accomplishment of this study.

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Annex.
Questionnaire applied to the health care professionals prior and post-qualification.

Questions	T	F	DNK
1. Hearing loss always means that the person is deaf.			
2. Deafness cannot be hereditary.			
3. A child that was born deaf cannot normally develop language.			
4. All deaf people can hear normally if they use hearing aid.			
5. There are different levels of hearing loss.			
6. Moderate hearing loss means that the person is not able to hear even when someone screams close to his/her ear.			
7. Ear infections cannot cause hearing loss.			
8. Lesions on cochlea cells (sensorial organ of hearing) caused by exposition to high levels of sound is always reversible.			
9. Some drugs used for a certain period of time can cause hearing loss			
10. Measles, mumps and rubella immunization can prevent hearing loss.			
11. Hearing evaluation and hearing screening is the same thing.			
12. The parents never suspect that the child has a hearing loss.			
13. Some questions can be asked to investigate the hearing of babies.			
14. Children with less than 1 year usually repeat words when asked.			
15. You can use your own voice to test the hearing of the children.			
16. People with normal hearing can understand what is said whispering.			
17. The lip reading can help people with hearing loss to recognize words.			
18. Deaf children cannot go to school.			
19. The community in general knows what deafness is.			
20. Health agents could orientate caregivers of daycares to observe the hearing of small children.			

(T) True; (F) False; (DNK) I do not know.