HEALTH HEARING TRAINING: ASSESSMENT TOOL IN THE BRAZILIAN NATIONAL TELEMEDICINE PROGRAM

Capacitação em saúde auditiva: avaliação da ferramenta no programa de telessaúde Brasil

Heyder Vieira da Conceição[1], Carmen Barreira-Nielsen[2]

ABSTRACT

Purpose: to evaluate the Telehealth Program as a strategy for training in Hearing Health. **Methods:** the activities were organized from the University Hospital, in Telehealth Nucleus with the use of Adobe® Acrobat® Connect™ Pro Meeting system that enables the interaction of multiple participants in a web conference through sharing. The training was composed of 37community health workers who had no previous experience in hearing health and distance training. **Results:** after the training was presented a questionnaire of 8questions to assess the experience of new instructional tool for web conference in hearing health of evaluating their expectations and their goals achieved, as well as technical issues to test the reliability of the transmission network. One hundred percent of participants considered it comprehensive and easy explained. In the group, 97% of researched pointed that web conference is a useful tool for training community health workers. About 70% of health workers felt comfortable to participate in a web conference. Seventy percent proved to have achieved the expectative on they had for distance education, while the other 30% were very satisfied. Fifty one percent of participants felt satisfied with the training on hearing health, whileother49%feltvery satisfied. Regarding audio and image quality observed large percentage of agents satisfied, 70%. When asked if this type of training is important for their empowerment, the average grade was 9. **Conclusion:** it is concluded that the activity was evaluated positively as a tool for empowerment in Hearing Health.

KEYWORDS: Telemedicine; Community Health Workers; Health Human Resource Training; Audiology

INTRODUCTION

Brazilian Family Health Program (Portuguese acronym *PSF*) was created in 1994 and it is defined by the Ministry of Health as a strategy that also prioritizes actions to promote, protect and recover health for individuals and families, from newborns to elderly, ill or healthy, in a whole and continuous way. On the healthcare team, the health community agents (Portuguese acronym ACS) are the link between the healthcare unit and the family. They perform services to promote health and disease prevention through home visits[1]. However, most PSF professionals do not get enough information on issues such as hearing and hearing disabilities, which makes it difficult for these professionals to identify these disorders in the population[2]. In 1998, in compliance with recommendations by the World Health Organization, some developing countries started implementing hearing health training for *ACS*[3].

One tool that has been introduced in Brazil is Telemedicine, which comprises a broad range of activities that go beyond patient care. It promotes health, patient and health professional's education, disease prevention, epidemiologic monitoring, health care service management, and environmental protection, among others[4]. Therefore, Telemedicine can be defined as "the use of information and communication technology to transfer health care information to clinic, administrative and educational service rendenring"[5].

(1) Speech Pathology and Audiology course at the Federal University of Espírito Santo - UFES, Vitória, ES, Brazil.

(2) Speech Pathology and Audiology Undergraduate Program at Federal University of Espírito Santo - UFES, Vitoria, Brazil.

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Brazilian Board of Speech-Language Pathology, through resolution CFFa 427 issued on March 1, 2013, regulates Telemedicine in speech pathology, which is the defined as professional practice through information and communication technology using interactive methodology and virtual learning environments to provide care, promote education and carry out investigations on health care. Among the articles of this resolution, it determines that the speech-language pathologist is free to use Telemedicine or not, and that the proceedings adopted should ensure the same effectiveness of in-person care[6].

Since health has moved into a new stage, it is necessary to think about research and training to improve human resources for some of the services[7]. Thus, this study aims at evaluating Brazilian Telemedicine Networks Program as a strategy to train health community agents and develop actions to promote and protect hearing health among pregnant mothers, adults, children, adolescents and workers, aligned with *NUTES* — Portuguese acronym for Telemedicine Center at the Federal University of Espírito Santo Hospital, Brazil.

METHODS

This study has been approved by the Committee for Ethics in Research on Human Beings of Federal University of Espírito Santo (UFES), Brazil under number 183/11. It was carried out from the Telemedicine Center at CassianoAntônio de Moraes University Hospital, supported by the facilities of Telemedicine Center of the State of Espírito Santo and *SESA* - Espírito Santo Department of Health.

Every ACS from the Municipality of Pinheiros (located in the north area of State of Espírito Santo) who did not have any previous experience in health hearing was invited to participate in this study. Only after signing the term Free and Informed Consent, these ACS were included in the casuistry. The sample was made up of the 37 ACS who were present on the days scheduled for training.

Among the sharing media proposed in the project, we chose to use communication technology via Internet, *Adobe® Acrobat® Connect™ Pro Meeting,* a web system which allows interaction between multiple participants through information sharing.

Once the sample was identified, ACS received a registration form containing questions about age, educational background, parenthood data, and professional history as ACS. In order to test knowledge about hearing health, the group answered a brief questionnaire. The ACS also received the supporting course-book, which was specially developed for this training program. Mediation between NUTES/Institution of origin/ IFES and the spot to be trained involved the local Telemedicine chain, social worker, health care unit manager, and computer technician.

In order to carry out the training program, the municipality chosen provided the ACS with a room with computer, internet access, microphone, speakers, webcam, multimedia projector and internet access, as well as a computer technician for support. The instructor, who was in the capital city, also used a computer with internet access, headset and a webcam.

The activity took two hours for the study group, in compliance with the script proposed by the Brazilian Hearing Health Program (PNSA) and its edict no. 587, issued on October 7, 2004, as well as with the published recommendations by the World Health Organization: Introduction to Hearing Anatomy and Physiology, Pregnancy Care, Child and Adolescent Care, Worker Care and Adult Care.

At the end of the training program, we administered a questionnaire containing 8 questions to evaluate the group's experience with the new web conference-based instructional tool for hearing health; their expectations and goals, as well as technical transmission questions to test the tool's reliability (Figure 1).

Federal University of Espírito Santo – UFES, Brazil
UNDERGRADUATE PROGRAM IN SPEECH-LANGUAGE PATHOLOGY

EVALUATION QUESTIONNAIRE

Were the topics studied clear and easily understood?
YES NO PARTIAL

Do you think web conferencing is a useful means to train ACS?
YES NO PARTIAL

Do you think online activities are as satisfactory as in-person classes?
VERY SATISFIED SATISFIED DISSATISFIED

How do you feel about participating in a web conferencing?
COMFORTABLE NOT VERY COMFORTABLE UNCOMFORTABLE

Were your expectations towards the program met?
VERY SATISFIED SATISFIED DISSATISFIED

Regarding sound quality:
VERY SATISFIED SATISFIED DISSATISFIED

Regarding video quality:
VERY SATISFIED SATISFIED DISSATISFIED

What do you think about the training program in health hearing?
VERY SATISFIED SATISFIED DISSATISFIED

From 1 to 10, how important is this course to your professional training?

Figure 1 – Evaluation questionnaire

The first analysis was descriptive to organize the following data: age, history as ACS, and educational background.

In order to assess the tool, the questions were analyzed as per a few methods. First, the Cronbach's Alpha test (1951) was applied, which is a reliability analysis of data. In this test, measurement scales are analyzed and, consequently, their internal consistency, where the items or indices of the scale should measure the same construct and should be highly inter-correlated[8]. Reliability is the degree in which a scale produces the same results[9]. In other words, Cronbach's Alpha evaluates the questionnaire responses and verifies if the instrument is authentic.

For the course assessment questionnaire, the percentages for each question were analyzed.

RESULTS

The descriptive part of the results found in this study is related to the characteristics of each individual. In the beginning of the training program, the ACS received the registration form containing questions asking about data such as name, parentage, educational background, and history as ACS.

The data concerning ACS's educational background are shown in Table 1. One can see that most of them (91.9%) have a high-school degree, 2.7% have incomplete high-school, and 5.4% have incomplete higher education.

As far as age data are concerned, 29.6% of respondents range between 37 and 43 years of age (Table 2). The ACS show long history in this profession, 21.62% have been ACS for 12 to 15 years (Table 3).

Table 1 – Educational background to community agents

	n	%
Complete high-school	34	91.9
Incomplete high-school	1	2.7
Complete higher education	2	5.4
Total	**37**	**100.0**

Table 2 - Age range of community agents

Age	n	%
22 |— 27	3	8.11
27 |— 32	4	10.81
32 |— 37	9	24.32
37 |— 42	6	16.22
42 |— 47	5	13.51
47 |— 52	8	21.62
52 |— 57	1	2.70
57 |— 62	0	0.00
62 |— 67	1	2.70
Total	**37**	**100.00**

Table 3 – Professional history as community agents

Time (years)	n	%
1 |— 3	2	5.41
3 |— 6	6	16.22
6 |— 9	2	5.41
9 |— 12	19	51.35
12 |—| 15	8	21.62
Total	**37**	**100.00**

The results regarding evaluation of the training program are show in the tables below. Table 4 shows 100% acceptance of the topic approached during the program, and 97% reported that it was clear and easily understood and the medium was useful for the training.

When asked to compare online to in-person activities, the data displayed in Table 5 show that a little over 50% of the sample say it is satisfactory; 35% believe it is very satisfactory; and 67% of the community agents feel comfortable (Table 6) participating in a web conference.

Table 7 shows their expectations toward the meeting: most (70%) were pleased. Technical aspects of the transmission were also evaluated. As far as audio is concerned, most (72.97%) of the agents were satisfied, whereas the up to 3/4 of the sample were happy with video quality.

Table 4 – Percentage of answers to questions 1 and 2

Number	Question asked	Yes (%)	No (%)	Partial (%)
1	Were the topics studied clear and easily understood?	100.00	0.00	2.70
2	Do you think web conferencing is a useful means to train ACS?	97.30	2.70	2.70

Table 5 – Percentage of answers to question 3

Number	Question asked	Very satisfied (%)	Little Satisfied (%)	Dissatisfied (%)
3	Do you think online activities are as satisfactory as in-person classes?	35.14	59.46	8.11

Table 6 – Percentage of answers to question 4

Number	Question asked	Comfortable (%)	Not very comfortable (%)	Uncomfortable (%)
4	How do you feel about participating in a web conferencing?	67.57	32.43	0.00

Table 7 – Percentage of answers to questions 5, 6, 7 and 8

Number	Question asked	Very satisfied (%)	Satisfied (%)	Dissatisfied (%)
5	Were your expectations towards the program met?	29.73	70.27	0.00
6	Regarding sound quality	24.32	72.97	2.70
7	Regarding video quality	24.32	75.68	0.00
8	What do you think about the training program in health hearing?	48.65	51.35	0.00

Table 8 shows the average grade ACS attributed to the importance of the training program. When asked if this type of course is important for their training, the agents' grades ranged between 7 and 10. The average grade was 9. Since the standard deviation is small, the sample is homogeneous, that is, most participants attributed grade 9 or close to 9.

Table 9 shows the results of Cronbach's Alpha test to evaluate the answers in the questionnaire. The tested verified goo reliability of the data (0.70 for Cronbach's Alpha is a good umber, since 0.90 is a goal to be achieved[10]). Thus, scale is consistent and it was approved.Therefore, the agent training assessment questionnaire through web conference is reliable.

Table 8 – Percentage of answers to question 9

Number	Question asked	Minimum	Maximum	Average	Standard deviation
9	How important is this course to your professional training?	7	10	9	0.897

Table 9 - Cronbach's Alpha Test

Cronbach's Alpha	Cronbach's Alpha based on standardized items	Number of items
0.801	0.800	8

DISCUSSION

Since 1998, the World Health Organization (WHO) recommends that health community agent (ACS) training for primary care of hearing and hearing disorders be supported by and reference and counter-reference system. However, most PSF professionals do not receive any information about topics such as hearing and hearing disability, which makes it difficult for the ACS[2] to identify these disorders in the population.

As far as profile of study participants is concerned, the fact of living in the community they work, having completed elementary education, and having successfully completed the basic training for community agent are some of the requirements to be hired as ACS[11]. Table 1 shows significant rise in ACS's educational background level, further than necessary. However, they had had no formal education on hearing health.

In tele-education, information should be provided through effective and well-planned strategies. Otherwise, it can be a waste of time for both patient and health professional, because information provided does not mean information internalized[12]. The hearing health training program involves content that allow the Community Health Agent to work not only to promote hearing health, but also identify hearing loss and thus support the family of children diagnosed with hearing disability and help this family join the habilitation/rehabilitation program[13].

There is always concern about the new and comparison to the known. This is no different in health tele-education activities. Some studies show that despite technological advances, it is not yet possible to transmit feelings deriving from the in-person meetings, result of physical contact[14]. Taking into account that for many, this is the training experience mediated by the computer, national studies believe that it takes some time for these participants to understand the importance of the service[15]. However, in this study, most community agents felt comfortable to participate in a web conference.

When asked about their impression of the training program on health hearing, there was almost a draw between satisfied and very satisfied ACS (51 to 48%).International studies[16,17]show that this method is useful and broadly used in health care, which shows participants satisfaction in general terms. In Brazil, a 2010[18] study showed that ACS's opinion about videoconference for health hearing training was welcome and met the Ministry of Health's requirements, which has taken measures to assist Family Health teams to provide full and quality care to the Brazilian population.

The situation in the Brazilian health sector is complex and the use of tools to decrease inequality in the national territory shows an opportunity to increase efficiency of health care services. The moment experienced by Telemedicine in Brazil is historical and its practice grown through different media[19]. Telemedicine means the search for better health care conditions and health promotion to users and training and updating to health professionals[20].

Distance education has a limited range, and it can reach professionals who, for financial reasons, are incapable of leaving their everyday routines or who do not have access to conferences, scientific events

and other sources of information for professional updating. Interactive tele-education can be a means to spread knowledge from big medical research centers and provide those living in remote areas[21] with an opportunity for professional recycling. Thus, training can be provided in a continuous way.

CONCLUSIONS

The study concludes that the web conferencing adopted in the Telemedicine Program was positively evaluated as a tool for Health Hearing primary care training.

RESUMO

Objetivo: avaliar o Programa de Telessaúde Redes como uma estratégia para capacitação em Saúde Auditiva. **Métodos:** a capacitação foi composta por 37 Agentes Comunitários de Saúde que não possuíam experiência prévia em saúde auditiva e em treinamento à distância. As atividades foram organizadas a partir do NUTES/UFES para uma unidade no interior do estado, utilizando o Adobe® Acrobat® Connect™ Pro Meeting sistema que viabiliza interação dos múltiplos participantes por web conferência. **Resultados:** após a capacitação foi apresentado um questionário de 8 perguntas para avaliar a experiência com a nova ferramenta instrucional avaliando sua expectativa e seus objetivos atingidos, assim como questões técnicas de transmissão para testar a confiabilidade da mesma. Cem por cento dos participantes consideraram o tema exposto fácil e compreensível por meio da nova modalidade, 97% apontaram que web conferência é um meio útil para capacitação.Setenta por cento dos entrevistados se sentiram confortáveis ao participarem de uma atividade a distância. Setenta por cento estavam satisfeitos quanto às expectativas que tinham para o encontro, enquanto os outros 30% estavam muito satisfeitos. Cinquenta e um por cento dos participantes sentiram-se satisfeitos com a capacitação no seu aspecto geral, enquanto os outros 49% sentiram-se muito satisfeitos. Com relação à qualidade do áudio e vídeo, 70% demonstraram-se satisfeitos. Quando questionados se este tipo de curso é importante para a sua capacitação, a média das notas foi igual a 9. **Conclusão:** conclui-se que a atividade no Telessaúde foi avaliada positivamente como estratégia para capacitação em Saúde Auditiva na atenção primária.

DESCRITORES: Telessaúde; Agentes Comunitários de Saúde; Capacitação de Recursos Humanos em Saúde; Audiologia

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Mailing Address:
Carmen Barreira-Nielsen
Curso de graduação em Fonoaudiologia
Centro de Ciências da Saúde – Universidade Federal do Espírito Santo – UFES
Avenida Marechal Campos, 1468
Vitória – Espírito Santo – Brasil
CEP: 29043-900
E-mail: carmenbarreira.nielsen@hotmail.com