English

Otorhinolaryngologist perceptions: why brazilian otorhinolaryngologits resist to telehealth?

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Abstract

Objective: *This manuscript aims to verify the perception of otorhinolaryngologists regarding teleconsultation, which was only approved by Brazilian Federal Council of Medicine (BFCOM) in the face of the public calamity situation experienced in Brazil due to the Coronavirus disease outbreak.* ***Methods:*** *For this purpose, 100 otorhinolaryngologists were invited to fill out a questionnaire on previous knowledge regarding the use of telemedicine and their perception of medical practice in relation to teleconsultation, ethics, service quality and compensation. After filling in, the data was plotted in tables for descriptive analysis of the answers on the topic.* ***Results:*** *Sample is composed by 51% female and 47% male, 40.9 median age. Regarding telemedicine use, since teleconsultation is not fully regulated by BFCOM, which impairs on physician usage. Physicians usually point out ethical matters, reduced service quality and tele-diagnosis unreliability as limiting factors, explaining willingness to face-fo-face consultation.* ***Conclusion:*** *Thus, this study indicates physicians' perceptions on telemedicine applications in Brazil, focusing on limiting factor.*

Keywords: Telemedicine. Remote Consultation. Cost-Benefit Analysis. Occupational Health. Otolaryngology.

Resumen

Percepciones de los otorrinolaringólogos: ¿por qué los otorrinolaringólogos brasileños se resisten a la telesalud?

Objetivo: *Este manuscrito tiene como objetivo verificar la percepción de los otorrinolaringólogos sobre la teleconsulta, que solo fue aprobada por el Consejo Federal de Medicina de Brasil (CFM) ante la situación de calamidad pública vivida en Brasil debido al brote de la enfermedad por Coronavirus.* ***Métodos:*** *Se invitó a 100 otorrinolaringólogos a llenar un cuestionario sobre conocimientos previos sobre el uso de la telemedicina y su percepción de la práctica médica en relación a la teleconsulta, ética, calidad del servicio y remuneración. Después del llenado, los datos fueron colocados en tablas para el análisis descriptivo de las respuestas sobre el tema.* ***Resultados:*** *La muestra está compuesta por 51% mujeres y 47% hombres, con una mediana edad 40,9. En cuanto al uso de la telemedicina, ya que la teleconsulta no está totalmente regulada por el CFM, perjudica el uso médico. Los médicos suelen señalar las cuestiones éticas, la reducción de la calidad del servicio y la falta de fiabilidad del telediagnóstico como factores limitantes, lo que explica la disposición a la consulta presencial.* ***Conclusión:*** *Este estudio indica las percepciones de los médicos sobre las aplicaciones de la telemedicina en Brasil, centrándose en el factor limitante.*

Palabras clave: *Telemedicina. Consulta Remota. Análisis coste-beneficio. Salud ocupacional. Otorrinolaringología.*

Resumo

Percepção de otorrinolaringologistas: Porque os otorrinolaringologistas brasileiros resistem a telessaúde?

Objetivo: *Este manuscrito tem como objetivo verificar a percepção dos otorrinolaringologistas sobre a teleconsulta, que só foi aprovada pelo Conselho Federal de Medicina (CFM) diante da calamidade pública vivida no Brasil devido ao surto da doença do Coronavírus.* ***Métodos:*** *100 otorrinolaringologistas foram convidados a preencher um questionário sobre conhecimento prévio sobre o uso da telemedicina e sua percepção da prática médica em relação à teleconsulta, ética, qualidade do serviço e remuneração. Após o preenchimento, os dados foram dispostos em tabelas para a análise descritiva das respostas sobre o tema.* ***Resultados:*** *A amostra é composta por 51% de mulheres e 47% de homens, com mediana de idade de 40,9. Em relação ao uso da telemedicina, como a teleconsulta não é totalmente regulamentada pelo CFM, prejudica o uso médico. Os médicos muitas vezes apontam questões éticas, redução da qualidade do serviço e falta de confiabilidade do telediagnóstico como fatores limitantes, o que explica a disposição para a consulta presencial. Conclusão: Este estudo indica as percepções dos médicos sobre as aplicações da telemedicina no Brasil, com foco no fator limitante.*

Palavras-chave: *Telemedicina. Consulta Remota. Análisis coste-beneficio. Salud ocupacional. Otorrinolaringología.*

Introduction

Information and Communications Technologies (ICT) modernized several human activities, including medicine practice culminating on telemedicine. The expression telemedicine is an universal word and indicates the use of ICTs on medicine. Although it raises many arguments in favor and against its use, undoubtedly it became a popular tool, remotely assisting a variety of medical specialties over the world[1,2].

In Brazil, telemedicine has found resistance since implementation, but its popularity remains relatively high on public services, specially due to governmental policies, such as the Brazil Telehealth Program that is primarily focused on primary healthcare[3].

Aiming to regulate telemedicine in Brazil, Brazilian Federal Council of Medicine has emitted resolutions since 2002. The first resolution has preserved physician's autonomy as it allowed medical doctors to practice telemedicine. This resolution remained in effect until 2011 when Resolution n 1.974/2011 was issued and partially denied telemedicine offer to patients that haven't had previous consultations. The most controversial resolution was released in 2018, as it left room for interpretations that medical teleconsultation could be mediated, in person, by a non-medical professional, being later revoked by the BFCOM itself.

However the 2020 Coronavirus disease 19 (COVID-19) pandemic has changed this reality due to high risk of infection associated in face-to-face medical consultations, forcing Brazilian Federal Council of Medicine (BFCOM) to change previous Resolutions. A new resolution was issued, which provisionally regulated, on an emergency basis, teleorientation and telemonitoring patients who are in social isolation [3,4,5,6].

Since April 2020, Resolution n 1756/2020 has exceptionally approved teleconsultation practice for physicians, including some medical specialities with major risks of being infected during appointments, such as otorhinolaryngologists. Whereas airways infections are often dealt by this medical specialty, the Brazilian Otorhinolaryngologist Neck and Facial Surgery Association has recommended suspension of face-to-face appointments and invasive procedures, excepting medical emergencies, and mandatory use of Personal Protective Equipment[7,8].

Albeit Telemedicine has proved already health care cost reduction since patients do not necessarily require to transfer long distances to obtain specialized medical attention, Telemedicine still faces many challenges in Brazil[9]. Highlighting the value of a presencial consultation, the Brazilian Federal Council of Medicine recommends that when teleconsultation can no longer fully attend the patient, it should be transferred for reference hospitals as soon as possible. Therefore, Telemedicine would assist patients on receiving proper medical attention, guarding presencial consultations' indication since teleconsultation can only be a substitute during the Covid-19 outbreak [10,11,12,13].

Since the 90's, authors form Norway, Northern Ireland, United States of America have published evidences that Tele-Otorhinolaryngology in rural areas have expanding access to health care system, promoting greater agility, cost reductions and relative patients' satisfaction[14,15,16,17]. Assessment methods have also been created to perfect tele-otolaringology, such as video-othoscopy, tele-audiometry, neuro-otology and speach impairments, barely used in Brazil as telemedicine was not allowed by BFCOM[18,19].

Therefore, the aim of this study is to verify Brazilian otorhinolaryngologist perceptions about telecosultation and identify resistance reasons, since Telemedicine faces restrictions and resistance for its implementation in Brazil.

Methods

The study is a cross-sectional descriptive pilot questionnaire conducted in Pará State University, located in north of Brazil.

This study was approved by the research ethics committee of Pará State University (CAAE 31859020.6.0000.8767) and it was conducted by delivering a questionnaire to physicians that consented with methodological study and signed the Free and Informed Consent.

Questions were close-ended, self-designed, and developed by researchers, consisting in ten questions aiming to analyze perceptions of a hundred Brazilian otorhinolaryngologists about telemedicine knowledge, teleconsultation, ethics, data security, service quality and compensation. To every question followed options indicating "Agree", "I am not sure" and "Disagree". Furthermore, socioeconomic data were collected, including questions about sex, age, educational and economic background (Table 1).

Table 1: Questionnaire developed by researchers.

PERSONAL INFORMATION	OPTIONS		
Age	-		
Sex	-		
Educational background	Specialist	Master degree	PhD
QUESTIONAIRE			
I know how to differentiate Telemedicine terms	Agree	I'm not sure	Disagree
I know how to realize a teleconsultation	Agree	I'm not sure	Disagree
I believe teleconsultation is unethical	Agree	Ethical only in calamities situation	Disagree
I would apply telemedicine during Covid-19 outbreak	Agree	I'm not sure	Disagree
I would apply telemedicine even after Covid-19 outbreak, if teleconsultaton was regulated	Agree	I'm not sure	Disagree
I believe teleconsultation offers quality in the same level as a face-to-face consult	Agree	I'm not sure	Disagree
I believe teleconsultation offers enough data for me to telediagnosis and offer treatment	Agree	I'm not sure	Disagree
I would accept patients from I would accept patients from	Private service	Private and healthcare insurance	Healthcare insurance / I'm not sure

The study was conducted over a period of two months, between June and July, by on-line structured questionnaire (SurveyMonkey®), to reduce unnecessary personal contact among medical practitioners and researchers.

Inclusion criteria were Brazilian otorhinolaryngologist willing to give written consent and willing to take part on the study. Exclusion criteria were participants who did not complete the questionnaire or were not willing to take part on the study.

Data generated were coded and imputed into tables and later statistical analysis was performed using Stata 12.0 software . Data was analyzed in terms of absolute and relative frequency, percentages, median and interquartile range. Shapiro-Wilk test was used to verify their normal distribution ($p \leq 0,05$).

Results

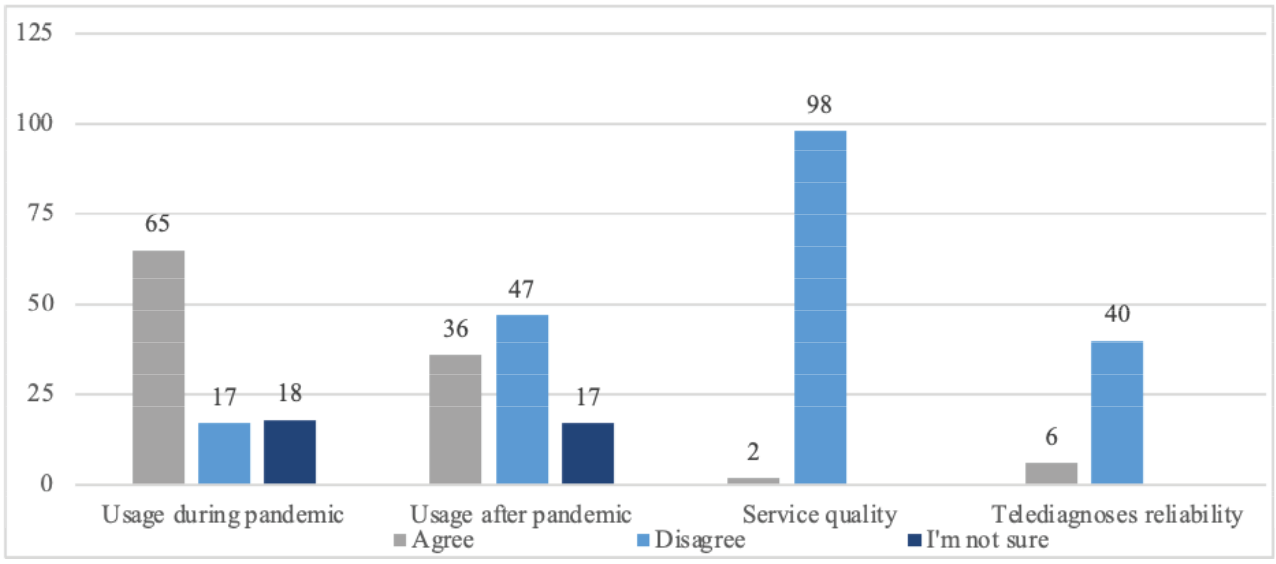
Descriptive analyses of results displays data about a hundred otorhinolaryngologists. Numeric data was classified as asymmetric distribution ($p<0,05$). Out of interviewed physicians, 51% were male and 47% were female. Considering educational background, 75% claimed to be specialists, 16% to have a master degree and 8% to be PhD (Table 2).

Table 2: Sample socioeconomic characteristics.

Carachteristics	n	
Sex		
Female	51	
Male	47	
Ignored	2	
Educational Background		
Specialist	75	
Master Degree	17	
PhD	8	
Age	median	p25-75
	40.5	35-48

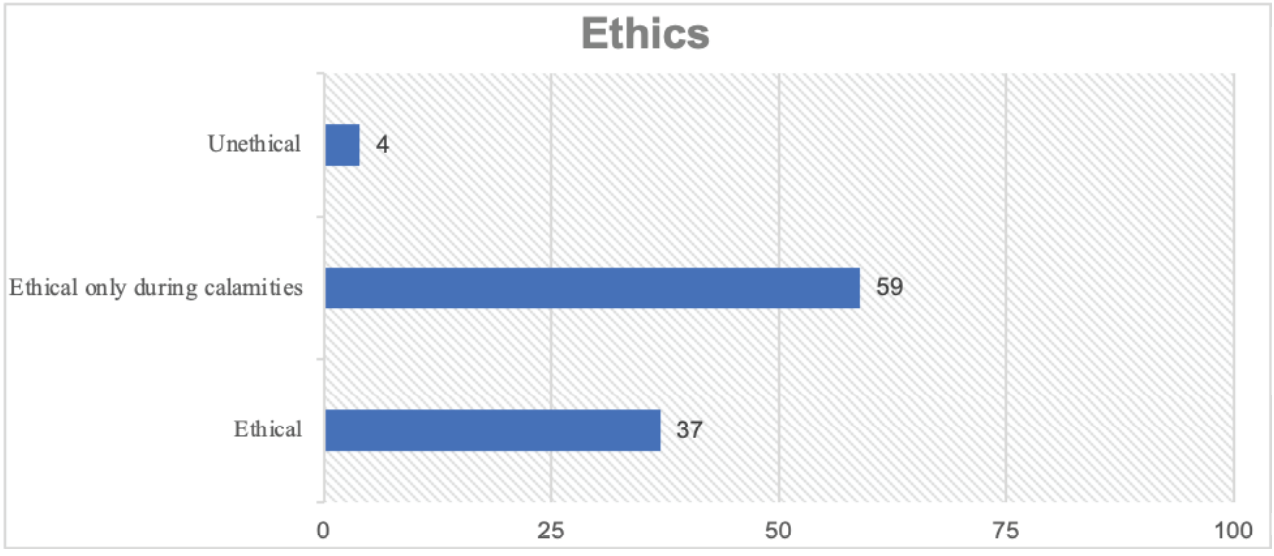
Otorhinolaryngologists perceptions about teleconsultation application, service quality, tele diagnoses reliability and equipment investment is also demonstrated (Graph 1).

Graphic 1. Absolute frequency describing otorhinolaryngologists' perceptions in the following order: teleconsultation use during pandemic, teleconsultaton usage after pandemic, service quality, telediagnosis reliability.



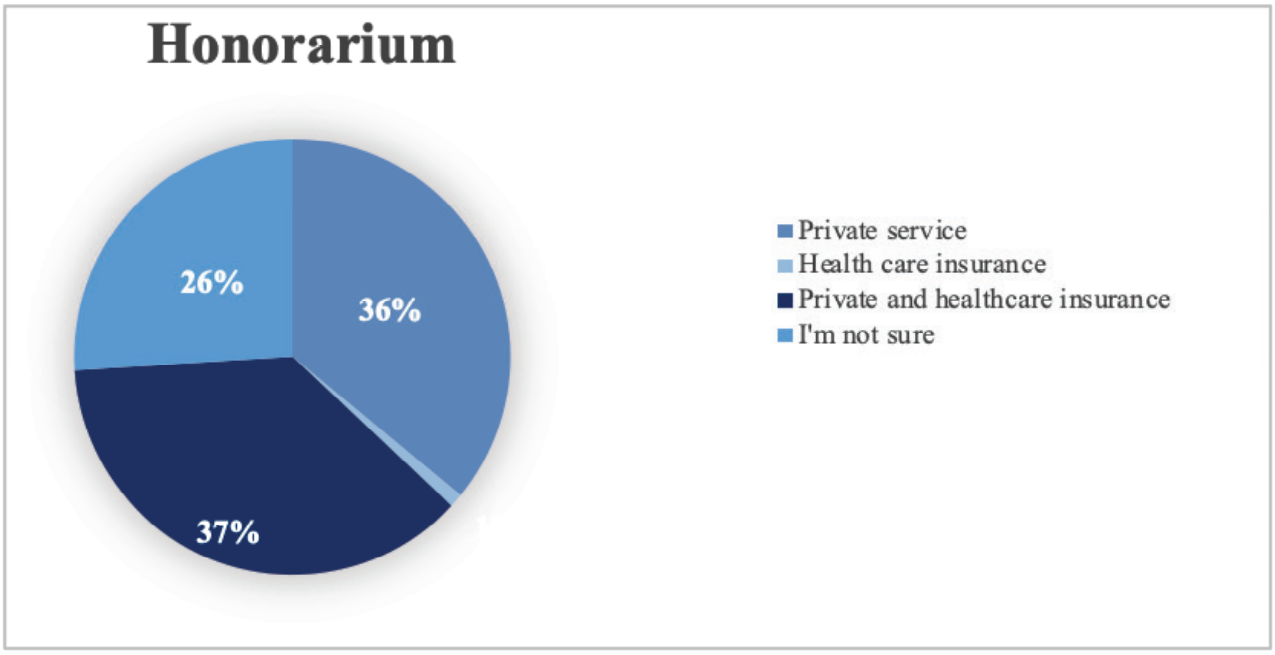
Ethical considerations are displayed separately, since Telemedicine applications are greatly limited in Brazil (Graph 2).

Graphic 2. Absolute frequency describing otorhinolaryngologists' perceptions about ethics and teleconsultation.



Regarding honorarium, most doctors were willing to receive patients from private services or healthcare insurance (Graph 3).

Gráfico 3: Relative frequency of acceptable honorarium for teleconsultation.



Discussion

In this study, teleconsultation perceptions of one hundred otorhinolaryngologists were analyzed through an on-line survey. Based on their answers, it was possible to verify their perception on the influence exerted by ICT and correlate age, socioeconomic and educational background to establish if medical doctors specialized in otorhinolaryngology are willing to use teleconsultation on clinical practice, depending on ethics, service quality and compensation.

Approximately 41% of medical doctors claimed to understand and differentiate terms such as telemedicine, teleconsultation and tele diagnosis. In contrast, 54% didn't know how to procede during teleconsultation. Regarding teleconsultation, BFCOM has emitted three Resolutions (n 1.643/2002, n 1.974/2011, n 2.227/2018) and an emergency official notice (n 1756/2020) in order to regulate teleconsultation as long as the pandemic persists[4,5,6,7]. According to article 4 of Resolution nº 2.227/2018, teleconsultation was defined as a remote medical appointment when conditions allow information exchange among physician and patient, accomplished by ICT, which does not accommodate telemedicine's extension and applications in Brazil[20]. Common obstacles to telemedicine application have been previously described, highlighting unfamiliarity and lack of training in ICT's which are likely to reduce telemedicine acceptance[21,22].

Ethical concerns about telemedicine applications were expressed by most of otorhinolaryngologists in this study. Great part of medical practitioners allege that teleconsultation is a doubtful ethical practice of medicine and the tool would only be safe during calamity situations, such as the Covid-19 outbreak, however they also suggest that if Brazilian Federal Council of Medicine definitely regulated such practice physicians would probably offer the service, investing in proper equipment.

Unexpectedly, 98% of the the sample consider teleconsultation a unreliable application of medicine. In this study, Brazilian physicians believe that teleconsultation does not provide same service quality as face-to-face or does not provide enough data for tele diagnosis. Previous reports have also associated this unreliability since visual contact, facial expression recognition, posture and speech might contribute to achieve diagnose in a wide number of conditions[23].

Besides, non-verbal communication is responsible for 93% of human communication, more specifically, 38% correlate to paralinguistic signs, 55% to body signs and only 7% is correlated to speech[24].

Since Covid-19 first case was reported, high rates of infection and lethal cases led Brazil to an alarming medical system status, for this matter exceptional regularization of teleconsultation in Brazil was motivated. In order to overcome the crisis, social isolation was encouraged by serious medical associations in Brazil, affecting medical assistance directly[13].

Furthermore, teleconsultation plays a different according to necessity. Medical assessment, dise diagnosis, treatment and medical follow-up could performed with ICT replacing face-to-face physi consultation partially or fully[25]. In Brazil, teleconsultatio an extraordinary measure never replacing the preser consult, even though major territoriality and structural problems have also been historically reported as great problems to access health systems.

Impaired primary healthcare access engender excessive load on subsequent assistance levels in health services, considering Brazilian dissimilarities. Thus, great investments were required to ensure universal coverage in Brazil26.

Under several limitations, since 2010 teleconsultories were authorized in Brazil for exchanging information between healthcare professionals27,28. Due to 2020, telemedicine was widespread whereas uncertainty about Covid-19 are frequent, telemedicine has also been a valuable tool to perform medical assessment, triage and to stratify risks between patients to improve the healthcare system.

In the context of otorhinolaryngology, Bergmo15 has demonstrated traveling cost reduction for ear, nose and throat appointments, avoiding medical transfers from countryside to capitals in order to get specialized medical attention. A cost-effective treatment has been equally shown in orthopedics, cardiology, dermatology and pediatric treatment9,30,31,32. Since transfer reduction may also contribute to social isolation, teleconsultation may improve medical access decreasing risks during Covid-19 pandemic[9,33,34,35].

Professionals were categoric to affirm that service quality is decreased and physicians may not conclude diagnoses, if performed completely on-line. However specific medical equipment was developed to improve quality of assessment, including tele-audiometric examinations, neuro-otology, diagnostics and therapy of articular disorders, disturbed speech, dysphagia, but non-consensual data is published on the subject[15,19]. Nevertheless, doctor-patient relationship is similarly responsible for consultation progress and teleconsultation is under ethical responsibilities of protocols and has a duty to provide proper treatment according to the Medical Code of Ethics[33, 36].

Regarding compensation when performing teleconsultation, doctor would use teleconsultation for private and healthcare insured services. Scarce resources, management problems and poor compensation are important reasons for public health precariousness in Brazil, which might indicate physicians willingness for private services[9].

Although physicians' perceptions are barely demonstrated in literature, this study aimed to analyze otorhinolaryngologists' perception about teleconsultation. This study presents substantial limitations, such as reduced sample size and application of a non validated questionnaire for its purpose. Therefore, further research on the topic is recommended.

Conclusion

In conclusion, the study has shown potential resistance reasons for telemedicine use in otorhinolaryngology in Brazil, despite great evidence-based utilization. Teleconsultation still faces considerable resistance in Brazil even in favorable conditions to its usage, such as low workforce density assisting the countryside, continental territoriality and increasing healthcare system precariousness.

Educational background, ethics consideration and consultation quality are more likely to be mentioned as a reason to resist teleconsultation practice. Nonetheless, modernizing health systems is a slow and complex process for innovative tools are often not enough, depending of health institutions and professional adhesion [9,37].

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