COMUNICATIONS

Hearing health studies involving distance education and presential education

Estudos em saúde auditiva envolvendo educação à distância e presencial

Estudios en salud auditiva envolvendo educación a distancia y presencial

Maria Thereza Raab Forastieri Piccino*
Jerusa Roberta Massola de Oliveira**
Camila de Castro Correa***
Wanderléia Quinhoneiro Blasca*

Abstract

The objective of this search was to present and analyze the studies related to the thematic Education for Hearing Health using presential education and distance education. For the selection were used the descriptors: "Hearing" AND "Distance Education"; "Hearing" AND "Telemedicine"; "Health education" AND "Audition" AND "Telemedicine" and its correspondents in English in: PubMed, Bireme, Embase, Web of Science, Scielo and Scopus. As inclusion criteria were considered articles in Portuguese, English or Spanish with methodologies of presential teaching or distance or presential and distance on Education Hearing Health. The exclusion criteria referred to literature reviews, and articles without the proposal focus. For the analysis, the following data were considered: the year of publication, scientific periodical, objective of the study, methods and results. A total of 626 papers were identified from 1984 to 2015, however, after the established filters, 12 articles were selected, two from Pubmed, four from Scopus, one from the Web of Science, four from the Scielo and one from Embase, from 2004 to 2014. This study presented 12 studies with the theme of Hearing Health Education that involve presential education and

* Faculdade de Odontologia de Bauru, Bauru, SP, Brazil
** Hospital de Anomalias Craniofaciais da Universidade de São Paulo, Bauru, SP, Brazil
***Faculdade de Medicina de Botucatu, UNESP, Botucatu, SP, Brazil

COMUNICATIONS

distance education with varied approaches, but in general the efficacy of distance teaching methods has been observed. However, there is a shortage of literature, the available studies are recent.

Keywords: Hearing; Telemedicine; Distance Education; Health Education.

Resumo

O objetivo da presente pesquisa foi apresentar e analisar os estudos com Educação em Saúde Auditiva utilizando educação presencial e à distância. Para a seleção, foram utilizados os descritores: "Audição" AND "Educação à Distância"; "Audição" AND "Telemedicina"; "Educação em saúde" AND "Audição" AND "Telemedicina" e seus correspondentes em inglês em: PubMed, Bireme, Embase, Web of Science, Scielo e Scopus. Como critérios de inclusão, admitiram artigos em português, inglês ou espanhol com metodologias de ensino presencial ou à distância ou presencial e à distância sobre Educação em Saúde Auditiva. Os critérios de exclusão se referiam às revisões de literatura, e artigos que não apresentaram o foco da proposta. Para a análise, foram considerados os seguintes dados: ano de publicação, periódico científico, objetivo do estudo, métodos e resultados. Foram localizados 626 trabalhos de 1984 a 2015, porém, após os filtros estabelecidos, foram selecionados 12 artigos, dois da Pubmed, quatro originados da Scopus, um da Web of Science, quatro do Scielo e um da Embase, de 2004 a 2014. Este estudo apresentou 12 estudos com a temática Educação em Saúde Auditiva que envolvem educação presencial e à distância com enfoques variados. No geral, observou-se a eficácia em métodos de ensino à distância. Entretanto, ressalta-se a escassez de literatura, sendo que os estudos disponíveis são recentes.

Palavras-chave: Audição; Telemedicina; Educação à Distância; Educação em Saúde.

Resumen

El objetivo desta búsqueda fue presentar y analizar los estudios con Educación en Salud Auditiva utilizando educación presencial y a distancia. Para la selección, se utilizaron los descriptores: "Audición" AND "Educación a Distancia"; "Audición" AND "Telemedicina"; "Educación en salud" AND "Audición" AND "Telemedicina" y sus correspondientes en inglés en: PubMed, Bireme, Embase, Web of Science, Scielo y Scopus. Como criterios de inclusión, fueron aceptados artículos en portugués, Inglés o Español con metodologías de enseñanza presencial o la distancia o presencial y la distancia en Salud Auditiva. Los criterios de exclusión se referían a las revisiones de literatura y artículos sin el enfoque de la propuesta. Para el análisis, se consideraron los siguientes datos: el año de publicación, periódico científico, objetivo del estudio, métodos y resultados. Se localizaron 626 trabajos de 1984 a 2015, sin embargo, después de los filtros establecidos, se seleccionaron 12 artículos, dos de Pubmed, cuatro originados Scopus, uno de la Web of Science, cuatro De Scielo y uno de Embase, de 2004 a 2014. Este estudio presentó 12 estudios con la temática Educación en Salud Auditiva que involucra educación presencial ya distancia con enfoques variados. En general se observó la eficacia en métodos de enseñanza a distancia. Sin embargo, se resalta la escasez de literatura, los estudios disponibles son recientes.

Palabras clave: Audición; Telemedicina; Educación a Distancia; Educación em salud.

Introduction

Health education aims to promote health and prevent illnesses through the dissemination of information that modifies behavior. Nowadays, health education is seen as a theoretical-practical process that proposes to integrate several types of knowledge: scientific, popular, and common sense, allowing those involved to have a critical view, a larger participation with autonomy and responsibility regarding health on everyday life[1].

Health education can be defined as a social practice that recommends changes in habits, practices, and attitudes in addition to transmission and detention of knowledge, but also the progressive change in the way of thinking, feeling, and acting through the selection and use of pedagogical methods that are participative and problematizing. Thus, to educate and to learn about health becomes

COMUNICATIONS

Maria Thereza Raab Forastieri Piccino, Jerusa Roberta Massola de Oliveira, Camila de Castro Correa, Wanderléia Quinhoneiro Blasca

a continuous process of reflection, questioning, and, more importantly, of collective and shared construction[2].

Education and health are opportunities for production and application of knowledge intended for human development. There is an intersection between these two fields, both at any level of attention to health and the continuous acquisition of knowledge by the health professionals[3].

The concepts regarding Promotion of Health went through evolutive processes, focusing in actions of health that aimed to transform habits and lifestyles, encompassing the family environment, cultural and social aspects. The promotion of health prioritizes educational aspects linked to behavioral factors[4].

One of the most efficient ways of promoting health and preventing hearing alterations is through education. Not only for professionals with teaching degrees[5,6,7], but also for parents/caregivers and the hearing impaired themselves[8,9]. We must also highlight the importance of education of the community in general, so they become knowledge multipliers and prevent possible audiological pathologies[10].

The directions proposed by the World Health Organization[11] for the "new" public health and health promotion generate the need to bring social classes closer, building an active community.

It is believed that in order to educate, several ways to access information must be created. A competent pedagogical practice that follows the challenges of modern society demands an interrelationship between teaching methods and innovative technology. Such technologies when combined can modify daily life[12].

Since the 19th century, technical courses already used distance learning through the postal service. Later, the radio became an educational tool for this purpose. Therefore, distance learning started to integrate traditional communication technologies such as radio and television, associated with printed materials sent via mail, promoting the dissemination of knowledge to the students. With the advent of the Information and Communication Technologies (ICT), new perspectives were brought to distance learning due to the fast release and distribution of contents, interaction with information, resources and people, in addition to flexibility of time and place for access[13].

Distance learning is a practice that allows for a balance between individual and group needs, both in presential and virtual form. It allows for the exchange of experiences and the clearing of doubts. Due to easy internet access, more educational practices will combine presential and virtual courses, interspersing periods of individual research with others of group research and communication[14].

Regarding Health Education in Audiology, researchers developed a project involving the creation of didactic materials, developing a remote course and the creation of Cybertutor[15]. It is worth mentioning that the Department of Speech-Language Pathology and Audiology of the College of Dentistry in Bauru/USP was the pioneer in the development of educational material in hearing health with the purpose of guiding parents and patients, in VHS format, titled "Educational Strategies in Hearing Impairment", which launched the creation of electronic didactic material and later, the CD-ROM "O Som e o Silêncio" (Sound and Silence). Since then, the Department of Language and Speech-Language Pathology and Audiology has been developing, in partnership with researchers, works focused in this area[16-17].

Distance Education is a type of learning that allows for self-learning with the mediation of systematically organized didactic resources, presented in different data media, used separately or combined and conveyed through several means of communication. Thus, Tele-education must be considered as a teaching methodology that facilitates the construction of a collaborative learning network, especially regarding subjects related to health[18]. Hence, education in health can count on the use of several ICTs in the professional and human development, increasing access, reducing costs and making health promotion actions more interesting and attractive to the target population.

Distance Learning and Tele-education are used as synonyms, but the concept of Interactive tele-education includes several computing resources, making information available with the purpose of stimulating interactivity fostering the student's interest.

In face of numerous benefits that Tele-education brings, the Department of Health recognized its use through the creation of the Projeto de Informatização e Telessaúde Brasil Redes (Project for Informatization and Telehealth Brasil Redes) In Primary Care, which intends to qualify Primary Care through permanent education of the teams us-

ing Teleconsulting, formative opinion and virtual visits[19].

This study aims to present and analyze studies related to Education in Hearing Health using presential or distance education or presential and distance education.

Method

As methodology for the research strategy, we used the following descriptors in Health: "Audição" AND "Educação à Distância"; "Audição" AND "Telemedicina"; "Educação em saúde" AND "Audição" AND "Telemedicina"; we also used their corresponding versions in English "Hearing" AND "Distance Education"; "Hearing" AND "Telemedicine"; "Health Education" AND "Hearing" AND "Telemedicine.

The search for literature was done on the following databases: PubMed, Bireme, Embase, Web of Science, Scielo, and Scopus without any limitation of time period for the search.

As planning for the study, the following criteria were used: studies in Portuguese, English, and Spanish that presented presential or distance teaching methodologies or presential and distance. Exclusion criteria referred to the literature review and studies that did not focus on the proposal.

For the analysis of the studies, the following data were evaluated: scientific periodical, year of publication, title, abstract, objective, methods, and results.

A total of 626 works were located; 94 were found on PubMed, 172 on Scopus, 252 on Embase, 96 on Web of Science, 07 on Bireme, and 5 on Scielo during the period from 1984 to 2015.

Data analysis was done through the title and 225 works were selected. Then, after reading the abstracts, 101 works remained and, finally, with the analysis of complete works, considering the inclusion and exclusion criteria, 12 articles were selected and composed the final result.
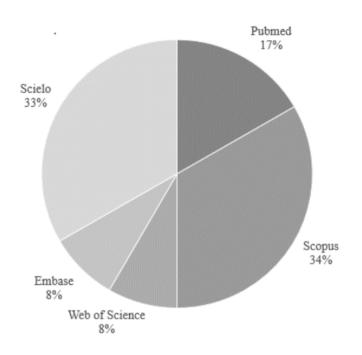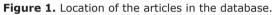
Results

The articles considered for this paper were in Pubmed (2 works); Scopus (4 works), Web of science (1 work), Embase (1 work) and Scielo (4 works). In Figure 1 we observe the percentages in which these articles were found.
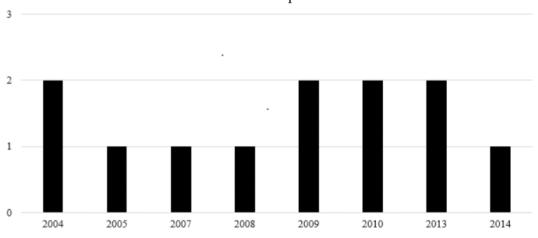
Regarding the period, 2 articles were dated from 2004, 1 from 2005, 1 from 2007, 1 from 2008, 2 from 2009, 2 from 2010, 2 from 2013, and 1 from 2014 (Figure 2).

Chart 1 shows the studies in Hearing Health Education using presential or distance learning.

Maria Thereza Raab Forastieri Piccino, Jerusa Roberta Massola de Oliveira, Camila de Castro Correa, Wanderléia Quinhoneiro Blasca

Figure 1. Location of the articles in the database.

Figure 2. Period and quantity of article publications.

COMUNICATIONS

Chart 1. Articles found that address education on hearing health using presental or distance learning.

AUTHOR, YEAR	MAGAZINE	OBJECTIVE	METHODS	RESULTS
RICHARDSON, LONGO, FOSTER, 2004	*Journal of Deaf Studies and Deaf Education*	To compare the performance of students with and without hearing loss (HL).	Both groups participated in distance learning courses.	Students with hearing loss had lower grades than those without the disability. Despite the impact of hearing loss in distance education having been relatively mild.
ERATH, LARKIN, 2004	*Assistive Technology*	To discuss individualized methods and technologies that can hinder the teaching of handicapped people, particularly those with HL.	Methods were examined, specific technologies and software were discussed.	Distance learning proved to be a way of learning at any time and anywhere, even though not all individuals benefited equally.
DRIGAS et al, 2005	*ITHET 2005: 6th International Conference on Information Technology Based Higher Education and Training*	To evaluate an e-learning environment for professional and educational formation of the deaf.	Through videos using gestures, for adults with HL.	Bilingual experiences (speech and sign language), have a significant increase in reading competency.
SADEGHI, MEHRABIAN, MOSLEHPOUR, 2007	*ASEE Annual Conference and Exposition, Conference Proceeding*	To discuss the recommendations to innovate distance learning with deaf students at university level.	Two approaches for distance learning for the deaf student: based on the web and synchronized videoconferencing.	Distance learning is efficient when it: has appropriate instructions, promotes interaction, promotes feedback from teacher to student, uses different resources (tables, pictures, and other visual elements).
ALVARENGA et al, 2008	*Pró-fono*	To evaluate the qualification of community health agents from the Family Health Program, in the child hearing field.	Two groups were formed (presental training with topics related to HL and questionnaires were applied before and after the training).	Training was effective with higher scores obtained on the before and after training questionnaires.
WILSON, WELLS, 2009	*Journal of Deaf Studies and Deaf Education*	To evaluate the efficacy of telehealth in the teaching offered to the deaf population.	Videoconference	The results indicate efficiency in the health care provided to the deaf population.
LUETKE, 2009	*American Annals of the Deaf*	To compare distance and presental learning for teachers of deaf students.	Online courses were evaluated through questionnaires since the 1990's.	Most of the educators liked the content presented through distance learning.
MELO et al, 2010	*Pró-fono*	To verify the efficacy of the training provided to community health agents about child hearing.	Training of 2 groups, one with presental training and another through videoconference.	Both groups showed there was learning, being that the presental group indicated more knowledge.

COMUNICATIONS

AUTHOR, YEAR	MAGAZINE	OBJECTIVE	METHODS	RESULTS
BLASCA et al, 2010	*Revista CEFAC*	To elaborate, apply, and evaluate an Interactive Tele-education model for the teaching of Audiology.	Senior students of the Speech and Language Pathology course enrolled in the Interactive Tele-education course (*Cybertutor*) about Personal Sound Amplification Products.	There was an increase in their knowledge after using this methodology. Regarding the results of the evaluation of Cybertutor, 100% of the students considered it explanatory and easy to understand.
BLASCA et al, 2013	*Revista CEFAC*	To elaborate a training program for high school students about the topic hearing health.	The program was divided in: presential activity, access to cybertutor, and practical activity. To evaluate the educational online material, they answered a questionnaire.	High approval rate for Cybertutor.
BARBOSA et al, 2013	*Brazilian Journal of otorhinolaryngology*	To verify the knowledge of nursing professionals after educational actions in child hearing health.	Professionals from a university hospital, answering a semi-structured questionnaire before and after educational actions.	There was a significant change in the knowledge of nursing professionals after the educational actions in most of the variables analyzed.
CONCEIÇÃO, BARREIRA-NIELSEN, 2014	*Revista CEFAC*	To evaluate the Program Telehealth Redes as a training strategy in hearing health.	Training via web conference for health agents.	Distance learning was evaluated positively.

Discussion

Tele-education, allowing for the exchange of information and experiences, becomes an ally in the promotion of health for many individuals and also has an unmatched role in the continuous formation of professionals who deal with certain clinical conditions in their routine, such as hearing impairment, which can cause difficulties of several levels in the hearing capability and, consequently, in other associated capabilities. Thus, considering the importance of the hearing heath and its aspects, in addition to the need for innovations in the educational methods for a population surrounded by technology, Tele-education is an important and distinct stimulus grouping conditions to supply the needs of individuals of the contemporary world with unquestionable advantages.

Tele-education allows for Distance Education, which is a type of learning that allows for self-learning with the mediation of systematically organized didactic resources, presented in different data media, used separately or combined and conveyed through several means of communication. Thus, Tele-education must be considered as a teaching methodology that facilitates the construction of a collaborative learning network, especially regarding subjects related to health as stated by Ferrari and colleagues in 2010.

In this study, having as objective to present and to analyze studies related to Hearing Health Education using presential and distance learning or not, the research papers analyzed were published in well-known magazines or those available in educational events focusing on hearing health recognized in the scientific/academic world which reflects in credibility. However, in the Telehealth field there are very few publications, which emphasizes the need to enrich the production of scientific papers on this topic.

We observed that the studies were comprehensive, involving several populations as agents of public health, nurses, teachers of deaf people, educators, high school students, Speech, Language

Pathology and Audiology undergraduate students, hearing impaired, students with or without hearing impairment. By choosing these samples, we confirmed that distance learning can convey learning to all individuals anywhere. We also had satisfactory attendance of participants regarding the commitment for the proposed activities.

In face of the results from the analyzed studies, it is possible to state that through Distance Learning individuals can be trained, showing the importance of expanding this way of knowledge transfer, since there was a significative difference in the performances of those evaluated, before and after the training in presential classes and video conferences. As an example, the study aiming to evaluate the program Telehealth Redes as a training strategy for 37 health agents who had no previous experience in hearing health or Distance Learning, done through web conference. The contents from the courses for teachers of deaf individuals were verified through questionnaires and video conferencing, indicating that Telehealth is efficient for this content.[30]

Regarding the study proposals, they were varied with focus on the content comparison[26] in the verification of efficacy[25], in the discussion of methods[21] and, finally, in the recomendations[23].

When evaluating the Virtual Environment of Learning in the qualification program for students, 100% of the high school students[29] and the undergraduate students of the Speech, Language Pathology and Audiology course[28] demonstrated high acceptance level and evaluated Cybertutor as a platform of easy understanding.

As far as strategies used, there were presential and distance-learning classes, video conferencing, and educational videos. Hence, several educational tools were used but all of them based on Distance Learning.

The use of Distance Learning employing different Information and Communication Technologies (ICT) observed in studies, show that presential education combined with Distance Learning strategies have presented positive results. For instance, in the study with the use of Distance Learning Technologies in Telehealth, it was positively evaluated as a training strategy to qualify in Hearing Health in primary health care[30]. However, another study alerts that if a careful analysis is not done, Distance Learning can make learning happen at any time, anywhere but not for everyone. The author of this study also discussed individualized methods and

specific technologies, since some distance learning courses make it difficult for those with impairments to learn, specifically the hearing impaired. Nonetheless, in another study, the authors presented two approaches for distance learning for the deaf student: Distance learning based on the web and video conferencing and concluded that Distance Learning for deaf students can be efficient if there is interaction among the participants through appropriate instructions and can promote feedback from teacher to student. For this, the teacher must use pictures, tables and foster interactivity and group work[26]. Using sign language in class significantly increases reading competency[25].

Still considering training, some authors trained 2 groups of community agents, one in the presential mode and another through distance learning, verifying that both groups presented significative difference, even though the group that received presential qualification had better performance[27]. We can also mention the presential qualification program with health agents in hearing health which used interactive materials, where the proposed approach proved to be efficient[24].

When evaluating the knowledge of professionals in the nursing field before and after presential educational actions in child hearing health, a study showed a significative change in their knowledge in most of the variables[29].

As far as methodology, we observed that the methods for data collection were pertinent to meet the proposals, and the results obtained were robust. Thus, we can say that all the studies analyzed presented a scientific merit for their execution.

In the analyzed studies, it was possible to understand that topic hearing health can be studied, discussed and spread to professionals that are in different places through Distance Learning, bringing new information to the methods of acquiring knowledge. Also, the use of educational tools to teach and acquire knowledge in comparison to traditional methods can benefit those who are willing, stimulating them for new learning.

Due to easy access to the internet by a large portion of the population, be it in schools, universities or at work, the combination of presential and distance education can present interaction between people and people and between groups and groups. Despite some studies having presented good results using presential training alone, the type of approach contributed to the success of the program. Hence,

the growth and improvement of Distance Education through Telehealth to broaden learning is essential.

The proposal was decided based on the difficulty to find topics related to hearing health qualification using education mediated by technology, Distance Learning, and Interactive Tele-education. The works found in the literature refer to virtual visits, involving especially the medical sector and remote consultation.

Works involving Tele-education in hearing health need to be widespread, considering that this type of learning will benefit more professionals with access to knowledge. Especially in Brazil where there are 2,261 Speech, Language Pathologists and Audiologists specialized in Audiology, according to the CFFa (National Speech, Language Pathology and Audiology Association).

We can mention the Distance Post-graduation course in Audiologic Habilitation and Rehabilitation in Children offered by the Department of Health in partnership with the Samaritan Hospital and the College of Dentistry in Bauru (Faculdade de Odontologia de Bauru - FOB), where professionals countrywide do diagnosis, audiologic habilitation and rehabilitation benefiting with the information and knowledge exchange among the different services in our country.

This study provided the audiology community and its correlated areas with an overview of the studies that encompass Tele-education and, therefore, have sources for theoretical basis from other studies and possibilities of verifying what can be explored in this area.

Conclusion

This study found 12 works with the topic education on hearing health that involved presential or distance education with varied focuses, but in general, the efficacy of distance learning methods was observed. Even though the studies developed were recent, we highlight the lack of literature about hearing health.

References

1. Reis DC. "Educação em saúde: aspectos históricos e conceituais." Educação em saúde: teoria, método e imaginação. Belo Horizonte: UFMG 1 2006: 19-24.

2. Moisés MA. "A educação em saúde, a comunicação em saúde e a mobilização na vigilância e monitoramento da qualidade da água para consumo humano." Jornal do Movimento Popular de Saúde/MOPS .2003.

3. Pereira ALF. As tendências pedagógicas e a prática educativa nas ciências da saúde. Cad. Saúde Pública. 2003; 19(5): 1527-34.

4. Verdi M, Capoani S. Reflexões sobre a promoção da saúde numa perspectiva bioética. Texto & Contexto Enfermagem. 2005; 14(1): 82-8.

5. Seno MP. A inclusão do aluno com perda auditiva na rede municipal de ensino da cidade de Marília. Psicopedagogia. 2009; 26(81): 376-87.

6. Punch R, Hyde M. Children with cochlear implants in Australia: educational settings, supports, and outcomes. J Deaf Stud Deaf Educ.2010; 15(4): 405-21.

7. Eriks-Brophy A, Whittingham J. Teachers' perceptions of the inclusion of children with hearing loss in general education settings. Am Ann Deaf.2013; 158(1): 63-97.

8. Christiansen JB, Leigh IW. Children with cochlear implants: changing parent and deaf community perspectives. Arch Otolaryngol Head Neck Surg. 2004;130(5): 673-7.

9. Anmyr L, Larsson K, Olsson M, Freijd A. Strengths and difficulties in children with cochlear implants: comparing self-reports with reports from parents and teachers. Int J Pediatr Otorhinolaryngol. 2012; 76(8): 1107-12.

10. Blasca WQ, Picolini MM, Silva ASC, Campos K, Pinto GFR, Brasolotto AG et al. Projeto Jovem doutor Bauru: Capacitação de estudantes do ensino médio em Saúde Auditiva. Rev CEFAC. 2013; 15(6): 1407-17.

11. World Health Organization. The Otawa charter for health promotion. Geneve: WHO, 1986.

12. Moran JM. Ensino e aprendizagem inovadores com tecnologias e telemáticas. In: Moran JM, Masetto MT, Behrens MA. Novas tecnologias e mediação pedagógica. Campinas (SP): Papirus, 2000.

13. Almeida MEB de. Educação à distância na internet: abordagens e contribuições dos ambientes digitais de aprendizagem. Educação e Pesquisa. 2003; 29 (2), 327-40.

14. Moran JM. O que é educação a distância. 2002. Disponível em: http://www.eca.usp.br/prof/moran/dist.htm.

15. Ferrari DV, Blasca WQ, Bevilacqua MC, Costa AO, Wen CL, Bohm G. Teleaudiology in Brazil. In: XXVII International Congress of Audiology, 2004.

16. Blasca WQ, Kuchar J, Pardo-Fanton CDS, Ascencio ACS, Falsetti APM, Mondelli MFCG. Modelo de educação em saúde auditiva. Rev CEFAC. 2014; 16(1): 23-30.

17. Spinardi ACP, Blasca WQ, Wen CL, Maximino LP. Telefonoaudiologia: ciência e tecnologia em saúde. Pró-Fono R Atual Cient.2009; 21(3), 249-54.

18. Ferrari DV, Blasca WQ, Bernardez-Braga GRA, Wen CL. Telessaúde: acesso a educação e assistência em Fonoaudiologia. Saúde Auditiva no Brasil, Academia Brasileira de Audiologia, p.189-218, 2010.

19. Ministério da saúde. Projeto de Informatização e Telessaúde Brasil Redes na Atenção Básica. Portaria nº 2.546, de 27 de Out. 2011.

20. Richardson JT, Longo GL, Foster SB. Academic engagement in students with a hearing loss in distance education. J Deaf Stud Deaf Educ. 2004; 9(1) 68-85.

21. Erath AS, Larkin VM. Making distance education accessible for students who are deaf and hard-of-hearing. Assist Technol.2004; 16(2): 116-23.

22. Drigas, A. S.Kouremenos, D. Kouremenos, S. Vrettaros, J. An e-Learning System for the Deaf people. ITHET 2005. 6th International Conference on Date of Conference.

23. Sadeghi R, Mehrabian A, Moslehpour S. Web based distance learning system for opportunities for hearing impaired students. Annual Conference & Exposition, 2007.

24. Alvarenga KF, Bevilacqua MC, Martinez MA, Melo TM, Blasca WQ, Taga MF. Training proposal for community health agents in hearing health. Pró- Fono. 2008; 20(3): 171-6.

25. Wilson JA, Wells MG. Telehealth and the deaf: a comparison study. J Deaf Stud Deaf Educ. 2009; 14(3): 386-402.

26. Luetke B. Evaluating deaf education web-based course work. American Annals of the Deaf .2009; 154(1): 62-70.

27. Melo TM, Alvarenga KF, Blasca WQ, Taga MF. Capacitação de agentes comunitários de saúde em saúde auditiva: efetividade da videoconferência. Pró-Fono. 2010; 22(2): 139-44.

28. Blasca WQ, Maximino,LP, Galdino DG, Campos K, Picolini MM. Novas tecnologias educacionais no ensino da audiologia. Rev. CEFAC. 2010; 12(6): 1017-24.

29. Barbosa CP, Aires JB, Farias IYS, Linhares FMP, Griz SMS. Newborn and infant hearing health education for nursing professionals. Braz J Otorhinolaryngol. 2013; 79(2): 226-32.

30. Conceição HV, Barreira-Nielsen C. Capacitação em saúde auditiva: Avaliação da ferramenta no programa de Telessaúde. Rev CEFAC. 2014; 16(5): 1426-33.