

Original articles

Brazilian phonoaudiology telepractice before and during the COVID-19 pandemic

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ABSTRACT

Purpose: to analyze the use of digital resources by Brazilian phonoaudiologists before and during the period of the COVID-19 pandemic.

Methods: cross-sectional study carried out with a representative sample of Brazilian phonoaudiologists, with at least one year of practical experience. An online questionnaire consisting of 28 questions divided into eight sections was prepared. Data were analyzed and are reported as absolute and relative frequency regarding the variables: respondent's age, highest degree and years of experience; weekly working hours; region of the country; type of service and area of expertise; use of digital means before and during the pandemic and willingness to use the same kind of resource after the pandemic.

Results: telehealth technologies were used by 90% of phonoaudiologists in Brazil since before the COVID-19 pandemic. A change in the profile of technologies used was observed: after the pandemic, videoconferences gained more use in contact with patients compared to the pre-pandemic period even though contact via mobile phone and instant messaging applications are the most used, both before and during the pandemic.

Conclusion: the study's findings demonstrate that 90% of phonoaudiologists who answered the questionnaire in Brazil used and still make use of telehealth technologies to contact patients.

Keywords: Speech, Language and Hearing Sciences; Audiology; Population Studies in Public Health; Coronavirus; Covid-19; Access to Health Services, Medical Informatics Applications

INTRODUCTION

Telehealth's relevance as a vehicle for providing timely remote care has become increasingly evident, as health care needs continue to exist even in situations of social distance. As information about how different countries are facing specific challenges, the demands by professionals working in low-and-medium resourced countries and by the population they serve must be clarified, if the purpose of equity in the access to health and education services is to be met.

Some barriers still need to be overcome, such as technology access^{1,2}, health professionals' training²⁻⁴, regulation², acceptance by professionals and clients^{1,2,4} and recognition of the benefits of this practice by public and professionals. The need for phonoaudiologists to adapt their practice to this new health care modality is evident⁵. Telehealth use in Phonoaudiology (the professional category that comprises speech-language pathologists and audiologists in Brazil) has increased in several countries, especially in the last ten years⁶⁻⁸. During the COVID-19 pandemic, many professionals from different health areas⁹, including phonoaudiologists, have chosen to use tele-service modality in their practice, as an alternative to interrupting presential care, while minimizing professionals' and patients' contamination risk.

Brazil has a wide range of different contexts regarding phonoaudiology services delivery. Large geographic distances and uneven population distribution determine some of these differences, but not all. Economic, social and educational inequalities are observed throughout the country and have an impact on access to health and education services. Thus, it should be considered that telehealth can represent a valuable resource for care continuity in the situation of social distancing imposed by the COVID-19 pandemic. In this sense, it may be a means of reducing the inequities in the access to Phonoaudiology services by reducing the barriers imposed by geography and by the COVID-19 pandemic. Nevertheless, the barriers represented by social inequalities will certainly demand several other actions.

In a literature review about the use of Telehealth in Speech-Language Pathology and Audiology, it was found that most of those studies focused on hearing (32.1%), followed by speech (19.4%), language (16.5%), voice (8.7%), swallowing (5.8%), multiple areas (13.6%) and others (3.9%). Most of studies refer to assessment (36.9%) or intervention proposals studies (36.9%)⁵.

The need for phonoaudiologists to adapt to the reality imposed by the pandemic, with the need for social distance, is undeniable, as well as the obligation to improve Telehealth practices⁵.

Research in phonoaudiology Telehealth is still incipient in Brazil, but it already has specific initiatives, related to different areas such as the stimulation of language development and autism spectrum disorders (ASD)¹⁰⁻¹², which had an important increase with the COVID-19 pandemic. Despite, the COVID-19 pandemic, the increase in the use of telehealth resources in phonoaudiology in Brazil, demands increasingly comprehensive studies, reflecting the national reality.

This study aims to analyze the use of digital resources by Brazilian phonoaudiologists before and during the period of the COVID 19 pandemic.

METHODS

Cross-sectional study carried out with a representative sample of Brazilian phonoaudiologists from all regions of the country.

The original study from which the data were taken is a prospective, web population-based cohort study. This study was approved by the Research Ethics Committee of the Psychology Institute of the Federal University of Rio Grande do Sul, Brazil, under protocol # 4,066,110. All participants expressed their consent to participate in the study per CONEP circular letter 2/2021.

Participants

The sample considered the universe of 40 thousand phonoaudiologists working in Brazil. The country has 27 federative units, divided into 5 regions. The sample was defined as having an equal number of subjects per region, avoiding the cluster effect. Considering a 50% distribution of telehealth use in the studied population, a confidence level of 95%, and a sampling error of 5%, was calculated with 381 phonoaudiologists per region and 20% loss prevention were included, totaling 450 phonoaudiologists per region, or a total of 2250.

All phonoaudiologists who work in Brazil, with at least one year of practical experience at the beginning of the study and who agreed to answer the questionnaire were eligible to participate in the study. The only exclusion criterion was working less than one year as a phonoaudiologist.

The strategy to reach the respondents was based on a convenience sample on social networks, lists of scientific associations, and professional council.

The study was conducted during 2020, 24 to 35 epidemiological weeks.

Logistics

Online questionnaires were sent via social networks and professional council mailing. The instrument was based on The Graham Center Family Physician Survey¹³ and its final version generated an online questionnaire consisting of 28 questions divided into eight sections:

- (1) Information / characteristics of participants - 8 questions.
- (2) Frequency of Telehealth use before the pandemic - 1 question.
- (3) Professional practice before the pandemic - 5 questions.
- (4) Professional practice during the pandemic - 5 questions.
- (5) Phonoaudiology and Telepractice – Negative points - 3 questions.
- (6) Phonoaudiology and Telepractice – Positive points - 3 questions.
- (7) Phonoaudiology and Telepractice - Future Perspectives - 2 questions.
- (8) Questioning about participation in a future research phase - 1 question.

The internal validity and reproducibility of the proposed questionnaire were tested by applying it in a pilot test with phonoaudiologists with academic and clinical experience in different areas of phonoaudiology and who did not participate in the study.

Only results from questions that were significant for the purpose of the study are presented in this paper. The remaining questions will be discussed in a later study after a second phase of data gathering.

Data are presented by absolute and relative frequencies of the following variables: respondent's age, highest degree and years of experience; weekly working hours; region of the country; type of service and area of expertise; use of digital means before and during the COVID 19 pandemic and willingness to use the same kind of resource after the pandemic.

RESULTS

The number of returned questionnaires was 1699, 148 (8.7%) of which formalized the non-consent to participate. Thus, 1551 phonoaudiologists from Brazil's five regions effectively participated in the study.

The characteristics of the participants are shown in Figure 1.

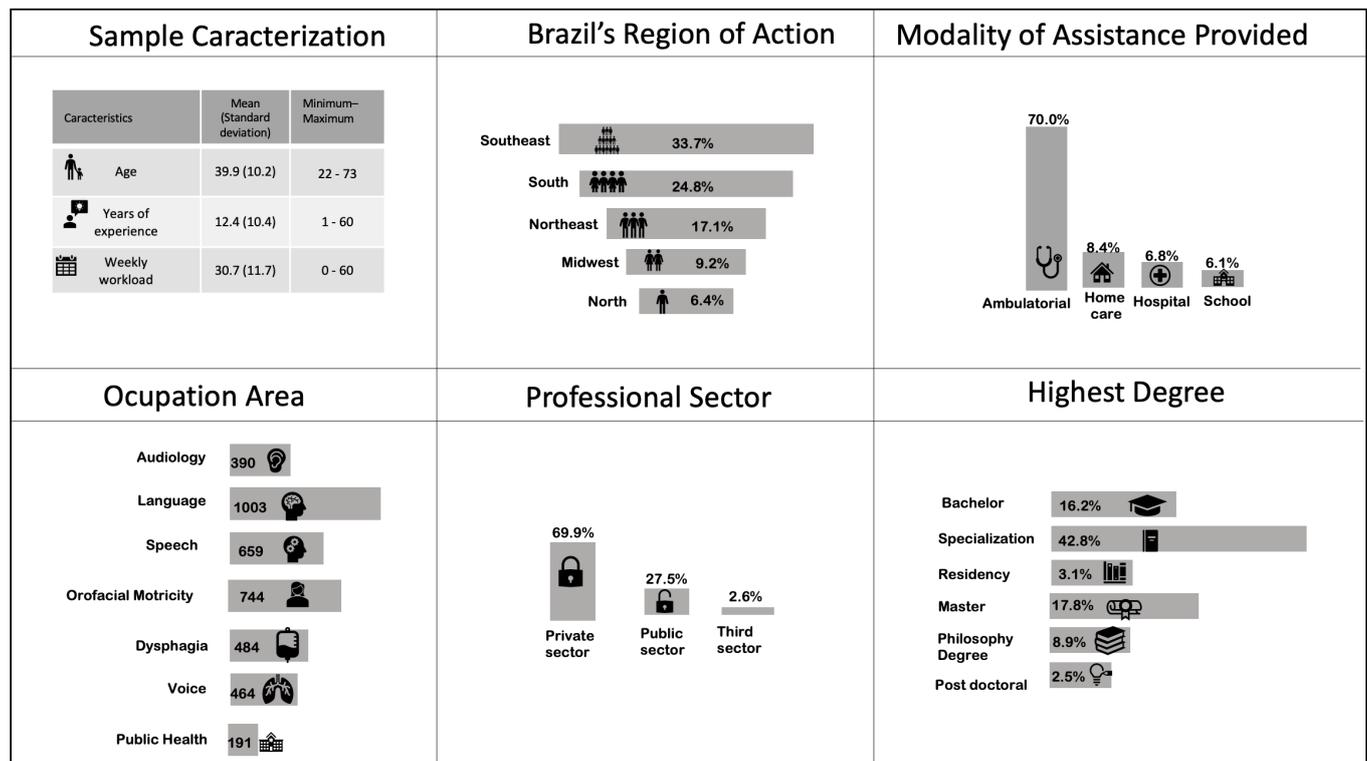


Figure 1. Characteristics of study participants in relation to Phonoaudiology Telepractice use, TelefONO-Brasil Study, 2020. (N = 1551)

The sample consists of phonoaudiologists with an average age of 40 years, and clinical experience of approximately 12 years. The vast majority of subjects have graduate degrees and live in the South and Southeast of Brazil.

Respondents concentrate their professional activities in two or more areas of phonoaudiology ($n = 1103$), with the Language area being the most cited by participants.

Table 1. Means used to perform Phonoaudiology telepractice before and during COVID-19 pandemic, TeleFONO-Brasil Study, 2020. (N = 1551)

Device/ resource	Pre COVID-19		During COVID-19	
	N	%	N	%
Mobile phone	1323	85.3	1251	80.7
WhatsApp/Telegram	1410	90.9	1375	89.6
Text Message	978	63.1	771	50.3
E-mail	841	54.2	704	45.7
Videoconference/videocall	223	14.4	986	64.2

Table 1 shows the number and proportion of respondents that use the different resources to telepractice. These data are not suitable for average comparison tests as it consists of absolute numbers and not an average value. During the pandemic, the biggest change refers to the substantial increase in the use of videoconferences during the period of social distancing. The preferred information and communication technologies (ICTs) for contact with patients before and during the pandemic continued to be mobile phones and WhatsApp.

Eight hundred eighty-five (57%) of the phonoaudiologists state they will continue to use telehealth after the end of the social distancing imposed by the pandemic. It should be noted that almost 30% (454) of the participants were unable to say, at the time of the interview, whether they would continue to use Telepractice or not.

DISCUSSION

The findings of this study demonstrate that 90% of phonoaudiologists that participated in the study have used telehealth technologies since before the COVID-19 pandemic. A change in the profile of technologies used for patient care was observed. After the pandemic, there was an increase in the use of videoconferences to contact patients when compared to the pre-pandemic period, even though contact via mobile phone and instant messaging continue to be the most used communication technologies, both before and during the pandemic.

Considering the period in which the questionnaire was available online (2020, epidemiological weeks, 24 to 35), the number of participants allows a significant overview of telehealth use by Brazilian phonoaudiologists.

Regarding the type of service provided, some participants work both in public and private practices, 70% of them were engaged in outpatient (clinical) activities and 69% have private practices. These findings are following with the 69.4% private services reported in a study conducted before the pandemic that aimed to estimate the prevalence of access and use of phonoaudiology services and identify the associated variables¹². Socioeconomic inequalities in accessing and using health services are associated with contextual variables, mainly related to the characteristics and organization of the Brazilian health system^{12,14}.

Most of the participants reported that their main working area was language (25%), followed by orofacial motricity (16%), and speech (19%). This distribution follows Brazilian Phonoaudiology's history, which started in educational activities,¹⁵ and with the national curriculum guidelines, that provides a broad scope of subjects in language and linguistics^{16,17}. This history and characteristics may also be associated with the largest prevalence of language disorders¹⁸⁻²⁰.

Regarding the means used in phonoaudiology telepractice, it is clear that several resources were used before the COVID-19 pandemic. Mobile phones and WhatsApp were the most popular means of contact before the pandemic and this information demands

the consideration of WhatsApp's low cost in Brazil, which makes it a preferred means of contact by a large population²¹. During the period of social distancing demanded by the COVID-19 pandemic, the results indicate increase in the number of participants that report videoconference use to contact patients and clients. The 450% increase in videoconference use was reported in several areas of activity²², this being the predominant feature of telehealthcare.

It is important to note that at the beginning of the pandemic some public services, schools, and school clinics associated with universities and training centers were temporarily closed, while private practices could provide telepractice treatment since the beginning of the social distancing.

The experience with telepractice in phonoaudiology seems to have resulted in a positive effect in the participants, since 57.8% of them answered that they would continue using telepractice even after the social distancing obligation was over and only 12.6% said they had no interest in using it after the COVID-19 pandemic. The current pandemic situation of COVID-19 made evident the benefits of telehealth, as well as the need to improve access and proficiency in the use of technologies by professionals²³. It can also contribute to a transformation of health care, improving several procedures, allowing close follow-up, and contributing to better clinical outcomes^{1,2,24}.

Nevertheless, some of the limits of the research reported must be considered. Data from the national professional council shows that 16% of the phonoaudiologists are officially specialists^{16,25,26}, while in this study, 46% of the professionals that agreed to participate are specialists in at least one of the areas recognized by the Brazilian council. The proportion of participants with any graduate degree is even larger when including those with Masters' and Ph.D. degrees, reaching 82% of the participants. The experience with research may be a factor that influences a professional towards agreeing to participate in a survey and any conclusion about the results should consider this factor.

On the other hand, there is a wide variation in age and participants' professional experience.

This study comprises professionals from a large country with a universal health system, who work in public and private practices. It can also contribute to an important notion of the state of the art of telepractice in Phonoaudiology.

In addition, the number of participants who answered the questionnaire can be seen as a limitation

of the study, as initially a sample of equal proportion between the regions of the country was defined. Although the sample number calculated was not reached, it is observed that the proportion of respondents is consistent with the number of phonoaudiologists in each region: The Southeast region, comprised of the states of São Paulo, Rio de Janeiro, Minas Gerais and Espírito Santo, has the largest number inhabitants and hence of professionals (52.9%). Those numbers decrease in the Northeast (18.5%), South (15%), West-Central (8%) regions and the lower numbers (5.65) are in the North region, comprised mostly by the Amazonian states.

The developed questionnaire was adequate to characterize the study's target population and preliminary results suggest the need for important discussions. An important reflection of the expansion of telepractice use in different realities is the requirement to improve the regulation policies of these activities to guarantee to the user access to the best quality services and at the same time that the local professional, geographically closer to the client, is valued. In addition, the regulation of these activities must meet the social demands, as well as contribute to expanding access to services.

Another important discussion that should be made in other studies concerns professional training for telepractice and for it to be included not only in theoretical and practical syllabus in undergraduate courses but also postgraduate certifications.

CONCLUSION

This study reports that almost 90% of the phonoaudiologists working in Brazil, that answered the questionnaire, used before and continued to use during the COVID-19 pandemic, different resources of telehealth technologies to contact patients, whether by mobile phone, computers or tablets. The larger difference observed refers to the use of videocalls/videoconferences to contact patients, which had an increase of 450% during the pandemic. However, the same is not true about the use of other means such as WhatsApp, Telegram, text messages, or e-mail, that didn't yield to large differences between both periods, pre- and during the pandemic.

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