

Original articles

Hearing prevention program: how speech-language pathologists and audiologists work in the occupational health area

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ABSTRACT

Objective: to characterize speech-language pathologists/audiologists and their interventions in the occupational health area, regarding the Hearing Prevention Program (HPP).

Methods: a cross-sectional, quantitative study with 74 speech-language pathologists/audiologists from several regions of Brazil, working in the areas of Occupational Health and Audiology. The participants answered a questionnaire on their professional and educational profile, as well as on their work related to the HCP components. For data analysis, statistical procedures were used (Chi-Square Test and the test of difference in proportions, at the significance level of 0.05 – 5%), in relation to the variables of gender, age, job position, time since their graduation and academic training in occupational safety and health.

Results: the speech-language pathologists/audiologists, mostly women, who reported performing the HPP, were older than 30 years, had specific postgraduate courses, but still had doubts about the Program implementation, they worked for companies with over 1,000 employees, disregarding their employment status, performing interventions, such as: hearing management and guidance on the correct use of ear protectors.

Conclusion: a high number of speech-language pathologists in the Occupational Health area have not developed a complete hearing conservation program to this date.

Keywords: Speech, Language and Hearing Sciences; Work; Health Programs and Plans; Occupational Health; Noise-Induced Hearing Loss

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INTRODUCTION

Speech-language pathologists/audiologists' education in Brazil has considerably advanced in the past decades. The work expansion of such professionals with the incorporation of the integrated care idea is noticeable; thus, it re-scaled the social role of speech-language pathologists towards individuals and communities¹⁻³.

Audiology and Occupational Health are among the Speech-Language Pathology/Audiology specialties. Given the broadness and labor market needs, Occupational Health ultimately takes up a high number of newly-graduates as their first job. In turn, Audiology has a straight correlation to Occupational Health, once, historically, the labor market requires speech-language pathologists to conduct hearing assessment of workers exposed to high noise levels, according to legal requirements since the 1980s³.

In the past decades, speech-language pathologists' work field in Occupational Health has been expanded. According to the Resolution of the Federal Speech-Language Pathology Board⁴, speech-language pathologists/audiologists, who work in the Occupational Health area, must monitor, identify and intervene the factors that may determine occupational health hazards. Therefore, they should not only diagnose hearing health conditions, but also conduct preventive interventions, guided by workers' fully-delivered health care^{5,6}. The implementation of Hearing Prevention Programs is encouraged in order to reduce occupational hearing loss in an effective way, such as Noise-Induced Hearing Loss (NIHL)⁷. The authors, in the current study, decided to use the expression "Hearing Prevention Program", according to the NIOSH and Brazilian authors' recommendations for the use of the terms "prevention" or "preservation"^{3,4,6}.

However, in daily life, speech-language pathologists/audiologists' intervention is still limited, in the Occupational Health area, to workers exposed to ototoxic agents (noise and chemicals, for example). Many professionals merely diagnose hearing loss, neglecting preventive practices and the implementation of a complete Hearing Prevention Program⁸⁻¹¹. The question asked by the authors in this study is: Is that limitation in their activities due to speech-language pathologists/audiologists' inexperience in this area, or is it due to the non-compliance of the legislation, which demands the HPP implementation in companies/institutions?

Knowledge on Occupational Health should be included in the curriculum of Speech-Language Pathology/Audiology undergraduates. In 2002, with the changes in the National Curriculum Guidelines for the Speech-Language Pathology/Audiology graduation course (National Curricular Guidelines for the Speech-Language Therapy graduation course, Resolution n. 610/18 and Resolution of the National Education Council/Higher Education Chamber n. 05/02), speech-language pathologists/audiologists' educational profile started to emphasize subjects' fully-delivered care, which includes health promotion and disease prevention¹, thus contemplating issues regarding workers' health preservation. In addition, as part of the continuing education proposal, it is possible to attend specialization courses and/or qualification courses specifically for the Occupational Health Area, complementing those professionals' education.

Nevertheless, in addition to the professionals' qualification, according to the legislation, speech-language pathologists/audiologists must implement the HPP at workplaces with sound pressure levels above the accepted regulatory limits. That task has not been easy, though. Even in countries, such as the United States, there have been reports of difficulties in implementing an HPP with efficient noise control, despite regulations on occupational hearing prevention date back from the 1980s. There are still workplaces in the United States with high sound pressure levels, and no strategy of noise control. Therefore, HPP interventions are limited to the use of ear protectors¹². A study in Brazil also evidences the development of an incomplete HPP in plants that must implement them, according to the current legislation⁹.

The proposal for the HPP implementation, with activities that contemplate workers' hearing prevention, is not recent. Since the 1980s, the *Occupational Safety and Health Administration* - OSHA, in the United States, has developed an HPP, featuring five categories: (1) periodical surveillance of noise exposure, (2) administrative and engineering control of high noise levels, (3) hearing monitoring, (4) audiometric assessments and follow-up activities, and (5) employees/managers' training¹³.

In Brazil, several authors^{6,14,15} consider that the proposal of implementing an HCP must contemplate three groups of actions: (1) profiling of ototoxic agents at the workplace, and proposal of elimination and/or control of those agents in an individual and collective way, (2) individual and collective hearing management,

(3) development of educational interventions. The program assessment must also be included in the proposal⁶. Therefore, it aims to preserve hearing with the identification of hazards, hearing monitoring, introduction of control measures of ototoxic agents, and employees and employers' awareness on the adoption of healthy behaviors^{6,14,15}. Thus, the HPP objectifies to control ototoxic agents at workplaces, avoiding their negative effects on workers' general and hearing health^{6,16}.

The HPP implementation is a complex task, which involves interdisciplinary knowledge and multiprofessional action. Consequently, the HPP must be elaborated and developed by a professional team, with the workers' collaboration while active subjects. It is important to define the contribution of each professional for the effectiveness of its implementation. However, a speech-language pathologist should coordinate the team^{3,4,6}.

Therefore, this study aims to profile speech-language pathologists/audiologists and their interventions in the occupational health area regarding the Hearing Prevention Program (HPP).

METHODS

It is a cross-sectional, quantitative study, which investigated speech-language pathologists working in Occupational Health and Audiology. The study was approved by the Ethics Research Board from the Tuiuti University of Paraná, Brazil, under number 2.021.278.

Non-probabilistic sampling was used to select the participants in the study, and the research subjects were reached by means of three different strategies, at different times, as follows: 1st) invitation sent by the Regional Council of Speech-Language Pathology/Audiology (3rd Region – Paraná and Santa Catarina States) to speech-language pathologists/audiologists; if they accepted the invitation, they received the Free Informed Consent Form, and answered the questionnaire; 2nd) invitation on a site of a specific group of speech-language pathologists on Occupational Audiology. When they accepted to participate in the research, the Free Informed Consent Form, and the closed-questions questionnaire were e-mailed to them;

and 3rd) by means of the “snowball” technique, that is, an interviewee recommends another peer to participate in the study; thus, the Free Informed Consent Form and the questionnaire were e-mailed to him (her). Subjects' low adherence, by means of the first strategy, led to the choice of the last two options.

The applied questionnaire (Appendix), was elaborated by the authors, based on the literature about HPP^{4,6,16}, having closed questions on professional and educational profiling and performance regarding the HPP components.

The responses to the questions were analyzed by the respondents' characteristics, according to the following variables: gender, age, job position, length of time since their graduation and academic education in occupational safety and health. For the data analysis, descriptive statistical methods were used (means, standard-deviation, tables of absolute and relative frequencies, and tables of frequencies to present the questionnaire results), as well as the inferential method for the comparisons between the qualitative variables, held by means of the test of difference in proportions. That analysis aimed at testing if the difference between two proportions of subjects was significant for the events, that is, speech-language pathologists/audiologists (SLPs) who had and did not have information on HCP during their graduation, according to the length of time since their graduation; SLPs who attended, and did not attend specific courses on HPP, in relation to their self-perception about being able to implement the HPP; and SLPs who reported the HPP implementation or non-implementation due to the age range, industrial plant size where they worked, and self-perception of their aptitude to implement the HPP. The level of significance adopted was 0.05 (5%).

RESULTS

Seventy-four speech-language pathologists/audiologists participated in the study. The sample age ranged from 22 to 62 years, mean of 36 years (SD=8.1), and length of time since the Speech-Language Pathology/Audiology graduation between 1 and 30 years, mean of 13 years (SD=7.5). Subsequently, in Table 1, the sample profiling is described in full.

Table 1. Speech language pathologists' profile of participants in the study (N = 74)

Characteristics	Absolute frequency	Relative frequency (%)
Age range (years):		
22 to 34	31	41.9
34 to 44	33	44.6
Over 44	10	13.5
Gender		
Females	69	93.2
Males	5	6.8
Work location (Region):		
South	41	56.8
Southeast	14	18.9
Midwest	2	4.8
Northeast	2	2.7
No response	14	18.9
Time since graduation:		
1 to 5 years	16	21.6
6 to 10 years	14	18.9
11 to 15 years	13	17.6
16 to 20 years	18	24.3
21 to 25 years	10	13.5
26 to 30 years	3	4.1
Specialization Certificate:		
No	22	29.7
Yes	52	70.3
Specialization Area:		
Audiology	38	51.4
Oral Motricity	2	2.7
Dysphagia	1	1.4
Voice	1	1.4
Others	10	13.5
Employment Status:		
Self-employed/ Service provider	37	50.0
CLL* hired by the company	18	24.3
CLL* outsourced company	19	25.7
Civil servant	3	4.1
Others	10	13.5
Size of the industrial plant (number of employees):		
Up to 200 workers	6	8.1
201 to 500	12	16.2
501 to 1,000	7	9.4
1,001 to 2,000	19	25.7
Over 2,000	12	16.2
Does not know	18	24.3

Note: In the Employment Status variable, there were multiple responses. *CLL – Consolidation of the Labor Laws.

Most professionals were females, aged between 33 and 44 years, graduated from 16 to 20 years, working in the Southern region of Brazil, mostly specialized in Audiology. Their most reported employment status was self-employed/service provider. Most professionals

(25.7%) work for industrial plants with 1001 to 2000 employees.

Table 2 shows speech-language pathologists/audiologists' length of time since their graduation, and if they had information on HPP elaboration during their graduation.

Table 2. Information about the Hearing Prevention Program during graduation regarding time since graduation (N = 74)

Length of time since graduation	Information about HPP during graduation		P value
	Yes	No	
1 to 10 years	17 (23.0%)	14 (18.9%)	0.2700
11 to 20 years	23 (31.1%)	7 (9.5%)	*0.0005
Over 20 years	12 (16.2%)	1 (1.4%)	NA
TOTAL	52 (70.3%)	22 (29.7%)	*0.0000

Note: *Test of proportions at the significance level of 0.05 (5%). NA = the test is not applicable.
Legend: HPP = Hearing Prevention Program

Most professionals (70.3%) had information on the elaboration of an HPP during graduation. A significant difference in the proportions was verified between those with or without information according to the categories: from 11 to 20 years since graduation, 31.1% of the professionals reported receiving information on

the HPP during graduation. However, between those with 20 years or longer since their graduation, the percentage was lower.

Table 3 shows the attendance of specific postgraduation course for the elaboration of an HPP, and the perception of their aptitude for the task.

Table 3. Distribution of course attendance on Hearing Prevention Program and perception of aptitude for its implementation (n = 74)

Aptitude to implement HPP	HPP course		P value
	Attended	Not attended	
Yes , absolutely	14 (18.9%)	1 (1.4%)	NA
Yes, but having doubts	30 (40.5%)	10 (13.5%)	*0.0001
No	8 (10.8%)	11 (14.9%)	0.2281
TOTAL	52 (70.3%)	22 (29.7%)	*0.0000

Note: *Test of proportions at the significance level of 0.05 (5%). NA = the test is not applicable.
Legend: HPP = Hearing Prevention Program

Most professionals attended specific course on HPP (70.3%), and significant difference was observed in the proportions of those who “Attended” and “Did not attend” the HPP course, according to their aptitude. However, among those who attended the course, there is still high amount of doubts on that activity (40.5%).

From 74 respondents, 40 (54.05%) reported the HPP implementation. The others reported specific actions that they did not consider as part of a complete HPP.

In Table 4, some variables were analyzed, regarding the HPP implementation, among the professionals.

Table 4. Relation between age range, industrial plant size, perception of aptitude to develop the Hearing Prevention Program and employment status while developing the Hearing Prevention Program by the professional (N=74)

Variables	HPP development		TOTAL	P value
	Yes	No		
Age (years):				
Under 30	7 (9.5%)	9 (12.2%)	16 (21.6%)	0.2799
30 to 39	22 (29.7%)	8 (10.8%)	30 (40.5%)	*0.0021
40 or over	22 (29.7%)	5 (6.8%)	27 (36.5%)	*0.0002
TOTAL	51(68.9%)	22 (29.7%)	73 (98.7%)	*0.0000
Industrial plant Size (number of employees):				
Up to 1000	14 (18.9%)	11 (14.9%)	25 (33.8%)	0.3055
Over 1000	28 (37.8%)	3 (4.1%)	31 (41.9%)	NA
Does not know	11 (14.9%)	7 (9.5%)	18 (24.3%)	0.1570
TOTAL	53 (71.6%)	21 (28.4%)	74 (100%)	*0.0000
Aptitude to develop the HPP:				
Yes, absolutely	14 (18.9%)	1 (1.4%)	15 (20.3%)	NA
Yes, but having doubts	30 (40.5%)	10 (13.5%)	40 (54.0%)	*0.0001
No	8 (10.8%)	11 (14.9%)	19 (25.7%)	0.2281
TOTAL	52 (70.3%)	22 (29.7%)	74 (100%)	*0.0000
Employment status:				
Self-employed/service provider	25	12	37	*0.0134
CLL hired	16	2	18	NA
CLL outsourced	9	10	19	0.8132
Civil Servant	-	3	3	NA
Others	9	1	10	NA

Note: *Test of proportions at the significance level of 0.05 (5%). NA = the test is not applicable.

Legend: CLL = Consolidation of Labor Laws; HPP = Hearing Prevention Program

Significant relation ($p=0.0289$) was observed between the HPP implementation and age: higher proportion of those who implemented the HPP was verified among the professionals with ages ranging 30 years or older. Regarding the plant size (number of workers), there was higher proportion of HPP implementation in those plants having more employees ($p=0.0012$). Considering the perception of their aptitude to implement the HPP, higher proportion was

evidenced among those who considered capable of doing that, but having doubts on how to do that.

By means of the Chi-square test, significance level of 0.05 ($p=1.000$), no significant correlation was observed between the HPP implementation by the professional under certain employment status, and length of time since graduation.

Table 5 shows the interventions developed by the professionals regarding the occupational health:

Table 5. Demonstration of the professionals' interventions to the workers, categorized by aspects of the Hearing Prevention Program and related activities (N = 74)

Aspects of the HPP/activities	Absolute frequencies	Relative frequencies (%)
Profile of the workplace and control proposal:		
Visits to workplaces in order to check ototoxic agents (noise, chemicals, etc.)	41	55.4
Assessment of the use of ear-protectors	46	62.2
Inspection in the power plant in order to check the use of ear protectors	42	56.8
Participation of the occupational safety and health team regarding the management of engineering and administrative control measures toward hearing hazards	44	59.5
Documental Analysis of the existing prevention programs in the industrial plant (ERPP, MCPOH, TRECW and HPP)*	44	59.5
Monitoring and assessment of the exposure to ototoxic agents, in addition to the adoption of control measures	31	41.9
Selection, recommendation, adaptation and follow-up of the use of Personal Protective Equipment (PPE)	44	59.5
Hearing management:		
Occupational Anamnesis	69	93.2
Otoscopy	71	95.9
Pure-tone air-conduction threshold audiometry	74	100.0
Pure-tone bone-conduction threshold audiometry	69	93.2
Speech audiometry	33	44.6
Otoacoustic emissions test	8	10.8
Acoustic immitance testing	15	20.3
Job-admission audiometry	74	100.0
Periodical audiometry	74	100.0
Job-dismissal audiometry	74	100.0
Hearing monitoring (comparison of workers' audiogram)	49	66.2
Educational Interventions		
Guidance on the correct use of ear protectors	58	78.4
Speeches on hearing loss prevention	50	67.6
Educational workshops on hearing loss prevention	36	48.6
Distribution of information material on hearing loss prevention	41	55.4
HPP Assessment		
Reporting	46	62.2
Elaboration, maintenance and updating of occupational records	39	52.7
Assessment of the program efficacy and efficiency	35	47.3

Note: * ERPP – Environmental Risk Prevention Program (PPRA – *Programa de Prevenção de Riscos Ambientais*), MCPOH - Medical Control Program of Occupational Health (PCMSO – *Programa de Controle Médico de Saúde Ocupacional*), TRECW - Technical Report of the Environmental Conditions at Workplace (LTCAT - *Laudo Técnico das Condições do Ambiente de Trabalho*), and HPP – Hearing Prevention Program (PPA – *Programa de Preservação Auditiva*)

Most interventions developed by professionals in occupational health reported the Hearing Management category, with the audiometric testing held by all professionals. On the other hand, the evoked otoacoustic emissions testing (10.8%) was scarcely mentioned by the professionals. Activities regarding the workplace characterization and proposal to control ototoxic agents were less frequent, as well as the development of educational interventions.

DISCUSSION

Most professionals in this study were from the Southern region of Brazil, where the research was initially conducted, which made an analysis difficult by regions in Brazil. The professionals, who accepted to participate in the study, were mostly females.

The results in the current study corroborate literature, which points to the Speech-Language Pathology/Audiology as a career where the female sex prevails^{17,18}.

According to authors, people who consider themselves educators, caregivers and communicators identify with the Speech-Language Pathology/Audiology, assumed as typically female features¹⁹. Education, entertainment and health are fields acknowledged as aggregating expressive number of women²⁰.

Concerning professionals' employment status, most of them reported working as self-employed/service providers, which is considered a usual situation in Speech-Language Pathology, mainly in Audiology. Therefore, the SLP in the occupational health is characterized by the employment status as a self-employed/service provider. It is usual for SLPs to work as self-employed professionals for Occupational Health and Safety companies, which in turn, deliver services to industrial plants/institutions. A study in Minas Gerais State, Brazil, with 67 SLPs, time length of three years since graduation, evidenced that most professionals were self-employed (44.78%), followed by professionals hired under the Consolidation of Labor Laws (26.87%)¹⁷. However, study with 312 SLPs, specialized in Educational Speech-Language Pathology, evidenced the prevalence of the employment status as hired or employed (36.22%)¹⁹.

Most professionals in the current study attended specific courses on HPP and/or specialization in Audiology. Continuing education is a reality for most health and education professionals. That is justified by the need of a differential in their education, which facilitates their entry in the job market. In addition, the importance of steady knowledge updating, once, in those fields, knowledge is fast-paced²¹. In the Speech-Language Pathology area, that fact is observed, as reported in a study, which points to the attendance of specialization courses by graduates from the Speech-Language Pathology/Audiology course, proceeding with their education¹⁷. Additionally, in a study held with 547 Audiology professionals, registered at the 6th Region of the Regional Council of Speech-Language Therapy/Audiology, 51.4% reported specialization in Audiology, and 52% reported working with "occupational audiological testing"¹⁸.

The demand for postgraduation courses, evidenced in the current study, occurred, despite most professionals reported having information on HPP during their graduation. Given the curricular changes in the past years, which point out health promotion and prevention, legislation for the development of the HPP, and the creation of the specialization in Occupational Health, the theme about the elaboration of an HPP is

expected to be part of the Speech-Language Pathology graduation curriculum²⁴. However, about 30% of the SLPs did not have that theme addressed in their graduation courses.

The current study did not analyze the curriculum of Speech-Language Pathology/Audiology courses in order to verify the presence, or not, of Occupational Health-related disciplines. That would be an interesting investigation for further studies Do the curricula not contemplate occupational health-related disciplines, or do the discipline contents privilege workers' audiological screening, neglecting the discussion of HPP development?

According to authors²², health professionals' education, including that of SLPs, points to a restricted view on workers' health, disregarding the necessary interventions to control hazards at the workplace.

Large part of the professionals, maybe in an attempt to supply the knowledge gap on occupational health, complement their training on HPP by attending specific postgraduation courses. Even so, those professionals report having doubts on the elaboration of an HPP, which may signal that those postgraduation courses are not enough for them in the job market. In such courses, there may be a gap between the theory, which guides HPP elaboration, and the practice expected at workplaces¹⁶. In the United States, where the HPP implementation is mandatory, there is the concern about qualifying certified professionals for interventions towards workers exposed to ototoxic agents at the workplace¹¹. The definition of a minimum content, necessary to qualify for the elaboration of an HPP, may guide professionals better for the search of more efficient training courses^{4,6,14}.

The current study evidenced that most SLPs worked for medium-sized or large industrial plants, regarding the number of employees. The presence of high risk of hearing loss is frequent in medium-sized and large industrial plants, mainly manufacturing plants²³. On the other hand, such industrial plants comply with the legislation more strictly, either for the company's own policy, or for the need to keep the quality of goods and rendered services^{9,12}. In general, requirements to comply with occupational health and safety regulations are of interest for those companies, as well as obtaining the I.S.O. - *International Organization for Standardization* – certifications, which define international standards of quality. For example, if a business wants to hold certification by applying the Environmental Management System (EMS) and Occupational Safety and Health

Management System (OSHMS), it is required to prove its efficiency on health and safety management according to international standards^{10,24}. That situation may facilitate the HPP development by the SLP⁶. Moreover, literature reports that medium-sizes and large companies have the economic conditions to invest in the development of an HPP, hiring specialized professionals for that²⁴. In the Brazilian literature, an estimate of costs for the development of an HPP was not found. However, in the United States, the cost of the HPP in a steel manufacturing company added up to 308 dollars a year per worker^{24,25}.

About half of the professionals in this study reported developing the HPP in the companies that they work for, and those who do not, only conduct audiometric screening in the workers. A study in Minas Gerais State found that, among 214 SLPs, who conduct audiological testing in workers, only 16.27% of them develop Hearing Prevention Programs¹⁸.

Even with the legislation demand²⁶ and the guidelines of the Speech-Language Pathology/Audiology Council, the implementation of the HPP has not been a reality to all SLPs that work in the occupational health field yet. A study in the United States points that the implementation of an HPP (investing in educational interventions and involvement of the company management) reduces the cases of NIHL²⁵. In Brazil, the situation of noise-exposed workers is disturbing²⁷, since many of them work at industrial plants where SLPs conduct the audiological screening, but they do not develop the HPP, at odd with the idea that speech-language pathologists have left behind the view centered on rehabilitation to an intervention centered on the Health Promotion^{8,9}.

In the current study, it was noticeable that interventions involving hearing screening are frequent in an SLP's daily routine in that area. The study also evidenced that the large part of the SLPs have not developed the necessary categories for the integrality of actions that comprise the HPP. The category surrounding actions of Hearing Management, that is, the diagnosis, still stands out. Hearing management is important to follow up the effects of ototoxic agents on hearing. However, audiological screening cannot be considered a preventive action by itself^{9,10}.

The category that comprises the development of Educational Interventions as part of the HPP was the second reported by the SLPs, emphasis lying on guidance about the correct use of ear protectors. Educational interventions should go beyond the

guidance about individual protection; they should enable workers to think over their health and work conditions, leading them to understand how work may affect their quality of life and, consequently, encouraging them to search for solutions²⁸⁻³¹. Such activities are part of the speech-language pathologists' tasks while working in the Occupational Health area, according to the Federal Council of Speech-Language Pathology/Audiology³². Most studies only report the educational interventions to improve the intent and use of ear protectors^{15,30,31}, without thinking about other solutions, as observed in the actions described by the professionals in this study. However, it deems necessary to expand prevention, in order to control environmental hazards, thus reducing the exposure¹².

The least reported category by the SLPs referred to the activities regarding the workplace profiling and the proposal of risk control. However, the prevention of auditory disorders, as well as of other effects related to the exposure to high levels of noise on the organism, is held by reducing the exposure or by eliminating noise from workplaces⁵. Ear protectors are advisable for workers to wear until collective changes and environmental changes are established. There are several limitations to hearing prevention relying exclusively on the use of ear protectors, that is why changes at the workplace are ultimate actions^{6,25,33}.

According to authors, in many companies/institutions, the development of occupational safety and health interventions are held to comply with the minimum required by the legislation, reducing or postponing issues at the Labor Court. Thus, full actions, necessary to implement the HCP, are not contemplated^{10,16}.

On the other hand, it is Speech-Language Pathologists/Audiologists' task to explain the companies/institutions the relevance in implementing the HPP with all its categories, but those professionals need to know all the possibilities of actions to be implemented by the HPP, being sure about its development.

This study has limitations regarding the number of subjects. Further studies, with a larger population and better distributed over the Brazilian States should be conducted, in addition to the income investigation of SLPs who work in the occupational health area.

CONCLUSION

A high number of speech-language pathologists/audiologists in the occupational health area do not develop the Hearing Prevention Program.

Those who report implementing the HPP are over 30 years of age, and attended specific postgraduation courses on the HPP elaboration. However, some are still in doubt about its implementation. The professionals work for industrial plants with over 1,000 employees and conduct most actions on hearing management, diagnosis of hearing loss, and guidance about the correct use of ear protectors.

Qualification for that should begin in the graduation course, and the continuing education is important for updating. Spreading successful experiences among the professionals should be encouraged and shared.

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Appendix: Questionnaire

HPP QUESTIONNAIRE – HEARING PREVENTION PROGRAM

Thanks for participating in this research; you're contributing to the area of the Speech-Language Therapy in Occupational Health. We'll keep your identification and use the collected data for academic purposes, once this study was approved by the Ethics Research Board n. 2.021.278.

Initials of the Name: _____ Age: _____ Gender:

Female Male

City/State where you work: _____

a) How long have you been a Speech-Language Pathology?Audiology graduate? _____

Do you consider that your academic education provided you with enough information to implement an HPP? yes no regular

b) Have you attended a specialization course? _____ If so, mention the area: _____

c) Besides specialization, have you attended other courses on HPP? yes no

d) Do you feel capable of implementing an HPP? yes, absolutely yes, but having doubts no

e) How many workers are there in the company that you work for (if more than one, number them and mention the approximate number of workers)

f) How many of those companies develop the HPP? _____

1) Mark your employment status at the workplaces: self-employed/service provider CLL (CLT) hired by the company where you develop the HPP
CLL (CLT) at an outsourced company civil servant other (specify): _____

2) Mark the activity (activities) that you conduct as a speech-language pathologist/audiologist:

auditory assessment

balance assessment

assessment and therapy of the oral language, voice, orofacial motricity or dysphagia

speech-language pathology services at schools

assessment and therapy of the written language

Hearing Prevention Program

others (specify): _____

3) Which activities below do you carry out as part of the interventions with exposed workers to ototoxic agents:

occupational anamnesis otoscopy

pure-tone air-conducted threshold audiometry

pure-tone bone-conducted threshold audiometry

speech audiometry

acoustic immittance testing (impedanciometry)

otoacoustic emissions test

guidance on the correct use of ear protectors

speeches about hearing loss prevention

educational workshops about hearing loss prevention

distribution of information material about hearing loss prevention

assessment on the use of ear protectors

job-admission audiometry

periodical audiometry

job-dismissal audiometry

4) Which activities below do you carry out as part of the company HPP?

I don't develop HPP

visits to workplaces to check ototoxic agents (noise, chemicals, etc.)

company inspections to check the use of ear protectors

hearing monitoring/management (comparison of workers' audiograms)

elaboration of reports: yearly semiannually monthly

participation in the occupational safety and health team regarding the management of engineering and administrative hearing-risk control measures;

documental analysis of the existing prevention programs at the company (ERPP, MCPOH, TRECW, and HPP);

monitoring and assessment of the exposure to ototoxic agents, besides the adoption of control measures;

selection, recommendation, adaptation and follow-up of the Personal Protective Equipment (PPE);

elaboration, maintenance and updating of occupational records;

assessment of the program effectiveness and efficiency.

Thank you!