Five Years of Humanitarian Missions in São Tomé and Príncipe

Cinco Anos de Missões Humanitárias em São Tomé e Príncipe

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ABSTRACT

INTRODUCTION: Since February 2011, a group of otolaryngologists from CUF Infante Santo Hospital, a private healthcare unit in Portugal, invited by a non-governmental organization to provide equipment and properly skilled professionals to help and treat otolaryngology diseases in São Tomé and Príncipe. These missions included surgical procedures, consultation and hearing evaluation.

METHODS: This work is a retrospective chart review of all otolaryngology cases performed during these missions since 2011 to 2016, and what we done during mission.

RESULTS: During these missions, we have found some common pathologies. Deafness is the most prevalent after which follows the lymphoid tissue of oropharynx pathology. On these 18 missions a total of 1057 otolaryngology assessments were conducted. The main surgery was oral cavity with adenoidectomy and tonsillectomy. The results of all audiological tests performed during these 18 missions, reveal an increase of sensorineural deafness.

DISCUSSION: These missions' purpose is to allow healthcare access to all, to identify people with hearing and language problems and to adapt prosthetics, if possible, mainly for children and young adults.

We have witnessed a considerable improvement on the children to whom we have adapted prosthetics. Some of them return to school, have friends and became more social.

As the result of this work, we conclude that all Humanitarian Missions must be adapted to each country's needs as we have done over the past five years.

KEYWORDS: Humanitarian Missions; Otolaryngology; Sensorineural Hearing Loss; São Tomé and Príncipe

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Received/Recebido: 3/01/2016 · Accepted/Aceite: 3/02/2016

RESUMO

INTRODUÇÃO: *Desde fevereiro de 2011, um grupo de Otorrinolaringologistas do Hospital CUF Infante Santo, tem sido convidado, por uma organização não-governamental, para integrar missões humanitárias em São Tomé e Príncipe. Esta equipa médica tem sob a sua responsabilidade a organização e disponibilização dos recursos humanos e dos equipamentos necessários para efetuarem procedimentos cirúrgicos, consultas e rastreios auditivos aos que têm patologias em Otorrinolaringologia.*

MÉTODOS: *Este trabalho resulta de uma revisão retrospetiva de todos os casos de Otorrinolaringologia com que esta equipa contactou, entre 2011 e 2016 durante as missões humanitárias supramencionadas. É também o resultado de todas as atividades que foram desencadeadas no decurso das referidas missões.*

RESULTADOS: *No decurso destas missões encontrámos patologias comuns. Entre as mais recorrentes destacamos os casos de surdez e de patologias dos tecidos linfoides no contexto de uma orofaringe. Em 18 missões foram efetuados 1057 rastreios em Otorrinolaringologia e as principais cirurgias foram efetuadas na cavidade oral com recurso a adenoidectomia e a amigdalectomia. Os resultados de todos os testes conduzidos, durante as 18 missões, revelam um aumento da surdez neurossensorial.*

DISCUSSÃO: *Estas missões pretendem promover o acesso a todos, na medida do possível, aos cuidados de saúde, no contexto da Otorrinolaringologia. Para tal, procede-se à identificação dos que têm problemas auditivos e/ou problemas relacionados com a linguagem. Neste sentido, também procurámos adaptar próteses, quando possível, sobretudo em crianças e jovens adultos. Constatámos um bom desenvolvimento das crianças às quais foi efetuada uma adaptação das próteses existentes. Algumas regressaram à escola, fortaleceram amizades, tornando-se assim mais sociáveis.*

Em última análise, concordamos que as missões humanitárias têm que ser adaptadas às especificidades do país onde decorrem, tal como temos feito nestes últimos cinco anos.

PALAVRAS-CHAVE: *Missões Humanitárias; Otorrinolaringologia; Surdez Neurossensorial; São Tomé e Príncipe*

INTRODUCTION

Since February 2011, a group of otolaryngologists from a private hospital in Portugal - hospital CUF Infante Santo was invited by a NGO to provide equipment and properly skilled professionals to help and treat otolaryngology diseases in São Tomé and Príncipe. These missions included surgical procedures, consultation and hearing evaluation.

São Tomé and Príncipe is an archipelago in western equatorial Africa, near Gabon, Equatorial Guinea, Camaroon and Nigeria. Was discovered by Portuguese explorers in 1470 (João de Santarém and Pero Escobar), who decided that these islands were good locations for bases to trade with the mainland. São Tomé and Príncipe have economic and political autonomy since 1975. The official language is Portuguese.[1]

With a resident population of approximately 187.000 inhabitants, this Country shows a low average age distribution (17-18 years) who have a low socioeconomic power and poor sanitary conditions. Many have also suffered from Malaria, a public health infection.[2-4]

The main hospitals in São Tomé and Príncipe are Hospital Ayres de Menezes in São Tomé city, and Hospital Manuel Quaresma Dias da Graça in Príncipe island.

The IMVF (Institute Marquês of Valle Flôr) is an NGO (Non-Governmental Organization) with the objective of implementing in this country the "Health for All – Medical Specialities", supported by Portuguese Institute to Development Support – Camões Institute and Callouste Gulbenkian Foundation in partnership with the Ministry of Health of São Tomé e Príncipe.

Doctors from the University Clinical Center of Hospital CUF Infante Santo embraced this project, since February of 2011. At the very beginning an Humanitarian Mission in this Country consists of observing patients during a regular consultation, surgery and hearing assessments for one week and then three or four times per year.

The aim was to be part of the project Health for all - Medical Specialities and to implement at São Tomé and Príncipe assessments and surgical interventions. These were our top priority. Due to absence of audiological exams for more than 30 years in these islands, our team also brought them. Thus, this project's global aim was not only to consolidate the Health System by bringing specialized medical care in São Tomé and Príncipe but also to complement its preventive and primary healthcare with specialized assistance for secondary and tertiary care.

FIGURE 1. First mission (February 2011) and five years later (February 2016).

FIGURE 2. Briefing when arrive, before work. (Feb 2011, Feb 2016).

The first team of five arrived on February of 2011: two ENT doctors, two nurses and one clinical audiologist with audiometric equipment and one year after we initiated speech therapy and hearing aids (Fig. 1). Each team of doctors tends to include one or two senior surgeons and one other in acadamic training. Nurses are specialized in ENT operating room.

Before arriving in São Tomé and Príncipe for these missions we were already expecting to find problems related to ear infections, chronic otitis media and conductive hearing loss.

Before going, we need to prepare all equipment and material. For the assessment, audiological evaluation and operating room. Surgical material, supplies and equipment arrived in STP by plane and boat.

Before going to São Tomé we had acquired a microscope with possible connection to a monitor to allow showing and explaining the surgical intervention system, to the local professionals.

As we arrive all mission members plan the activities for the week (Fig. 2).

The hospital has 2 operating rooms for the whole country. These are spacious, each has a large window and air conditioning (Fig. 3). Yet, the lack of reliable electricity and water supply compromises the proper delivery of oxygen and suction as well as cleanliness. The sterilization equipment is quite basic and it results on the instruments gradual degradation. Besides, dressings are often washed and reused.

The post-surgical recovery area is located on the hall right outside the operating room and has no nursing staff.

FIGURE 3. Operating room – Hospital Ayres de Menezes.

TABLE 1. Common pathologies found during missions.

ENT Assessment	Audiology	Operating Room
Chronic adenoiditis and tonsillitis	**Sensorineural Hearing Loss (NSHL) severe to profound**	**Adenoidectomy**
Simple chronic middle ear disease and Cholesteatoma	Cofosis	**Tonsillectomy**
Otosclerosis	Children and adults without oral language	Ear surgery
Thyroglossal duct cyst		Head and neck surgery
Branchial cyst and fistula		Biopsies
Tumors		

Otolaryngology assessments are held in a pavilion at Ayres de Menezes Hospital which shares a physical space with ophtalmology. All assessments take place on the arrival day and on the following 3 afternoons.

METHODS

This work is a retrospective chart review of all otolaryngology cases observed during these missions, which occurred from 2011 until 2016. It also includes all activities and actions taken in this context.

RESULTS

During these missions, we have found some common pathologies (Table 1).

Deafness is the most prevalent pathology followed by the lymphoid tissue of oropharynx.

After the first mission, we found that we needed to change our organization, because we found a high prevalence of sensorineural hearing loss. So, we needed to acquire auditory brainstem response to assess what we could not with pure tone audiogram.

The need for fitting hearing aids, also required speech therapy, to improve hearing and oral language. In some cases, it was impossible to acquire oral language and lead the necessity to develop a language for communication - sign language.

The mission grew after 1 year with one more audiologist for hearing aids and a speech therapist. After one year, a teacher of sign language has been associated to help them creating this language.

In these 18 missions 1057 otolaryngology assessments were conducted. Patients were referred for consultation by radio or television (Fig. 4).

Operating room activities are performed on the five working days during the morning and are always prepared one day in advance. Before surgery and early in the morning, all patients were placed in a room next to the operating room for preparation - veins were channeled (Fig. 5). All men and women, children and adults wait all morning for it.

Only sixteen of eighteen missions were surgical and during all missions we made 465 surgical procedures (Fig 6). Surgery of the lymphoid tissue and less complex surgery is done which allows larger number of patients. The main surgery is oral cavity with adenoidectomy and tonsillectomy. Here we have also chronic otitis media surgery and otosclerosis surgery. The rhinologic surgery is mainly chronic rhinosinusitis with polyps, rhinitis and masses. The cervical surgery consists in glands surgery and brachial masses.

After the mission all patients are re-observed by a local otolaryngology doctor who is on a temporary assignment and not a native of São Tomé and Príncipe.

FIGURE 4. Patients are referred for consultation by radio or television.

FIGURE 5. Before surgery early in the morning all patients are placed in a room next to the operating room and are all prepared for surgery - veins are channeled.

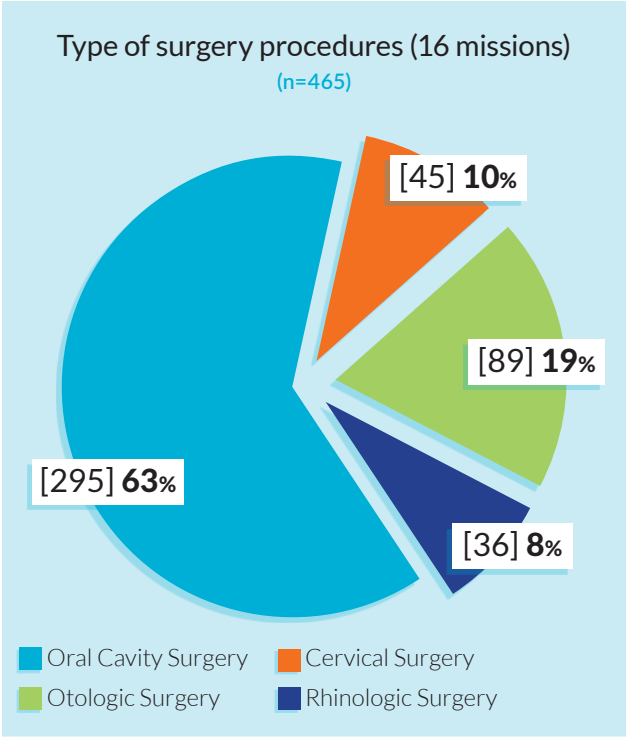

FIGURE 6. Surgical statistic in 18 missions (16 surgical missions).

FIGURE 7. Hearing tests are performed in an isolated room, to minimize noise as much as possible.

We have found a high prevalence of sensorineural hearing loss so we have started audiology assessments on the fourth mission. Since then we are completing a survey to identify risk factors, personal history and record all examinations.

Exactly 1377 audiology assessments were held and included either a tonal audiogram or auditory brainstem response (ABR), in compliance with each individual in a total of 2073 exams (1705 assessments made by tonal audiogram and 368 made by ABR).

Assessments were recorded for each ear. In some cases, only one ear was evaluated, because they have abundant purulent otorrhea.

Hearing tests are performed in an isolated room. This is a closed room with no fan or air conditioning (Fig. 7). This is to minimize noise as much as possible.

The results of all audiological tests performed during these 18 missions, reveal an increase of sensorineural deafness, instead a high prevalence of conductive or mixed hearing loss as we expected (Fig. 8). More than 50% of all ears have from slight to profound deafness, according to the classification adopted by the World Health Organization (Fig. 9). Seeing that normal hearing is 25dB or better.[5]

According to our results we structured the intervention to promote communication and integration of these individuals, adapting earing aids, if possible, and trying to acquire oral language. If we could not have oral language, we send to sign language (Fig. 10).

Since February 2012, seventy-eight hearing aids were adapted (Fig. 11). These prosthetics were offered to children and young adults in STP, especially for those who are working or studying.

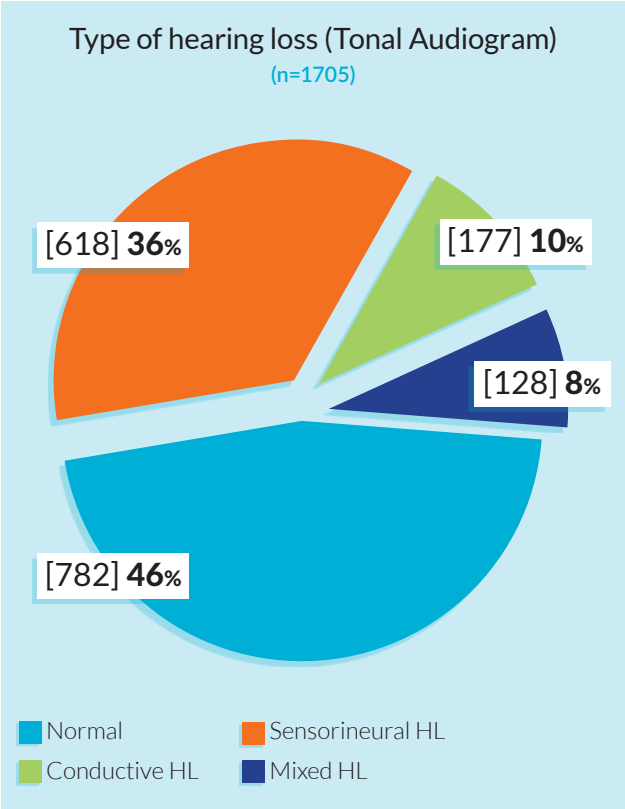

FIGURE 8. Type of hearing loss obtained during 18 missions.

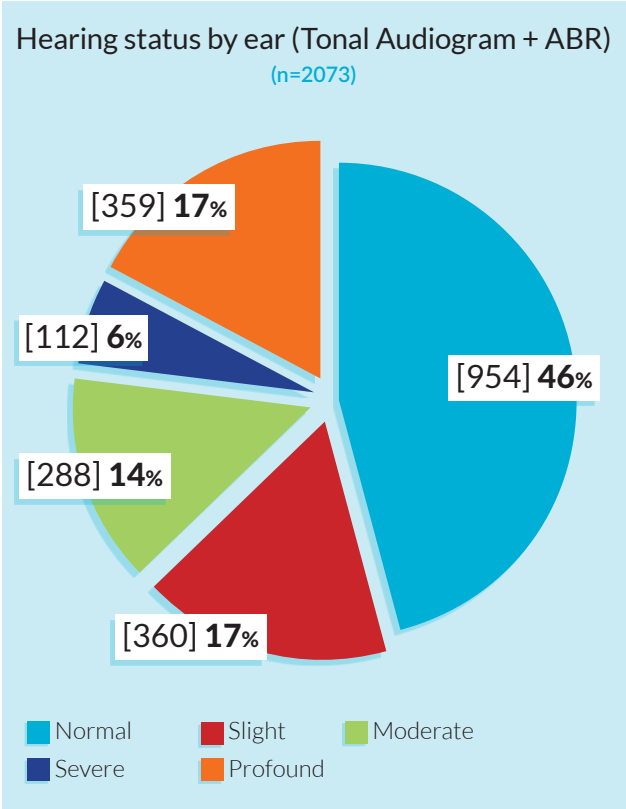

FIGURE 9. Hearing status by ear analyzed during 18 missions.

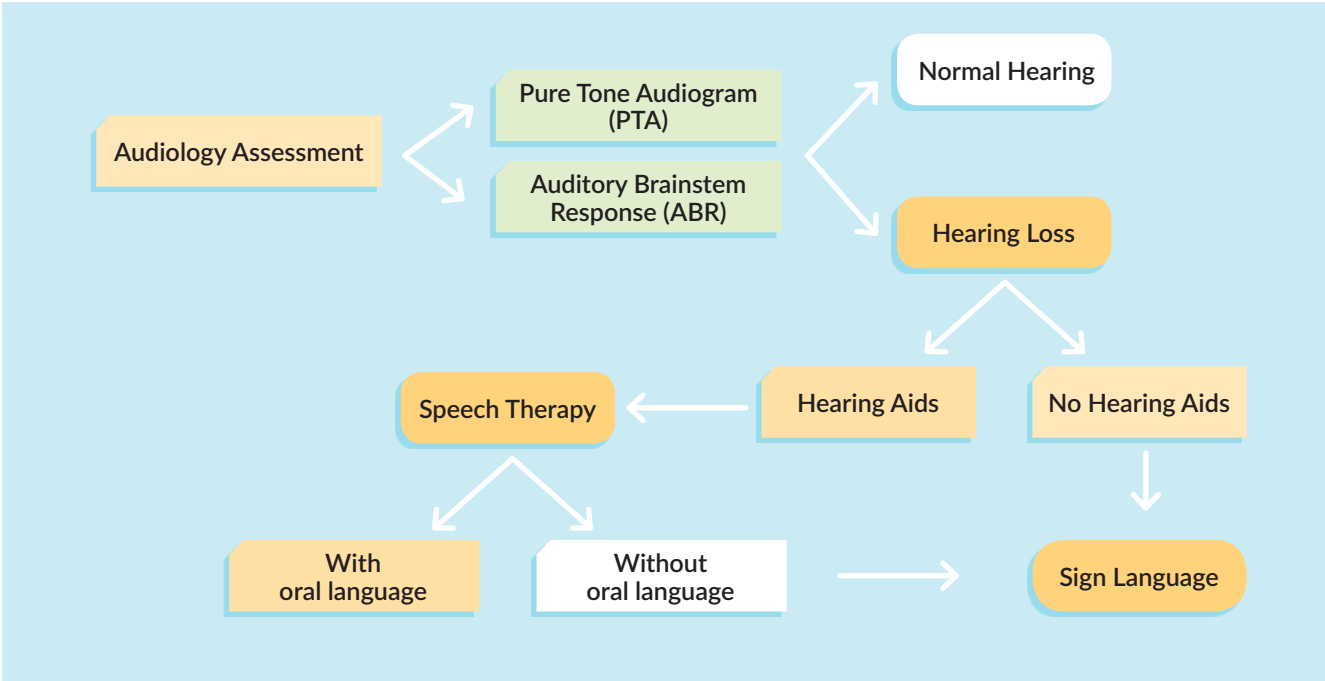

FIGURE 10. Scheme of actuation during the Missions.

In speech therapy we try to have a caretaker present (Fig. 12). These sessions are also important for training the caretaker. For the rest of the year he will be responsible to carry on the work with the children. Some acquired oral language and others did not.

This project leads us to fulfill the need for sign language by creating a sign language alphabet, started in February 2013. The sign language dictionary was created to widely spread the São Tome e Príncipe sign language (Fig. 13).

Since November 2014 we had started neonatal hearing screening in Hospital Ayres de Menezes and in February 2015 in Hospital Manuel Quaresma Dias da Graça (Fig. 14), with an actuation protocol (Fig. 15).

FIGURE 11. Hearing aids adapted in children and young adults that are studying or working. This is a photo of a child in the left on February 2012, when adapted to hearing aids and in the right in last mission (February 2016).

FIGURE 12. In speech therapy we try to have a caretaker present.

FIGURE 13. This project leads us to fulfill the need for sign language by creating a sign language alphabet. The sign language dictionary was created to widely spread the São Tomé e Príncipe sign language.

DISCUSSION

São Tomé and Príncipe is a small country in extreme need. They have limited access to surgical expertise, otolaryngology and audiology evaluation.

These humanitarian missions try to make healthcare accessible to all as well as to identify people with earing and language problems so prosthetics can be adapted, if possible, mainly for children and young adults.

We mainly perform surgical procedures for the lymphoid tissue as we try to treat the vast majority of citizens.

By analyzing Chadwick J *et al* paper, we have the advantage that an otolaryngologist lives in that country. This allows some surgeries that we couldn't do if a colleague wasn't available to take care of patients for the post-surgical time. Yet for any doubt he has our contact to ask for help.[6]

From our experience we agree that we are often unable to make the follow-up of a ear surgery as most patients do not return for the post-surgery follow-up. According to Horlbeck G *et al*, they got good results related with otology surgery but that is based on the follow-up of 64% of cases only. [7]

The most complex cases we must evacuate to Portugal.

We have noticed a positive development in children to whom we have adapted their prosthetics. Some of them returned to school, have friends and became more social.

During the missions, clinical sessions were held, addressing the results of previous missions and clinical topics.

FIGURE 14. Neonatal hearing screening in Hospital Ayres de Menezes.

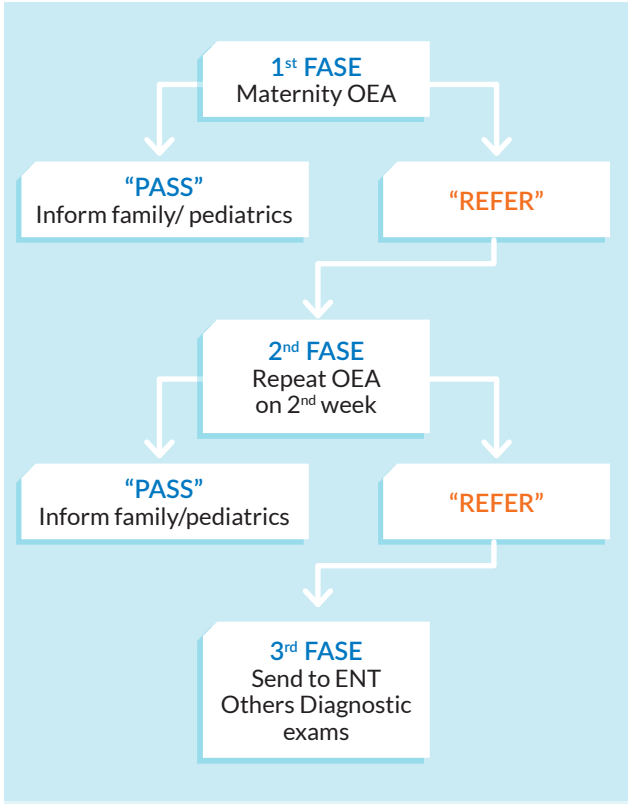

FIGURE 15. Protocol for neonatal hearing screening in São Tomé and Príncipe.

There are otolaryngology conditions that other doctors and health personnel can learn to take care of. That was for that reason, that we started the ENT seminars. First ENT seminar was about ear pathology, second on nasal and oropharynx pathology, third on larynx and cervical pathology and the last on urgent pathology (Fig. 16).

These Missions are projected for otolaryngology and audiology assessment, surgical procedures, speech therapy, ear rehabilitation and finally sign language. We form a multidisciplinary team.

During these years an investigational project is running to determine why they have a high prevalence of sensorineural hearing loss.

CONCLUSIONS

For five years we have carried hope for the people of São Tomé and Príncipe. Yet it is necessary to continue our commitment with these friendly and welcoming people. In order to prevent social problems it is important to secure the hearing screening of newborns so hearing loss is identified as soon as possible and sign language is implemented in time. Furthermore, surgical procedures, during humanitarian missions promote best comfort to patients who have their families near them while providing a reduced economic cost.

ACKNOWLEDGEMENT

We would like to thank Instituto Marquês de Valle Flôr (IMVF), Hospital CUF Infante Santo, Instituto Camões, Fundação Calouste Gulbenkian, and Governo de São Tomé e Príncipe.

These missions wouldn't be possible if we hadn't worked as a team. Thus we would like to thank all who have worked with us in the course of these missions.

Medical Doctors: Catarina Tinoco, Diogo Oliveira Carmo, Inês Cunha, Inês Moreira, João Bacelar, João Subtil, João Vieira de Almeida, Margarida Branco, Maria Manuel Henriques, Paula Campelo, Sílvia Pereira;

Nurses: Andreia Torrão, Barbara Carvalheda, Carla Ramalho, Cláudia Guiomar, Isabel Aragoa, Isabel Beirão, Elsa Mota, Madalena Januário, Paula Afonso, Patrícia Neves, Sandra Paço, Sara Simas;

Audiologists: Adriana Amarante, Cláudia Sobral, Cláudia Sofia Silva, Daniela Batista, Diogo Ribeiro, Nadine Martins, Vera Lourenço, Tania Martins, Sandy Batista, Wendy Lopes;

Speech Therapists: Ana Mafalda Almeida, Tânia Constantino.

CONFLICTS OF INTEREST: The authors have no conflicts of interest to declare.

FINANCING SUPPORT: This work has not received any contribution, grant or scholarship.

CONFIDENTIALITY OF DATA: The authors declare that they have followed the protocols of their work center on the publication of patient data.

PROTECTION OF HUMAN AND ANIMAL SUBJECTS: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

FIGURE 16. Seminars presented during this five years of missions.

CONFLITOS DE INTERESSE: Os autores declaram a inexistência de conflitos de interesse na realização do trabalho.

FONTES DE FINANCIAMENTO: Não existiram fontes externas de financiamento para a realização deste artigo.

PROTEÇÃO DE PESSOAS E ANIMAIS: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

CONFIDENCIALIDADE DOS DADOS: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

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