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Speech, Language and Hearing Sciences teleconsultations in a large public telehealth service

Teleconsultorias de fonoaudiologia em um serviço público de telessaúde de larga escala

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ABSTRACT

Purpose: to analyze the profile of Speech, Language and Hearing Sciences teleconsultations of a large scale public telehealth service in Minas Gerais, Brazil.

Methods: all Speech-Language Pathology teleconsultations performed from February 2011 to May 2014 were assessed and classified according to the type of questions, professional who sent the solicitation and the speech-language pathologist area of expertise.

Results: the 259 teleconsultations performed during the study period were originated from 81 cities. The majority of the solicitations were originated from speech-language pathologists (64.5%), followed by nurses (27.0%) and physicians (5.0%), and were related to patients' assistance (81%). Among these, 35% were about diagnosis and 65% about discussion of procedures and therapeutic approaches. There was no difference with regards to the type of solicitation and healthcare practitioner, whether speech-language pathologist or not (65.7% vs. 64.9%, p=1.00). The majority of the questions were about language (47%), followed by oral motor functions (29%), voice (20%), audiology (18%), dysphagia (10%) and public health (3%).

Conclusion: in this study, the majority of the solicitations to a Speech, Language and Hearing Sciences teleconsultation service were about language, although there was demand for all fields. Although the use of teleconsultations in Speech-Language Pathology, is still in its early stages there is great potential for using this tool in clinical practice.

Keywords: Speech, Language and Hearing Sciences; Telemedicine; Health Informatics; Public Health; Primary Health Care

RESUMO

Objetivo: analisar o perfil das teleconsultorias de fonoaudiologia realizadas em serviço público de telessaúde de larga escala em Minas Gerais.

Métodos: foram analisadas todas as teleconsultorias consecutivas de fonoaudiologia realizadas de fevereiro de 2011 a maio de 2014. As teleconsultorias foram agrupadas de acordo com tipo de dúvida, profissional solicitante e área de atuação fonoaudiológica.

Resultados: as 259 teleconsultorias realizadas no período do estudo foram originadas de 81 municípios. A maior demanda de teleconsultorias foi dos próprios fonoaudiólogos (64,5%), seguidos de enfermeiros (27,0%) e médicos (5,0%). A maior parte das dúvidas eram assistenciais (81%), sendo que, destas, 35% eram para auxílio na definição diagnóstica e 65% para discussão de procedimentos e sugestão de condutas terapêuticas. Esta proporção foi semelhante, independente da formação do profissional solicitante: fonoaudiólogo e não fonoaudiólogo (65,7% vs. 64,9%, p=1,00). A maioria das dúvidas estava relacionada à área da linguagem (47%) e à motricidade oral (29%), seguidas de voz (20%), audiologia (18%), disfagia (10%) e saúde pública (3%).

Conclusão: neste estudo, foi observado que a maioria das dúvidas para o serviço de teleconsultorias em fonoaudiologia estavam relacionadas à área da linguagem, mas há demanda em todas as áreas de abrangência da profissão. Embora o uso da teleconsultoria em fonoaudiologia seja ainda incipiente, observa-se grande potencial de utilização deste instrumento na prática clínica.

Descritores: Fonoaudiologia; Telemedicina; Informática em Saúde; Saúde Pública; Atenção Primária à Saúde

INTRODUCTION

The practice of an speech-language pathologists and audiologists requires a broad and generalist approach, as the professional has to design actions which identify the most relevant intervention issues in his/her community. Amongst people looking for help in the public health system, there is a high incidence rate of communication, hearing and swallowing disorders. This reinforces the need to structure support according to this specific and current demand. In order for that to happen, the service needs to be adapted and adaptable to make it effective and equitable[1]. Telehealth has emerged through the development of communication technologies and offers possible solutions to these challenges. Experiences with telehealth have been developing in a quick and increasing manner, widespread in many countries, going beyond the scope of videoconferences. Several tools have been utilized, such as teleconsultations, telediagnosis and telemonitoring[2,3].

In Brazil, Telehealth was implemented in the public health system with the aim to offer support, through information and communication technologies, to primary care practitioners of remote municipalities, and, therefore, qualify and increase response efficiency and strengthen the Family Health Strategy (*Estratégia de Saúde da Família*). It is an alternative that offers strategic actions to all levels of healthcare, facilitating people's access to qualified specialized services and reducing professional isolation. The Brazilian Telehealth Network Program (*Programa de Telessaúde Brasil Redes*) aims to increase the quality of service and of primary care within the Brazilian National Health System (*Sistema Único de Saúde - SUS*), bringing learning and service together through information technologies that provide the conditions for teleconsultations and tele-education[5]. These practices offer healthcare resources to a larger number of people, contributing to higher equality amongst the population and better quality, access and efficiency of services[2,3].

Teleconsultations are one of the many tools of telehealth, defined as the sharing of information amongst healthcare practitioners with a need to discuss a clinical case or get a second opinion, or when there is the need for a particular expertise not available at their location[6]. Teleconsultations allow for actions to be taken regardless of geographic and time distance. They can be synchronous (connection in real time) or asynchronous (distant communication not in real time), reinforcing the right of every citizen to have high quality health services[7].

In the area of Speech, Language and Hearing Sciences, Telehealth has contributed to facilitating rural and remote area that patients access to quality diagnostic and therapy services, at lower costs. In 2004, one of the first web based tools for diagnosis, treatment and long distance education in the speech and audiology therapy field was described. This system allowed speech language pathologist and audiologist to research the appropriate treatment for each patient, besides offering information on speech-language and audiology pathologies[8,9].

The usage of telehealth in Speech, Language and Hearing Sciences in Brazil was regulated by the Federal Speech, Language and Hearing Sciences Council (*Conselho Federal de Fonoaudiologia*), through their Resolution 427, March 1st, 2013, which determines its directives. The resolution specifies that speech therapy can make use of several telehealth tools in delivering services, such as: (i) teleconsultations, "registered communication exchange amongst professionals, managers and other people interested in the health and education fields, with the goal of clarifying questions on clinical procedures, health actions and issues related to work processes"[10]; (ii) teleconsultation, "clinical consultation registered and conducted by professional services at a distance"[10] (it can involve a speech language pathologist and audiologist by linking clinician to client/patient; clinician to clinician for assessment, intervention, and/or consultation or professional of other expertise and the speech language pathologist and audiologist); (iii) telediagnostics, defined as "registered usage of technological resources to allow (online) services that support diagnostics"[10]; (iv) telemonitoring, which includes following over distance a patient previously seen in person; and (v) a second opinion, "a systematized response, based on bibliographic reviews and clinic-scientific evidences, demanded after questions on teleconsultations" [3,10].

In the field of Speech, Language and Hearing Sciences (SLP), regarding primary care, telehealth has allowed training in hearing care for community health workers in order to develop actions of promotion and protection of hearing care to pregnant women, adults, children, adolescents and workers[11]. Teleaudiology has shown to be a promising area for adapting prostheses and supporting users of cochlear implant. A study describes the case of a distance adaptation between two Brazilian municipalities, showing that internet based

long distance adaptations can bring more efficiency to this service and increase chances of acceptance by the SUS patient[12].

When caring for patients using tools in the health field, it is crucial to respect secrecy, confidentiality and privacy of the information gathered[13]. The ordinance 2546/2011, from the Brazilian Health Ministry, which redefines and expands the Brazil Telehealth Program, is not clear about the requirements related to a patient consent form[14], but professional institutions recommend that teleconsultation services establish and keep safety norms to protect patient's confidentiality. The Resolution from the Brazilian Federal Medical Council[15], which follows the guidelines of the Tel Aviv Declaration, states that "information about a patient can only be passed on to another professional with the previous permission of the patient, through his/her free informed consent", which is also in agreement with the Resolution 427/2013 (art.8º) from the Brazilian Federal Speech, Language and Hearing Sciences Council. To ensure the privacy and confidentiality of patient's data and professional confidentiality, the information system must have strict access mechanisms, limited to user profiles, according to their role in the caring process[13].

In Minas Gerais, the Telehealth Network of Minas Gerais (TNMG) is a public telehealth service created in 2005 as part of the Brazilian Telehealth Network Program, following its goals. It receives funding from the Brazilian Department of Health, the Minas Gerais Health Department and the Municipality of Belo Horizonte to perform the telehealth activities in 750 of the 853 municipalities of the state[2]. The aim of RTMG is to provide quality services at a low cost, enabling the reduction of spending on referral of patients for care in larger reference towns. Professionals from different fields of healthcare are offered the opportunity to use the teleconsultation platform RTMG to share and discuss their difficulties. The field of Speech, Language and Hearing Sciences has been using the teleconsultation platform since 2011.

Santos and colleagues, in a study that investigated the distribution of speech-language pathologist and audiologists in the state of Minas Gerais and its insertion in SUS, found the presence of 1,733 professionals working in the state in February 2009, with 67.8% of them working for SUS. Of the 853 municipalities of Minas Gerais, 505 (59%) did not have a professional in the period that the study was carried out[16]. Given the shortage of speech-language pathologist and audiologists in primary care in Minas Gerais and given that teleconsulting in Speech, Language and Hearing Sciences can be a tool for extending assistance to the population, this study was developed in order to describe the profile of teleconsultation in Speech, Language and Hearing Sciences performed by the TNMG.

METHODS

This research is included in the research project 396/09, approved by the Ethics Committee of the Universidade Federal de Minas Gerais.

Case study

It is a descriptive, observational study. The study included all consecutive Speech, Language and Hearing Sciences teleconsultations carried out by TNMG. The data refers to the period of February 2011 to May 2014. At the time, TNMG looked after primary care for 668 municipalities in the state of Minas Gerais. Some teleconsultations were excluded from the study, such as teleconsultations with incomplete data for the study (eg lack of a particular question or blank fields in the system), repeated in the system, those who reported only to thank the service and those that were not specific to the knowledge area of Speech, Language and Hearing Sciences and those characterized as tele-appointments.

TNMG's teleconsultation system is a proprietary system, accessed by individual login and password, with encrypted content, ensuring the security and confidentiality of data, as recommended by the councils that govern professional practice in telehealth. The teleconsultations are performed offline (asynchronously), answered within 48 hours from the request at the website www.telessaude.hc.ufmg.br by a professional from the requested area. The network has professionals in 47 healthcare specialties[17].

As for the ethical aspects, TNMG, including its teleconsulting actions in speech-language pathology, requires secrecy and responsibility of its professionals, regarding the processing of data. At the initial point of registration to use TNMG services, professionals are trained on how to use the platform. Part of the training is to inform them on ethical aspects. Patients' clinical data of should be dealt with under ethical care determined by Resolution 427 of 1st March 2013, Article 8, which guarantees that "information concerning patients can only be transferred to another professional with prior approval of the patient or his/her legal

representative, under safety standards that ensure the confidentiality and integrity of information"; and Article 11, which stipulates that "the exercise of telehealth by a speech-language pathologist and audiologist registered in Brazil, provided to patients or professionals outside the country, must obligatorily comply with the legal and ethical principles of the profession, established in Brazilian legislation, in addition to international rules and agreements for professional distance relationship"[10].

The teleconsultations directed at Speech, Language and Hearing Sciences are answered by a single professional experienced in teaching and assistance. For soliciting and using the system, municipalities and applicant professionals make a pre-registration, which is validated in the National Register of Health Establishments (*Cadastro Nacional de Estabelecimentos de Saúde* - CNES). After this registration, they are trained in how to use the platform, as mentioned above. When they send their query, they are required to complete four fields: (1) general data (patient's name, mother's name, gender and date of birth), (2) specialty requested (3) focus of the inquiry (promotion of health and disease prevention, diagnosis, prognosis or monitoring plan and treatment), (4) question (including a list of problems presented by the patient, use of medications, test results already ordered and issue which motivated the requested teleconsultation).

Although teleconsultation is accepted by the resolution 427/2013 of the Brazilian Federal Speech, Language and Hearing Sciences Council, the service offered by RTMG follows the approach suggested by the Telehealth Manual for Primary Care / Response Protocol to teleconsultation/2013 which limits the on call interactions between a health professional and a patient in Brazil[10,14].

Procedures

In this study, consecutive teleconsultations directed at the field of Speech, Language and Hearing Sciences were included. Repeated and incomplete teleconsultation were excluded, as well as tele-appointments. The teleconsultations were classified by a single appraiser, according to: category of the professional requesting it, municipality, type of question and the expertise of the professional. Regarding the type of inquiry, they were classified as: (1) Educational, when there is a request for some kind of theoretical information, suggested references, exchanges of experience or general information on Speech, Language and Hearing Sciences; or (2) Care, when the question relates to the care of a specific clinical case. In respect to the field of Speech, Language and Hearing Sciences, they were classified as: dysphagia, language, audiology, orofacial motor skills, speech, public health and educational speech therapy. The same teleconsultation may involve more than one area.

Statistical analysis

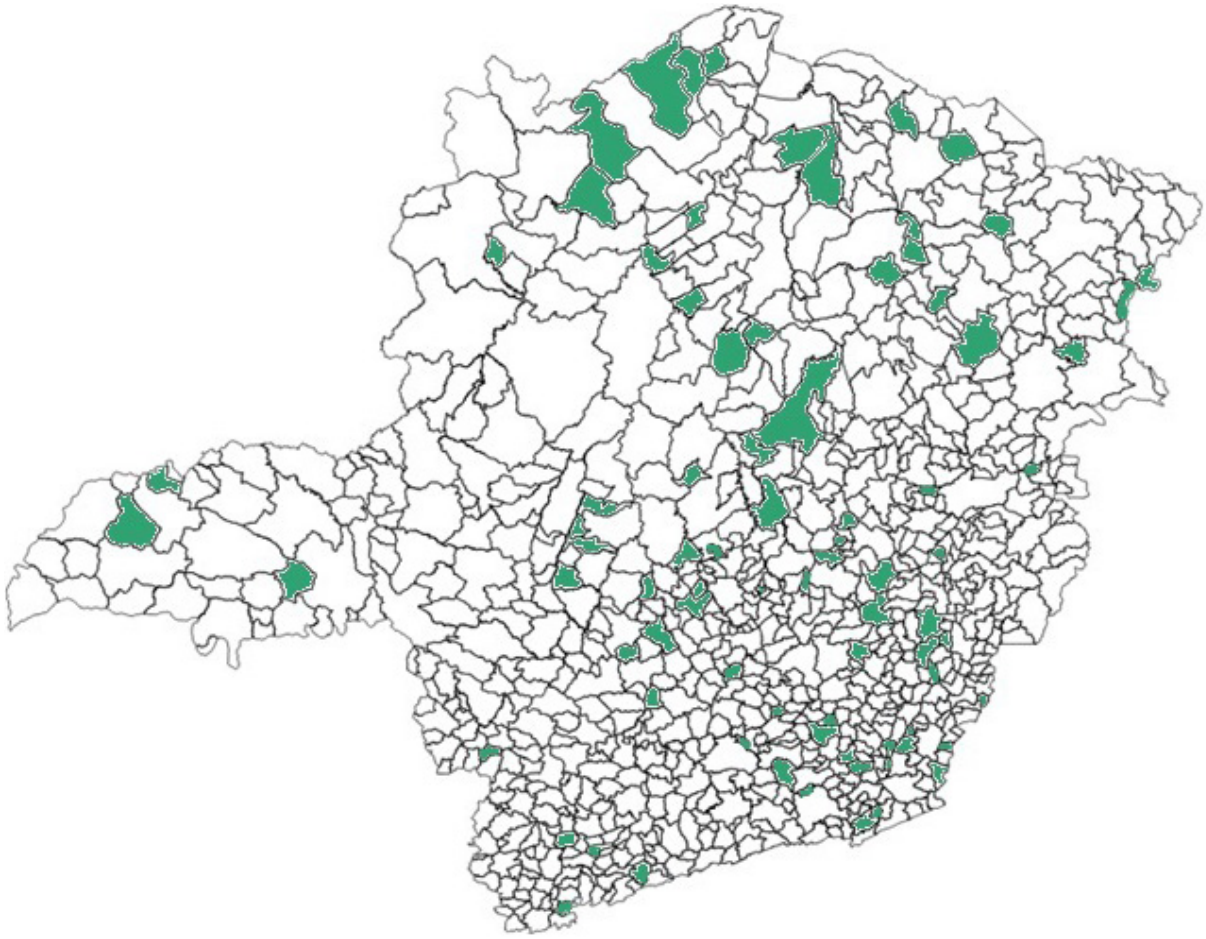
The search database has been organized in Microsoft Office 2007 Excel spreadsheet and statistical analyses were performed using SPSS software, version 20.0. Categorical variables were described as absolute number and/or percentage. The chi-square test was used to evaluate the difference in the proportion of the types of questions among the professional categories (speech-language pathologist and speech-language pathologist and audiologist vs. non-speech-language pathologist and speech-language pathologist and audiologist). The significance level was 0.05.

RESULTS

During the period of the study, there were 42,256 teleconsultations in all specialties at TNMG, and 321 (0.8%) in Speech, Language and Hearing Sciences. Of these, 62 (19.3%) were excluded for the following reasons: 43 were repeated in the system, 13 showed no question (referring only to thanks or were blank); 2 were incomplete; 1 was not specific to Speech Language Pathology and Audiology and 3 of these were tele-appointments.

The 259 teleconsultations included in the study were originated from 81 municipalities, representing 12.1% of the municipalities served by TNMG. Most municipalities that requested teleconsultations belong to the northern macro-region of Minas Gerais (Figure 1). The greatest demand came from teleconsultations from speech-language pathologist and audiologists (64.5%), followed by nurses (27.0%), doctors (5.0%), and other professionals (3.5%): dentists (3), psychologists (3), physical therapists (2) and a chemist (1).

Most questions were healthcare related (81%). Of these, 65% were for clarification of therapeutic procedures and 35% for diagnosis definition. There was no difference in the proportion of healthcare questions (81.4% vs. 80.4%, $p = 0.86$) or in the number of questions for therapeutic clarification (65.7% vs. 64.9%, $p = 1, 00$) between professional speech-language



Source: IBGE website, 2014 (modified)

Figure 1. Municipalities that solicited teleconsultations over the course of the study

pathologist and speech-language pathologist and audiologists or non-professionals.

The requests were mostly related to the area of language (47.1%) and oral motor skills (29.3%), followed by voice (20.1%), audiology (18.1%), dysphagia (10, 0%), health (3.1%) and only 1.5% were on educational speech therapy. It is important to mention that 29.1% of the teleconsultations covered more than one area of Speech, Language and Hearing Sciences.

DISCUSSION

The results show that most professionals, speech-language pathologist and audiologists and non-speech-language pathologist and audiologists, asked for teleconsultations related to compliance with clinical cases, and that there is demand for all areas of Speech, Language and Hearing Sciences. Questions in the fields of language and oral motor skills were predominant (47.1% and 29.3%, respectively). Due to the fact that is an early and exploratory study, detailed data on the population (child, adult or elderly) and the specificities of each field were not analyzed.

This is a pioneering study, and no original study to examine the proportion of teleconsultations by area of expertise in Speech, Language and Hearing Sciences was found. Spinardi and collaborators, in a systematic review of Speech, Language and Hearing Sciences studies and telehealth, evaluated the proportion of studies published up to 2009 compared to areas of Speech-Language Pathology. Among the 25 studies included (23 international and 2 national studies), the most discussed topics were hearing (34%), followed by language (19%) and speech (12%)[9].

Although it is not the subject of this study, previous studies[8,9] found that the use of telehealth in Speech, Language and Hearing Sciences enables patients in rural and remote areas to access diagnostic services and quality care, with a significant reduction of costs. Most municipalities that requested teleconsultations

belong to the northern macro-region of the state, the region with a human development index similar to the poorest states in the Northeast of the country[18], few resources in the area of occupational health and with limited access to continuing educational strategies.

A recent study shows the central and southern regions of the state as those who have the greatest range of services and professionals[19]. These regions have the highest rates of literacy and per capita income of the state, improving the chances of integration of new professionals, especially speech-language pathologist and audiologists in the SUS. In the north and northwest regions of the state, a growth in the number of Speech, Language and Hearing Sciences professionals was also experienced. In the northern region there were 52 speech-language pathologist and audiologists in 2005 and 100 in 2010 (increase of 92%); in the Northwest Region, 37 speech-language pathologist and audiologists in 2005 and 44 in 2010 (19% increase). When compared to other macro-regions, the number of professionals is still very low showing a large disparity between the regions[19]. In the case of an extensive state (586,522,122 km^2, IBGE) with an estimated population of 20,743,097 people distributed in 853 municipalities, teleconsultation allows for a better quality patient care in places where there are not enough services and promotes training and updating of professionals, decreasing the heterogeneity of conduct[8,9].

This study encourages us to think about the importance of drawing a profile of professional users of the teleconsultation services of TNMG, which would provide information to reflect on the professional motivation to seek the service and the conditions of access. At the same time, one should reflect on the characteristics that make up the profile of professionals that act as teleconsultants. Whereas teleconsultations aim to answer questions about clinical procedures, health actions and issues related to the work process[10], this professional should have an academic background and work experience that will enable him/her to perform the role of teleconsultant. The need for quality training and a broad generalist approach are obvious, but other issues involving ethics and care should be considered as required characteristics of a teleconsultant speech-language pathologist and speech-language pathologist and audiologist. This is a difficult issue because, although Telehealth and other services provided at a distance are already part of the Speech, Language and Hearing Sciences scenario, undergraduate courses do not include related content in their curricula, so that an egress professional who wants to work in telehealth has to seek learning in the practice itself. The growth of telehealth in Speech, Language and Hearing Sciences requires the inclusion of the subject on undergraduate and graduate programs.

The literature shows few studies[20,21] that address the speech-language pathologist and audiologist profile, either with respect to the labor market, or regarding the fields of work. However, as these studies are regionalized, several regions of Brazil remain without any evaluation[20]. In the state of Minas Gerais, there is only one study on graduates in Speech, Language and Hearing Sciences from our public University, which reported that most professionals working in the field (44.8%), work autonomously. The other forms cited by graduates were: privately employed (26.9%); working for the municipal civil service (16.4%); service providers (14.9%); voluntary workers (4.5%) and working for the state civil service (3.0%)[21]. This data helps us understand the profile of the professional who seeks the support of teleconsultation services. Professionals in the public service are exposed to a large and complex demand for treatment because of its diversity, which requires a continuous process of professional development and new methods, innovative techniques and a multidisciplinary approach, leading them to seek the support and resources provided by teleconsultations.

Considering the total of teleconsultations with TNMG, the number of teleconsultations in Speech, Language and Hearing Sciences (0.8%) is not considered expressive. Possible hypotheses that may be suggested include failure to disclose the existence of teleconsultation in the municipalities; the lack of content on this approach at undergraduate and graduate courses, as it is not part of the curriculum guidelines; and even a lack of knowledge on the part of other professionals on the role of speech-language pathologist and audiologists on primary care. Thus, it is imperative to explain and publicize teleconsultation services among the primary care professionals with more direct action. For example, to make telephone contact with the municipalities non-users to publicize the existence of the specialty, to provide articles on the website on the practice of Speech, Language and Hearing Sciences and to offer online course. The methodology used to implement the service in the municipalities also deserves a review, since currently it is the local manager who chooses the professionals to be trained on how to use the system, with the vast majority of participants being doctors or nurses. A

larger percentage of speech-language pathologist and audiologists in this training could contribute to increased use by these professionals.

In this study, it was observed that the professionals requested more teleconsultations for intervention than diagnosis. The role of Speech, Language and Hearing Sciences in the Health System is new and faces adversities, such as the lack of training for acting on primary care, lack of knowledge by SUS on the possibilities of speech-language pathologist and audiologist's actions in this context, in addition to a repressed demand for Speech, Language and Hearing Sciences, which led to the choice of focusing on clinical intervention at the basic level of healthcare services[22]. This fact may explain the high proportion of teleconsultations to resolve doubts about interventions. The professional is turning to teleconsultation services for updating and training in new techniques of intervention, through a process of lifelong learning, one of the goals of the Brazilian Telehealth Network Program, in which the teleconsultation service analyzed in this study takes part[5].

The study shows that teleconsultations came from professionals in the field of Speech, Language and Hearing Sciences of several municipalities of Minas Gerais and also other healthcare professionals seeking the opinion of an expert to better conduct specific cases at each healthcare unit. Acting in primary care requires, in addition to a general approach, skills that address the broad and complex range of demands of an impoverished population. One of the basic assumptions of the Unified Health System (SUS) is the one of universal care, leading to a need for disseminated knowledge. Professionals are driven to be interested in or take ownership of other specialty content. This universalization of knowledge, as well as the principles of integrality, equity and social inclusion, leads the professional to an increasing demand for updating his/her knowledge of healthcare, keeping an eye on the emergence of new diagnosis and intervention techniques[23].

The results showed no difference between the type of care questions (diagnosis and intervention) between speech-language pathologist and audiologists and professionals from different specialties. This suggests that they are aware and informed of the communication disorders and their impact on the quality of life of individuals. On the other hand, considering that Speech, Language and Hearing Sciences interventions are restricted to this profession, there is a risk of offering tools of treatment to a professional from another specialty. Therefore, questions about intervention were always accompanied by a comment in order to make the professional understand that teleconsultations would not be enough to conclude the intervention, being necessary to seek a multidisciplinary team, with a speech-language pathologist and audiologist present. Some of the limitations of this study are related to methodological design. This is a retrospective study involving observation and information recovered from teleconsultation service files. Thus, it is inevitable that some information that was considered important for the conduct of the study has not been collected, such as a profile description of the professional requesting the service. The type of population benefited in attendance, such as age and gender, is missing information in the database of this study. Other missing data in this study was the effectiveness of the benefits achieved by the population. This information should be considered for future studies.

On the other hand, positive points should be highlighted: it is a pioneering study on the role of Speech, Language and Hearing Sciences in a telehealth service in a large scale in the state of Minas Gerais with important contributions to the development of this type of assistance to professionals and users in Primary Care which, not only helps inform the speech-language pathologist and audiologists about this service, but increases their interest and participation in the field of telehealth.

FINAL CONSIDERATIONS

The education of a speech-language pathologist and audiologist requires many skills, taking into consideration the hardships of an impoverished population with a lack of appropriate care to meet its demands, and the constant technological advances in healthcare. Although the use of teleconsultation in Speech, Language and Hearing Sciences is still incipient, there is great potential for using this tool in clinical practice. Speech, Language and Hearing Sciences can count on the support offered by telehealth resources to expand assistance and prevention of disorders that can impair the life quality of citizens.

This study aimed to analyze and classify Speech, Language and Hearing Sciences teleconsultation in a wide range public service, with the highest demand coming from speech-language pathologist and audiologists themselves; the vast majority were divided into healthcare diagnosis (35%) and therapeutic

approaches (65%). The requests were mostly in the area of language, followed by oral motor skills, speech and audiology.

The characteristics of the teleconsultation described in this study suggest a specific demand for teleconsultation actions for Speech, Language and Hearing Sciences in Primary Care. The characterization of the service enables reflections on the necessary improvements to ethical practice, and extension of access to healthcare for a greater number of users in primary care.

As a result of this study, an investment in publicizing TNMG services amongst Speech, Language and Hearing Sciences professionals is suggested, alongside the inclusion of this professional in the user trainings offered by municipalities, which could lead to greater staff adhesion to the use of the system in their professional routine.

REFERENCES

1. Moreira MD, Mota HB. Os caminhos da fonoaudiologia no Sistema Único de Saúde – SUS. Rev. CEFAC. 2009;11(3):516-21.
2. Marcolino MS, Alkimim MBM, Assis TG, Palhares DMF, Silva GAC, Cunha LR et al. A Rede de Teleassistência de Minas Gerais e suas contribuições para atingir os princípios de universalidade, equidade e integralidade do SUS – relato de experiência. R Eletr de Com Inf Inov Saúde. [periódico na Internet]. 2013 [acesso em outubro 2014]; 7(2):1-21. Disponível em: www.reciis.icict.fiocruz.br/index.php/reciis/article/view/480.
3. Spinardi-Panes AC, Lopes-Herrera SA, Maximino LP. Aspectos éticos e legais na prática da telessaúde em fonoaudiologia. Rev. CEFAC. 2013;15(4):1040-3.
4. Brasil, Ministério da Saúde [internet]. Portaria n. 402, de 24 de fevereiro de 2010. [Citado em 02 de dezembro de 2015]. Disponível em: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2010/prt0402_24_02_2010.html
5. Brasil, Ministério da Saúde.[internet]. Telessaúde Brasil Redes: História do Telessaúde. [Citado em 03 ago 2015]. Disponível em: http://programa.telessaudebrasil.org.br/vhl/expansao/sobre-teste/
6. Nerlich M, Balas EA, Schall T, Stieglitz SP, Filzmaier R, Asbach P et al. Teleconsultation practice guidelines: report from G8 Global Health Applications Subproject 4. Telemed J E Health. 2002;8(4):411-8.
7. Hill A, Theodoros D. Research into telehealth applications in speech-language pathology. J Telemed Telecare. 2002;8(4):187-96.
8. Pierrakeas C, Georgopoulos VC, Malandraki, GA. Online collaboration environments in telemedicine applications of speech therapy. 27th Annual International Conference of the; 17-18 Jan 2006; Shangai, China: IEEE Engineering in Medicine and Biology Society; 2005.
9. Spirnardi ACP, Blasca WQ, Wen CL, Maximino LP. Telefonoaudiologia: ciência e tecnologia em saúde. Pró-Fono R Atual Cient. 2009;21(3):249-54.
10. Conselho Federal de Fonoaudiologia. Resolução n. 427, de 1 de março de 2013. Dispõe sobre a regulamentação da Telessaúde em Fonoaudiologia e dá outras providências. Diário Oficial da União. 2013; Seção 1:158.
11. Conceição HV, Barreira-Nielsen C. Capacitação em saúde auditiva: avaliação da ferramenta no programa Telessaúde Brasil. Rev. CEFAC. 2014;16(5):1426-33.
12. Penteado SP, Ramos SL, Battistella LR, Marone SM, Bento RF. Adaptação à distância de próteses auditivas acústicas: a teleaudiologia aplicada na melhoria da condução das Políticas Públicas no Brasil. Int. Arch. Otorhinolaryngol. 2012;16(3):371-81.
13. Rezende EJC, Melo MCB, Tavares EC, Santos AF, Souza C. Ética e telessaúde: reflexões para uma prática segura. Rev Panam Salud Publica. 2010;28(1):58-65
14. Brasil, Ministério da Saúde [internet]. Manual de Telessaúde para a Atenção Básica / Atenção Primária a Saúde. Protocolo de resposta a teleconsultorias. Universidade Federal do Rio Grande do Sul. – Brasília; 2013 - [citado em 01 de ago 2015]. Disponível em: http://189.28.128.100/dab/docs/portaldab/publicacoes/resposta_teleconsultorias.pdf
15. Conselho Federal de Medicina. Resolução n 1643, de 07 de agosto de 2002. Define e disciplina a prestação de serviços através da Telemedicina. Diário Oficial da União. 2002, Seção 1:205.

16. Santos JN, Maciel FJ, Martins VO, Rodrigues ALV, Gonzaga AF, Silva LF. Inserção dos fonoaudiólogos no SUS/MG e sua distribuição no território do estado de Minas Gerais. Rev. CEFAC. 2012;14(2):196-205.
17. Centro de Telessaúde – Hospital das Clínicas. UFMG – Belo Horizonte. [Citado em 04 out 2015]. Disponível em: http://telessaude.hc.ufmg.br/servicos/teleconsultorias/
18. Índice de Desenvolvimento Humano Municipal Brasileiro. Brasília: PNUD, Ipea, FJP, 2013.96p. [citado em 10 de out 2015]. Disponível em: http://atlasbrasil.org.br
19. Ferreira CL, Silva FR, Martins-Reis VO, Friche AA, Santos JN. Distribuição dos fonoaudiólogos na atenção à saúde no estado de Minas Gerais entre 2005 e 2010. Ver. CEFAC. 2013;15(3):672-80.
20. Silva DGM, Sampaio TMM, Bianchini EMG. Percepções do fonoaudiólogo recém-formado quanto a sua formação, intenção profissional e atualização de conhecimento. Rev Soc Bras Fonoaudiol. 2010;15(1):47-53.
21. Teixeira LC, Rodrigues ALV, Santos JN, Cardoso AFR, Gama ACC, Resende LM. Trajetória profissional de egressos em Fonoaudiologia. Rev. CEFAC. 2013;15(6):1591-600.
22. Fernandes TL, Nascimento CMB, Sousa FOS. Análise das atribuições dos fonoaudiólogos do NASF em municípios da região metropolitana do Recife. Rev. CEFAC. 2013;15(1):153-9.
23. Alkmim MBM, Abreu MP, Carvalho GG, Alkmim EM, Ribeiro ALP, Figueira RM. Boas práticas em teleassistência: a experiência de dois anos do Centro de Telessaúde do Hospital das Clínicas da UFMG. Em: XI Congresso Brasileiro de Informática em Saúde: 2008; Nov 29-03; Campos do Jordão.